ENERGY STAR Connected Thermostat Draft 3 Specification Stakeholder Comments

Topic	Subtopic	Comment Summary	EPA Response
AB Study	Stakeholder review and posting of study	One stakeholder recommended that partners using the A/B approach should undergo stakeholder review of the proposed study prior to EPA approval, and that approved A/B studies should be added to the specification in an appendix.	In the Final Draft, EPA proposes to post A/B study proposals to our web site before they are approved. Though a formal commenting process is not planned, Interested stakeholders will be able to review the proposals and contact EPA with any comments or concerns. While EPA cannot append the final specification or test method outside of a formal revision process, EPA does intend to publish all final studies.
Baseline		Two Stakeholders commented on the Baseline used to estimate savings by the Specification and Method to Demonstrate Savings. One Stakeholder noted that the Pacific Northwest is collecting interior temperature data as part of the Residential Building Stock Assessment (RBSA) study, and would be willing to reach out to EPA once their analysis was complete. This stakeholder recommended that a baseline from validated data would likely be superior to the theoretical 90/10 Baseline used in the Software. The other Stakeholder expressed concerns that the constant comfort temperature baseline is a risk since it does not capture current setback information about the home, prior to the installation of the CT Device. This Stakeholder notes that this issue would make it difficult for utilities and other stakeholders to accurately assess the expected savings from a CT Device.	EPA recognizes that the planned baseline does not take into account setback behavior with the previous thermostat. EPA continues to consider the current baselining strategy to be the best that can be practically implemented in light of data available to CT Service Providers, who typically have no knowledge as to temperature schedules and setbacks that were used previously. EPA notes that the CT field savings software, for informational purposes only, will also evaluate each CT for savings relative to average indoor temperatures for the EIA climate zone in which it is installed. While savings relative to this baseline will not be used for product qualification, it enables EPA to analyze this alternate baselining methodology to inform potential enhancements to the modeling of CT field savings. EPA is very interested in the RBSA study and looks forward to working with stakeholders to improve baselining methodology as well as the overall assessment of CT field savings.
Customer Data	Customer Access / Sharing Data	A Stakeholder commented that EPA could provide additional value to both End Users and Stakeholders by adding a requirement where the Connected Thermostat has a clear mechanism for allowing an End User to authorize sharing their data with interested parties, both directly and through a service.	EPA agrees such a mechanism would provide significant value, but it is beyond the scope of this specification to develop or require it.
Definitions		A Stakeholder commented submitted a number of comments recommending explicitly defining API, consistent use of language to enable differentiation between CT Device, CT Product and CT Service Provider, adding a definition for Low Voltage Thermostat, describing relevance in the Line 67 footnote referencing NEMA DC 3, Annex A-2013, and adding detail into the definition for Connected Thermostat Product that more explicitly speaks to the CT Diagram.	EPA notes that API is an acronym for Application Programming Interface as indicated in the Demand Response criteria. In the Final Draft specification EPA has 1) made an effort to use the specific terms CT Device, CT Product and CT Service Provider throughout the spec. in order to enhance clarity, 2) added a definition for Line Voltage Thermostat, 3) added detail in the footnote to NEMA DC 3, Annex A-2013, and 4) added detail into the definition for Connected Thermostat Product that more explicitly describes the elements of the CT Diagram.

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Demand Response		One Stakeholders recommended EPA 1) replace current DR criteria for CTs with the detailed and more prescriptive DR criteria provide in their comment letter, and 2) recommended EPA reference the DR definition from CFR 18 Part 35.28 (a) (4): "Demand response means a reduction in the consumption of electric energy by customers from their expected consumption in response to an increase in the price of electric energy or to incentive payments designed to induce lower consumption of electric energy." Another stakeholder indicated that the term "Demand Response Functionality" would benefit from greater definition.	Current DR criteria has evolved from the open stakeholder process to encompass the broad diversity of both DR programs and methods of implementation. By continuing to maintain high-level, non-prescriptive criteria that mandate use of open communication standards, enable open access to DR capabilities and ensure consumers are empowered to override, EPA intends to ensure all ENERGY STAR CT Products include DR capability. In the Final Draft specification, EPA has incorporated language suggested by this stakeholder into recommended content for the DR capabilities summary. These enhancements ae intended to guide partners to develop DR capability summaries that will enable utilities and other interested parties to differentiate between DR capabilities of ENERGY STAR CT Products. EPA has elected to retain the current FERC DR definition as it presents a broader definition for DR that include ancillary services and price responsiveness. EPA has updated the link in the footnote. In keeping with the high-level non-prescriptive DR criteria, EPA has determined it best not to provide more detailed criteria for DR Functionality, but as noted has provided more detailed content recommendations for the DR capabilities summary.
Labelling	Retail Product Labelling	Two Stakeholders commented on ENERGY STAR Labelling on Connected Thermostats in a retail setting. One Stakeholder commented that they understood the rationale for unique Device + Service Provider labelling requirements for Connected Thermostats, but recommended that EPA engage stakeholders to develop new marketing approaches to consumers, which typically rely on pointing consumers to the ENERGY STAR Logo in a retail setting. The other Stakeholder referenced the Specification requirement that a CT Device would need to be running a qualified service to be labelled, recommending that in the event that a CT Device is certified with its default service, retail shelf and package labelling should be available for this product. This stakeholder also suggested that CT Devices capable of working with multiple services should also be eligible for labelling, provided they default to the ENERGY STAR Service and provide a warning that the device is only compliant when operated with a compliant service.	EPA supports the adoption of open platform CT devices intended to support multiple CT Services. EPA also recognizes that for each CT device currently available in retail markets, there is a service branded by the CT device manufacturer or a device and default service that are co-branded . Installers are instructed to connect to this service to enable remote access and consumer amenities. Allowing retail package labeling for CT devices that are part of an ENERGY STAR certified CT product with that "default service" will raise the profile of ENERGY STAR CTs in the retail environment. EPA expects that these requirements may need to be updated as the market evolves over the coming years.
Product Family Definition		One stakeholder recommended EPA provide guidance on product families, that includes examples that result in products falling into the same or into separate product families. This stakeholder provided an example where products with and without occupancy sensing should fall into separate product families.	As requested, EPA has added criteria language from the Product Family definition. In addition, EPA has added illustrative examples to guide partners, labs and CBs. We also note that there are mechanisms in place to ensure consistency among CBs when questions of specification interpretation arise.

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Savings Levels	A/B	One Stakeholder commented that the A/B study pathway should have higher savings requirements than the currently proposed 4% and 5%, to make it more align more closely with the 8% and 10% savings for metrics performance. This stakeholder expressed concern that if a Vendor could not achieve the required savings levels via the metric performance pathway, the A/B study with lower savings requirements could provide a mechanism to certify a product that should not qualify. This stakeholder also noted that an in-depth study could potentially demonstrate more savings than the Metrics approach, since more energy savings effects could be accounted for, and more accurately.	EPA notes that the A/B study compares savings to a "typical thermostat" baseline while the metric performance method uses a constant comfort temperature baseline. In addition, an A/B study can be designed to capture a wider range of savings strategies. Because of this, the results from A/B studies are expected to be more reliably tied to homeowner's experience of savings. Therefore, a lower level of savings can be justtified. However, in the Final Draft, EPA has proposed higher savings requirements for the A/B study of at least 6% for heating and at least 7% for cooling that more closely align with pilot results from high performing CT products.
Savings Levels	Metric	One stakeholder commented in support of EPA's proposed savings levels of 8% in heating and 10% in cooling, noting that these levels may not describe a specific household, but should be representative of groups of households in aggregate. This stakeholder also commented that these levels should not be reduced below the current levels, to ensure that the impact of the levels in aggregate is maintained.	Thank you for your comment.
Savings Levels	Public Results by Climate Zone	Two Stakeholders recommended that the Qualified Product List should provide a mechanism for informing End Users if a Connected Thermostat product performs below average in their climate zone. One stakeholder suggested that EPA could flag a climate zone if a product performed below a certain threshold, e.g. 6% Heating Savings or 8% Cooling Savings, or modify the QPL entry with a note for this climate zone. The other Stakeholder recommended that EPA release the estimated Heating and Cooling Savings per Climate Zone, noting that this would benefit both utilities and some End Users.	EPA will not be able to provide climate zone specific information on metric performance for individual ENERGY STAR CT Products, because the results are not reliably representative. However, we can develop general guidance for consumers as to how ENERGY STAR CT savings may vary with respect to climate and other factors.
Standby Power Levels		Two Stakeholders commented on the proposed levels for Standby Power. One of the Stakeholders expressed support for the current 3 Watt level due to CT product complexity, but recommended that EPA strongly vocalize intentions to reduce levels in the future, noting that most connected products do not reduce standby levels without external influences. The other Stakeholder commented that the 3 Watt standby requirement was higher than industry best practices, and EPA should include a specific level to phase in after a specified date. This stakeholder suggested using 1.0 W - 1.4 W as a potential target. Both Stakeholders recommended that the CT Device standby power should be published on the Qualified Products List (QPL). One stakeholder noted that this could encourage End Users to make informed purchasing decisions, and would encourage Manufacturers to reduce power levels in the future.	While EPA agrees that the 3 watt level proposed for version 1 is higher than industry best practices, it allows CT Products which save much more energy than they spend in standby power to participate. EPA will, as suggested, encourage partners to lower CT standby power use and will revisit standby power level setting during subsequent specification revisions. EPA also plans to publish measured standby power consumption for ENERGY STAR CT products on the Qualified Product List.
Static Temperature Accuracy		A stakeholder commented that the current static temperature accuracy requirement of ±1.0°F is problematic when the Thermostat Display is rounded to the nearest °F. When combined with the tolerance on the reference temperature sensor of ±0.5°F, there can arise situations where a passing sensor would fail the test even though the temperature performance would be within the specification. One example would be an actual test chamber temperature of 70.4 reading at 69.9 from the chamber sensor, with the thermostat reading at 70.5; the device would round this value up to 71, resulting in a failed test when the actual sensitivity could be as high as ±0.1°F.	EPA thanks this stakeholder for their efforts to help improve the static temperature accuracy test procedure. Informed by this comment and subsequent conversations, EPA has proposed a modified test methodology, intended to reduce measurement error and enhance repeatability. EPA has also proposed a less stringent requirement of ± 2.0°F. The current baseline for the metric will correct largely for temperature inaccuracy. We hope to work with stakeholders to improve the test such that future versions can include more stringent requirements.