

Summary and Response to Stakeholder Comments Received on the  
ENERGY STAR Draft 1 Version 6.0 Residential Dishwasher specification

Ref No	Topic	Comment	Response
1	Definitions	<p>A stakeholder commented that the consumer product definition is not identical to that found in the CFR.</p> <p>The same stakeholder also noted that the proper citation for the portable dishwasher definition is ANSI/AHAM DW-1-2010.</p>	<p>Since a number of aspects of the ‘Consumer Product’ definition located in the CFR are not directly applicable to a dishwasher, EPA has included an abbreviated definition in the Draft 2 Version 6.0 specification with only the language relevant to define dishwashers as consumer products. In response to the stakeholder's concern, EPA has added a footnote to clarify that the definition of consumer product differs from that in the CFR. EPA notes that the Section 1 language also conveys that in case of any conflict, the definition in the CFR takes precedence.</p> <p>EPA has amended the citation for the portable dishwasher definition to ANSI/AHAM DW-1-2010 in Draft 2.</p>
2	Certification Criteria	<p>A stakeholder commented that ENERGY STAR should consider an all-inclusive test method to incorporate not only energy, water, and cleaning, but also noise, drying, capacity and time.</p>	<p>EPA understands that an all-inclusive test method, such as that utilized in Europe, could be beneficial for consumers. At this time, EPA will continue to employ the same test method utilized for the DOE Federal standards to maintain harmonization.</p>
3	Certification Criteria	<p>Two stakeholders commented that EPA should speak to manufacturers of compact dishwashers to determine the impact of the specification criteria. It is a concern to both stakeholders that there are only two non-representative units that meet the Draft 1 proposal.</p> <p>One of the two stakeholders also commented that EPA should make clear that the technology options presented apply only to compact dishwashers and not standard dishwashers.</p>	<p>As part of the development of the Draft 2 specification, EPA engaged multiple compact dishwasher manufacturers to gain further insight into the compact market and opportunities for increasing efficiency. As a result, EPA has slightly relaxed the compact efficiency criteria in the Draft 2 specification to ensure that a range of compact products are able to meet the proposed criteria.</p> <p>EPA confirms that the technology options presented in Draft 1 are applicable to compact dishwashers. However, many of the design options discussed in Draft 1, such as switch mode power supply can be utilized by standard dishwasher products.</p>

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4	Certification Criteria	Stakeholder notes that there are fewer dishwasher incentive programs due to low per unit savings and high ENERGY STAR market share.	EPA believes that strengthening the ENERGY STAR dishwasher criteria will result in more differentiation. This in turn will make dishwasher rebates more attractive to utility programs.
5	Cleaning Performance	<p>Three stakeholders noted that if EPA proceeds with a reporting requirement, the data should not be posted on the ENERGY STAR certified product list.</p> <p>Two other stakeholders responded that EPA should give manufacturers a year to build familiarity with the test procedure and then begin posting the scores to the ENERGY STAR certified product list.</p>	In the Draft 2 specification, in lieu of a mandatory reporting requirement, EPA is strongly encouraging manufacturers to submit cleaning performance data based on the ENERGY STAR Test Method for Determining Residential Dishwasher Cleaning Performance through their certification bodies using the existing data reporting pathways, or directly to appliances@energystar.gov. EPA intends to use this data to support future specification development efforts and will only share masked data with interested stakeholders.
6	Cleaning Performance	<p>Four stakeholders commented that EPA should evaluate whether performance is negatively impacted by higher efficiency levels.</p> <p>Three stakeholders supported a cleaning performance reporting requirement with data submitted to EPA. However, three stakeholders noted that AHAM should be the entity to collect that data and EPA should explore this possibility with AHAM.</p>	EPA looks forward to working with AHAM and other stakeholders to determine if performance is negatively impacted by higher efficiency levels. As noted above, Draft 2 does not include a reporting requirement. EPA is requesting that manufacturers provide cleaning performance data to EPA in order to build a dataset, which will help identify the impact of higher efficiency levels on performance.

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7	Cleaning Performance	<p>Two stakeholders expressed support for using the test method. Two stakeholders noted that there are still concerns regarding the test method and therefore the data collected will be of questionable quality. EPA should address these concerns before adding a reporting requirement.</p> <p>One stakeholder had specific concerns related to water hardness and proposed that manufacturers measure and record water hardness once for each test.</p>	<p>EPA is asking manufacturers to voluntarily provide cleaning performance data using the ENERGY STAR Test Method for Determining Residential Dishwasher Cleaning Performance (Rev. Feb-2014). EPA believes this call for data will allow the program to more accurately consider cleaning performance as part of the specification development process as needed, assist in identifying potential issues with the test method, and will allow test labs to gain more familiarity with the ENERGY STAR Cleaning Performance Test Method.</p> <p>The ENERGY STAR Cleaning Performance Test Method water hardness requirement references ANSI/AHAM DW-1-2010, which specifies that: “water hardness should be between 0 and 85 parts per million (ppm) of CaCo3. Where necessary action exchange water softener may be used to maintain water hardness at this level.” DOE does not interpret this to mean that water hardness shall be continuously recorded throughout the test, and laboratories may choose to monitor water hardness periodically to confirm that it is within the specified range.</p>
8	Connected	<p>Two stakeholders expressed support for the 5% connected allowance.</p> <p>Two stakeholders expressed concern regarding the connected allowance and indicated that EPA should consider this a temporary credit and one that expires sooner than later.</p>	<p>EPA has retained the five percent allowance in Draft 2 for ENERGY STAR standard dishwashers with connected functionality, to help drive near-term, consumer value through the availability of new energy savings and convenience features. This functionality may also provide future benefits to the electric grid and additional consumer savings once the supporting infrastructure is built. This temporary incentive is designed to help 'jump start' the market.</p> <p>Considering the very small market for compact dishwashers, EPA does not see this product type as a target for demand response programs. Therefore in Draft 2 EPA is proposing to exclude compact dishwashers from being eligible for the connected allowance.</p>

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9	Connected	One stakeholder expressed support for EPA's proposal to mandate use of open, non-proprietary connectivity within the bounds of the consumer's premises.	Currently, a range of connected approaches are being explored in the nascent connected appliance market. Accordingly, EPA believes it is ultimately in the consumer's interest for the market to be free to test a range of options, constrained only by the consumer-oriented objectives the ENERGY STAR program is seeking to advance. In Draft 2, EPA has continued to indicate a preference for products that enable on-premises open standards connectivity. However, EPA will also allow alternate approaches such as those that use open standards connectivity only outside of the consumer's premises to comply.
10	Connected	One stakeholder requested that EPA provide clarification that the product is not required to provide more than one Delay Appliance Load response per wash cycle.	In Draft 2, EPA has revised the section 5.G.1.c criterion to clarify that the while the dishwasher must be able to provide three Delay Appliance Load responses per rolling 24-hour period, it need only provide one response per dishwasher cycle.
11	Connected	Two stakeholders indicated that certain cycles, such as NSF International certified sanitization cycles would be adversely affected by interruption and should be excluded from TALR response criteria.	In Draft 2, in order to ensure consumer expectations are met, EPA has elected to exempt sanitization cycles that are compliant with NSF/ANSI standard 184. EPA was advised by stakeholders that if the high temperature portion of the sanitization cycle was interrupted, the cycle would not comply with standard 184. Re-starting the high temperature cycle after the TALR response would result in increased energy and water use and could damage dishware. EPA welcomes additional information that would inform consumer use of NSF 184 sanitization cycles and feedback on the proposed exemption of the NSF 184 cycle from responding to TALR signals.

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12	Connected	<p>Two stakeholders indicated that soil sensing cycles could be adversely affected, potentially resulting in increased energy and water use if soil sensing and/or soil sensor calibration operations were interrupted. These stakeholders requested EPA allow a postponement to the start of a TALR response until after the soil sensing operation.</p>	<p>In draft 2, EPA has added a note for soil-sensing cycles, that allows up to a 60-second response delay to allow soil sensing and sensor calibration operations to complete, prior to TALR response. EPA encourages manufacturers to develop products that delay responses only when necessary.</p>
13	Connected	<p>One stakeholder commented that ENERGY STAR products must continue to represent cost-effective energy savings independent of the potential benefits of connectivity and stakeholder is pleased to see EPA's affirmation of this point.</p>	<p>EPA develops product specifications using the program's Guiding Principles. The Agency agrees it is important that efficiency requirements provide cost-effective savings for consumers. As part of the effort to define new optional connected criteria, EPA seeks to recognize new opportunities for energy savings and convenience, i.e., through diagnostics/alerts and feedback on energy use.</p>
14	Connected	<p>For products that do not enable open standard connectivity within the bounds of the consumer's premises, one stakeholder expressed concerns with regards to reliability, consumer privacy, security, and reliance on 3rd parties for maintenance. This stakeholder further noted that not all consumers have broadband and/or Wi-Fi, and recommended that EPA ensure that connected appliances be capable of communicating via all major communication pathways or provide a standardized modular port.</p>	<p>Stakeholder engagement as appliance connected criteria were developed revealed strong but divergent opinions on whether EPA should specify that a product must have on-premises open standards-based communications. In the draft 2 specification EPA continues to recommend that products with connected functionality provide on-premises open standards connectivity, but also allows alternate approaches to also qualify. EPA plans to monitor the market, including interconnection of connected products by utilities, and may consider associated criteria revisions to support realization of opportunities from Smart Grid interconnection.</p> <p>EPA does not require products be able to “communicate via all major communication pathways,” and as such, EPA recognizes that in the near term, protocol translation by in-home hubs, gateways, in the cloud, or by other means may be necessary until the market coalesces around a more limited set of communication protocols.</p>

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15	Connected	One stakeholder recommends development of a test method that evaluates the appliance's ability to respond to price signals.	EPA appreciates this feedback on the importance of connected end devices being responsive to variable pricing signals, and/or schedules as time of use and other dynamic pricing programs become more prevalent. While the current capabilities have been mainly considered as responses to an event / reliability-based signals, the specification does not define the signal -- only a minimum response from the appliances. It is therefore feasible that price responsiveness could also be enabled in connected appliances at a system level using, for example, an upstream energy management app that monitors price schedules and/or price signals and leverages Demand Response and/or Remote Management capability to signal the appliance to respond in accordance with pre-set consumer price sensitivity preferences.
16	Connected	One stakeholder expressed concerns with a reliance upon examination of the product and product literature for connected criteria not related to Demand Response.	EPA notes that while the DOE test procedure will be limited to demand response criteria, all connected criteria will be subject to evaluation by a recognized third party lab in order to be certified as ENERGY STAR. EPA appreciates this feedback and will consider it as the communication plan to support newly identified connected features is developed in collaboration with stakeholders. EPA believes ENERGY STAR recognition of products with connected functionality can help to facilitate consumer adoption of these products and enable utility program sponsors and other interested parties to identify and possibly, provide some incentive for products that are capable of participating in smart grid/ energy management programs.

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17	Connected	One stakeholder recommended consideration of information-based "behavior change" demand response programs.	<p>In its approach to connected, EPA has developed broad criteria designed to capture both direct consumer benefits associated with energy management as well as longer-term benefits that will accrue when the connected product is enrolled into a signal-based DR program.</p> <p>Regarding behavior change programs, EPA envisions that connected appliances can provide behavioral energy management functionality in a system environment that leverages price and grid status information, as well as operational status and consumption reporting functionalities to encourage behavioral change. Optionally, such an implantation could additionally use remote management or Demand Response functionality to automatically delay wash cycles in accordance with pre-set consumer preferences.</p>