UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
AIR AND RADIATION

December 19, 2013

Dear ENERGY STAR® Clothes Dryer Manufacturers and Other Interested Stakeholders:

In response to feedback on Draft 2 of the ENERGY STAR Version 1.0 Clothes Dryer specification, the U.S. Environmental Protection Agency (EPA) is sharing further thoughts on several key issues and seeking additional input on a number of contemplated changes, prior to the publication of a Final Draft.

EPA welcomes written comments no later than **Friday, January 24, 2013** via email to appliances@energystar.gov.

Efficiency & Cycle Length

In response to Draft 2, stakeholders expressed concern that some energy savings may not be realized if dryers achieve savings by significantly extending the duration of the cycle, to a point that consumers will choose a shorter, more energy intensive cycle. Test data shared with EPA indicates 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, this could come at the expense of significantly longer drying times—approximately two hours—over twice as long as the 'normal' cycles that most consumers use today.

In order to address this concern as straightforwardly as possible, EPA is re-introducing a maximum drying time requirement, i.e. a certain amount of time to complete the cycle tested under the U.S. Department of Energy (DOE) test procedure in 10 CFR Part 430 Appendix D2 (herein Appendix D2). EPA acknowledges there is limited data available on what consumers will find to be an 'acceptable' dry time for most loads, or on the difference in dry time of the test load in Appendix D2 and a typical consumer load. Given this, the objective for this proposal is to identify a time that is long enough to accommodate various drying technologies and afford manufacturers maximum flexibility, while maximizing consumer acceptance of efficient cycles. EPA's data set shows that the average cycle time under Appendix D2 is 45 minutes for conventional dryers (across all product classes) and 83 minutes for heat pump dryers with a range from 64 to 107 minutes.[1] EPA is proposing to integrate a maximum cycle time of 80 minutes into the Version 1.0, by revising Section 3.B to read:

> *Section 3.B: Drying Time: The elapsed time for the product to complete the test cycle, as measured in Section 5C, must be 80 minutes or less.*[2]

[1] Data set comprised of data from products tested in support of the DOE rulemaking, the CLASP report *Analysis of Potential Energy Savings from Heat Pump Clothes Dryers in North America* (2013), and Appendix D2 test data provided by the California Investor Owned Utilities in support of their Draft 2 comment submission. Heat pump cycle time average derived from a data set of 2 standard size heat pump dryers with cycle times of 64 and 73 minutes and three compact size heat pump dryers (tested with a larger 8.45 lb load instead of the compact size 3 lb load) that had cycle times ranging from 77-107 minutes. While limited, additional data is not available.

[2] Based on the average cycle times of dryers tested per the sampling plan requirements in Section 5A.

In response to general concern expressed by stakeholders about the potential use of alternate, shorter, more energy intensive drying cycles, EPA believes an important first step is to track the extent to which products are also providing consumers with a faster cycle setting to dry a typical load and if so, what the associated energy use and drying time is. This will provide some information about the consequences of consumers using a shorter, more energy intensive cycle instead of the default cycle tested in Appendix D2. To this end, EPA is also proposing that manufacturers test and report the per-cycle energy consumption and duration of the manufacturer-defined fastest cycle, if different from that tested under Appendix D2. EPA may consider this information, combined with any additional research on consumer setting choices, in future specification development activities.

EPA proposes adding the following additional language to Section 3 – Qualification Criteria:

> *Section 3.C: Test and Report Requirement for the Fastest Drying Cycle: The per-cycle energy consumption as defined in 10 CFR 430 Subpart B Appendix D2 Section 4.6 and the cycle time as assessed per Section 5C of this specification, shall be reported for the manufacturer-defined fastest operational cycle for a typical load (e.g., not specialized cycle settings such as sanitize, anti-bacterial or wrinkle care) that can be selected by a consumer. Dryers tested must continue to meet the applicable final remaining moisture content (RMC) requirements of Appendix D2.*

EPA encourages stakeholder feedback on the proposed maximum drying time requirement, and on the additional testing and reporting requirement. EPA also welcomes information on what settings or cycle programs may offer shorter drying cycles than the energy test cycle, as defined in the Appendix D2 Test Procedure. EPA also encourages stakeholder feedback on proposed Section 3C language: Does the language provide manufacturers and test labs with sufficient guidance around which cycle to test? If not, what modifications should be considered?

Reference to Appendix D2

With the finalization of DOE's Appendix D2 test method, EPA proposed in Draft 2 to make use of it. A variety of stakeholders—including utilities, efficiency organizations, and a manufacturer—supported referencing this test, confirming that it would provide more accurate energy use and relative energy-efficiency comparisons of clothes dryers. However, a number of manufacturers were concerned that use of Appendix D2 constituted an unprecedented approach and about the potential for consumer confusion associated with requiring the use of a second test procedure.

EPA's proposal to update the test method reference to Appendix D2 was developed through careful consideration. As noted in Draft 2, the test better reflects the way consumers use the clothes dryers, will more accurately measuring energy consumption, and allows for greater differentiation among models. Appendix D2 test results have demonstrated that the relative efficiency of models can change in a substantive way when the cycle is permitted to run until the automatic cycle most commonly used by consumers, terminates. This—absent a way to separately identify dryers with better automatic termination controls—necessitates use of Appendix D2 in order for ENERGY STAR to effectively differentiate models. Referencing Appendix D2 also offers manufacturers an additional avenue for demonstrating enhanced clothes dryer efficiency through improved automatic termination control technology that reduces wasted energy at the end of the drying cycle.

EPA believes the potential for consumer confusion is small. Clothes dryer energy use or efficiency is not communicated to consumers on the retail floor or on e-retail websites in a standardized way since there is no EnergyGuide labeling requirement for dryers. In fact, broader use of Appendix D2 would create greater standardization and thereby may reduce consumer confusion resulting from the prevalence of different manufacturers' marketing claims about dryer and/or paired laundry energy-savings that often depend upon assumptions noted in fine print, making them more difficult for consumers to understand and compare consistently. While there are publicly available sources of U.S. dryer energy efficiency data available online (e.g. the DOE Certification Database and the California Energy Commission Appliance Database), these data sets are not necessarily geared to a typical consumer. EPA believes that consumers are ultimately best served by an easy-to-use label that reflects the effectiveness of auto

termination. That said, EPA welcomes further feedback with specific information that should be considered during this specification process.

EPA also recognizes that dryer manufacturers have expressed concern that testing with Appendix D2 to meet the Draft 2 proposed efficiency levels, while continuing to meet various other performance requirements (e.g., drying time or dryness targets of various loads), will be very challenging. Recent conversations with a number of manufacturers suggest there will likely be limited product available that can meet the proposed ENERGY STAR Version 1.0 levels in 2014. Considering this, the Agency is proposing an effective date of January 1, 2015 for the Version 1.0 specification so as to provide added time for manufacturers to transition to the new test procedure, before the ENERGY STAR clothes dryer program is launched.

EPA welcomes written comments **submitted via email to appliances@energystar.gov by Friday, January 24th**. All previous drafts and comments on these drafts can be found at www.energystar.gov/revisedspecs.

Please direct any specific questions to Amanda Stevens, EPA, at stevens.amanda@epa.gov, (301) 646-5634, or Jessica Lyman, ICF International, at jessica.lyman@icfi.com, 202-862-1557. Clothes dryer test method questions should be directed to Ashley Armstrong, DOE, at Ashley.Armstrong@ee.doe.gov or (202) 586-6590. Thank you for your involvement in this specification development process.

Sincerely,

Amanda Stevens

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ENERGY STAR Labeled Products