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September 6, 2013

Ann Bailey  
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**Submitted via:** mostefficient@energystar.gov

**Re: ENERGY STAR 2014 Most Efficient:  
Proposed Criteria - Central Air Conditioners and Heat Pumps  
Proposed Criteria - Furnaces**

Lennox International Inc. (Lennox) hereby submits comments on the proposed *ENERGY STAR Most Efficient Proposed Recognition Criteria for Central Air Conditioners and Air-Source Heat Pumps* and the *ENERGY STAR Most Efficient Proposed Recognition Criteria for Furnaces* published on July 26, 2013 (hereafter, the “Proposed Criteria”).

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 Proposed Criteria. Lennox is also a member of the Air-Conditioning, Heating and Refrigeration Institute (AHRI), which has worked extensively with EPA and DOE to develop reasonable, practical energy efficiency regulations and programs.

Lennox offers the following general comments regarding the ENERGY STAR program and the Proposed Criteria. Below that, Lennox provides responses to specific items raised by EPA and identified by topic.

**A. *General Comments on the Current ENERGY STAR Program.***

Lennox attended the stakeholder webinar meeting held by EPA on August 22, 2013 regarding the Proposed Criteria. Before commenting on the specifics of the Proposed Criteria, Lennox believes some general comments in regard to the ENERGY STAR program and its Most Efficient program are appropriate.

**1. Increased Burden of the Program.**

While the Proposed Criteria are focused on the ENERGY STAR Most Efficient program, Lennox is concerned with the overall status of the EPA ENERGY STAR program.

Prior to 2010, the ENERGY STAR program worked seamlessly with the AHRI certification program. However, in 2010 EPA made significant changes to the ENERGY STAR requirements for CAC/ASHP and furnace products, which resulted in a dramatically increased burden to manufacturers. These changes have greatly increased the effort and cost to participate in the program to the point where Lennox as well as many other manufacturers have questioned the benefit of the program. The result of these changes has been a dramatic and consistently declining level of participation in the ENERGY STAR program by CAC/ASHP manufacturers over the last few years. Lennox is concerned about the viability of ENERGY STAR and its Most Efficient program and recommends reforming the program to reduce the burden on manufacturers.

Lennox captured these and other concerns and suggestions for improvement in our comments to the *ENERGY STAR Central Air-Conditioner and Air-Source Heat Pump Version 5.0 Specification Framework*, submitted to EPA on August 2, 2013. Those comments are included with this submission for reference.

## **2. ENERGY STAR Most Efficient and CEE Advanced Tier.**

Lennox agrees with the general concepts of the ENERGY STAR Most Efficient program and supports the need for leading-edge, energy-efficient products. Lennox's support for EPA's Most Efficient objectives can be seen in our focus on innovative products that are among the industry leaders in energy efficiency.

Lennox believes there is benefit to the ENERGY STAR program as a forum that can be used by stakeholders to promote increased energy efficiency. This is accomplished by setting reasonable thresholds for energy performance criteria.

The recent letter of the Consortium for Energy Efficiency (CEE) regarding its *Advanced Tier Specification for Central Air Conditioners* dated July 19, 2013 (hereafter, the "Advanced Tier Letter") has indicated that CEE intends to update its Advance Tier in the same timeframe as EPA is updating its ENERGY STAR Most Efficient criteria. Lennox believes the current combined ENERGY STAR and CEE Tier systems are unnecessarily complex with too many threshold levels. This fractures the market into subcategories that add a significant burden to HVAC manufacturers and inhibit product innovation. Furthermore multiple, inconsistent tiers inhibit manufacturers from participating in all tiers and may cause some manufacturers to drop out of these programs entirely, impeding the development of higher-efficiency products and adversely impacting installing contractors and consumers. Table 1 below shows the current ENERGY STAR and CEE Tier status.

<b>Table 1</b>		
Current CEE and ENERGY STAR Split Central Air Conditioner Specification		
Level	SEER	EER
CEE Tier 1 and ENERGY STAR	14.5	12
CEE Tier 2	15	12.5
CEE Tier 3 (Advanced)	16	13
<b>ENERGY STAR Most Efficient</b>	<b>18</b>	<b>12.5</b>

CEE has stated “Having one 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.” Lennox agrees that alignment between CEE’s Tiers and EPA’s ENERGY STAR performance requirements further increases benefits to the market. The CEE Advanced Tier Letter notes this alignment at the base ENERGY STAR and CEE Tier 1 efficiency levels. Lennox strongly recommends that EPA and CEE further this concept, and there is a large benefit to aligning the CEE Advanced Tier for central air conditioners and the ENERGY STAR Most Efficient criteria. Both the ENERGY STAR and CEE programs can, and should, be relevant to promoting improved energy efficiency, and properly-aligned performance requirements are necessary to achieve this goal.

In the Proposed Criteria, EPA proposes maintaining the current Most Efficient quantitative standards for split-system CAC/ASHP equipment of 18.0 SEER and 12.5 EER. EPA further stated in the August 22, 2013 webinar presentation regarding the Proposed Criteria that less than 1% of CAC/ASHP models on the market meet the existing Most Efficient CAC/ASHP quantitative standards, and that these standards already result in significant energy savings “over standard systems.” *Lennox agrees with EPA’s reasoning and conclusion that the Most Efficient quantitative standards for CAC/ASHP equipment should remain the same.*

CEE in its Advanced Tier Letter indicated that it “anticipate[s] proposing increases in both SEER and EER” components of the Advanced Tier specifications. Lennox has commented to CEE that alignment in the CEE Advanced Tier and ENERGY STAR Most Efficient programs at 18.0 SEER and 12.5 EER would provide significant benefits to stakeholders while still satisfying CEE’s objectives.

Lennox strongly recommends that CEE should align its Advanced Tier with the ENERGY STAR Most Efficient specifications at 18 SEER/12.5 EER. Lennox requests that EPA continue to confer with CEE in this regard, to encourage CEE to align its Advanced Tier with the ENERGY STAR Most Efficient CAC/ASHP specifications at 18 SEER/12.5 EER.

***B. Specific Proposed Criteria Issues.***

In addition to the above general points, Lennox also offers comments on the specific issues raised by EPA. However, Lennox submits these comments with the outlook that the ENERGY STAR program for CAC/ASHP products needs to be reformed.

**1. Central Air Conditioner and Heat Pump Recognition Criteria – Item 2 Performance Metrics.**

Lennox agrees with the proposed quantitative performance levels outlined, which represent no change to the current performance levels for this product category.

**2. Furnace Recognition Criteria – Item 2 Performance Metrics.**

Lennox agrees with the proposed quantitative performance levels outlined, which represent no change to the current performance levels for this product category.

**3. Central Air Conditioner and Heat Pump Recognition Criteria, Furnace Recognition Criteria – Item 3 -- Product must have automatic setup, monitoring, and service messaging.**

Lennox does not believe that it would be appropriate at this time to require diagnostics and communication as ENERGY STAR eligibility criteria. Further, Lennox does not believe these “qualitative requirements” should be part of the Most Efficient criteria. Communication capability is developing for HVAC products and adding prescriptive requirements as outlined in the Proposed Criteria inhibits advancements by the industry. Among other issues, Lennox is particularly concerned regarding the scope of new requirements regarding signals that can be used to estimate static pressure.

Lennox manufactures a number of models that have two-way communications with the system controller. The communications protocol used in these systems is proprietary to Lennox. The communications system is used to assure proper initial system setup and in some modulating capacity systems, to assure proper airflow is achieved for a given operating condition. There are also fault detection features that can be communicated to the homeowner, or if the homeowner prefers to a servicing contractor, to assist system maintenance. Communication capability adds costs to a product, which discourages consumers from making certain ENERGY STAR purchases, and it should be up to manufacturers whether to add diagnostics to equipment.

Compounding the potential costs and burdens associated with communication protocols, CEE’s Advanced Tier Letter states that CEE is “considering the possibility of incorporating aspects of ‘connectivity’ in the next version of its specification and as such, may wish to reference features that would enable load management, energy management, and diagnostics.” Conflicting and prescriptive CEE and ENERGY STAR requirements would add costs to

products and burden manufacturers. Consumers won't buy products that aren't economical, and manufacturers can be expected to drop out of a program that imposes conflicting and unduly burdensome, prescriptive communication requirements.

Furthermore, prescriptive communication requirements delay development of innovative communication capability with greatly enhanced benefits within the industry to meet short-term program requirements. As communication capabilities, protocols, and standards are very much an evolving area for HVAC products, Lennox recommends that the Most Efficient program let the industry further develop technologies that best meet the market needs and not impose specific requirements that increase product cost and stifle innovation.

In summary, Lennox strongly recommends that EPA and CEE standardize a position with no qualitative communication requirements. In the alternative, Lennox would recommend that the EPA keep the current communication requirements in place for the Most Efficient program (i.e., not add new requirements) and allow for these product features to develop within the industry.

***In conclusion, Lennox wishes to emphasize that EPA should thoroughly review and reform the current ENERGY STAR program to ease the burden to manufacturers and increase participation. Additionally, Lennox recommends a harmonized approach to ENERGY STAR Most Efficient that is coordinated with the CEE Advanced Tier. Furthermore, Lennox would urge EPA not to require prescriptive qualitative system communication requirements to the ENERGY STAR or Most Efficient criteria or at a minimum keep the current Most Efficient requirements. Lennox appreciates the opportunity to comment on the Proposed Criteria.***

Sincerely,

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