

July 18, 2022

Ms. Julia Hegarty
U.S. Department of Energy
Office of Energy Efficiency and Renewable Energy
Building Technologies Office
1000 Independence Avenue SW
Washington, DC 20585-0121

Re: Request for Information – Energy Conservation Program for Appliance Standards: Energy Conservation Standards for Direct Heating Equipment [*Docket No. EERE-2022-BT-STD-0018*]

Dear Ms. Julia Hegarty:

The Air-Conditioning, Heating, and Refrigeration Institute (AHRI) respectfully submits this letter in response to the U.S. Department of Energy (DOE) Request for Information Pertaining to Standards for Direct Heating Equipment (DHE) published in the *Federal Register* on June 21, 2022.

AHRI represents 332 air-conditioning, heating, and refrigeration equipment manufacturers. In North America, the annual output of the HVACR and water heating industry is worth more than \$44 billion. In the United States, the industry supports 1.3 million jobs and \$256 billion in economic activity annually. AHRI represents the vast majority of North American manufacturers of furnace equipment.

Response to DOE Issues

For clarity, AHRI has assigned numbers to the issues identified in the Departments request for information.

Issue 1: DOE requests comment on an appropriate definition for a consumer “hearth heater.” DOE also requests feedback on whether sub-categories of hearth heaters are necessary (e.g., “vented hearth heaters” and “unvented hearth heaters”), and, if so, what the definitions of those sub-categories should be.

AHRI Response: AHRI has no comment on this issue.

Issue 2: DOE seeks comment on whether oil-fired hearth heaters are currently being manufactured, as well as the relative market shares of gas-fired, oil-fired, and electric hearth heaters.

AHRI Response: AHRI has no comment on this issue.

Issue 3: DOE requests comment on its expectation that the energy savings potential from possible energy conservation standards for electric hearth heaters would be de minimis.

AHRI Response: AHRI agrees with the Department's expectations for de minimis energy savings for an updated energy conservation standard for electric hearth heaters.

Issue 4: DOE requests comment on whether additional product definitions are necessary to close any potential gaps in coverage between product types.

AHRI Response: AHRI has identified no gaps related to Hearth Heaters and DHE. AHRI proposes that DOE differentiate products based on the standards to which they are tested and certified.

Issue 5: DOE requests feedback on whether hearth heaters have performance-related features (e.g., heat exchanger design, flame characteristics, or heat output) that provide unique consumer utility that impact energy use of the product. If so, DOE requests data detailing the corresponding impacts on energy use that would justify separate product classes (i.e., explanation for why the presence of these performance-related features would increase energy consumption).

AHRI Response: Given that vented hearth heaters are non-ducted products, there is energy savings as there is no heat lost through the duct. Unvented products should be considered to be close to 100% efficient since there is virtually no heat loss.

Issue 6: DOE seeks information on the technologies listed in Table II.1 regarding their applicability to the current hearth heater market (including both vented and unvented hearth heaters) and how these technologies might potentially impact the efficiency of hearth heaters.

AHRI Response: The technologies covered in Table II.1 could be applied to hearth heaters, at a substantial increased cost to owners. Additionally, some hearth heater installations do not have external electric power nearby. Given this restraint many of the technologies outlined are impractical for these product types. AHRI notes that air circulating fans are currently an option used in some hearth products.

Issue 7: DOE also seeks information on how these technologies may have changed since they were considered in the April 2010 Final Rule and/or February 2015 NOPR.

AHRI Response: AHRI is not aware of any significant changes in these technologies since they were last considered by the DOE.

Issue 8: DOE seeks information on the range of efficiencies or performance characteristics that are currently available for each technology option.

AHRI Response: Unvented hearth heaters there would be minimal changes in the efficiency of these products given the different technologies options listed, these heaters operate at approximately 99% efficiency.

Issue 9: DOE also seeks comment on any other technology options that it should consider for inclusion in its analysis and whether these technologies might impact product features or consumer utility of hearth heaters

AHRI Response: AHRI is currently unaware of any additional technologies in use on the market today.

Issue 10: DOE requests feedback on what impact, if any, the five screening criteria described in this section would have when applied to each of the technology options listed in Table II.1 pertaining to hearth heaters.

AHRI Response: AHRI has no comment on this issue.

Issue 11: DOE seeks information regarding the effect these same criteria would have when applied to any other technology options not already identified in this document with respect to their potential use in hearth heaters.

AHRI Response: AHRI has no comment on this issue.

Issue 12: DOE requests comment on the appropriate baseline efficiency level for vented gas hearth heaters, as well as the corresponding design features characteristic of the baseline efficiency.

AHRI Response: AHRI believes that the current baseline efficiency level is appropriate and should be maintained.

Issue 13: DOE requests comment on the appropriate baseline for vented oil hearth heaters

AHRI Response: AHRI has no comment on this issue.

Issue 14: DOE requests comment on higher efficiency levels for vented gas hearth heaters and their associated design features. Additionally, DOE requests comment on appropriate efficiency levels above baseline for vented oil hearth heaters and their associated design features.

AHRI Response: AHRI believes that that current efficiency levels are appropriate and should be maintained due to increased cost of improved technology.

Issue 15: DOE also seeks input on identifying the max-tech efficiency level(s) and associated design options for gas and oil vented hearth heaters.

AHRI Response: AHRI again notes that the current efficiency levels are appropriate and should be maintained due to increased first cost of improved technology. Additionally, these products are typically used to serve disadvantaged and underprivileged communities. If efficiency levels are increased further it would require a total redesign and additional capital expense.

Issue 16: Additionally, for any max-tech efficiency level identified by stakeholders, DOE also seeks input on whether such a max-tech efficiency level would be appropriate for potential consideration as possible energy conservation standards for hearth heaters, and if not, why not.

AHRI Response: See above answers.

Issue 17: DOE requests additional data and information about the typical usage of unvented hearth heaters. Specifically, DOE requests comment on how commonly the pilot lights of gas unvented hearth heaters are left on during non-heating season.

AHRI Response: AHRI does not have any data on this subject.

Issue 18: DOE requests comment on how commonly manufacturer instructions to turn off gas unvented hearth heaters are provided on the heater near the gas control valve.

AHRI Response: AHRI has no comment on this issue.

Issue 19: DOE requests comment on appropriate baseline off mode energy consumption levels, and the associated design options, for unvented hearth heaters in terms of Qp, PW,SB, and/or other metrics.

AHRI Response: AHRI does not have data on this topic. AHRI notes that off mode energy consumption would be dependent on the size of the pilot (light), which is designated by the appropriate product safety standards.

Issue 20: DOE seeks input on identifying efficiency levels above baseline, including the max-tech efficiency level(s), in terms of Qp, PW,SB, and/or other metrics, for unvented hearth heaters.

AHRI Response: AHRI has no comment on this issue.

Issue 21: DOE also requests comment on the design options associated with every efficiency level.

AHRI Response: AHRI has no comment on this issue.

Issue 22: Additionally, for any higher efficiency level identified by stakeholders, DOE also seeks input on whether such an efficiency level would be appropriate for potential

consideration as possible energy conservation standards for unvented hearth heaters, and if not, why not.

AHRI Response: AHRI has no comment on this issue.

Issue 23: DOE requests feedback on whether an increase in energy efficiency for vented hearth heaters or a reduction in energy consumption for unvented hearth heaters would lead to other design changes that would not occur for these products otherwise.

AHRI Response: AHRI notes that for vented hearth heaters, a change in stringency would lead to a complete redesign of products currently on the market, in turn leading to a substantially increase in first cost to the owner.

For unvented hearth heaters there is a minimum required size for pilot lights to ensure safe operation. Accordingly, setting more stringent off mode requirements would lead to potential safety concerns if manufacturers are unable to right-size these pilot lights. Additionally, the pilot light includes the oxygen depletion sensor, which is vital for safety of the consumer. If changed to technology that would remove standing pilots, the cost of the product would increase significantly for a population of consumers that is typically seeking the lowest cost access to heating.

Issue 24: DOE is also interested in information regarding any potential impact of design options on a manufacturer's ability to incorporate additional functions or attributes in response to consumer demand, for both vented and unvented hearth heaters.

AHRI Response: AHRI has no comment on this issue.

Issue 25: DOE also seeks input on increases in MPC associated with incorporating any design options identified. Specifically, DOE is interested in whether and how the costs estimated for design options in the April 2010 Final Rule and/or February 2015 NOPR have changed since the time of those analyses.

AHRI Response: Costs have increased since they were previously analyzed due to rising prices of raw material, transportation, and labor. AHRI recommends that the Department perform manufacturer interviews to better capture these increased costs.

Issue 26: DOE also requests information on the investments necessary to incorporate specific design options, including, but not limited to, costs related to new or modified tooling (if any), materials, engineering and development efforts to implement each design option, and manufacturing/production impacts.

AHRI Response: AHRI recommends that the Department perform manufacturer interviews to better capture these increased costs.

Issue 27: DOE requests comment on whether certain design options may not be applicable to (or incompatible with) specific product types.

AHRI Response: All of the items listed in Table II.1 would require significant modifications to the current product lines available and would add significant cost to the owner.

Issue 28: DOE requests information on the existence of any distribution channels other than those listed previously for hearth heaters. Further, DOE seeks input on the percentage of products being distributed through the different distribution channels, as well as whether the share of products through each channel varies based on capacity or other features.

AHRI Response: AHRI has no comment on this issue.

Issue 29: DOE requests data and information regarding market applications of consumer hearth heaters.

AHRI Response: AHRI has no comment on this issue.

Issue 30: DOE requests any other available data or published reports on the annual operating hours for consumer hearth heaters.

AHRI Response: AHRI has no comment on this issue.

Issue 31: DOE requests comment on the use of RS Means as a source to develop installation costs for consumer hearth heaters.

AHRI Response: AHRI has no comment on this issue.

Issue 32: DOE requests comment on whether the installation cost of consumer hearth heaters would be expected to change with efficiency level.

AHRI Response: AHRI expects that there would be a significant increase to the cost for owners if efficiency levels were increased for hearth heaters, given that the additional technology would require new vents and an electrical connection.

Issue 33: DOE requests comment on its approach to develop electricity and natural gas prices for consumer hearth heaters.

AHRI Response: AHRI has no comment on this issue.

Issue 34: DOE requests feedback and data on whether maintenance costs differ in comparison to the baseline maintenance costs for any of the specific technology options listed in Table II.1 for consumer hearth heaters.

AHRI Response: Due to the complexities of the technologies outline in Table II.1, there would be increases in the maintenance costs for owners.

Issue 35: DOE requests information and data on the frequency of repair and repair costs by product class for the technology options listed in Table II.1 for consumer hearth heaters. While DOE is interested in information regarding each of the listed technology options, the Department is also interested in whether consumers simply replace the products when they fail as opposed to repairing them.

AHRI Response: The current design of hearth heaters on the market requires limited repair or maintenance. By moving to more complex technologies outlined in Table II.1, owners would be faced with increased installation costs as well as newly required maintenance costs. Given that these products are typically used in underserved communities, there may be an increase in the repair of these units as opposed to adopting a more expensive replacement.

Issue 36: DOE requests comment on whether the average lifetime of 16 years for consumer hearth heaters that was used in the February 2015 NOPR is still a valid estimate.

AHRI Response: AHRI agrees that the 16-year lifecycle of these products is still valid. However, AHRI would expect to see an increased lifecycle of these products if a more stringent standard is put in place, due to the likelihood of the owner to repair instead of replace these products as a result of the increased first-cost of a baseline product.

Issue 37: DOE requests data on the market share of vented and unvented hearth heaters with the technology options listed in Table II.1 and/or by efficiency level.

AHRI Response: AHRI has no comment on this issue.

Issue 38: DOE requests updated annual sales data (i.e., number of shipments) for vented and unvented consumer hearth heaters. If available, DOE requests the annual shipments information for the years 2014–2021.

AHRI Response: AHRI has no comment on this issue.

Issue 39: DOE requests data on the expected future growth trends of vented and unvented hearth heaters with the technology options listed in Table II.1 of this document.

AHRI Response: AHRI has no comment on this issue.

Issue 40: DOE requests information regarding the cumulative regulatory burden impacts on manufacturers of hearth heaters associated with: (1) other DOE energy conservation standards applying to different products or equipment that these manufacturers may also make and (2) product-specific regulatory actions of other Federal agencies.

AHRI Response: AHRI has no comment on this issue.

Issue 41: DOE also requests comment on its methodology for computing cumulative regulatory burden and whether there are any flexibilities it can consider that would reduce this burden while remaining consistent with the requirements of EPCA.

AHRI Response: AHRI has no comment on this issue.

AHRI appreciates DOE's consideration of these concerns. Please feel free to contact me with any questions or for further discussion.

Sincerely,

A handwritten signature in black ink, appearing to read "Kyle Bergeron". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Kyle Bergeron
Regulatory Engineer