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November 18, 2014

Via E-Mail

Melissa Fiffer  
Product Manager  
U.S. Environmental Protection Agency  
ENERGY STAR Appliance Program  
[appliances@energystar.gov](mailto:appliances@energystar.gov)

Re: ENERGY STAR Program Requirements  
Product Specification for Room Air Conditioners, Eligibility Criteria, Draft 1, Version 4.0

Dear Ms. Fiffer:

On behalf of the Association of Home Appliance Manufacturers (AHAM), I would like to provide our comments on the ENERGY STAR Product Specification for Room Air Conditioners, Eligibility Criteria, Draft 1, Version 4.0.

AHAM represents manufacturers of major, portable and floor care home appliances, and suppliers to the industry. AHAM's membership includes over 150 companies throughout the world. In the U.S., AHAM members employ tens of thousands of people and produce more than 95% of the household appliances shipped for sale. The factory shipment value of these products is more than \$30 billion annually. The home appliance industry, through its products and innovation, is essential to U.S. consumer lifestyle, health, safety and convenience. Through its technology, employees and productivity, the industry contributes significantly to U.S. jobs and economic security. Home appliances also are a success story in terms of energy efficiency and environmental protection. New appliances often represent the most effective choice a consumer can make to reduce home energy use and costs.

AHAM supports EPA and the Department of Energy (DOE) in their efforts to provide incentives to manufacturers, retailers, and consumers for continual energy efficiency improvement, as long as product performance can be maintained for the consumer. With regard to this current draft, AHAM would like more clarity on the specification provisions dealing with installation materials, and also has concerns over those sections addressing alternative refrigerants and sound performance. We would also like to comment on the connectivity requirements of the specification.

## **I. Installation Materials**

The draft specification states that an ENERGY STAR product “shall minimize air leaks (seal) between the room air conditioner and the window opening, as well as seal gaps between fixed and movable window sashes. Acceptable weather stripping or gasket material includes vinyl clad foam, EPDM cellular rubber, silicone rubber, or comparable alternatives.”

At first reading, it seems as though the list of materials provided is not meant to be holistic or exhaustive, and we suggest EPA specifically state that is the case. AHAM also requests more guidance on the properties an adequate seal would possess.

For Through-the-Wall (TTW) units, the specification requirements include an appropriately sized cover which has a minimum insulation value of R1 as determined by the FTC’s Labeling and Advertising of Home Insulation regulations. EPA has not provided adequate justification for this. AHAM would like to know if EPA specifically accounted for the cost of the cover in their payback analysis, as any increased cost will be passed onto the consumer. While AHAM agrees that proper coverings and sealing materials lead to annual savings, we question the assertion that it would lead to \$32-\$45 in annual savings. The report cited in the specification is limited to New York City and thus does not have a broad enough scope to reflect the regional differences that must be accounted for in a nationwide specification. Furthermore, the figures quoted do not show that covers for TTW units would equate to a significant percentage of the savings potential.

## **II. Alternative Refrigerants**

In comments to the November 2013 Version 4.0 framework document, AHAM noted that refrigerants in room air conditioners are very different than those in refrigerator/freezers—the charge amounts in room air conditioners are much higher. Safety issues are different, and the refrigerant heat transfer dynamics are different. There are also additional increased safety requirements for storage, transport, manufacture of such materials that the analysis cited does not appear to have considered. Those same reports are not specific to RACs and represent a broad statement on refrigerants and hydrocarbons. Thus, the low GWP alternative refrigerants, such as hydrocarbons or HFOs, that exist for refrigeration products may not be feasible for room air conditioners.

Hydrocarbons have not been SNAP approved. Underwriters Laboratory is looking at this issue from a safety perspective and could place restrictions on charge size. It is possible that the necessary charge to operate most room air conditioners may not fit within that range, depending on the UL determination. In addition, significant technical and economic challenges remain. Accordingly, AHAM does not believe that there are low GWP alternatives available that are economically justified at this time.

Refrigerant choice has a demonstrable impact on RAC design. EPA is premature in considering alternative refrigerants until a suite of options have been approved under SNAP so that manufacturers know what options are available. Activity on alternative refrigerants should be tabled until such time as the SNAP and UL evaluation is complete. In the meantime, EPA may

conduct additional study on the energy efficiency of various refrigerants based on GWP, energy efficiency across several different types and sizes of RACs.

Furthermore, as we have commented in the past, EPA must not stray from its strategic vision for the ENERGY STAR program, which is to reduce greenhouse gas emissions by removing barriers in the market that deter consumers and others from purchasing the most energy-efficient product model that otherwise meets their needs. The ENERGY STAR program must remain squarely focused on energy efficiency and should not create design requirements. Market forces should and will dictate whether manufacturers decide to incorporate such design elements into their products.

### **III. Sound Performance**

AHAM first notes that the standard EPA has cited with respect to sound performance (EN 12102) is not a consensus based standard. This is a significant departure from EPA's usual reliance on consensus standards for appliance specifications. The draft specification itself states that manufacturers tend to rely on internally defined limits for sound. This is because variation in noise testing from lab to lab is significant, thus raising issues of repeatability and reproducibility. There is also a limited number of testing chambers available in the United States that would likely be unable to handle the volume required to certify products under ENERGY STAR, imposing an unnecessary burden on manufacturers who wish to seek certification.

EPA should consider the cascading effects of other elements of the ENERGY STAR specification before including sound performance. Higher efficiencies might increase fan speeds which affect sound. Certain refrigerants affect compressors, which in turn affect sound. Here as well, the ENERGY STAR program must remain squarely focused on energy efficiency and should not create design requirements. This is another example where market forces will require manufacturers to design products with sound levels acceptable to the consumer.

### **IV. Connected Criteria**

EPA has identified its intent to help advance the market for products with intelligent features in ways that deliver immediate consumer benefit as well as support a low-carbon electricity grid over the long-term. AHAM supports EPA's decision to incorporate smart grid functionality and to provide a 5% allowance consistent with the "Joint Petition to ENERGY STAR to Adopt Joint Stakeholder Agreement as it Relates to Smart Appliances" from industry, efficiency advocates, and environmental groups. The allowance is intended to serve as an incentive to help jump start the market for room air conditioners with smart grid functionality.

In Section 4 "Connected Product Criteria", EPA has identified its intent to ensure the consumer is being considered such that product satisfaction is maintained or enhanced with the addition of new energy savings and convenience features. AHAM agrees with EPA's effort and therefore supports EPA's language in the specification to allow consumers to retain their ability to override any signal "without limitation".

In addition, in Section 4G, EPA proposes a new approach for demand response and temporary appliance load reduction to provide more predictable impacts to consumers, more consistent load shed as well as to reduce associated product testing burden. Based on this approach, EPA is focusing on set temperatures and compressor operation, which is informed by previous programs in New York City. AHAM supports this new approach which will provide desired energy reduction while significantly reducing the test burden.

## **V. Effective Date**

Fall is the appropriate transition time for changes in the RAC ENERGY STAR specification so that units can be certified for the following spring and summer seasons. As stated earlier, there are limited chambers available for 3<sup>rd</sup> party certification and they are running at high capacity. Because of development time and the time required for certification, AHAM believes that Version 4.0 should go into effect in the fall of 2016.

AHAM appreciates the opportunity to submit comments on the ENERGY STAR Product Specification for Residential Dishwashers, Eligibility Criteria, Draft 1, Version 4.0 and would be glad to further discuss these matters should you so request.

Best Regards,

A handwritten signature in black ink, appearing to read 'Rob McArver', written in a cursive style.

Rob McArver  
Vice President, Policy & Government Relations