

Summary and Response to Stakeholder Comments Received on the
ENERGY STAR Program Draft 1 Version 7.0 Clothes Washer Specification

REF NO.	Topic	Comment Summary	ENERGY STAR Response
1	Definitions	<p>The DOE definitions in 10 C.F.R. Part 430 should be cited rather than copied and pasted in the specification. Citing the definitions is the best way to ensure consistency and harmonization with DOE definitions at all times and allows the definitions to change with the DOE definitions. The definitions must be identical at all times to ensure consistency and reduce confusion from manufacturers and consumers. Stating anything different from the DOE definitions may, intentionally or unintentionally, change the meaning of those regulations, which are the foundation of the ENERGY STAR specifications.</p>	<p>In order to provide all partners with a clear understanding of the program's requirements, EPA lists relevant definitions in section 1. The specification states that unless otherwise specified, the clothes washer definitions are identical with the definitions in the DOE test procedure at 10 CFR 430, Subpart B, Appendix J1 and J2 or in 10 CFR 430.2 and 10 CFR 431.152. Additionally, with the aim of providing better clarity for stakeholders, EPA has added new footnotes to a number of definitions, clarifying where an ENERGY STAR program definition differs from a DOE regulatory program definition and providing the Code of Federal Regulations (CFR) citation for a DOE definition. EPA and DOE are seeking feedback from stakeholders on these changes.</p>
2	Scope	<p>Combination washer-dryers should be excluded from the proposed specification. These machines use significantly more water than a separate washer and dryer and should not be included in ENERGY STAR at this time.</p>	<p>EPA shares the stakeholder's concern about the added water use by some combination washer-dryers. In response to continued manufacturer interest around this category of products, EPA signaled in Draft 1 that the Agency welcomed additional performance data that would allow for further analysis of potential combo washer-dryer efficiency opportunities as well as further investigation of the added water use. EPA did not receive new data and is not planning to further examine combination washer-dryers through the Version 7.0 specification development process.</p>

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3	Criteria Levels	<p>Due to the speed at which the market adapts to new ENERGY STAR specifications, it is important for EPA to set stringent criteria. The proposed requirements adhere to the ENERGY STAR brand tenets, include both top and front load units, and will likely enable cost-effective programs.</p>	<p>In Draft 2 EPA is proposing changes to the Version 7.0 criteria. For front-loading residential clothes washers greater than 2.5 cu-ft.: $IMEF \geq 2.28$ and $IWF \leq 3.7$ (equivalent to $MEF \geq 2.80$ and $WF \leq 3.5$), for top-loading residential clothes washers greater than 2.5 cu-ft.: $IMEF \geq 2.11$ and $IWF \leq 4.3$ (equivalent of $MEF \geq 2.55$ and $WF \leq 3.8$). As a general principle, the ENERGY STAR program seeks to make it easy for consumers to find the most efficient product, regardless of technology, that performs the desired function (e.g. washing clothes). In some instances, the Agency sub-divides product categories so that products with enhanced features or functionality can be compared with each other rather than more basic models. Because top-loading and front-loading clothes washers perform the same basic function, EPA proposed in Draft 1, that they be considered together for purposes of ENERGY STAR qualification. Upon further review and based on feedback on Draft 1, the Agency believes there may be enough of a difference in functionality, particularly wash-time, to warrant two separate categories. As a result, the Agency is proposing separate product classes in Draft 2. Based on currently available data, this Draft 2 proposal reflects the performance of the top 24 percent of residential clothes washers larger than 2.5-cu-ft, and balances the program's goal of differentiating highly efficient models while ensuring adequate consumer choice of products with reasonable pay back periods. The Agency's data set, charts and supporting analysis are available to stakeholders through an Excel file now available on the ENERGY STAR Version 7.0 clothes washer specification development website and are also attached for your convenience.</p>
4	Criteria Levels	<p>EPA is encouraged to adopt an ENERGY STAR criteria level of $MEF \geq 2.4$ and $WF \leq 4.0$ for top load models and $MEF \geq 2.6$ and $WF \leq 3.7$ for front load models. This would accomplish ENERGY STAR's goal of getting the total number of qualified modes to fewer than 25 percent while striking a delicate balance between efficiency, cleaning/rinse performance, and consumer preference in the forthcoming clothes washer specification.</p>	<p>The Agency welcomes additional insights on potential advances in the market that might support more stringent requirements, as well as additional information stakeholders might provide on the differences in consumer functionality between a top and front load residential clothes washer.</p>

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5	Criteria Levels	A new tier for small washing machines (less than 2.5 cu-ft.) should be added as there are only a small number of units that meet the proposed criteria. EPA should coordinate with the 2013 Most Efficient criteria to avoid a situation where a washing machine would qualify as Most Efficient, but not ENERGY STAR.	
6	Criteria Levels	Even with substantial investment and design improvements to top-performing models, it will not be possible to qualify small clothes washers (less than 2 cu-ft.) for ENERGY STAR. These small units are valuable to small households and no units smaller than 2.1 cu-ft. would be able to meet the V7.0 proposed specification. Visual representation of a non-qualified 2 cu-ft. clothes washer next to an ENERGY STAR qualified 6 cu-ft. clothes washer will cause consumers to think more critically about the utility of different sized washers and the credibility of the ENERGY STAR program.	In response to stakeholder feedback, EPA further evaluated the model data for units that range from 1.6 to 2.5 cu-ft. Based on this analysis and in light of the unique consumer need met by this space saving product size, the Agency is proposing new levels for this class of products in Draft 2: $IMEF \geq 2.07$ and a $IWF \leq 4.2$ (equivalent to $MEF \geq 2.45$ and a $WF \leq 4.0$).

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7	Criteria Levels	<p>The data EPA relied on to determine the proposed criteria is incomplete and/or flawed. EPA estimated that consumers will save annually, on average, \$89 on their utility bills, which is much too high. The annual operating cost range of comparability on the Energy Guide label spans from \$10 to \$71. If the most a clothes washer today could cost to operate on an annual basis is \$71, then it is impossible to save \$89 annually. In addition, the webinar slides show that the current federal standard was used as the baseline for this estimation. It only makes sense to use the federal standard as the baseline for the first specification. Instead, EPA should compare the proposed levels to the existing ENERGY STAR levels to show additional savings due to revised ENERGY STAR criteria. Further analysis needs to be made on what impact the proposed revision would have on the cost of manufacturing products that meet the proposed criteria.</p>	<p>As part of every specification revision, EPA estimates consumers' savings associated with the new ENERGY STAR requirements. For clothes washers, this included the savings a consumer would see on their electric, gas, and water bills from purchasing an ENERGY STAR labeled clothes washer instead of a standard model. EPA provided details of the annual energy, water and cost savings in the September 2012 stakeholder webinar, where cost savings were disaggregated by electricity, gas and water savings. The Agency also notes that the EnergyGuide label does not include costs associated with water use, which is a substantial portion of a consumer's cost savings from an ENERGY STAR clothes washer.</p> <p>For the analysis, in product categories where there are minimum standards in place, EPA uses the Federal standards as a representation of the minimum performers in the market, i.e., as the baseline from which EPA calculates the savings associated with products meeting the latest ENERGY STAR requirements. To evaluate cost-effectiveness, EPA develops an estimate of the price differential between an ENERGY STAR model versus and a standard model. EPA focuses its analysis on comparing "like to like" models (i.e., similar size and features), in an effort to better isolate the price difference associated with efficiency, alone.</p>
8	Criteria Levels	<p>A crosswalk should be provided by DOE in the next draft of the specification revision to reduce confusion and uncertainty for manufacturers. Any crosswalk will inherently introduce some error and therefore cause some confusion. In order to simplify the crosswalk, EPA should split the product classes consistent with the DOE standards in 2015 and set eligibility criteria upon the same ratio the DOE standards contemplate for the two product classes.</p>	<p>In light of the proposed March 2015 effective date, EPA has included criteria based on the new DOE metrics: Integrated Modified Energy Factor (IMEF) and Integrated Water Factor (IWF). EPA used the existing dataset of ENERGY STAR certified clothes washers (rated using MEF and WF) to identify MEF and WF requirements. EPA worked with DOE to translate the current metrics into IMEF and IWF using test data collected by DOE. The cross-walk analysis is included in the supplemental data file available on the ENERGY STAR Version 7.0 clothes washer spec revision website.</p>

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9	Cleaning Performance	<p>The Consumers Union cleaning and rinse performance scores cited in Draft 1 are misleading. Consumers Union utilizes a more intensive cleaning cycle, which increases water and energy consumption, not the "Normal" cycle used by the DOE test procedure, which impacts cleaning, gentleness, cycle time, and efficiency by as much as 20%.</p> <p>The ENERGY STAR guiding principle of "product performance being maintained or enhanced with increased efficiency" cannot be preserved without a "real life" performance test requirement for criteria levels that exceed 2.4/4.0 for top-loaders and 2.6/3.7 for front-loaders. Incorporating unprecedented energy and water levels without a cleaning score will negate any expected net efficiency and monetary benefits.</p>	
10	Cleaning Performance	<p>The proposed 7.0 specification relies on Consumer Union to express a performance metric. Testing provided by Consumer Union is proprietary and laboratory information on reproducibility or repeatable has not been published. It has not been proven as an accurate substitute for consensus standards of performance.</p>	<p>Consistent with ENERGY STAR Guiding Principles, EPA believes it is important to ensure product performance is maintained as efficiency requirements become more stringent. To further assess potential performance impacts from the proposed Version 7.0 energy and water-efficiency criteria, EPA reviewed manufacturer and retailer claims and online consumer product reviews. Many manufacturers are promoting excellent cleaning performance of models that meet/exceed the proposed Version 7.0 requirements. EPA also noted many of the highly efficient products received good/excellent reviews. Test data provided to EPA showed a number of units tested will use more energy and water use during a CU cycle, than they do in the DOE test. EPA believes the CU ratings remain a relevant indicator of clothes washer performance, but acknowledges that results from CU's more intensive cleaning cycle may not be representative of the cleaning performance under the "Normal" cycle used by the DOE test procedure.</p>
11	Cleaning Performance	<p>DOE and EPA are encouraged to develop a cleaning performance test for the next specification revision. Ensuring that clothes washers perform well is critical to meet consumer needs and to preserve consumer trust in the ENERGY STAR program. While there are many high-performing, high efficiency models in the Consumer Reports ratings, there are also ENERGY STAR models that do not perform well in the Consumer Reports ratings. This indicates that while ENERGY STAR washing machines are performing well overall, there are some that do not perform as well. When developing a cleaning performance test, EPA and DOE should also take into consideration other factors that affect utility, such as cycle time.</p>	<p>Based on all the feedback received on cleaning/rinse performance in response to Draft 1, EPA believes it will be important for future specification revisions to more comprehensively consider data on energy efficiency, water efficiency, and cleaning and rinse performance. EPA plans to incorporate cleaning and rinse performance into a future ENERGY STAR clothes washer specification to ensure qualified models meet consumers' performance expectations.</p> <p>DOE is launching a process to develop an ENERGY STAR cleaning and rinse performance test for clothes washers.</p>

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12	Cleaning Performance	DOE's efforts to review available industry test procedures for characterizing clothes washer cleaning and rinse performance is supported. Given the prevalence of high efficiency laundry equipment in the European market, international test methods for evaluating cleaning and rinse performance of clothes washers, such as the IEC 60456:2011 could provide some potentially relevant components.	
13	Cleaning Performance	Actual consumer usage and recent technological advantages have not been taken into account in the DOE test procedure. Contemporary laundry practices in the United States must be incorporated into the test procedure and criteria for the size of a minimum laundry load, the size of an average load, and the frequency distribution of various laundry loads should be reconsidered. Measured drum volume remains representative of the term capacity and capacity has not been defined in terms of wash performance by the DOE. Wash performance directly influences consumer usage patterns. The adequacy of the 3 pound minimum load sizes for new larger machines with adaptive fill has not been investigated with respect to usage patterns of smaller households. Front-loading HE clothes washers using small quantities of water resulting in elevated concentrations of specialized HE detergents require consumers to separate larger loads to avoid cross-running of fabric dyes.	DOE reviewed consumer usage factors, including load sizes, as part of its analysis supporting the DOE clothes washer test procedure final rule published March 7, 2012. DOE reviewed all available data sources at the time. The DOE test procedure measures energy and water use; it does not measure wash performance.

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14	Connected Functionality	<p>A 5% energy allowance for washing machines with connected abilities is supported.</p> <p>A “smart grid” capable clothes washer must needs to have the capability to meet both the Delay Appliance Load (DAL) Capability and Temporary Appliance Load Reduction (TALR) Capability, but not simultaneously, in order to earn a 5% allowance. EPA's statement that clothes washers can offer additional savings and grid benefits through the ability to receive price signals and provide customers with feedback that encourages operation during favorable pricing periods is strongly supported.</p>	<p>EPA has proposed a 5% energy criteria allowance for ENERGY STAR clothes washers with connected functionality to help encourage manufacturers to make available products with these new features that can deliver immediate consumer benefit as well as support in the longer-term a more reliable, low-carbon electricity grid.</p>
15	Connected Functionality	<p>As some utilities are moving towards offering time-based pricing in the residential market, a consumer may enroll in a time-based rate to capture the financial benefits of their connected appliance. The current DOE draft test procedure for DR functionality only addresses reliability-based signals, though time-based pricing is mentioned as a possible signal type. While reliability may be an important consideration for DR events, the price of power will also be important and could more frequently determine DR events, particularly for purposes of delaying and shifting load. Consequently, a test method that can evaluate the appliance’s ability to respond to price signals will be necessary to verify that the consumer will capture the financial benefits of DR.</p>	<p>In regards to price responsiveness, EPA continues to acknowledge the importance for residential consumers to be able to adjust consumption in order to reduce their energy expense and grid stress. However, after further consideration and stakeholder outreach, stakeholders have informed EPA that at the system level, price responsiveness may be implemented atop the existing DAL and TALR functionality. EPA also believes the importance of price responsiveness is well recognized by the appliance industry and utilities. As such, EPA expects the market will drive development of appliances that are capable of tailoring their consumption in response to a dynamic pricing environment. EPA will continue to monitor the marketplace and related technical developments and welcomes stakeholder feedback on this approach</p>
16	Connected Functionality	<p>EPA should ensure that any additional energy use (standby or otherwise) added by connected features is captured in the test procedure and reflected in the specification.</p>	<p>DOE determined during the last test procedure rulemaking that it could not address network mode in that rulemaking because of a lack of information and available products with connected features at that time. Should additional information about connected products energy use become available, DOE will consider it in future rulemakings.</p>

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17	Effective Date	EPA is encouraged to move its effective date to March 7, 2015 to harmonize with DOE's effective date for the revised standards. The transition to new standards and a new test procedure will introduce confusion for consumers and retailers because the changes will impact the measured energy use reported on the Energy Guide label.	For various reasons, including additional time required to finalize connected criteria that were to form the basis for the clothes washer connected proposal, the release of this Draft 2 specification was delayed, such that the earliest possible effective date would be less than a year before the federal test procedure change. In light of this, EPA is now proposing a Version 7.0 Clothes Washer effective date that aligns with the federal test procedure change on March 7, 2015. While a later effective date may be warranted in this circumstance, it does present an added challenge in terms of anticipating advances in the clothes washer market such that the new performance levels will effectively distinguish the highest performers when it goes into effect in 2015. EPA welcomes information that might supplement our current clothes washer data, both on expected efficiency improvements and reductions in the incremental cost associated with those improvements. The Agency recognizes that potential advances in efficiency may be constrained by cleaning and rinse performance considerations
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