UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

**OFFICE OF AIR AND
RADIATION**

June 27, 2019

Dear ENERGY STAR® Air Cleaner Manufacturers and Other Interested Parties,

As part of the ENERGY STAR Room Air Cleaner specification revision, the U.S. Environmental Protection Agency (EPA) is considering adding optional criteria for connected functionality. The objective is to define a set of minimum requirements an air cleaner would have to meet in order to be identified as "connected" on the ENERGY STAR Product Finder.

EPA released Draft 1 of the Version 2.0 Air Cleaner specification on March 18, 2019 for stakeholder review. In response to stakeholder comments, EPA is now releasing a limited topic proposal providing opportunity for comment specifically on the potential connected criteria before releasing a Final Draft Version 2.0 specification. Stakeholders may provide comments to EPA **no later than July 15, 2019**.

Proposed Optional Connected Criteria

EPA received feedback from stakeholders recommending that EPA consider establishing criteria for connected functionality in room air cleaners. The focus of the optional criteria EPA is proposing is open access and energy consumption reporting. These criteria reflect a simplified version of optional connected criteria found in numerous ENERGY STAR specifications. Most notably, these criteria do not address demand response. Consistent with conversations earlier in this specification development process, EPA does not plan to develop optional demand response criteria for this product category at this time.

While EPA anticipates that early entrants in providing connected functionality will focus on providing capabilities through a product specific app, in the long term, users have more energy saving opportunities for products that participate in a service provider managed smart home package. The proposed criteria include capabilities that are important for connecting to such smart home packages. This proposal addresses energy reporting by requiring that it be available to third parties through use of open standards and provision of interface documentation. EPA is developing an ENERGY STAR Smart Home Energy Management System specification, that will recognize smart home packages that deliver energy savings. You can find more information here.

Stakeholders are encouraged to share feedback on the relevance of these features for air cleaners on the market today and in the near future, as well as thoughts on how air cleaners are envisioned to support smart energy management services. Lastly, EPA seeks information on the prevalence of Wi-Fi in today's products and whether functions such as filter alerts and product management are being offered through a manufacturer's app.

Proposed additions to the Version 2.0 specification follow below.

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4. Optional Connected Criteria

4.1.1   To be recognized as connected, a room air cleaner shall include the base room air cleaner plus all

elements (hardware, software) required to enable communication in response to consumer-authorized energy related commands (not including third-party remote management which may be made available solely at the discretion of the manufacturer).

4.1.2   The specific design and implementation of the connected room air cleaner is at the manufacturer's discretion provided it is interoperable with other devices via open communications protocol and enables economical, consumer-authorized third-party access to the functionalities provided for in Section 4.4. The capabilities shall be supported through one or more means, as identified in Section 4.2.2. A product that enables economical and direct, on-premises, open- standards based interconnection is the preferred option for meeting this requirement, but alternative approaches are also acceptable.

4.1.3   The product must continue to comply with the applicable product safety standards – the addition of the functionality described below shall not override existing safety protections and functions. The appliance must meet manufacturer's internal minimum performance guidelines, e.g., air cleaning.

4.2   Communications

4.2.1   Open Standards – Communication with entities outside the connected room air cleaner that enables connected functionality (Section 4.4) must use, for all communication layers, standards that are:

A. Included in the Smart Electric Power Alliance Catalog of Standards, and/or
B. Included in the NIST Smart Grid framework Tables 4.1 and 4.2, and/or
C. Adopted by the American National Standards Institute (ANSI) or another well-established international standards organization such as the International Organization for Standardization (ISO), International Electrotechnical Commission (IEC), International Telecommunication Union (ITU), Institute of Electrical and Electronics Engineers (IEEE), or Internet Engineering Task Force (IETF).

4.2.2   Communications Hardware Architecture – Communication with entities outside the connected room air cleaner that enables connected functionality (Section 4.4) shall be enabled by any of the following means, according to the manufacturer's preference:

A. Built-in communication technology
B. Manufacturer-specific external communication module(s) and/or device(s)
C. Open standards-based communication port on the appliance combined with open standards-based communications module
D. Open standards-based communication port(s) on the appliance in addition to A, B or C, above

If option B or C is used, the communication module/device(s) must be easy for a consumer to install and shipped with the appliance, provided to the consumer at the time of sale, or provided to the consumer in a reasonable amount of time after the sale.

4.3   Open Access

4.3.1   To enable interconnection with the product, in addition to Section 4.2.1 that requires open-standards, an interface specification, API or similar documentation shall be made available to interested parties that at a minimum, allows transmission, reception, and interpretation of the following information:

A. Energy Consumption Reporting specified in Section 4.4 (must include accuracy, units, and measurement interval).

4.4   Energy Consumption Reporting

4.4.1   In order to enable simple, actionable energy use feedback to consumers and consumer authorized energy use reporting to third-parties, the product shall be capable of transmitting energy consumption data via a communication link to energy management systems and other consumer authorized devices, services, or applications. This data shall be representative of the product's interval energy consumption. It is recommended that data be reported in watt-hours for intervals of 15 minutes or less, however, representative data may also be reported in alternate units and intervals as specified in the product manufacturer's interface specification or API detailed in Section 4.3.

4.4.2   The product may also provide energy use feedback to the consumer on the product itself. On-product feedback, if provided, may be in units and format chosen by the manufacturer (e.g., $/month).

4.5   Information to Consumers

4.5.1   If additional modules, devices, services, and/or infrastructure are part of the configuration required to activate the product's communications capabilities, prominent labels, or other forms of consumer notifications with instructions shall be displayed at the point of purchase and in the product literature. These shall provide specific information on what consumers must do to activate these capabilities (e.g. "*This product has Wi-Fi capability and requires Internet connectivity and a wireless router to enable interconnection with an Energy Management System, and/or with other external devices, systems or applications.*").

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If you have comments or concerns about this proposal, **please submit them by July 15, 2019**, to roomaircleaners@energystar.gov. Please direct any specific questions to Katharine Kaplan, EPA, at kaplan.katharine@epa.gov or (202) 343-9120, Emmy Feldman, ICF, at Emmy.Feldman@icf.com or (202) 862-1145, and Steve Leybourn at ICF, Steve.Leybourn@icf.com or (202) 862-1566.

Thank you for your continued support of ENERGY STAR.

Sincerely,

Katharine Kaplan

Katharine Kaplan, Manager
ENERGY STAR Product Development and Program Administration