

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



OFFICE OF AIR AND RADIATION

April 9, 2012

Dear Climate Control Stakeholder or Other Interested Party:

The U.S. Environmental Protection Agency (EPA) welcomes your input on the attached Draft 3 ENERGY STAR® Version 1.0 Residential Climate Controls specification, including the Version 1.0 Ease of Use Test Method. Stakeholders are encouraged to submit comments on the draft proposal, and on the test method, to EPA no later than **May 7, 2012**.

Since its launch in 1992, the ENERGY STAR label has become the symbol for energy efficient products, recognized by more than 80% of American households. Today, the label is available across more than 60 product categories and a cumulative total of 5 billion products. For the first time, EPA intends to qualify residential climate controls, addressing both energy efficiency and ease of use criteria. Ease of use compliance may be demonstrated to either (non-test) prescriptive criteria or to performance-based test criteria.

In this draft, EPA maintains its focus on ease of use and connectivity, key features that will enable consumers to save energy, offer convenience, and keep their homes comfortable. Easy to use devices will help consumers to realize the promise of climate control schedules, with benefits for themselves and for the environment. Climate control connectivity enables additional opportunities for consumer value, whether through remote user access or integration into utility demand response programs. EPA's intent is for ENERGY STAR to serve the consumer through increased awareness of energy use and cost, access to tools to better manage and reduce energy consumption, and in time optional participation in utility load control programs.

The attached Draft 3 document brings together concepts from, and addresses feedback on, four earlier documents:

- Draft 2 ENERGY STAR Version 1.0 Residential Climate Controls specification (Draft 2, released July 1, 2010)
- Residential Climate Controls Draft Specification Framework – Usability Requirements (usability framework, released November 30, 2010)
- Draft Usability Test Method for Test Labs (draft test method, released August 15, 2011)
- ENERGY STAR Residential Climate Controls Remote Interface discussion document (RI document, released October 26, 2011)

In addition, it incorporates results from the Department of Energy (DOE) study on the Ease of Use test method conducted in the summer of 2011 by User Centered Design (UCD). UCD's final report is available at [http://www.energystar.gov/index.cfm?c=new\\_specs.climate\\_controls](http://www.energystar.gov/index.cfm?c=new_specs.climate_controls), along with the four documents referenced above.

The attached Draft 3 document addresses feedback received on HVAC control requirements from Draft 2, and feedback received on communications requirements from Draft 2 and from the RI document. The following key changes were made compared to Draft 2:

- The requirement to sense and display relative humidity has been removed.
- Names for schedule periods are no longer required for devices qualifying as easy to use via the performance based path.
- Product packaging need not specify that devices are intended for residential use only, but must clearly identify the HVAC equipment the device supports. The packaging of devices which rely on remote interfaces (RIs) for ease of use qualification must also identify additional equipment required to use that RI, e.g. a computer with web browser and a WiFi network.
- The requirement for outdoor temperature data has been relaxed such that it applies only to products that support dual fuel heat pump installations.
- The specification now includes a specific test method for climate control power consumption.
- Wiring terminal definitions are recommended, but no longer required, to conform to NEMA-DC 3-2008.
- Products with rechargeable batteries are exempt from battery requirements.
- The requirement for ambient display of electricity rate tier has been removed.
- The proposed Tier 2 has been removed. Standards recognized by the SGIP are now recommended rather than required.

The attached Draft 3 ease of use criteria and test method address feedback received on ease of use criteria from the usability framework, the draft test method, and the RI document. The following key changes were made compared to the usability framework and draft test method:

- Performance based ease of use criteria have been moved to an appendix to make the specification easier to follow. The Ease of Use Test Method is also incorporated as an appendix. The separate Performance-Based Ease of Use Criteria include the tasks to be used for testing, the closely related test administrator script, as well as the ease of use metric and the performance-based ease of use criteria required to earn the ENERGY STAR. The Test Method itself includes description of the user group, the testing facility, requirements of the test administrator, and a description of data to be reported.
- Products which include remote interfaces are provided a performance based path to meet ease of use requirements, and may demonstrate ease of use for complex tasks such as programming solely through the RI.
- The maximum time to complete each task has been extended, in order to ensure that test results fully capture task success and time to complete.
- The task to determine the electricity rate tier or price has been removed.
- Some limits have been added on how the demographic characteristics of the user group interact, in order to improve the reproducibility of the test.

- EPA has clarified that users will not be permitted access to user documentation before or during the test, reflecting the need to separate how easy the documentation is to understand from how easy the device itself is to use.

EPA addresses these and other changes in note boxes found throughout the Draft 3 specification.

### **Round Robin Testing for the Ease of Use Test Method**

This draft of the specification includes the first release, V1.0, of the Ease of Use Test Method. The next step for development of the test method is to check the repeatability of the test through a round robin exercise, testing several different models at a variety of test labs. The American Council for an Energy Efficient Economy (ACEEE) has agreed to act as administrator. ACEEE has long been an advocate for cost-effective efficiency specifications and standards on a wide range of products. ACEEE has provided input to EPA ENERGY STAR, Department of Energy, ASHRAE, AHRI, and other organizations on their periodic revisions of appliance and equipment test procedures. ACEEE has the experience to provide responsive and responsible oversight for this project.

Organizations interested in participating in the round robin are encouraged to contact Dr. Susan Mazur-Stommen at ACEEE directly, at [smazur@aceee.org](mailto:smazur@aceee.org) or 202-507-4026. EPA will remain involved in the planning of the exercise, to ensure that the data generated by it is sufficient to inform further development of the test method and the specification.

EPA anticipates further refinements to the test method during the remainder of the specification development, but is releasing this as V1.0 with the understanding that accreditation to this version can be maintained even as the test method is modestly updated and refined.

### **Save the Date: Stakeholder Conference Call**

EPA will host a stakeholder webinar on April 17, 2012 from 1 to 3 pm EDT to discuss the Draft 3 Version 1.0 ENERGY STAR® Residential Climate Controls specification and the V1.0 Ease of Use Test Method. If you would like to participate in this discussion, please RSVP to [ClimateControls@energystar.gov](mailto:ClimateControls@energystar.gov) by COB April 13, 2012. Conference call and log-in information will be provided to attendees prior to the meeting.

### **Suggested dates for an In-person Stakeholder Meeting**

EPA would like to gauge stakeholder interest in an in-person meeting to be held around the time the round robin concludes. To reduce the difficulty of such a meeting, we are looking for dates in September when such a meeting could be held in conjunction with another event for which participants would be gathering. Please email [climatecontrols@energystar.gov](mailto:climatecontrols@energystar.gov) to indicate your interest in such a meeting, and with any suggested dates.

### **Comment Submittal**

Stakeholder input is an important part of this ENERGY STAR specification development process. All interested parties are encouraged to submit comments on the Draft 3 specification and the test method no later than May 7, 2012 to [ClimateControls@energystar.gov](mailto:ClimateControls@energystar.gov). When addressing specific text within the document, comments should include reference to the appropriate line numbers of the subject text.

Written comments will be posted to the ENERGY STAR Residential Climate Controls specification development Web site unless the submitter requests otherwise. All specification development materials can be found on the ENERGY STAR Climate Controls Web site at [www.energystar.gov/newspecs](http://www.energystar.gov/newspecs).

EPA appreciates the feedback received thus far during the specification and test method development and looks forward to continuing to work with stakeholders to bring the ENERGY STAR Version 1.0 Residential Climate Controls specification to fruition. If you have any questions regarding EPA's proposal, please feel free to contact me at [daken.abigail@epa.gov](mailto:daken.abigail@epa.gov) and (202) 343-9375, or Doug Frazee, ICF International, at [dfrazee@icfi.com](mailto:dfrazee@icfi.com) and (443) 333-9267.

Sincerely,

A handwritten signature in cursive script, appearing to read 'Abigail Daken', written in dark ink.

Abigail Daken  
ENERGY STAR Product Manager, HVAC