

Summary and Response to Stakeholder Comments Received on the
ENERGY STAR Program Draft 2 Version 1.0 Clothes Dryer Specification

REF NO.	Topic	Comment Summary	ENERGY STAR Response
1	Definitions	In support of transitioning the specification to reference Appendix D1, rather than Appendix D2 as proposed in Draft 2, stakeholder recommends that the definition for Combined Energy Factor should be updated to have the same meaning as the calculation defined in Appendix D1 to Subpart B of Part 430, section 4.8	The Final Draft continues to reference the DOE clothes dryer test procedure located in 10 CFR 430 Appendix D2, that was proposed in the Draft 2 specification. Considering this, no changes have been made to the definition of Combined Energy Factor included in Version 1.0.
2	Definitions	Stakeholder supports EPA's approach to add citations to the relevant DOE regulatory definitions and to indicate that, in cases of conflict, the definition in the CFR will take precedence. However, the stakeholder recommends that harmonization be taken a step further to make all definitions exactly the same as those written in the CFR, specifically "Consumer Product" which has been abbreviated to be specific to clothes dryers	Since a number of aspects of the 'Consumer Product' definition located in the CFR are not directly applicable to a clothes dryer, EPA has included an abbreviated definition in the Version 1.0 clothes dryer specification with only the language relevant to define clothes dryers as consumer products. In response to the stakeholder's concern, EPA notes that the Section 1 language also conveys that in case of any conflict, the definition in the CFR takes precedence.
3	Definitions	A typo is noted by the stakeholder in the introductory paragraph of the definitions section where Appendix D1 is inappropriately referenced	EPA has made this correction in the Final Draft.
4	Scope	Stakeholder opposes the ability for timer dryers (those that do not have automatic termination ability) to qualify for the ENERGY STAR label.	EPA has not identified any timer-only dryers on the market.
5	Qualification Criteria	Stakeholder supports EPA's decision to incorporate smart grid functionality and include a 5% allowance.	Consistent with other ENERGY STAR appliance specification revisions that have incorporated optional connected criteria, EPA proposed a five percent energy criteria allowance for clothes dryers with connected functionality as a temporary incentive designed to help 'jump start' the market for new features that can offer consumers new energy savings and convenience features.
6	Qualification Criteria	Stakeholder does not support the inclusion of a 5% allowance for connected functionality, and asks more specifically about the benefits of grid connection for a clothes dryer, to whom these benefits accrue, the costs of achieving these benefits and who pays the costs, how any new associated benefits should be realized and paid for, and to what extent grid-connected appliances could use more energy than they were certified to use after being placed in service.	

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7	Qualification Criteria	Any performance credit awarded for “Connected” functionality should be proportional to the energy efficiency benefit provided by that functionality to the individual customer or utility, and not provide a mechanism for manufacturers obtain ENERGY STAR qualification for clothes dryers that do not actually provide significant energy savings in typical use. Further, as initial improvements to conventional dryers seeking to meet the ENERGY STAR specification may include lengthening the drying time and reducing the heater power levels, it is important to not double count energy savings from any demand response functionality.	By identifying products with this functionality, utility programs and other interested parties could also offer incentives, as appropriate, i.e., to a consumer who opts to enroll a product with connected features in an available demand response program. Longer term, the Agency expects grid-connected products could benefit the electric grid and the environment (i.e., helping to integrate more intermittent renewable energy sources) once the supporting infrastructure is available. DOE may conduct testing of network mode as products with connected functionality become available to evaluate appropriate test methods for network mode.
8	Qualification Criteria	In the absence of a defined "network mode" in appliance test methods, or a specified energy consumption of appliances while within this mode, the energy savings benefit from this functionality its not sufficiently obvious to offset its energy costs.	
9	Qualification Criteria	Based on the testing information provided by EPA and supplementary test data by Ecova, stakeholder supports the proposed efficiency criteria, believing it to be achievable.	EPA has not made any changes to the efficiency criteria in the Final Draft. The clothes dryer market is changing in response to a number of factors including anticipation of new ENERGY STAR program requirements, EPA Emerging Technology award recognition, and in response to amended Federal standards in 2015. As a result, defining levels that will represent the most energy efficient products in the market when the specification is effective has been challenging. However, EPA believes that the latest analysis developed, discussed during recent stakeholder webinars and shared on the clothes dryer spec development website, provides the best information available as to potential product efficiencies under the Appendix D2 test method. Through discussions with manufacturers, the Agency received feedback that meeting the proposed levels using the DOE test procedure located in Appendix D2 was feasible, but would be challenging.
10	Qualification Criteria	Opposes efficiency levels proposed in the Draft 2 specification, citing that the levels proposed are not in keeping with ENERGY STAR's guiding principle of recognizing the top 25% of models available on the current market.	Therefore, EPA believes the current levels will provide meaningful differentiation for consumers by helping them
11	Qualification Criteria	Proposes EPA consider specification levels 4% higher than the CEF levels proposed in Draft 2. The proposal is supported through the inclusion of additional test data points to the EPA dataset used to develop the baseline. The inclusion of these data points increases the baseline by 4%.	
12	Qualification Criteria	Supports other stakeholders in recommending a sloped specification based on dry time or increasing the electric standard dryer CEF criteria to 4.29 (X%)	

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13	Qualification Criteria	EPA should use a sloped specification line dependent on cycle time and certify at multiple drying speeds. If EPA is unwilling to use a sloped line, EPA should increase the stringency of the proposed specification to a CEF of 4.29 for full-sized electric dryers for two principle reasons. First, ENERGY STAR should encourage fundamental improvements in conventional dryer design beyond improved automatic termination. Second, the delay in implementation of the specification from the 2013 timeframe to January 2015 means that the baseline has improved.	<p>identify more energy efficient dryers. EPA will continue to gather data through the implementation of the Version 1.0 specification to inform appropriate levels for future specifications, particularly for the compact product classes where data has been more limited.</p> <p>EPA recognizes that significant efficiency gains (at least 25-30%) could be achieved with conventional clothes dryers through little modification other than lower-heat and longer cycles. However, as stakeholders have noted this could come at the expense of significantly longer drying times. In order to address this concern in as straightforward a manner as possible, EPA re-introduced a maximum drying time requirement, i.e. a certain amount of time to complete the cycle tested under the DOE test procedure in Appendix D2.</p>
14	Qualification Criteria	Disagrees with EPA's proposal to expand the product classes as defined by the DOE, citing that in doing so, EPA ignores the extensive analysis DOE has done to formulate standards for those products which includes a careful balancing of energy savings, consumer choice, product functionality, and manufacturer burden. The stakeholder requests that EPA provide data to support the decision to modify the DOE product classes	<p>EPA has retained the expanded product classes in the Final Draft specification. Earlier in the process, stakeholders commented that ventless dryers available in other countries might be introduced or modified and introduced, into the U.S./North American market. EPA has had concerns that limiting the specification to the product types defined through the Draft 1 product classes could impede potential market advancements for high efficiency ventless clothes dryer designs. EPA believes that expanding the product classes provides a pathway for more energy efficient ventless dryers to also qualify for the program; EPA welcomes further feedback on the suitability of the efficiency levels.</p>
15	Qualification Criteria	Is supportive of EPA's decision to expand the product classes to cover full-sized ventless electric clothes dryers and compact electric ventless (120V) clothes dryers, noting the expanded product classes will allow new high efficiency products to qualify for the ENERGY STAR program and provide a broader range of choice for the end consumer.	
16	Qualification Criteria	Supports the inclusion of product categories that cover indirectly-heated ventless clothes dryers.	
17	Qualification Criteria	Stakeholder supports EPA's efforts to promulgate specifications that are inclusive of the various technology options present in the market; omitting electric ventless clothes dryers had the potential to impede the advancement of high efficiency ventless technologies in the market.	

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18	Qualification Criteria	Suggests that it would be useful to consumers for EPA to report the annual and lifetime energy costs of each dryer model on the EPA website.	EPA appreciates this feedback and will consider it as clothes dryer model data elements that will be available on the ENERGY STAR website, are developed.
19	Qualification Criteria	Suggests that EPA require reporting of the clothes dryer rated ventilation rate (CFM) for qualifying models as this data combined with cycle time will help inform efficiency program estimates of heating and cooling impacts from ventilated dryers on residential homes	At this time, the Appendix D2 energy test method does not measure and record a clothes dryer's ventilation rate. EPA is aware that some stakeholders are interested in HVAC impacts and sought comment on this topic on Draft 1. While feedback to date has been limited, EPA welcomes further information on efforts to use the vent airflow rates to model HVAC effects associated with clothes dryers. This information would help enable the program to evaluate the benefits from developing test guidance and reporting requirement around ventilation rate, in a future specification.
20	Qualification Criteria	Is concerned about the energy savings analysis performed by EPA in assessing efficiency levels, noting that the mix of models in the data set may or may not represent the market reality. Stakeholder recommends reassessing its energy savings analysis.	Along with the Draft 2 proposal, EPA shared its dataset consisting of clothes dryer test data published by DOE, test results from available reports, and additional test data submitted as part of the stakeholder process. EPA believes this data set represents the best information available to the program, at this point in time, on the energy efficiency on clothes dryers measured under the Appendix D2 energy test procedure and has encouraged manufacturers to share any additional data throughout the specification development process. EPA does not have additional information to suggest that the CLASP report's data was not a useful representation (as stakeholder indicates, the report states that the testing was done in a very similar fashion to the DOE NOPR and would vary by less than 1%) of energy consumption as measured by Appendix D1.
21	Qualification Criteria	Requests additional data to support the CLASP report claim that, "testing performed was similar to the test proposed in the DOE January 2013 NOPR and that analysis suggests that the energy consumption would vary by less than 1%."	
22	Qualification Criteria	Raises concerns regarding the use of data provided by the California Investor Owned Utilities for the development of efficiency levels proposed in Draft 2. Stakeholder notes that the efficiency modifications applied to the clothes dryer for the purposes of testing and energy use characterization require the unit to be taken apart and put back together, such extensive modification does not guarantee that the baseline energy performance will remain identical to the original condition. Stakeholder also questions the feasibility of the efficiency modifications employed.	
23	Qualification Criteria	Supports removing the warranty requirements from the Draft 2 specification, emphasizing that warranty requirements for appliances have not been included since the inception of the ENERGY STAR program	The Final Draft specification does not include any warranty requirements. There is precedence for including warranty requirements in ENERGY STAR specifications to ensure

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24	Qualification Criteria	Believes that EPA should reconsider the removal of warranty requirements from the Version 1.0 specification, recommending that EPA establish warranty requirements for ENERGY STAR clothes dryers that are double the current industry standard warranty duration.	product performance is maintained with energy efficiency gains, particularly in the cases where new technologies are being brought to market that have yet to be vetted through extensive consumer use. However, in light of stakeholder feedback received on the Draft 1 and absent more specific data on quality or longevity of clothes dryers and their subcomponents, EPA removed the warranty requirements in the Draft 2.
25	Connected Criteria	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.	EPA develops product specifications using the program's Guiding Principles. The Agency agrees it is important that the ENERGY STAR 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 to enable new opportunities for energy savings and convenience, i.e., through diagnostics/alerts and feedback on energy use.
26	Connected Criteria	There are concerns regarding the unproven amenity provided by connected appliances, in particular the demarcation between the manufacturer and retailer claims regarding connected and the energy performance attributed to ENERGY STAR, the minimum testing for the energy and demand performance of connected, and the expectations of surrounding local utility DR program options (if any). The use of the DOE test procedure for all energy related aspects of connected and having minimum functionality that would enable the appliance to participate in a DR or IDSM program to be specified and then verified for inclusion in the ENERGY STAR program is supported.	While the DOE test procedure focuses on verifying products meet the demand response criteria, all connected criteria will be

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27	Connected Criteria	<p>EPA has indicated that it will rely on a review of product literature and physical equipment inspections for the required specifications for connected that are not related to demand response. Therefore, EPA will be relying on claims by manufacturers, as opposed to testing, for some aspects of what the consumer may associate with a connected product. This strategy may be inadequate, but at a minimum, additional planning and safeguards could help mitigate potential negative consequences. To mitigate potential consumer confusion and/or dissatisfaction, one risk mitigation approach would be to expressly prohibit manufacturer and retailer statements of association between "connected" features and the ENERGY STAR program. Any assertion made by manufacturers or retailers that suggests the ENERGY STAR Program is responsible for product performance associated with "connected" features could be grounds for dismissal from the program. Consultation with FTC regarding the logic and possible expansion of their new Green Guidelines to cover "connected." EPA should further note that until a final DOE test procedure is in effect, it is only the manufacturers who are standing behind claims of connected functionality.</p>	<p>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.</p>
28	Connected Criteria	<p>In response to EPA's request for information regarding remote management and demand response as it relates to gas dryers, stakeholder does not support the inclusion of gas dryers in the specification citing that there is insufficient data demonstrating the energy savings benefit to the electrical grid.</p>	<p>EPA incorporated additional language at the beginning of Section 4 in the Final Draft Version 1.0 specification to indicate that the connected criteria are applicable to electric clothes dryers, only.</p>

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29	Connected Criteria	<p>Stakeholder requests inclusion of a reference to known open communication protocols for DR (such as SEP 2.0) be integrated into the following current specification language, "A product that enables economical and direct, on-premises, open standards based interconnection is the preferred option for meeting this requirement, but alternative approaches are also available."</p> <p>Stakeholder further comments that allowing multiple methods of communication could significantly impact utility DR program design. For example, a utility may offer more attractive rebates to a customer who purchases a clothes dryer with direct communication through the utility meter, as compared to a consumer who purchased a clothes dryer communicating through a manufacturer's cloud-based solution. Thus, the value to consumers is diminished in the second instance, likely affecting uptake of DR-capable devices.</p>	<p>While EPA recognizes that certain application layer open standards, such as Smart Energy Profile (SEP) 2.0 and OpenADR are being widely leveraged for demand response, EPA notes that these open standards meet the Section 4B communication criteria. EPA further notes that the appliance industry itself scores SEP 2.0 and OpenADR application protocols "the highest" (Assessment of Communication Standards for Smart Appliances: The Home Appliance Industry's Technical Evaluation of Communication Protocols, released in October 2010). As such, in the Final Draft Version 1.0 Clothes Dryers specification, EPA has maintained the Draft 2 language in Section 4A.</p>
30	Connected Criteria	<p>Stakeholder agrees that maintaining openness, function, and communication technology neutrality toward "Connected" functionality in the ENERGY STAR clothes dryer requirements will allow EPA to avoid conflicts with the many interested parties working on integration of home appliances into a future, more intelligent grid.</p>	<p>EPA agrees with the need to specify communications criteria that enable open-access while allowing manufacturer's flexibility in implementation, especially at this early stage in the market of connected appliances.</p>
31	Connected Criteria	<p>EPA's proposal to disallow architectures that do not provide an open, non-proprietary means of achieving grid connectedness within the bounds of the customer's premises is applauded. Consumers are currently using a number of different communications technologies and protocols depending on available infrastructure and regulatory environments. Maintaining a focus on openness and neutrality will allow EPA to define the objectives of a connected architecture, while avoiding conflicts with the efforts of standards bodies. EPA is encouraged to keep this high-level principle in mind as it develops tight language to ensure open, non-proprietary communication.</p>	<p>Stakeholder engagement as 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 Final Draft Version 1.0 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>

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32	Connected Criteria	<p>Customer-supplied broadband may be a viable way to achieve connectedness within a customer's home, but there are significant numbers of consumers who do not have broadband and/or wireless access. Some other customers may not be willing to support the use of their broadband connection by the utility or appliance manufacturers. Given that the ENERGY STAR program is a mass market program, it is recommended that a connected appliance be equipped to communicate via all major communication pathways or requiring a standardized modular port. A modular approach that is based on an open standard is one option to address this diversity and provide consumers with flexibility.</p>	<p>The communications criteria in the Final Draft Version 1.0 specification are unaltered from Draft 2. These criteria support the use of open standards. EPA is aware there are currently a number of different communication protocols that can be used in connected devices. 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>
33	Connected Criteria	<p>If utilities and other third parties are required to interface with each manufacturer's cloud-based solution in the future, then there may be added cost and complexity, which may impact the cost effectiveness of demand response and energy efficiency programs. Also, cloud-based solutions could compromise customer data privacy and security due to the introduction of a third party into the flow of customer data and appliance control, which may not be the customers preference. Requiring that the appliance communicates in an open, non-proprietary manner from within the customer's premises provides the customer with the ability to choose who "manages" their appliances in the future and would help ensure that the customer is afforded the ability to choose which offer to participate is based on their own needs and wants. While not the preference, alternative means for achieving two-way connectedness could be supported so long as the customer has the ultimate say and emerging pathways are not squelched.</p>	<p>The communications criteria in the Final Draft Version 1.0 specification are unaltered from Draft 2. EPA is aware that a number of connected products in the marketplace currently use a cloud-based solution. By indicating a preference for products that enable on-premises open standards-based connectivity but allowing alternate communication architectures that offers greater flexibility in the short-term, EPA intends to let market forces drive the refinement of communication architectures for connected appliances.</p>

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34	Connected Criteria	Stakeholder commented that in recent testing, due to weak signals in the home, many DR-capable products did not perform as promised when installed in consumer homes. In these cases, additional external devices, e.g. range extenders may be required to establish reliable communications. In light of this potential need, the specification should require that necessary external devices be provided to the consumer at the time of purchase.	The Final Draft Version 1.0 specification does not propose requiring any additional devices such as range extenders. Recognizing that connected products require other services/infrastructure (e.g., internet connection and home Wi-Fi network) and steps be taken in order to activate connected functionality, EPA has included section 4H to help ensure consumers are informed prior to purchasing the clothes dryer. While there may be situations where an accessory, such as a range booster or repeater is needed, EPA believes that manufacturers of connected products are best positioned to evaluate the need for additional in-home equipment such as a range extender and provide the specific instructions and if necessary, make additional equipment available to their customers.
35	Connected Criteria	Although stakeholder agrees that utilities may need operations status of the dryer, such as on/off, it is not clear that additional detailed criteria in the specification such as “standby”, “delay start”, “cycle in process” are necessary and may add substantial complication for the design of the product. Stakeholder requests information from EPA on how detailed the reporting requirements would be needed by utilities.	EPA has revised the operational status reporting criteria in the Version 1.0 specification in response to this feedback. EPA also notes that while the criteria language includes examples of operational status reporting, this language is provided, not as criteria, but to help guide manufacturers.
36	Connected Criteria	Stakeholder supports inclusion of operational status reporting criteria for purposes of estimating the magnitude of dispatchable load. Furthermore, stakeholder requests that confirmation of load reduction be included as part of this criteria.	
37	Connected Criteria	Stakeholder requests the following language modification: “At least two types of messages relevant to the energy consumption of the product. For example, messages for clothes dryers might address performance issue such as a clogged lint filter or report of energy consumption that is outside the product’s normal range.” be replaced with: “At least two types of messages relevant to the energy consumption of the product. For example, messages for clothes dryers might address: door left open notification, a notification that product lost power, clean lint filter or report of energy consumption that is outside the product’s normal range.”	In the Final Draft Version 1.0 Clothes Dryers specification, EPA has retained language from Draft 2. EPA notes that, as with operational status reporting, the included language provides examples, and thus leaves manufacturers with flexibility as to the specific messages relevant to energy consumptions that they will implement.

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38	Connected Criteria	<p>Stakeholder agrees with EPA that multiple sequential signals that the consumer must respond to could negatively impact consumer experiences and therefore recommend the changes to the specification as outlined below. In addition, the specification should provide clarification language that the product is not required to respond to a Delay Appliance Load and Temporary Appliance Load Reduction signal at the same time. The stakeholders requests the following language in the specification: “The product shall be able to provide at least one Delay Appliance Load response at the start of each consumer initiated operating cycle” be replaced with: “A smart clothes dryer must respond to a minimum of one Delay Appliance Load event per 24 hour period”</p>	<p>EPA recognizes the need to balance grid benefits with consumer expectations and based on stakeholder feedback, in the Final Draft Version 1.0 clothes dryers specification the Delay Appliance Load criteria has been revised such that a product would not need to provide more than three Delay Appliance Load responses in a 24-hour period.</p> <p>In regards to the request to explicitly specify that that the product is not required to respond to a Delay Appliance Load (DAL) and Temporary Appliance Load Reduction (TALR) signal at the same time, it is EPA's understanding that a DAL response can occur only if the appliance is not operating at the start of the response period and conversely that a TALR response can only occur when the appliance is active. As such, EPA does not believe the requested change to demand response criteria language to be necessary.</p>
39	Connected Criteria	<p>Stakeholder commented that connected clothes dryers should be able to respond to more than one DR signal within a 24-hour period and thanked EPA for responding to their prior clothes washers comments, requesting that default DR responsiveness of cycle-based appliances not be bound to a 24 hour , or any specific time period. Stakeholder believe that cycle-based appliances can potentially respond multiple times in successive operational cycles and the current (Draft 2 Version 1.0 Clothes Dryers specification) language makes that achievable.</p>	
40	Connected Criteria	<p>Stakeholder requests the following language in the specification: “The product shall be able to provide at least two Temporary Appliance Load Reduction responses during each consumer initiated cycle” be replaced with: “A Smart Clothes Dryer must respond to a minimum of one TALR event per Cycle”</p>	<p>In the Draft 2 proposal, EPA proposed minimum Temporary Appliance Load Reduction criteria intended to enable additional grid benefits from a minimum of two, potentially successive, Temporary Appliance Load Reduction responses per cycle. However, in response to appliance manufacturer concerns in regards to consumer impacts such as increased cycle times, in the Final Draft Version 1.0 Clothes Dryers specification, EPA has proposed a minimum of one Temporary Appliance Load Reduction response per cycle.</p>
41	Connected Criteria	<p>Stakeholder supports the use of standardized DR criteria but comments that limiting Temporary Appliance Load Reduction responses to 10 minutes maximum does not align with utility DR program requirements.</p>	

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42	Connected Criteria	<p>Stakeholder questions why the 3 hour minimum Delay Appliance Load response duration differs from the 4 hour requirement for other appliance classes. Stakeholder believes all product classes should use the same definition unless there is a significant reason to do otherwise. No clear reason was stated in the Joint Petition.</p> <p>Further, utility peak periods may be longer than 4 hours. Thus, it would make sense that appliance responses would last for the entire peak period duration. The ability of various appliances to respond to such events would differ, but we believe the current language in the Joint Petition should be re-evaluated with additional utility input to ensure the most benefit to consumers.</p>	<p>Based on stakeholder outreach, EPA was informed that the shorter 3-hour minimum Delay Appliance Load response, as specified in the Smart Appliance petition, is intended to help minimize the potential for mold to form during the delay period. Accordingly, to maintain consumer satisfaction with the product and DAL periods, the Final Draft Version 1.0 Clothes Dryers specification retains a 3-hour minimum Delay Appliance Load response.</p>
43	Connected Criteria	<p>Stakeholder indicates that DR signal latency varies depending on numerous factors. Typical latency on the stakeholder's system is 2-4 minutes, and is impacted by distance, data traffic on the network, and other factors.</p>	<p>EPA notes that the Version 1.0 clothes dryer optional demand response criteria specify minimum responses, but does not explicitly address signal type or time required to respond once a signal is received.</p>
44	Connected Criteria	<p>Stakeholder commented that the current draft test method for Demand Response tests using Delay Appliance Load and Temporary Appliance Load Reduction (reliability) signals, only. This stakeholder indicates that while reliability signals are important, the price of power will more frequently drive DR events. A test method that can test the appliance's ability to respond to price signals will be necessary to verify that consumers under time-of-use (TOU) pricing will capture the financial benefits of DR. Stakeholder recommends that DOE and EPA gather stakeholder feedback on using price signals to initiate DR events for consideration of inclusion in connected criteria.</p>	<p>While the optional demand response capabilities included in the Version 1.0 clothes dryer specification 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 feasible that pricing information could also be leveraged by a clothes washer or upstream energy management system to recommend that a consumer delay the start of wash load for 4 hours until when electricity prices will be lower.</p>

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45	Connected Criteria	<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>The TALR and DAL criteria included in the Final Draft are based on recommendations from manufacturers and stakeholders as the core responses that would define demand response functionality in a clothes dryer. EPA may further consider other types of signals (e.g., pricing) and product responses through future specification development. In support of this, DOE also welcomes further comment on appropriate test methods for validating responses to price signals to consider in developing a test method for determining compliance with requirements for DR functionality.</p>
46	Connected Criteria	<p>Stakeholder recently conducted tests of DR-capable appliances that compared responses to DR signals to normal operation. While not directly clothes dryer related, stakeholder believes lessons learned are applicable to all appliances and has offered to make their findings available to DOE and EPA as well as share insight associated with development of (Demand Response) test standards. In the near future, stakeholder will be installing connected appliances in consumer homes as part of a demonstration project. Data collected will allow much more insight into consumer usage patterns and impacts of DR events on the consumer experience. Stakeholder plans to make this data available to DOE and EPA as well.</p>	<p>EPA appreciates this comment and the added insight gained from follow-on discussions with this stakeholder. The Agency looks forward to receiving and discussing additional data from the demonstration project.</p>
47	Effective Date	<p>Should EPA choose to rely on Appendix D1 for Version 1.0, one stakeholder recommends aligning Version 1.0 effectivity with the effective date of the amended DOE federal standards - January 1, 2015. If Appendix D2 remains the test method referenced by the Version 1.0 specification than the stakeholder recommends that EPA would need to work with manufactures to determine an appropriate effective date. Stakeholder also notes that the effective date is an additional complication to using the Appendix D2 several years in advance of its required use</p>	<p>As discussed in the Supplemental Proposal and implemented in the Final Draft Version 1.0 specification, EPA has retained the reference to the Appendix D2 test method. Based on feedback provided in response to the proposed January 1, 2015 effective</p>

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48	Effective Date	Stakeholder only supports an effective date of January 1, 2015 if the test procedure is also harmonized with the mandatory test procedure Appendix D1.	date EPA anticipates that few models will meet the requirements under this specification in advance of 2015; however, to the extent there are any, early qualification will be available any time after the specification is final.
49	Effective Date	Encourages EPA to consider an earlier effective date than January 1, 2015. Stakeholder understanding is that multiple manufacturers will have ENERGY STAR eligible products available by the middle of this year (2014), delaying the specification could negatively impact these manufacturers who have invested in improving their product lines.	
50	Future Specification	Stakeholder recommends that EPA consider at least two energy performance levels, or tiers, as a way of encouraging manufactures to introduce a range of new energy efficient products. The lower tier should be defined by the "ENERGY STAR Program Product Specification for Clothes Dryers" with the higher tier initially defined by the ETA requirements for clothes dryers and, in the longer term, by the ENERGY STAR Most Efficient designation.	In December 2013, EPA announced its intent to continue the Emerging Technology (ET) Award for Advanced Clothes Dryers into 2014 and subsequently released draft criteria for the 2014ET award in March 2014. The proposed ET criteria harmonize with the new ENERGY STAR clothes dryer program by also referencing Appendix D2 as the test method. EPA's intends for the 2014 award to serve as a bridge to the ENERGY STAR specification that will be effective January 1, 2015. EPA will also engage stakeholders to help evaluate the opportunity from including clothes dryers as a new category in the ENERGY STAR Most Efficient Program, as an opportunity to further differentiate the most energy efficient clothes dryers once EPA Emerging Technology Award recognition is no longer available.
51	Future Specification	Stakeholder proposes a Tier 2 criteria level consistent with 10% more savings for electric dryers over the Draft 2 proposed CEF levels. Stakeholder recommends that the Tier 2 criteria effectivity should coincide with the January 2015 DOE standard and supports the development of a Tier 2 by indicating that testing and analysis have demonstrated that 20% energy savings beyond automatic termination would be feasible and cost-effective for electric dryers.	
52	Future Specification	Encourages EPA to provide additional guidance as to how the extension as to how the 2014 extension of the ENERGY STAR Emerging Technology Award for clothes dryers and the ENERGY STAR clothes dryers program will work together in the market	

Summary and Response to Stakeholder Comments Received on the
ENERGY STAR Program Draft 2 Version 1.0 Clothes Dryer Specification

53	Future Specification	Proposes EPA collaborate with clothes dryer manufacturers to establish requirements for a clothes dryer user interface that offers and unequal choice hierarchy to encourage user selection of the automatic termination option rather than timed cycles. To further enhance this requirement EPA could require manufactures to clearly label automatically terminated cycle option as the primary or preferred option through labeling, placement on the control panel, and language in the product manual	EPA agrees that it will be helpful for consumers to have information on the cycle setting(s) tested to comply with ENERGY STAR and related information as to the impacts of cycle setting selections on the energy use. In the Final Draft Version 1.0 specification, EPA has proposed that manufactures convey information to consumers (i.e., in a owner use/care manual) as to the cycle setting(s) tested to determine the energy efficiency rating, and provide guidance about cycle selection and energy use. EPA sees this as a step towards improving consumer understanding of the energy use rating and awareness of the implications that cycle/setting selection will generally have on energy use and is interested in further engagement on opportunities to help consumers easily identify and use the most energy efficient settings.
54	Future Specification	Recommends EPA consider the impacts on clothing wear and tear, indoor air quality, and HVAC impacts attributed to clothes dryers for the development of this and future specifications. Stakeholder notes that the impacts to the HVAC system may be positive or negative depending on the venting configuration of the dryer and the season.	EPA appreciates this feedback on the broader impacts of dryer use and welcomes further discussion on the magnitude of the energy savings and performance enhancement opportunities for future clothes dryer specification development efforts.