



June 17, 2011

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Via E-Mail

Abigail Daken  
U.S. Environmental Protection Agency  
ENERGY STAR Appliance Program  
RoomAirCleaners@energystar.gov

Re: ENERGY STAR Program Requirements Product Specification  
For Room Air Cleaners, Eligibility Criteria, Draft, Version 1.2

Dear Ms. Daken:

On behalf of the Association of Home Appliance Manufacturers (AHAM), I would like to provide our comments on the ENERGY STAR Program Requirements Product Specification for Room Air Cleaners, Eligibility Criteria, Draft, Version 1.2.

The Association of Home Appliance Manufacturers (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 U.S Environmental Protection Agency (EPA) and Department of Energy (DOE) in their efforts to provide incentives to manufacturers, retailers, and consumers for continual energy efficiency improvement. AHAM agrees that revisions to the ENERGY STAR product specification for room air cleaners are necessary in order to permit verification testing on multiple samples in accordance with ENERGY STAR Directive No. 2011-04 (May 9, 2011), under which multiple units are procured for verification testing. This is the approach best applied to room air cleaners given the inherent variation in test results due to the difficulty in measuring dust particles.

EPA proposes in the draft specification revision to allow qualification for ENERGY STAR for air cleaners based either on the results of one unit or the results of a sample of four units. Under the proposed specification, for qualification based on testing of multiple units, test results from

the four units, with statistical methods applied, will be used to determine if the model meets the ENERGY STAR specification. The statistical methods proposed are the same as those proposed in Directive No. 2011-04, which applies to verification testing.

AHAM agrees that, in addition to allowing qualification for ENERGY STAR based on the testing of one sample, EPA should permit partners (through their Certification Bodies) to qualify air cleaners for ENERGY STAR based on the testing of multiple units. But AHAM strongly opposes the approach EPA proposes in the draft specification because it applies tolerances that are intended for verification testing to the qualification tolerances. If EPA follows its proposed approach, it will weaken the ENERGY STAR qualification requirements for air cleaners. No tolerance is needed, nor should one be permitted, for purposes of *qualification*. Tolerances are only required for *verification* testing for the reasons we explained in our comments, dated May 4, 2011, on the draft version of Directive No. 2011-04, which are attached as Attachment A.

Instead of EPA's proposed approach for multiple sample approach qualification, AHAM proposes that three units of the model be tested. The mean of the values measured during the three tests should be the basis for qualification—i.e., qualification for ENERGY STAR should be based on a rating either at or below the mean value. Unlike EPA's proposed approach, this approach does not weaken the ENERGY STAR requirements. It is a more stringent approach which is also more in line with the existing single sample approach. In addition, it is consistent with AHAM's longstanding approach in its certification and verification program for room air cleaners.

We note that it would be far less burdensome for manufacturers to follow this more accurate and reliable approach to qualification (and verification) based on the testing of multiple units if EPA were to allow for a model family (basic model) approach in the air cleaner specification. AHAM's program applies such an approach, and we urge EPA to consider doing so as well as it does for a number of other home appliance products eligible for ENERGY STAR.

AHAM appreciates the opportunity to submit these comments on ENERGY STAR's proposal regarding the ENERGY STAR Program Requirements Product Specification for Room Air Cleaners, Eligibility Criteria, Draft, Version 1.2. We would be glad to discuss this matter further should you request.

Best Regards,



Jennifer Cleary  
Director, Regulatory Affairs

# **ATTACHMENT A**



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May 4, 2011

Via E-Mail

Kathleen Vokes  
U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue, NW  
Washington, D.C. 20460

Certification@energystar.gov

Re: ENERGY STAR Verification Testing Sample Size

Dear Ms. Vokes:

On behalf of the Association of Home Appliance Manufacturers (AHAM), I would like to provide our comments on the ENERGY STAR Verification Testing for Certification Bodies, Test Sample Sizes and Determining Testing Failures (Non-Lighting Products) Draft Guidance dated April 25, 2011 (Draft Guidance).

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 the Environmental Protection Agency (EPA) and Department of Energy (DOE) in their efforts to provide incentives to manufacturers, retailers, and consumers for continual energy efficiency improvement. Since 2010, we have been working closely with EPA on our verification programs, and we recently expressed concerns regarding sampling plans, as well as other enhanced testing program administration issues. We appreciate that EPA has taken some steps to address the concerns we raised, and specifically, that EPA has aligned its process with DOE's rules on sampling plans, at least with regard to DOE covered products. While this guidance represents a step forward, we also have some suggestions on how it could be improved, specifically for air cleaners, which are not a DOE covered product.

## **I. Approach 2: Manufacturer Qualifies Product for ENERGY STAR Based on Multiple Test Samples**

The Draft Guidance states that when a manufacturer qualifies a product for ENERGY STAR based on multiple test samples, which will likely be the case for most DOE covered products, one unit will initially be tested, and “[i]f the tested unit fails to meet the requirement by less than 5% of the applicable ENERGY STAR specification, no further tests will be conducted and the model will be considered to meet ENERGY STAR requirements.” If the measured performance is not within that range, however, three additional units will be tested immediately. EPA specifies the calculations for the sample of four units.

AHAM generally supports this approach. In particular, AHAM strongly supports EPA’s aligning the approach with DOE’s sampling plan requirements for certification. It is critical for DOE products to be tested for all purposes under the same rules. We read the Draft Guidance to mean that the certification body, or in the case of AHAM’s verification programs, AHAM, need only report to EPA a test failure at the end of the process—i.e., if the testing of all four units results in a failure. We agree with that approach—it would be clearer if that were expressly stated in the Draft Guidance.

AHAM also recommends that EPA make clear that manufacturers may conservatively rate. This is consistent with DOE’s approach under the energy efficiency standards. *See* 76 Fed. Reg. 12422, 12429 (Mar. 7, 2011) (“manufacturers may rate models conservatively, meaning that the tested performance of the model(s) must be at least as good as the certified rating, after applying the appropriate sampling plan”). EPA should expressly state in the final version of the sampling plan guidance that manufacturers may conservatively rate.

Although we appreciate EPA’s desire to immediately proceed with testing the additional three units if the spot check demonstrates potential noncompliance, AHAM notes that initial procurement of all four units at one time presents unnecessary additional cost to manufacturers which, for some, may not be recovered. If a unit passes the initial spot check, we understand that the remaining three units will be returned to the manufacturer. But the manufacturer may no longer be able to distribute those three units into commerce, particularly if there has been any alteration in the packaging. In addition, there is a high cost associated with shipping products to mitigate damage to packaging and the product itself, especially for products such as refrigerator/freezers and clothes washers. And it may be difficult for testing laboratories to store so many units in their laboratories at one time. A better approach would be to tag all four units at the same time, but only call for the other three units to be shipped if needed. That could likely be done within a 10 day period of time, which would not significantly slow down the testing process.

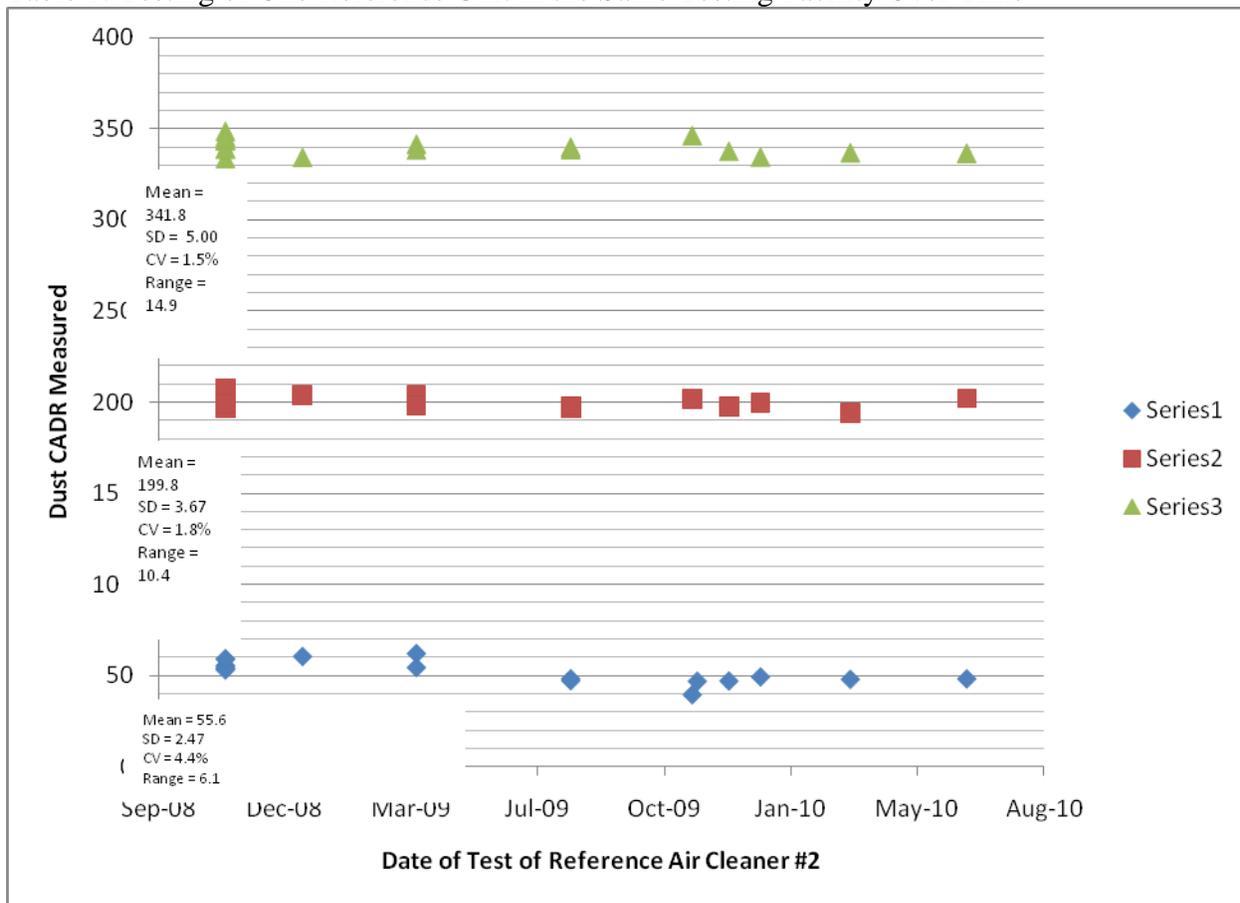
## **II. Approach 1: Manufacturer Qualifies Product for ENERGY STAR Based on One Representative Model**

Under approach one, which applies to non-DOE covered products and DOE covered products if the manufacturer decides to qualify for ENERGY STAR based on a single test, the Draft Guidance states that one unit will be selected, obtained, and tested. The measured performance must be equal to or better than the ENERGY STAR specification—no tolerance is permitted.

We understand that EPA has proposed taking this approach because it wants to ensure that all customers receive a product that meets or exceeds the ENERGY STAR specification. AHAM agrees with that objective. But this approach is not necessarily consistent with that objective. It ignores the foundational laws of statistics and probability and does not work for all products, and thus, not every product can be treated the same way.

For example, as we discussed with EPA and DOE on April 29, 2011, this approach will not work for air cleaners. Accurate representation of Clean Air Delivery Rate (CADR) values allows consumers to select the air cleaner of the appropriate size to clean the desired space. Particles of dust are difficult to measure, and thus there is inherent variation in test results. As we have explained, even several tests of the same unit will have some variation in results simply due to the difficulty of measuring small particles of dust. This is shown below in Table 1 (the notes on the mean, standard deviation, etc. explain the seven tests done in November).

Table 1: Testing of One Reference Unit in the Same Testing Facility Over Time



Given this testing and statistical reality, many manufacturers currently rate air cleaners conservatively, often about two standard deviations away from the mean product performance. (The mean product performance would more closely represent the actual performance of an air cleaner in a room over long periods of time). Permitting only a single test and eliminating a tolerance from the CADR verification testing will force manufacturers to list models up to four standard deviations away from the mean product performance in order to account for the risk of failing the verification test. This broad scale underrating is likely to lead to consumers selecting larger units that consume more energy than required, in turn lessening the impact of the energy savings the ENERGY STAR program is trying to achieve.

During our April 29 meeting, we understood that DOE and EPA were considering a sampling plan and threshold for non-DOE covered products that would be similar to the approach outlined for DOE covered products that choose to qualify products based on multiple test samples (Approach 2 in the Draft Guidance). AHAM strongly supports that option and requests that EPA allow a sampling plan similar to that allowed for DOE covered products, including a threshold of 10% for air cleaners. (AHAM can provide specific data beyond Table 1 that shows 10% is lower than the actual statistical variation in practice). As we discussed, that approach is similar to the way AHAM’s air cleaner verification program has historically been administered. The result will not be that a consumer potentially gets less than the ENERGY STAR specification—in fact, the opposite is true. Recognizing the limits of the test and the fact that several tests of the same

unit will provide variations in dust results, this approach, based on sound laws of statistics, ensures that consumers can more accurately select the unit best suited for their room size, thus achieving the maximum energy savings.

**A sampling plan approach for non-DOE covered products should be included in the final version of the Draft Guidance—it should not be separately or later issued.** The Draft Guidance deals with test sample sizes and determining testing failures and it must do so in a comprehensive way in order to allow partners to rely on it. If EPA has a revised approach it is considering, it should not issue a final version of the guidance until or unless that has been fully considered and a decision been made. In addition, EPA should ensure that product specifications are consistent with the final guidance. For example, EPA should make any necessary changes to the air cleaner specification to reflect that ENERGY STAR qualification may be based on testing of multiple units and appropriate thresholds.

AHAM appreciates the opportunity to submit these comments on the ENERGY STAR Verification Testing for Certification Bodies, Test Sample Sizes and Determining Testing Failures (Non-Lighting Products) Draft Guidance dated April 25, 2011, and would be glad to further discuss these matters should you so request.

Best Regards,

A handwritten signature in cursive script, appearing to read "Jennifer Cleary".

Jennifer Cleary  
Director, Regulatory Affairs