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Ms. Abigail Daken
Manager, ENERGY STAR HVAC Program
United States Environmental Protection Agency
Washington, DC 20460

Submitted via e-mail: cacashp@energystar.gov

Re: EPA ENERGY STAR Residential Air Source Heat Pump (ASHP) and Central Air Conditioner (CAC) Equipment Version 6.0 Draft 2 Specification.

Lennox International Inc. (Lennox) hereby submits comments on the *United States Environmental Protection Agency (EPA) ENERGY STAR Residential Air Source Heat Pump (ASHP) and Central Air Conditioner (CAC) Equipment Version 6.0 Draft 2 Specification* as published by the EPA on January 23, 2020.

Lennox is a leading provider of climate-control solutions for heating, air conditioning, and refrigeration markets. Lennox is a publicly-traded company that has thousands of employees, and it manufactures equipment addressed by the EPA ENERGY STAR ASHP and CAC program criteria.

A. General Comments.

Lennox believes the EPA ENERGY STAR program can effectively promote increased energy efficiency. This can be accomplished by maintaining a program that is not burdensome to administer combined with *reasonable specifications for energy performance criteria that consider impacts to consumers, contractors, distributors and manufacturers*. Further, the ENERGY STAR program should work to unify energy program approaches across jurisdictions to increase the success of efficiency programs and avoid regional requirements which dilute program participation and effectiveness. A consistent set of specifications that can be promoted by all efficiency programs in the US and Canada makes it easier for contractors, distributors, and manufacturers to engage and hence allows for a larger impact on the market for enhanced energy efficient products

While Lennox appreciates the EPA proposal to align the effective date with the 2023 Department of Energy (DOE) ASHP and CAC minimum energy conservation standards, the proposed draft Version 6.0 ASHP/CAC presents significant problems, including overly stringent performance and multiple prescriptive requirements that go beyond the current ENERGY STAR Most Efficient criteria. To ensure continued participation and success for the ENERGY STAR Lennox recommends that EPA strongly consider the following for the residential ASHP and CAC specifications:

- *ENERGY STAR should maintain the current performance levels through January 1, 2023, when updated DOE ASHP and CAC minimum performance standards go into effect.*
- *ENERGY STAR criteria should be performance based using DOE required metrics and must avoid prescriptive requirements.*
- *ENERGY STAR performance criteria should be set at reasonable thresholds that average consumers can afford and aligned with ENERGY STAR's Guiding Principles.*
- *ENERGY STAR should not impose regional requirements.*
- *AHRI 1380 should be the foundation for optional connected criteria.*

Historically, when EPA overreaches by imposing uncoordinated or burdensome ENERGY STAR requirements, participation in the program declines precipitously. While Lennox conceptually supports the ENERGY STAR program, Lennox will continue to evaluate participation based on cost, value and the associated return on our investment. EPA's proposal to impose significantly more stringent performance and prescriptive requirements risks Lennox's participation in the program and potentially a similar decline in ENERGY STAR participation within the HVAC industry. Although Lennox produces many models that are rated as the most efficient ASHP and CAC products available in the market and supports the EPA ENERGY STAR efforts to recognize and promote highly efficient products, Lennox does not support the proposed Version 6.0 Draft 2 specification and would need to seriously consider our continued participation in the program if enacted. Lennox prior comments regarding 6.0 Draft 1 included a summary of the extraordinary regulatory changes that HVACR manufacturers are in the midst of. Due to this and limitations of the ENERGY STAR program value, while Draft 2 proposes alignment in dates, the stringency of the Draft 2 proposal will significantly reduce the products available that meet ENERGY STAR criteria and will not encourage manufacturer participation or market adoption.

Further, Lennox recommends that any changes to the ENERGY STAR residential ASHP and CAC criteria be coordinated with the Consortium for Energy Efficiency (CEE). CEE is the leading consortium of efficiency program administrators across the United States and Canada. CEE members work to unify energy program approaches across jurisdictions to increase the success of efficiency programs.

B. Specific Issues regarding the Proposed Draft 2 Criteria.

1. Lennox supports ENERGY STAR maintaining the current performance levels through January 1, 2023, when updated DOE ASHP and CAC minimum performance standards go into effect.

Manufacturers are in the midst of extraordinary regulatory changes requiring significant development efforts to meet the 2023 standards as well as address ongoing regulatory developments. The transition to low GWP refrigerants will effectively double manufacturer design efforts to achieve the 2023 standard. Major changes to the ASHP/CAC ENERGY STAR program at this juncture could lead to a significant decline in industry participation in the program, contrary to the goals of the ENERGY STAR program. For continued success of the

ENERGY STAR program a January 1, 2023 effective date and reasonable specification criteria must be maintained.

2. ENERGY STAR criteria should be performance based using DOE required metrics and must avoid prescriptive requirements for CAC and ASHP products.

EPA must not impose both performance standards and a prescriptive “design requirements” on air-conditioning and heat pump equipment. Doing so is overly prescriptive, prevents manufacturers from meeting applicable performance standards in the most efficient way possible, and inhibits innovation. Moreover, it directly contradicts EPCA statutory provisions, which limit efficiency standards for a given product to a performance standard or a “design requirement.” (42 USC 6291(6)). Furthermore, EPCA enumerates specified products for which a design standard can be established and does not include central air conditioners.

Even if Energy Star is voluntary, EPA should not now promulgate voluntary standards that are grossly inconsistent with the expressed will of Congress and the rulemaking of DOE. Lennox strongly recommends that the EPA remove the following prescriptive requirements from the specification;

- Staged or Variable Capacity Requirement
- Installation Capabilities

These requirements are currently included in the ENERGY STAR Most Efficient criteria where they may be appropriate. While these are beneficial features they are focused on premium products where the product cost increase can more easily be absorbed by consumers who can afford them. The base ENERGY STAR program should focus on reasonable performance thresholds that are affordable to average consumers and programs that can assist low income consumers who may need improved energy efficiency the most to reduce energy cost.

Lennox offers a variety of variable-capacity ASHP and CAC products, including two stage and fully variable products and those with installation capabilities. However, while beneficial, these features add cost which will inhibit both manufacture participation and consumer affordability. The EPA should base the primary criteria for the ENERGY STAR ASHP and CAC programs on the federally-mandated energy efficiency metrics for these products allowing manufacturers to find the most innovative and cost effective solution and avoid additional prescriptive requirements. Well-designed single-stage equipment can cost-effectively perform above baseline efficiency levels that can provide energy savings to a broader base of consumers, and EPA should not stray from setting performance-based standards using existing federal metrics for this equipment.

3. ENERGY STAR performance criteria should be set at reasonable thresholds that average consumer can afford aligned with ENERGY STAR’s Guiding Principles to encourage manufacturer and market participation.

Lennox believes the EPA ENERGY STAR program can effectively promote increased energy efficiency by maintaining a program that is not burdensome to administer combined with

reasonable specifications for energy performance criteria that consider impacts to consumers, contractors, distributors and manufacturers.

Lennox finds the performance levels proposed in the Draft 2 specification to be overly stringent and not in alignment in alignment with ENERGY STARS Guiding Principles. In reviewing the proposed levels versus information available regarding product rating the number of available models meeting the Draft 2 criteria would drop dramatically. The data indicates that less than 5% of CAC and 4% of ASHP would meet the Draft 2 proposed criteria which Lennox finds unacceptable. This review was based upon rating data only not inclusive of the addition prescriptive requirements proposed which would further drop these percentages significantly. While Lennox recognizes that the 6.0 specification is forward looking, the specifications must be reasonable for the program to be successful. Lennox conducted a further analysis of available ratings, screening at several threshold levels to evaluate acceptable participation levels generally aligned with ENERGY STARS Guiding Principles. Lennox recommends the following levels which we believe will have broad industry support for participation, be affordable for consumers and effectively drive energy efficiency in scale to deliver significant energy savings. Lennox is providing the levels in both the DOE M and M1 Test Procedure metrics for clarity.

ENERGY STAR Efficiency Specification	Split CAC	Split ASHP	Package CAC	Package ASHP
ENERGY STAR M Test Procedure	16.0 SEER 13.0 EER	16.0 SEER 13.0 EER 9.0 HSPF2	15.0 SEER 12.0 EER	15.0 SEER 12.0 EER 8.2 HSPF
ENERGY STAR M1 Test Procedure	15.2 SEER2 12.0 EER2	15.2 SEER2 12.0 EER2 7.8 HSPF2	14.3 SEER2 11.0 EER2	14.3 SEER2 11.0 EER2 7.0 HSPF2

Lennox recognizes that the levels for Package products are the same as current ENERGY STAR levels. Due to the fact that the DOE Energy Conservation Standards for these products do not change in 2023, no change in the levels is warranted.

4. Regionally-specific performance requirements beyond current federal metrics should be avoided.

Lennox strongly opposes EPA imposing new regional requirements into the ENERGY STAR program for ASHP products. The ENERGY STAR program should work to unify energy program approaches across jurisdictions to increase the success of efficiency programs and avoid regional requirements which dilute program participation and effectiveness. Having one set of specifications that can be promoted by all efficiency programs in the U.S. and Canada makes it significantly more cost effective for contractors, distributors, and manufacturers to participate in programs like ENERGY STAR and hence allows for a larger impact on the market for enhanced energy efficient products. Regional requirements would slice the market into smaller segments and may regionally limit participation in the program, as they necessitate regional specific product designs which individual manufacturers may not be in a position to provide due to the need for additional models, increased costs and limited opportunity in certain markets. This

segmentation can reduce consumer offerings and thus competition and has negative market impact on higher efficiency products due to limited consumer choice and higher product cost. Accordingly, ENERGY STAR should not impose new regional ASHP requirements, including tightened HSPF and new Coefficient of Performance (COP) and Percentage of Heating Capacity requirements.

5. Lennox supports AHRI 1380 as optional connected criteria.

Lennox supports AHRI 1380 standard for grid responsive systems (DR) and encourages the EPA to expand its current ENERGY STAR Communicating Thermostat Specification to recognize products that provide this capability beyond typical set-back DR approaches.

In conclusion, Lennox recommends that ENERGY STAR maintain the current 5.0 performance criteria through January 1, 2023 and recommends performance criteria be set at reasonable thresholds that average consumers can afford. ENERGY STAR criteria should be performance based using DOE required metrics and must avoid prescriptive requirements. Lennox remains engaged to further the effort of the EPA regarding the ENERGY STAR program for ASHP and CAC products and is available for further discussion regarding. Please feel free to contact us with any further questions.

Sincerely,



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