

June 27, 2013

Taylor Jantz-Sell
US Environmental Protection Agency
Ariel Rios Building 6202J
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Dear Ms. Jantz-Sell:

The Consortium for Energy Efficiency (CEE) respectfully submits the following comments in response to the *ENERGY STAR® Lamp Version 1.0 Draft 4 Specification*, released by the US Environmental Protection Agency (EPA) on April 19, 2013.

CEE is the binational organization of energy efficiency program administrators and a staunch supporter of the ENERGY STAR® Program. CEE members are responsible for ratepayer-funded efficiency programs in 45 US states and seven Canadian provinces. In 2011, CEE members directed \$6.1 billion of the \$7.6 billion energy efficiency and demand response program expenditures in the two countries. These comments are offered in support of the local activities CEE members carry out to actively leverage the ENERGY STAR brand. CEE consensus comments are offered in the spirit of strengthening ENERGY STAR so that it may continue to serve as our national marketing platform for energy efficiency.

CEE highly values the role ENERGY STAR plays in differentiating energy efficient products and services that the CEE membership supports locally throughout the US and Canada. We appreciate the opportunity to provide these comments.

Recommend Increased Clarity in Definition for Omnidirectional Lamps

The current wording of the Draft 4 definition for omnidirectional lamps caused significant confusion for CEE members regarding acceptable variances for light distribution in the different zones. Specifically, we reference the language that addresses different percentages of measured values from a variety of zones in the definition; “A general service replacement lamp with an ANSI standard base that emits the majority of light produced in an even distribution about the lamp with 90% of measured intensities in the 0° to 135° zone varying by no more than 25% from

the average of all of measured values, with no measured values more than 50% from the average of all measured values and having at least 5% of the total flux (lumens) emitted in the 135° to 180° zone.” We recommend that the definition be refined to separate and distinguish more clearly the different requirements, whether that be accomplished by changes to the language, punctuation or spacing. The definition provided within the specification relative to luminous intensity distribution separated the various requirements, and thus is more easily understood

Support the Removal of R9 Requirements for CFLs and Consider a Higher R9 Value for LED Lamps

In previous drafts, EPA proposed requiring a positive R9 value ($R9 \geq 0$) for both CFL and LED lamps, thus aligning the specification with the existing requirement for LED lamps, and introducing a new requirement for CFLs. Since then, EPA has indicated that stakeholders have consistently commented that in order to achieve a positive R9 for compact fluorescent lamps, significant redesign with deep red phosphors, especially for warmer color temperatures, will be required. We recognize that as a result of these changes, these lamps’ cost will increase and their efficacy will decrease. Stakeholders have also provided data demonstrating that a modest increase in R9 is imperceptible to the human eye. In response to this input, CEE supports EPA’s decision to remove the requirement for CFLs and to start collecting R9 performance data for all lamps in order to monitor this color quality metric and adjust the requirement as needed.

It is commonly understood that the color rendition of LEDs is best demonstrated using the R9-R12 color samples. The R9 value (saturated red) is important to achieving a quality environment of color rendition because color rendering of deep reds by LED products can vary significantly. Given EPA’s current proposal to apply a minimum R9 value of zero or greater solely to LED lamps, some CEE members suggested that EPA ought to consider further tightening the standard by raising the R9 requirement to greater than 50. These efficiency program administrators believe that positioning ENERGY STAR to recognize only those LED lamps that are designed to provide superb rendering of deep reds will greatly improve the reputation of LED lamps with respect to color quality. Based on individual conversations with manufacturers, CEE members have also indicated that applying this higher R9 requirement should not impose a significant incremental cost burden on manufacturers.

Consider Moving Towards 4-step MacAdam Ellipses for LED Lamps

As indicated in our Draft 1 and 2 comment letters, CEE supports the increased stringency of the color requirements, including correlated color temperature (CCT), color rendering index (CRI), color maintenance, and color uniformity, so long as the cost implications related to testing don’t disadvantage or prohibit promotion in programs. Given the current state of manufacturing and the associated cost implications, we understood EPA’s decision to revert back to the less

stringent 7-step MacAdam ellipses / ANSI quadrangles, which allows products displaying greater deviations from the specified color temperature standard to pass testing. However, CEE members likely would support a move towards the stricter 4-step MacAdam ellipses / ANSI quadrangles (and thus allowing less deviation from the standard) in future specifications in order to more effectively tighten the color consistency requirements, particularly if evidence suggests that the cost impacts of applying tighter criteria are not overly burdensome or can be appropriately balanced against the benefit of improved product quality.

Recommend Dimming Requirements be Included in Version 1 of the Specification

Dimming capability continues to be a high priority for efficiency programs and CEE reiterates its strong desire to see dimming performance requirements included within Version 1 of the lamp specification. We are highly encouraged by EPA efforts in concert with industry stakeholders to develop a definition, method of measurement, and compatibility metric for dimmable lamps. In particular, we are pleased to see the release of a Draft Recommended Practice for measuring light output on a dimmer, light source flicker, and noise. CEE is also interested in the recent round robin testing and methods EPA plans to apply to determine passing criteria for dimmable lamps, and looks forward to seeing the results of this testing reported to stakeholders.

Expand Recommended Practices for Testing Dimmable Lamps and the Level of Specificity within the Specification

After review of the Draft Recommended Practices for dimming, CEE has two major recommendations. First, we note that chromaticity is not currently measured during the dimmed state. Due to concerns regarding color shift when lamps are dimmed, CEE recommends that a chromaticity measurement be added. Secondly, we recommend that the high level elements from the Draft Recommended Practices be incorporated in the dimming requirements of lamp specification as an informational reference.

Request Data on the Effectiveness of Labeling Strategies; Otherwise Oppose the Removal of Elevated Temperature Testing Requirements

One possible reason for consumer dissatisfaction with ENERGY STAR lamp purchase is if the lamp fails prematurely. One known reason for premature failures is that the lamp is installed in an application for which it is not intended and that environment causes the ballast to overheat. There are different solutions available to combat this issue. One is a technical approach, which requires lamps to use more robust components and be able to withstand higher temperatures; the second is to reduce incorrect installations by educating consumers about proper applications

for the different lamp types. The current ENERGY STAR lamp specifications require elevated temperature testing for CFL reflector lamps and omnidirectional and directional LED lamps and CEE continues to agree with the position outlined in Draft 1 of the ENERGY STAR Lamp Specification that argues for including this testing in the lamp specification (referenced below).

“Originally employed in the Compact Fluorescent Lamp specification and later referenced in the Integral LED Lamps spec, the Elevated Temperature Test has proven an effective means to evaluate the robustness of a lamp in the thermal environments created by luminaires. Experience has shown that despite information on product packaging and myriad consumer education efforts, consumers frequently install the wrong type of lamp (esp. CFLs) into fixtures for which the lamp was not designed. A common example of this misapplication is the installation of bare spiral CFLs – marked “not for recessed” – into recessed can fixtures. This misapplication, EPA believes, is feeding a misunderstanding that CFLs do not last as long as the claimed rated life. For this reason, the Agency is proposing to extend the Elevated Temperature Test to all lamps with an input power greater than or equal to 5 watts. With this, EPA believes consumers are less likely to have disappointing experiences with qualified lamps which often lead to generalizations that efficient lighting does not live up to long life claims.”

As stated in our draft 1 and 2 comment letters, given consumer dissatisfaction related to premature failure of CFLs, CEE applauds the inclusion of requirements for rapid cycle stress and elevated temperature testing for all replacement lamps. We recommend that these requirements be included in the final version of the specification.

However, CEE also appreciates EPA’s desire, as expressed in Draft 4 of the specification, to balance the testing burden on lamp manufacturers with cost considerations, and hence generally follows the logic for exempting lamps labeled as “not for use in enclosed fixtures” and “not for use in recessed luminaires” from completing elevated temperature tests since these products are not intended to be installed in those environments. Though CEE supports the desired outcome, we are not convinced that EPA has sufficiently demonstrated that the required labeling strategies are effective at preventing consumers from installing lamps in enclosed and recessed applications. As a result, CEE asks that EPA provide market research or other data that clearly shows that these labels positively influence consumer behavior or else to continue to require elevated temperature testing for omnidirectional and directional lamps.

Greater Clarity is Needed Regarding EPA’s Rationale for Applying One Performance Level across Lamp Technologies

CEE supports EPA’s efforts to uphold the ENERGY STAR® Products Program Strategic Vision and Guiding Principles. Specifically, we call out the language under guiding principle number four:

“Where a product category consists of multiple technologies, ENERGY STAR specifications

generally take a technology neutral approach to helping consumers identify the most efficient products within the category. In doing so, EPA remains mindful of market dynamics and representation of various technology types in the market. For example, the ENERGY STAR specification for displays applies one performance level regardless of whether the technology is CRT or LCD. In situations where technology is a dominant factor in consumer choice, such as gas furnaces versus oil furnaces (because of the fuel type), ENERGY STAR specifications can be divided into sub-categories with different performance requirements, as appropriate.”

In recognition of the policy represented above, the question at hand is whether technology type is the decisive factor in a consumer’s lamp selection in every case, select cases, or only for particular applications. Furthermore, in the case where a consumer makes the selection based on technology, there are a number of possible drivers, including everything from response to a marketing “buzz,” to selection based on a unique attribute and its suitability for the specified application. We also recognize that other consumers are simply looking to replace a lamp in a standard socket in order to meet a general task purpose, and that in many cases, this decision disregards technology. Based on the fact that all of these circumstances can coexist, that is, one consumer may view a socket as requiring a general task lighting solution, where another could view the same exact socket as requiring a particular type of lighting technology, and given the market dynamics, CEE believes the Brand is best served when EPA discloses the particular assumptions that led it the proposed approach.

As we have expressed previously, some residential and commercial lighting program administrators support more stringent efficacy requirements, and yet recognize that the application of tighter criteria could limit the ability of CFLs to qualify. These same members have expressed interest in seeing higher efficacy, color, and warranty requirements given the technical potential and performance of lamps in the market. CEE is pursuing the potential for more stringent requirements—as potentially embodied in a CEE advanced lighting specification and/or ENERGY STAR Most Efficient level—that would enable recognition of only the top performing lamps in the market and could also facilitate new product development. We believe this approach will support the program objective of promoting the next generation of highly efficient lamps and capturing greater savings.

Thank you for your consideration of these comments. Please contact CEE Program Manager Eileen Eaton at (617) 337-9263 with any questions.

Sincerely,



Ed Wisniewski

Executive Director