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September 20, 2013

Via E-Mail

Amanda Stevens
U.S. Environmental Protection Agency
ENERGY STAR Appliance Program
appliances@energystar.gov

Re: ENERGY STAR Program Requirements Product Specification for
Residential Clothes Dryers, Eligibility Criteria, Draft 2, Version 1.0

Dear Ms. Stevens:

On behalf of the Association of Home Appliance Manufacturers (AHAM), I would like to provide our comments on the ENERGY STAR Program Requirements Product Specification for Residential Clothes Dryers, Eligibility Criteria, Draft 2, Version 1.0.

AHAM represents manufacturers of major, portable and floor care home appliances, and suppliers to the industry. AHAM's membership includes over 150 companies throughout the world. In the U.S., AHAM members employ tens of thousands of people and produce more than 95% of the household appliances shipped for sale. The factory shipment value of these products is more than \$30 billion annually. The home appliance industry, through its products and innovation, is essential to U.S. consumer lifestyle, health, safety and convenience. Through its technology, employees and productivity, the industry contributes significantly to U.S. jobs and economic security. Home appliances also are a success story in terms of energy efficiency and environmental protection. New appliances often represent the most effective choice a consumer can make to reduce home energy use and costs.

AHAM supports EPA and the Department of Energy (DOE) in their efforts to provide incentives to manufacturers, retailers, and consumers for continual energy efficiency improvement, as long as product performance can be maintained for the consumer. But, as AHAM has commented numerous times, EPA must not stray from the foundation the DOE standards, test procedures, and product classes set for the ENERGY STAR program. In particular, AHAM opposes EPA's proposal to reference Appendix D2 several years before it becomes mandatory for compliance with federal minimum standards.

I. Definitions (Section 1)

EPA proposes definitions that are harmonized with those in 10 C.F.R. 430, Subpart B, Appendix D2 as well as the relevant definitions from 10 C.F.R. 430.2. To that end, EPA has included footnotes that provide the relevant citation to the Code of Federal Regulations (CFR) and has indicated that in cases of conflict, the definitions in the CFR take precedence.

AHAM fully 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. As we have previously commented, citation to definitions is the best way to ensure consistency and harmonization with DOE definitions at all times—it ensures that as DOE definitions change, ENERGY STAR definitions also change to mirror them. To achieve consistency, the relevant definitions must be identical to each other at all times. Without such consistency and uniformity, there would be significant confusion for manufacturers and for consumers. Furthermore, manufacturers must make energy representations based DOE's applicable test procedures and regulations. For these reasons, AHAM thanks EPA for taking this approach which will ensure that the ENERGY STAR specification does not unintentionally differ from DOE regulations which are the foundation of the ENERGY STAR program.

EPA proposed to cite Appendix D2 (D1 is stated in the introductory text to section 1, but we assume this is a typo). Consistent with AHAM's comments below, AHAM opposes citation to Appendix D2—instead, EPA should cite Appendix D1 both for the definitions and as the required test procedure for qualification.

With regard to specific definitions, AHAM notes that the definition for “Combined Energy Factor” attempts to describe the calculation in Appendix D1.¹ Instead, EPA should cite to the calculation. For example, EPA could state, “Combined Energy Factor shall have the same meaning as in Appendix D1 to Subpart B of Part 430, section 4.8.” In the alternate, the footnote to the description of CEF could cite to that section instead of Appendix D1 generally.

Footnote 3 indicates that the definition of consumer product has been abbreviated to be specific to clothes dryers. But, there is no need to shorten the definition from how it is stated in the regulatory text. EPA should simply use the definition as written in the CFR.

¹ We also note a couple of minor typographical corrections EPA may wish to make in the next draft. The definition of “ventless clothes dryer” is missing one small and minor word, but we note this correction as follows to ensure the definition is identical to Appendix D1, consistent with EPA's intent, as shown in redline: “**The M**moist air is not discharged from the cabinet.” In addition, footnote 3 is also attached to the definition of basic model, but does not seem to apply to that definition, which appears to be identical to the CFR.

II. Qualification Criteria (Section 3)

A. Combined Energy Factor (CEF)

In the note section for section 3 of the draft specification, EPA states that “the best performing electric standard clothes dryers obtained CEF values of 3.48-3.51. From those CEF performance levels, an additional 11% energy savings would be necessary to reach the Draft 2 proposed CEF level of 3.93. . . . The best performing gas dryers in EPA’s data set reached a CEF of 3.25; an additional 7% energy savings would enable units to meet the proposed criteria.” AHAM’s understanding of the ENERGY STAR program is that it is designed to identify top energy performers, not to set aspirational criteria above the most efficient products available on the market. In fact, the ENERGY STAR Products Program Strategic Vision and Guiding Principles (Guiding Principles) state that “[e]xperience has shown that it is typically possible to achieve the necessary balance among principles by selecting efficiency levels reflective of the top 25% of models available on the market when the specification goes into effect.” While AHAM understands that EPA balances a number of factors, the approach it took in this case—setting a percentage above the best performing available clothes dryers currently on the market—is not consistent with the approach set forth in the Guiding Principles or previously employed by EPA. Accordingly, EPA should reevaluate its proposed criteria consistent with the Guiding Principles.

AHAM is also concerned with several elements of EPA’s energy savings analysis:

1. EPA used the test samples from DOE and others to determine the energy savings. But the mix of models in that data set may or may not represent the market reality. Thus, the sample is determining the energy savings (and justifying EPA’s proposed levels) rather than the market itself. This can be problematic particularly because the larger the number of models with a small change in test results derived using Appendix D1 versus D2, the more stringent the criteria will be. EPA should reassess its energy savings analysis by taking the market reality into account. One way to do that would be to weight the results according to shipments of the types of units in the sample.
2. The supplemental data file includes a note: “Test data reported from 2013 CLASP based on modified DOE Test Method, 10 CFR 430 Appendix D1 with automatic termination enabled. The report notes that testing was similar to the test proposed in the DOE January 2013 NOPR and that analysis suggests that the energy consumption (kWh/per cycle) would vary by less than 1%.” AHAM seeks more information on this conclusion. There is no explanation as to how CLASP determined that the difference would be less than one percent—did CLASP do testing? Is it one percent on average? If it is, then what is the range? The answers to those questions would help us to understand whether or not these data are properly included in EPA’s analysis. Without the answers, EPA should not use these data to set specification levels.
3. The California IOUs also presented data in comments. The data file indicates that Ecova tested one standard electric clothes dryer outfitted with different technologies. There are several problems with that approach and the results it generated. First,

when a unit is taken apart and put back together again, there is no guarantee that the energy performance will remain identical to the original condition. For example, the seals could be impacted. Second, AHAM questions the use of these tests of a single unit as unique data points. Although Ecova outfitted the unit with different technologies, the unit itself was still the same and uses the same core technology. Thus, it is not appropriate to pretend that the data comes from separate units. Third, Ecova has not demonstrated that the technologies it tested are market ready. It is an interesting laboratory exercise to create a “Frankenstein” clothes dryer. But, the test results should not be given weight when they may not actually be feasible technology options. Manufacturers would need to do extensive safety and longevity testing, among other things, before determining whether certain technologies are feasible. Finally, the test data show a significant amount of variation. All five values for tests 16 through 20 are within the same range, indicating that the difference between them is likely due to variation. This demonstrates that there was too much variation, likely due to the process of modifying the unit, for the test results to be meaningful. The data in the file also seem inconsistent with later conclusions—the data seem to show no improvement in efficiency due to insulation and sealing improvement. But, on sheet seven, EPA indicates that “[t]esting recently performed by Ecova for the CA IOUs demonstrated aftermarket retrofits to seal and insulate the drum yielded savings of about 2%.” It appears that this was derived by comparing test 19 to the average of 16-18. But the apparent savings may be due to nothing more than variation in the test data, particularly because the data from test 19 is within the range of variation for tests 16 through 18. Accordingly, EPA should not rely on the Ecova/California IOU data.

B. Product Classes

EPA proposed to explicitly include ventless standard electric and compact 120V configurations in the specification, using the same efficiency criteria as similarly configured vented dryers. EPA acknowledged that 240V electric compact dryers have a separate product class and level established by DOE. But, “EPA has limited data at this time to evaluate separate levels for ventless electric standard clothes dryers and ventless electric compact 120V clothes dryers.” EPA welcomed stakeholder feedback on its proposal to extend the criteria to additional types of ventless clothes dryers.

As AHAM has commented numerous times, EPA must rely on the foundation set by DOE’s standards. DOE, through its lengthy, thorough, and long-existing rulemaking process for appliance efficiency standards, has established separate product classes and standards for good reasons. And DOE’s regulations implement Congressional intent. DOE’s standards are, and should be, the foundation for the ENERGY STAR program. EPA cannot use an approach that would vary from the approach DOE takes to regulating covered products. To do so 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 per the National Appliance Energy Conservation Act of 1987 (NAECA).

EPA cannot simply decide to include a new product class that DOE has not included through its detailed analysis. This is particularly the case here where DOE has included separate ventless classes for compacts (240V) and combination washer-dryers, indicating that DOE decided not to address ventless electric or ventless compact (120V). Furthermore, even were it appropriate for EPA to stray from the foundation set by DOE standards and product classes, EPA must present data to do so. Here, EPA even admits to the fact that it has no data and, therefore, simply lumped ventless electric standard clothes dryers and ventless electric compact (120V) clothes dryers together with their vented counterparts. That is the very definition of arbitrary and EPA should remove those product classes.

C. Connected Allowance

EPA has identified its intent to help advance the market for products with intelligent features in ways that deliver immediate consumer benefit as well as support a low-carbon electricity grid over the long-term. AHAM strongly supports EPA's decision to incorporate smart grid functionality and to provide a 5% allowance consistent with the "Joint Petition to ENERGY STAR to Adopt Joint Stakeholder Agreement as it Relates to Smart Appliances" from industry, efficiency advocates, and environmental groups. The allowance is intended to serve as an incentive to help jump start the market for clothes dryers with smart grid functionality.

D. Drying Time

EPA proposed to require that the elapsed time for the product to complete the test cycle be measured and reported as part of the ENERGY STAR certification. DOE proposed, in section 5.C, draft guidance for measuring the duration of a clothes dryer operation cycle under Appendix D2. DOE and EPA welcomed comment regarding that proposed guidance and the proposal to require that the length of the drying cycle be reported and on making that data available for consumers on the ENERGY STAR website.

It appears that EPA's intent is to potentially post the drying time alongside the CEF on the Qualified Products List. AHAM would like to understand the variation, if any, of the procedure DOE proposed. It is important that that variation be minimal in order for the drying times to have any value to consumers.

E. Warranty Requirements

EPA proposed to remove the warranty requirements it previously proposed in Draft 1 of the specification. AHAM fully supports EPA's proposal to remove the warranty requirements.

EPA stated that there is precedence for including warranty requirements in ENERGY STAR specifications to ensure performance is maintained with greater energy efficiency, particularly in sectors where new technologies are being brought to market that are yet to be vetted through extensive consumer use. EPA then stated that, in light of stakeholder feedback and absent more specific data on quality or longevity of clothes dryers and their subcomponents, EPA decided not to include such warranty requirements in this case. AHAM agrees that there is no data that would suggest such a warranty requirement is necessary or justified. Furthermore we note that,

to our knowledge, this would have been the first warranty requirement for appliances since the inception of the ENERGY STAR program. Every change to improve efficiency in twenty years has increased the complexity of the product at issue, and this is no different. Thus, we thank EPA for removing the warranty requirements from the draft specification.

III. Test Requirements (Section 5)

EPA and DOE proposed to reference Appendix D2 as the test procedure for ENERGY STAR qualification. EPA stated that it believes the amended DOE test procedure will provide the accuracy with regard to the effectiveness of automatic termination controls that stakeholders are looking for in characterizing use and relative energy efficiency of clothes dryers, while “reducing the longer-term burden of having to re-test for ENERGY STAR purposes in order to capture the performance of automatic termination setting.” EPA stated that all “dryers tested under Appendix D2 used more energy, resulting in a calculated lower CEF value, than when tested to Appendix D1. . . . However, the sample of clothes dryers tested also showed significant variation in the amount of additional energy use, ranging from just 4 percent more energy up to 62 percent more energy.”

AHAM strongly opposes referencing Appendix D2 as the test procedure for ENERGY STAR qualification in Version 1.0 of the clothes dryer specification. Instead, EPA and DOE must reference Appendix D1, which is the test procedure that will be mandatory when Version 1.0 becomes effective.

First, as AHAM has often commented, DOE’s standards and test procedures are, and should be, the foundation for the ENERGY STAR program. EPA cannot use an approach that would vary from the approach DOE takes to regulating covered products. To do so 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 per NAECA. Those standards are based on an analysis done using the mandatory test procedure—thus, the DOE standards were not set using Appendix D2. As EPA recognized in its note to section 3 of Draft 2, the impact of measuring under Appendix D2 as opposed to Appendix D1 varies depending on the basic model—the range is significant.

AHAM requested that DOE permit early compliance with amended standards and early use of new test procedures to ease the transition to the new standards and test procedure. DOE responded with guidance that permits early use of a new test procedure and early compliance with an amended standard. Under the guidance, AHAM understood the intent to be that manufacturers must meet the amended standard in order to use the new test procedure early. DOE has since, however, adhered to what we understood to be an error and allowed early compliance with test procedures that are not tied to amended standards. AHAM recognizes that the guidance does not provide a time limit on how early a company could use the new test procedure and comply with the new standard. But 2014 or 2015, at least six to nine years prior to a standards change that would require use of Appendix D2, is too early to require, for ENERGY STAR qualification, early use of the D2 test procedure.

Beyond principle, referencing Appendix D2 (long) before it is mandatory will have practical implications for both manufacturers and consumers. For example, how will consumers compare ENERGY STAR qualified units with other units? The other products are likely to overwhelmingly be measured under Appendix D1. Thus, consumers could be confused because they will, unknowingly, be comparing apples to oranges. EPA seems to dismiss the consumer confusion concern because there is not currently an EnergyGuide label for clothes dryers. However, the ENERGY STAR brand and its web site are used by consumers and this information is readily attainable to consumers who seek it. Furthermore, consumers can compare products on DOE's database. With no explanation as to why the values are drastically different, consumers will undoubtedly be confused (especially because the relationship of one CEF value to another is counter-intuitive to those who do not understand that a higher number means "less efficient").

In addition, there will be confusion and uncertainty for manufacturers. Under EPA's proposal, manufacturers would be required to use two different test procedures for a period of at least six years, instead of for just a brief transitional period. This increases the likelihood of error. In addition, EPA's claim that it is reducing a long-term burden of having to re-test for ENERGY STAR purposes once DOE requires use of Appendix D2 for compliance with federal standards is misguided. In actuality, EPA is *creating* a testing burden by requiring technicians to be conversant in two different test procedures and to keep track of test records under two different test procedures for a period of years. And the long term burden EPA claims it is reducing is actually non-existent. Presumably by the time Appendix D2 becomes mandatory for compliance with federal standards, EPA will need to implement a revised specification as well, during which time it could propose to use Appendix D2 on a harmonized timeline with DOE.

AHAM notes that it agrees that Appendix D2 is the ultimate goal—we would have liked to see DOE implement it earlier. But, due to a number of circumstances with which EPA is familiar, the rulemaking timeline did not make that possible, particularly because of the impact the change in test procedure would have on measured energy. We share EPA's and DOE's goal of referencing Appendix D2 and accounting for the impact of automatic termination controls. But, we cannot support two separate government test procedures for one product category. That is inconsistent with EPCA's intent and contrary to the principles upon which the ENERGY STAR program should be based.

IV. Connected Product Criteria (Section 4)

A. Connected Clothes Dryer System (Section 4.A Notes)

EPA proposes the connected criteria in the specification include gas dryers and has requested additional feedback from stakeholders on remote management and demand response as it relates to gas dryers. AHAM does not support the inclusion of gas dryers in the specification. There is insufficient data demonstrating energy saving benefits to the electrical grid based on demand response or remote management for connected gas dryers. In addition, a test procedure is not available to evaluate the demand response capability of a connected gas dryer.

B. Operational Status, User Settings and Messages (Section 4.F.1)

EPA proposes additional reporting requirements for operational/demand response status for smart dryers above that required for refrigerator/freezers. Although AHAM 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. AHAM requests information from EPA on how detailed the reporting requirements would be needed by utilities.

C. Operational Status, User Settings and Messages (Section 4.F.2)

AHAM requests the following language in the specification

“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.”

D. Demand Response (Section G.1.c)

AHAM 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.

AHAM 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”

E. Demand Response (Section G.2.c)

AHAM 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”

V. Effective Date

EPA did not propose an effective date for the Version 1.0 specification, but indicated that the final specification could be completed in early 2014 or possibly sooner.

Because AHAM opposes the use of Appendix D2 and instead proposes that EPA rely on Appendix D1 for Version 1.0, AHAM also proposes that EPA align its effective date with the effective date of DOE’s amended standards for clothes dryers—January 1, 2015. Should EPA continue to cite Appendix D2 above AHAM’s strenuous objection, EPA would need to determine an effective date by speaking with manufacturers. An appropriate effective date is just one more complication to using Appendix D2 several years early. Instead, EPA should harmonize with DOE both in terms of the test procedure (Appendix D1) and the effective date (January 1, 2015). This is the best way to provide clarity and consistency for ENERGY STAR partners.

AHAM appreciates the opportunity to submit comments on the ENERGY STAR Clothes Dryer Draft 2, Version 1.0 Specification and would be glad to further discuss these matters.

Best Regards,



Jennifer Cleary
Director, Regulatory Affairs