



APPLIANCE STANDARDS
AWARENESS PROJECT



April 8, 2022

By E-mail

Ms. Kelly Speakes-Backman
Acting Assistant Secretary for EERE
Department of Energy
Building Technologies Program
Mailstop EE-5B
1000 Independence Avenue, SW
Washington, DC 20585-0121

AirCleaners2021STD0035@ee.doe.gov
AirCleaners2021TP0036@ee.doe.gov

Re: Joint Comments on DOE's Request for Information on the Test Procedure and Energy Conservation Standards For Consumer Air Cleaners; Docket Nos. EERE-2021-BT-STD-0035 and EERE-2021-BT-TP-0036

Dear Ms. Speakes-Backman:

The American Council for an Energy-Efficient Economy (ACEEE), the Appliance Standards Awareness Project (ASAP), the Association of Home Appliance Manufacturers (AHAM), Consumer Federation of America (CFA), and the Natural Resources Defense Council (NRDC) (collectively, the Joint Commenters) respectfully submit the following comments to the Department of Energy (DOE or Department) on its Request for Information on the Test Procedure and Energy Conservation Standards for Consumer Air Cleaners (Air Cleaner RFI); Docket Nos. EERE-2021-BT-STD-0035 and EERE-2021-BT-TP-0036; 87 Fed. Reg. 3702 (Jan. 25, 2022).

The Joint Commenters, which represent varying points of view, are unified in our support for DOE's efforts to save energy and ensure a national marketplace through the Appliance Standards Program. We continue to support DOE's proposal to include consumer room air cleaners as a covered product and our organizations have been working to negotiate possible Federal energy conservation standards for consumer room air cleaners along with an applicable test procedure for DOE's consideration. Our discussions are ongoing and we look forward to working with the Department on these important rulemakings and, if possible, we hope to soon present the Department with recommendations on a test procedure and energy conservation standards. In the interim, these comments provide feedback on some of the Department's requests for information.

I. Definition and Scope of Coverage

The Joint Commenters agree with DOE's proposal to include consumer room air cleaners in its scope of coverage and to consider possible test procedures and energy conservation standards for these products. We do not comment on whether other room air cleaners such as commercial or whole-home air cleaners should be included in the scope of coverage, though individual organizations may do so in separate comments.

In its proposed coverage determination, DOE proposed a definition for all potentially covered room air cleaners. The Joint Commenters generally agreed with DOE's proposed definition as the basis for a consumer room air cleaner definition, though we provided some minor edits to the definition. In these comments, we further refine our comments on DOE's proposed definition. Specifically, we propose the following definition, which is slightly different than what we proposed in response to DOE's proposed coverage determination. Redlines show substantive changes.

Consumer Room Air Cleaner means a consumer product which:

- 1) Includes conventional room air cleaners and miscellaneous room air cleaners;
- 2) Is a self-contained, mechanically encased assembly;
- 3) Is powered by single-phase electric current; and
- 4) Excludes central air conditioners, room air conditioners, portable air conditioners, dehumidifiers, and furnaces, as defined in 10 CFR 430.2.

Conventional Room Air Cleaner means a Consumer Room Air Cleaner that

- 1) Is an electric corded unit;
- 2) Operates with a fan for air circulation; and
- 3) Removes, destroys, and/or deactivates particulates and may also remove pollutants, such as volatile organic compounds (VOCs) and microorganisms, from the air.

Miscellaneous Room Air Cleaner means a Consumer Room Air Cleaner ~~excludes products~~ that

- 1) Operates ~~solely by means of ultraviolet light~~ without a fan for air circulation; and
- 2) Removes, destroys, and/or deactivates particulates and/or pollutants, such as VOCs and microorganisms, from the air.

Notably, our proposed definition is restricted to consumer room air cleaners because that is the scope of the Joint Commenters' negotiations. As mentioned above, individual organizations may comment separately on whether other products, such as those that might be included in HVAC, should be included in DOE's scope of coverage. It is possible that DOE will need different definitions to address different types of room air cleaners should it include more than consumer room air cleaners in its scope of coverage.

In the definition of what we propose DOE call "conventional room air cleaners," we suggest clarifying that these traditional units have electric cords, which helps to differentiate portable air cleaners from whole-home units.

Consistent with our prior comments, we suggest language that is more inclusive than the definition DOE outlined in the Air Cleaner RFI. Specifically, the edits we propose would make it clear that all room air cleaners that remove particulate matter and/or other pollutants are covered. DOE's definition indicated the removal of microorganisms, but many consumer room air cleaners are able to remove VOCs which is not covered by the term microorganisms. We believe these proposed revisions include a wide variety of room air cleaners and are consistent with DOE's intent in its proposed definition.

The Joint Commenters no longer agree with DOE's proposal to exclude from coverage products that use only an ultraviolet light and do not have a fan for air circulation. These products are already beginning to appear on the market and are being marketed as room air cleaners. DOE's existing lamp test procedures and standards address lamps designed for illumination. Products that use ultraviolet light for air cleaning purposes should be addressed as air cleaners, not illumination devices. We acknowledge that there is not yet a test procedure to measure the energy use of these products as air cleaners, but we believe it is important for them to be included in the scope of coverage such that a test procedure and standards can at some point be developed.

Similarly, we previously proposed including language to specify that consumer room air cleaners are electric powered units. We continue to believe that is the case for what we are now proposing DOE call "Conventional Room Air Cleaners," but we expect that future products might be powered via a terminal box, socket, or other type of direct connection, and thus, we no longer propose that DOE include the requirement for a cord for all air cleaners. What we are proposing DOE call "Miscellaneous Room Air Cleaners" could include products such as UV bulbs that claim to be air cleaners, as one example, and may not be connected via a cord.

The Joint Commenters continue to agree with DOE's proposal to exclude the products listed in item four, which are already covered by DOE and subject to their own energy conservation standards.

II. Test Procedure For Consumer Room Air Cleaners

DOE requested comment on the appropriate test method for measuring room air cleaner efficiency. As DOE is aware, AHAM has been working to develop a test procedure to measure the energy efficiency of consumer room air cleaners: "AC-7, Energy Test Method for Consumer Room Air Cleaners" (AHAM AC-7). In addition to AHAM and its members, ASAP, the California Investor-Owned Utilities, DOE, and Guidehouse have been participating on the task force developing AHAM AC-7. Those discussions have been productive and we believe we are on the verge of completing AHAM AC-7. We hope that the resulting test procedure will be satisfactory to all parties and meet DOE's statutory criteria for the adoption of a test procedure such that the Joint Commenters may propose that DOE incorporate it by reference as the test procedure for measuring consumer room air cleaner energy efficiency. Our goal is to meet or exceed DOE's timeline and we ask that if DOE needs a final test by a specific date, it inform us of that timeline.

III. Metric For Consumer Air Cleaners

DOE sought feedback on the metric for consumer air cleaners. The Joint Commenters propose that DOE adopt a metric based on a PM 2.5 Clean Air Delivery Rate (CADR). PM 2.5 specifically refers to a category of fine particulate matter that is 2.5 microns or smaller in size. PM 2.5 CADR is the geometric mean of the measured cigarette smoke and dust CADR of an air cleaner and represents the rate at which a room air cleaner removes fine particulate matter from the air. Fine particulate matter has been shown to cause serious health problems and can get into the lungs and bloodstream. The Environmental Protection Agency (EPA), among other experts, has indicated that PM 2.5 particles are the primary concern from a health standpoint and are often found indoors.¹ Accordingly, this is the particulate that is likely to be of greatest concern to consumers going forward. Due to the small size, PM 2.5 particles can adequately represent a unit's performance for other larger particles as well. AHAM AC-7 in its current draft form measures efficiency based on PM 2.5 CADR as the numerator.

DOE indicates the Energy Policy and Conservation Act of 1975, as amended (EPCA) requires it to integrate standby mode and off mode energy consumption into the overall energy efficiency metric and seeks comment on the technical feasibility of doing so. It is technically feasible to incorporate standby and off mode energy consumption into the overall efficiency metric for consumer portable room air cleaners and the Joint Commenters hope to soon propose to DOE a metric and method for doing so.

In addition, we propose that minimum energy conservation standards apply to conventional room air cleaners with a measured PM 2.5 CADR of 10 or greater in order to capture tabletop/desk portable room air cleaners. We note that, consistent with AHAM's Air Cleaner Certification Program, an approximate treatable room size is the cigarette smoke CADR multiplied by 1.55. For example, 10 cigarette smoke CADR x 1.55 = 15.5 square foot room. The same would apply to a PM 2.5 CADR.

IV. Auto-Mode

The Joint Commenters recognize the efficiency benefits associated with an effective automatic mode for consumer room air cleaners. Currently, companies use a variety of methods to achieve an auto-mode. There is not yet a test procedure to account for the associated efficiency benefits or to measure the effectiveness of automatic mode(s). Developing such a test will take time. As part of our ongoing discussions, the Joint Commenters continue to discuss possible ways to account for the benefits of auto-mode and we may have additional comments or recommendations for DOE in the near future.

¹ See EPA, Residential Air Cleaners, A Technical Summary, 3d Ed. (July 2018), *available at* https://www.epa.gov/sites/default/files/2018-07/documents/residential_air_cleaners_-_a_technical_summary_3rd_edition.pdf; EPA, Guide to Air Cleaners in the Home, 2d Ed. (July 2018), *available at* https://www.epa.gov/sites/default/files/2018-07/documents/guide_to_air_cleaners_in_the_home_2nd_edition.pdf.

V. The Joint Commenters

ACEEE, a nonprofit research organization, develops transformative policies to reduce energy waste and combat climate change. With our independent analysis, we aim to build a vibrant and equitable economy – one that uses energy more productively, reduces costs, protects the environment, and promotes the health, safety, and well-being of everyone.

ASAP organizes and leads a broad-based coalition effort that works to advance, win and defend new appliance, equipment and lighting standards which deliver large energy and water savings, monetary savings and environmental benefits.

AHAM represents more than 150 member companies that manufacture 90% of the major, portable and floor care appliances shipped for sale in the U.S. Home appliances are the heart of the home, and AHAM members provide safe, innovative, sustainable and efficient products that enhance consumers' lives. The home appliance industry is a significant segment of the economy, measured by the contributions of home appliance manufacturers, wholesalers, and retailers to the U.S. economy. In all, the industry drives nearly \$200 billion in economic output throughout the U.S. and manufactures products with a factory shipment value of more than \$50 billion.

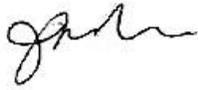
CFA is an association of more than 250 non-profit consumer and cooperative groups that was founded in 1968 to advance the consumer interest through research, advocacy, and education.

NRDC is an international nonprofit environmental organization with more than 3 million members and online activists. Since 1970, our lawyers, scientists, and other environmental specialists have worked to protect the world's natural resources, public health, and the environment. NRDC has offices in New York City, Washington, D.C., Los Angeles, San Francisco, Chicago, Bozeman, MT, and Beijing.

The Joint Commenters appreciate the opportunity to submit these comments on DOE's Air Cleaner RFI and would be glad to discuss these matters in more detail should you so request.

Respectfully Submitted,

(signatures on next page)



Jennifer Amann
Senior Fellow
American Council for an Energy-Efficient Economy



Joanna Mauer
Technical Advocacy Manager
Appliance Standards Awareness Project



Jennifer Cleary
Vice President, Regulatory Affairs
Association of Home Appliance Manufacturers



Richard Eckman
Energy Policy Associate
Consumer Federation of America



Joe Vukovich
Energy Efficiency Advocate
Natural Resources Defense Council