



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

OFFICE OF
AIR AND RADIATION

November 21, 2024

Dear ENERGY STAR® Smart Thermostats Partner or Other Interested Party:

With this letter, the Environmental Protection Agency (EPA) invites public comment on the second draft of the [Version 2.0 ENERGY STAR Method to demonstrate field savings](#), and the accompanying beta release of the [Version 2 software](#). Comments on this proposal may be submitted to EPA no later than December 20, 2024. As a reminder, the updated test method will include a wider variety of installations in the analysis, allow inclusion of line voltage thermostats that control electric baseboard heating, and result in more reliable and stable savings metric results.

In developing the Draft 2 test method, the EPA considered [feedback](#) submitted by five stakeholders. The EPA thanks stakeholders for their comments on the first draft of the test method and engagement in subsequent conversations about improving the specification. Note boxes throughout the test method provide EPA's rationale for proposals.

The EPA proposes several changes to increase the stability and reliability of the savings analysis results, including:

- Proposing updates to the heating stage definitions to account for line voltage smart thermostats appropriately, ensuring more accurate performance metrics.
- Introducing new rules for data completeness and savings accuracy, requiring smart thermostats to be connected during the reporting period to be included in savings calculations.
- Proposing significant software updates in the beta release of Version 2.0, including a new method to find the optimum fit of each house to the HVAC model, with constraints on the tau value used in the HVAC heating(cooling) run time model to reduce thermostats eliminated because of physically implausible model parameters.
- Adjustments to climate zone weightings are based on the 2020 Residential Energy Consumption Survey, with heating weightings changing by up to 10% and more significant changes in cooling weightings. The updated weighting led to eliminating the Marine Zone air conditioning exemption. The EPA does not expect this to cause a problem for any currently certified product families, based on partner's submitted results.
- Updating the resistance heat utilization (RHU) calculation methodology to the 30-45F temperature bin in accordance with the metrics proposed in the Version 2 Draft 1 specification.
- Reorganizing Appendix A for added clarity.
- Improving error logging to assist partners in meeting the new requirements for sufficient installations in the sample, such that it will be considerably easier to understand why each thermostat eliminated from analysis was not included. Other changes make the software faster, easier to use, and more reliable.

In addition, the beta release of the Version 2 software carries forward the changes to allow thermostats wired to control two-stage heating and cooling to be part of the analysis. For some vendors, this is a substantial fraction of their installations. Other modifications in the version 2 software have also been carried forward from the alpha release.

Comments related to specification requirements will be addressed when the next draft of the specification is released, however the EPA would like to address one specification update at this time. We received detailed data showing that the proposed 1W standby power limit was too restrictive and intend to propose a 1.5W limit in the next specification draft. This is still a substantial improvement in standby power while allowing vendors more scope to innovate around thermostat capabilities.

Comment Submittal

As with all ENERGY STAR specification development and revision efforts, the EPA is committed to a transparent, open, and inclusive process with the intention of creating a high quality, stakeholder supported specification. Stakeholders are encouraged to provide written comments for the EPA's consideration to connectedthermostats@energystar.gov by December 20, 2024. All comments will be posted to the ENERGY STAR Smart Thermostats Product Development website unless the submitter requests otherwise.

Stakeholder Meeting

The EPA will host a stakeholder webinar on December 4, 2024 from 2 to 4 pm EST to discuss the proposed criteria and address initial stakeholder comments and questions. Stakeholders interested in participating in this discussion should register [here](#) by December 3, 2024.

Please direct any questions to Abigail Daken at EPA, Daken.Abigail@epa.gov, or 202-343-9375, Abhishek Jathar at ICF, Abhishek.Jathar@icf.com or 202-862-1203.

Thank you for your continued support of the ENERGY STAR program.

Sincerely,



Abigail Daken
EPA Product Manager, ENERGY STAR for HVAC and Connected

Enclosures:

[ENERGY STAR Version 2.0 Method to demonstrate field savings](#)