

March 19, 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 3 Specification*, released by the US Environmental Protection Agency (EPA) on December 21, 2012.

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 energy efficiency 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 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. In fact, the process of engaging with our members during the development of these comments has caused us to reconsider our own industry's approach to the lighting market.

Recommended Approach for Advancing Lighting Performance

CEE strongly supports a technology neutral philosophy, which has caused us to arrive at some significant observations that suggest a new or adjusted approach is needed to address diverse program needs. These approaches are still developing, but as they evolve, we intend for them to remain consistent with our overarching philosophy that specifications should be designed to support efficient products and practices based on market performance factors, independent of the underlying technology (e.g. CFL and LED).

Firstly, CEE believes it will be useful to distinguish among different lamp applications in the market (e.g. omnidirectional, directional, and decorative), drawing distinctions based on such criteria as configuration and component differences, and perhaps also how these products are sold and purchased at retail. We believe that differences among lamp designs, as well as among their intended applications, impact their overall performance. Following from this, we believe that assigning separate efficacy requirements to different lamp types best enables recognition of the highest performing lamps that are suited to each application. This approach retains consistency with technology neutrality, and yet allows products with similar characteristics to compete on a level playing field that is appropriate to their particular design and usage. Furthermore, we believe ENERGY STAR has signaled its support for such a path by developing separate efficacy requirements for omnidirectional, directional, and decorative lamps. CEE therefore suggests it is appropriate to consider requirements that would allow consumers and efficiency program interests to distinguish further among these product types.

During its deliberations, CEE identified among its membership, two types of lighting programs who are operating under differing market dynamics and, as a result, expressed different preferences regarding the qualification objectives of the ENERGY STAR Program. One of these program types is suited best when a significant number of lamps of varying technologies are able to achieve ENERGY STAR qualification. This approach is most consistent with the needs of more traditional lighting programs where availability of a wide variety of product options, competitive prices, and a high volume of general sales are important considerations. The second program type places greater emphasis on increased unit performance to enable greater savings per customer incentive, and also values the role of supporting the advancement of high performance products in the market. To meet these more advanced lighting program objectives, CEE believes that an additional effort separate from the current ENERGY STAR lamp specification in the form

of either CEE advanced tier or ENERGY STAR Most Efficient level may represent an attractive approach.

We believe this overarching approach outlined in the two paragraphs above maintains consistency with our shared interest in preserving a technology neutral philosophy, and yet allows for both program types to coexist and contribute to the advancement of overall lighting performance.

The above observations and philosophical approach directly inform the following specific comments.

Support the Removal of Semidirectional and Nonstandard Lamps

In Draft 1 of the lamp specification, EPA proposed the inclusion of non-standard lamps. We understood that EPA's thinking at that time was that solid state lamps (SSL) need not conform to historical American National Standards Institute (ANSI)-standardized shapes to provide high quality, efficient illumination, and that in some instances, abandoning the limitations of ANSI shapes might enable greater application efficacy. EPA sought input from stakeholders on an approach to labeling non-standard lamps that would ensure high efficacy, while closing a loophole through which lamps not meeting standard shape requirements could gain the ENERGY STAR label.

In Draft 2 of the lamp specification, EPA included semidirectional lamps as a new category of non-standard lamps with the intention of covering products which are neither omnidirectional nor directional, as defined by the light distribution requirements. In response to this proposal, CEE expressed concerns about the quality and readiness of semidirectional lamps, and noted that at least several efficiency programs had declined to promote semidirectional lamps due to concerns about consumer satisfaction, as described further below.

Because incandescents have been the primary lamp technology sold at retail for the last century, programs assume that consumer expectations regarding lamp performance, including light distribution, are grounded in their long experience with these lamps. Since standard A-lamp incandescents provide omnidirectional light distribution, we believe this is what the majority of consumers expect upon purchase. Conversely, since the properties of semidirectional lamps remain undefined, and consumers have no previous experience with or understanding of these

lamps, we do not believe that a consumer is able to appropriately distinguish semidirectional from omnidirectional lamps at retail based on their physical appearance, nor will they have any familiarity with their light distribution patterns. As a result, program administrators believe that a consumer purchasing a semidirectional product may well expect omnidirectional light distribution, and hence be disappointed when the product doesn't meet that expectation.

In our most recent comment letter, we did offer support for EPA's efforts to educate consumers about these light distribution differences through black and white light output diagrams on the packaging for these products, however we lacked a basis of knowledge to state whether this approach would be sufficient to educate customers about these differences.

In Draft 3, EPA shared its analysis of the current use of the non-standard SSL pathway, revealing that it is not being used as originally intended, but is instead being exploited as a loophole for products that cannot meet ENERGY STAR shape and light distribution requirements. In addition, EPA's recent market surveillance indicates that package labeling requirements are not adequate to address the consumer confusion posed by nonstandard and semidirectional lamps. For these reasons, CEE supports EPA's proposal to remove semidirectional and nonstandard lamps as eligible ENERGY STAR categories.

Support Reporting Beam Angle for Directional Lamps

Unlike the previous categories discussed, directional lamps have been in the market for over 50 years. Based on this, CEE believes that consumers are familiar with the physical appearance of these products, and have an understanding of the applications for which they are best suited and the type of light distribution they provide. CEE supports EPA's proposal to report beam angle on the packaging of all directional products based on the opinion that such content will aid consumer purchase of replacement flood type lamps. In assessing the relative importance of beam angle and light output in consumer purchasing decisions, and we agree with EPA that beam angle is the more critical element as it is the primary differentiator between these lamp types and standard, omnidirectional lamps.

Support the Elimination of Separate Commercial Requirements

In Draft 2, EPA proposed more stringent requirements related to lifetime and power factor for commercial lamps, in recognition of increased hours of use as compared to residential lamps, and the impact of power factor in commercial applications. In Draft 3 however, we note that EPA has removed the language associated with the higher commercial grade requirements, on the grounds that its implementation would create potential complications in the marketplace with existing “commercial” lighting products, and would potentially confuse consumers. The commercial tier designation was originally introduced to allow large purchasers or efficiency program implementers to better distinguish between the performance and longevity of ENERGY STAR lamps; but EPA has indicated that a better solution is to rely on the new filtering capabilities of the certified product list.

Similarly, efficiency program’s have experienced challenges promoting only commercial lamps based on the difficulties faced by consumers in distinguishing between commercial and residential lamps at retail. Given that residential and commercial lamps are often sold through the same retail channels, and the fact that it can be difficult to distinguish among their respective qualities, we agree that a move toward separate ENERGY STAR requirements for commercial lamps would provide little value, and could in fact create potential complications in the market. CEE has concluded that separate commercial grade requirements are not appropriate given the similar sales channels, and thus supports EPA’s decision to eliminate separate requirements for commercial lamps.

Despite our position above, we support the availability of a filtering function on the ENERGY STAR qualified product list as some CEE members are interested in differentiating among lamps that exhibit longer lifetimes and higher power factors. With the understanding that this filtering functionality may not provide any direct benefit to the consumer, it does serve a unique program need while avoiding other aspects of market confusion that we believe would arise given separate commercial and residential requirements.

Recommend Consistent and Higher Efficacy Levels for All Wattage Lamps

CEE understands EPA's desire to align the wattages in its lamp specification with test procedures in US Department of Energy (DOE)'s Code of Federal Regulation Title 10 section 429, but would like to better understand the basis for applying different lumen per watt requirements by wattage bins. Our understanding is that DOE adopted the wattage bins from the ENERGY STAR CFL Specification Version 1.0, which took effect in 2001. In an attempt to understand the technical basis for these wattage bins, CEE conducted its own product analysis based on a scatter plot of all currently qualified ENERGY STAR lamps that looked at wattage as compared to efficacy. Based on this analysis, we could perceive no correlation between efficacy and wattage. CEE would appreciate the opportunity to gain a better understanding of EPA's technical basis in support of a specification that favors lower wattage lamps. If none can be demonstrated, CEE suggests that efficacy requirements should be made consistent across all wattages.

Moreover, the efficacy requirements in Draft 3 are less stringent by five lumens per watt (relative to Draft 2) for products that use between 10 and 20 watts. The Draft 3 proposal introduces a significant decrease in both efficacy and potential energy savings among these products. While a decrease of five lumens per watt may appear modest, we are concerned that this amounts to a measurable impact on savings, given that these wattage bins represent a significant percentage of ENERGY STAR qualified lamps, as shown in Table 1, and no technical or other bases have been provided to warrant such consideration.

Table 1 - Share of ENERGY STAR Lamps by Type and Wattage Bin

| Lamp Type | Wattage Bin Impacted | Percentage of Total Lamps on the ENERGY STAR List | Proposed Decrease in Efficacy Requirements (Draft 3) |
|-----------------|----------------------|---|--|
| Omnidirectional | 10-14.9 watts | 38% | 60 to 55 lumens/watt |
| Directional | 10-19.9 watts | 52% | 45 to 40 lumens/watt |
| Decorative | 10-14.9 watts | 30% | 50 to 45 lumens/watt |

CEE therefore recommends that the efficacy requirements be revised to reflect levels that are no lower than those proposed for higher wattage lamps (10 watts or greater) in Draft 2: i.e., 60 lumens/watt for omnidirectional lamps, 45 lumens/watt for directional lamps, and 50 lumens/watt for decorative lamps.

Recommend Additional Distinction between Lamp Types to Account for Product Performance Variations

Aside from wattage rating, we recognize that configuration and component differences among the various lamp types can significantly impact a product's efficacy in a particular application. At retail, lamps are often grouped in the following categories: decorative, flood & spot, multipurpose or household, specialty, and outdoor use. CEE believes that the manner in which these products are grouped at retail is broadly representative of these configuration and component differences, and that these classifications may provide basis or model under which to set different efficacy levels by product type (e.g. omnidirectional, directional, and decorative). We also suggest that this approach can be extended to encompass other major applications, such as specialty lamps. Specifically, CEE suggests that EPA may wish to consider developing separate efficacy requirements for lamp configurations that face technical limits to higher efficacy where a particular lamp configuration is inherent to the end use application. For example, additional product categories or subcategories described under specialty lamps could include covered and dimmable products. Again, the goal of separating out these different lamp types would be to enable technology neutral recognition of the highest performing lamps within each product category. This approach would allow products with similar characteristics to compete on a level playing field appropriately suited to their particular design and usage, and would better position programs to recognize the top performers in each category, and claim the associated energy savings.

Seek Clarity 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 is 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.

Many Program Administrators Desire Higher Performance Standards to Capture Greater Savings

CEE understands that the proposed efficacy levels are based on the performance of current ENERGY STAR lamps and are designed to ensure that a significant number of both CFL and LED lamps are able to qualify. A segment of CEE members are very supportive of this approach as they are interested in promoting a variety energy efficient lamp technologies in the market (i.e., both CFLs and LEDs), especially given the current breadth of product availability and retail price points. However, there is also a segment of residential and commercial lighting program administrators that supports more stringent efficacy requirements, and we recognize that this could limit the ability of CFLs to qualify. These same members have expressed interest in seeing higher efficacy and color rendering requirements given the technical potential and performance of lamps in the market. Because efficiency programs may only be able to claim savings based on the ENERGY STAR requirement for the lamp as opposed to actual performance, they believe that higher requirements could indeed position them to capture additional energy savings. These more stringent requirements—potentially as embodied in a CEE advanced tier and/or ENERGY

STAR Most Efficient level—would also enable recognition of only the top performing lamps in the market and could also facilitate new product development, which would support the program objective of promoting the next generation of highly efficient lamps.

Recommend Dimming Requirements be Included in the First Version of the Specification

Dimming capability continues to be a high priority for efficiency programs. We are encouraged by EPA efforts in concert with industry stakeholders to develop a definition, method of measurement, and compatibility metric for dimmable lamps. CEE is particularly 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. CEE also reiterates its strong desire to see dimming performance requirements included within Version 1 of the lamp specification.

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