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

OFFICE OF
AIR AND RADIATION

November 30, 2015

Dear Connected Thermostat Provider or Other Interested Party:

The U.S. Environmental Production Agency (EPA) welcomes your input on the attached Draft 2 Version 1.0 ENERGY STAR® Program Requirements for Connected Thermostats. Accompanying the draft specification is the first draft of the ENERGY STAR Method for Demonstrating Connected Thermostat Field Savings. Stakeholders are encouraged to submit comments on this proposal and the savings methodology to EPA no later than **December 23, 2015**.

In conjunction with these documents, EPA is assembling connected thermostat savings data to inform metric development and the setting of a proposed metric performance level for the next draft specification. Please see the accompanying letter for details and deadlines associated with this effort.

The draft 2 specification was developed taking into account comments on the Draft 1 specification and the draft grid responsiveness requirements, as well as subsequent conversations with a wide variety of stakeholders. Key changes to the proposal have been made in the following areas:

- Electronic labeling requirements: In response to concerns expressed regarding timing and size of the labeling requirement, EPA is proposing to have partners integrate the logo into the main menu rather than on a splash screen.
- Temperature requirements for connected thermostat device: In response to market insights provided by a range of stakeholders, EPA has removed droop and operating differential requirements from this draft 2, and relaxed the static temperature accuracy requirement.
- Device testing: EPA has added a standby power test method and an explicit test method for static temperature accuracy, based on but not referencing the NEMA DC-3 test method. Other requirements be evaluated through examination of product documentation.
- Occupancy sensing: In the interest of maintaining flexibility in terms of how savings are achieved, EPA has removed these requirement from draft 2.
- Grid response: EPA has radically simplified the grid response requirements in recognition of the variety of robust demand response (DR) business models connected thermostat (CT) service providers currently have.
- Auditability: EPA received several comments stressing the importance of metric score verification. EPA has retained the twice-yearly reporting requirement, and the draft 1 test method furthers EPA's goal of aiding auditability of metric scores.

Field Savings Requirements
EPA continues to work with stakeholders to develop and implement a metric for product savings based on aggregated analysis of CT customer data. Specific comments on the structure of the metric score requirements (for example, whether we also limit the number of households with very low metric scores) will be considered as we work to set levels in draft 3. In addition, one provider convincingly showed EPA that some products with proven meter savings may not perform well against the metric, to the extent they take an approach not contemplated by the metric design. Given the broad scope for innovation in influencing HVAC use towards energy savings, it may be that even as the metric improves to properly reward a wide variety of approaches, some highly effective products could be excluded. Allowing for a more tailored demonstration of savings in such cases is in the interest of the environment and consumers, as well as allowing innovation to flourish.

Thus, draft 2 includes a proposal for an alternative path to demonstrate field savings using an A/B study comparing HVAC run time (or energy use) for groups of homes with and without the full capabilities of the connected thermostat available. The requirements and test method for this alternative path are designed to be as parallel as possible to those for the field savings metric. For instance, each should accurately reflect savings for the geographic spread of current users of the product, and each concentrates on savings in core heating and cooling seasons. Providers using the alternative path will also submit metric data to assist EPA in improving the metric. EPA proposes to post the results of any such A/B studies on energystar.gov.

Method for Demonstrating Field Savings
The draft 1 ENERGY STAR Method for Demonstrating Connected Thermostat Field Savings includes a reference to the open-source software that will be available for calculating the field savings metric, along with guidance on building a representative sample of households to feed into it.

Comment Submittal
EPA thanks stakeholders for their thoughtful and helpful feedback on draft 1 of the specification, and for their continued participation in the metric development process. The exchange of ideas and information between EPA, industry, and other interested parties has been invaluable as we develop a specification that is meaningful in the marketplace and contributes to reductions of CO_2 emissions. Stakeholders are strongly encouraged to review and provide input on the attached draft 2 specification and draft 1 test method and send written comments to ConnectedThermostats@energystar.gov **by December 23, 2015**. All comments will be posted to the ENERGY STAR Connected Thermostat development web site unless the submitter requests confidentiality.

Stakeholder Webinar
EPA will host a stakeholder webinar to discuss the Draft 2 Version 1.0 Connected Thermostat specification and the Draft 1 Connected Thermostat test method on Thursday, December 10, 2015 from 3:00 pm to 5:00 pm Eastern time. Please register here if you are interested in attending.

Thank you for taking the time to review the specification. If you have any questions regarding the draft 1 proposal, please feel free to contact me at daken.abigail@epa.gov and 202-343-9375, or Doug Frazee, ICF International, at dfrazee@icfi.com and 443-333-9267.

Sincerely,

Abigail Daken, Product Manager
ENERGY STAR for HVAC