Consortium for Energy Efficiency

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June 23, 2010

Alex Baker
US Environmental Protection Agency
Ariel Rios Building 6202J
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Dear Mr. Baker:

The Consortium for Energy Efficiency (CEE) respectfully submits the following comments in response to the ENERGY STAR Luminaire Draft 1 Version 1 Specification, released by the Environmental Protection Agency (EPA) on May 10, 2010. The following comments, which were developed by the CEE Residential and Commercial Lighting Committee (the Committee), are supported by the organizations listed below.

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 43 U.S. states and 8 Canadian provinces. In 2009, CEE members directed over $6 billion of energy efficiency program budgets in the two countries. In short, CEE represents the groups that are actively working to make ENERGY STAR the relevant platform for energy efficiency across North America.

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.

Commercial Luminaires

CEE members view lighting as a significant end use in the commercial sector; according to the 2009 CEE Commercial Lighting Program Summary, there are 80 member lighting programs in

operation across the U.S. and Canada. To be effective, these programs rely on performance specifications that: 1) deliver considerable energy savings over baseline products, 2) identify high quality products, 3) are based on reliable and repeatable test procedures, and 4) meet their customers' other expectations in terms of performance and longevity.

We understand that ENERGY STAR is currently considering whether commercial luminaires can be covered in a manner that is consistent with the current brand tenets. CEE looks forward to engaging with EPA to help determine whether (and if so under what circumstances) it makes sense to expand the brand to cover these products. Given efficiency programs' investment in the ENERGY STAR brand and their desire to make use of the ENERGY STAR designation in all sectors with customer groups that are likely to benefit from the differentiation that the label provides, CEE lighting program administrators see the potential benefits to including commercial luminaires in the program. However, CEE has not evaluated the brand-level implications of including commercial lighting products with the Commercial Whole-Buildings Committee or the CEE Board Committee on ENERGY STAR.

If stakeholders agree that an ENERGY STAR label is warranted for commercial and industrial lighting applications, CEE would like to better understand how an ENERGY STAR presence in commercial lighting would fit within the broader ENERGY STAR approach to the commercial sector, which focuses on assessing and improving efficiency at the whole building level. CEE asks that ENERGY STAR work with affected stakeholders (including the CEE Committees referenced above) as quickly as possible to determine the program's role in the commercial sector so that the outcome of these deliberations can be incorporated in efficiency program planning efforts.

Categorization of Luminaires

At a conceptual level, CEE supports requiring all light fixtures to undergo luminaire photometry for the following reasons. First, luminaire photometry provides the most accurate estimate of product's actual efficiency and light output in a setting that controls for relevant factors. Second, it accounts for luminaire losses. The combination of these two factors may allow efficiency programs to capture savings opportunities from well designed, efficient luminaires that were previously missed. For example, if a consumer installs an ENERGY STAR luminaire that is very efficient in delivering light to their specific task, they could purchase a lower wattage option. In order for programs to continue to support the purchase of ENERGY STAR products, it's important that all categories of the ENERGY STAR luminaire specification deliver significant energy savings to the end user.

However, we recognize requiring photometric testing for all luminaires would be overly burdensome to fixture manufacturers and as a result, could lead to decreased participation in the

ENERGY STAR Program. As such, CEE supports EPA's efforts to identify applications for which luminaire efficacy is not feasible or meaningful.

Based on our preference for photometric testing described above, CEE is pleased to see the number of applications that are currently proposed to be tested at the luminaire level. However, we seek greater clarity on why these specific applications were selected as "directional" products, as it appears that the definition for "directional lighting" doesn't provide a sufficient basis for the current categorization. CEE asks that ENERGY STAR enhance the definition of "directional" and "non-directional" lighting to enable a clear distinction between applications that fall into each category.

We also seek greater clarity on the definition for "inseparable luminaires." For example, in some luminaires there is one embedded module that includes all components, while in other products, the chip, chip and driver, or the heat sink can be replaced separately. When a luminaire is inseparable, must it be tested photometrically?

Lastly, CEE requests that definitions be developed for those directional applications that are not currently defined: outdoor post or arm mounted luminaires, surface mount with directional heads, and under-cabinet luminaires.

Efficacy Levels

CEE asks that ENERGY STAR provide all stakeholders with the data and analysis it used to establish the efficacy levels that are proposed in Draft 1 of the specification. Until CEE receives this information, it is difficult for us to comment specifically on the current efficacy levels. Generally, however, we were pleased to note that the proposed 70 LPW level for source efficacy is an improvement over the specifications currently in place and seems to reflect the market's movement toward higher efficiency over the past few years. However, given the efficacy of current ENERGY STAR qualified luminaires and the capability for technology improvements as outlined in DOE's Multi-Year Program Plan for solid-state lighting (SSL), the proposed luminaire efficacy levels appear to be low. CEE encourages ENERGY STAR consider trends in product innovation and to set efficacy levels that maximize energy savings when the specification becomes effective in June 2011, while maintaining consistency with the brand tenants.

To ensure accurate and reliable test results, CEE believes that industry standard test procedures are the strongest basis for ENERGY STAR lighting specifications. We understand that LM XX-1X—a testing procedure referenced in the draft specification—is still under development but is scheduled to be finalized before the luminaire specification becomes effective. CEE asks that once

LM-XX-1X becomes finalized, EPA inform stakeholders of that development and identify whether there were any changes made that might impact its use within the ENERGY STAR Program.

Lumen Maintenance

In the draft specification, EPA identifies two options for measuring lumen maintenance. Option 1 would measure lumen maintenance at the chip level using the IES LM-80-08, while Option 2 would measure lumen maintenance at the luminaire or light engine level, taking into account degradation of the driver and any secondary options. EPA has stated a preference for Option 2 within the notes section of the draft specification. CEE generally agrees that Option 2 appears to offer a more robust examination of lumen maintenance, however we have a number of outstanding questions, listed below. Once we have more information, we will consider commenting on the specific proposal in the draft specification.

What is the status of test procedure IES LM-xx-1x?

What is additional cost and time for manufacturers for Option 2?

Is 6,000 hours enough testing to determine whether the driver will last?

Is it possible just to add a driver test to Option 1?

Lifetime

The draft specification includes a proposal that manufacturers would not be allowed to claim over 25,000 or 35,000 hour lifetimes for their products (depending on product type). CEE understands the purpose of this requirement is to prevent manufacturers from overstating lifetime claims based on 6,000 hours of testing and we support ENERGY STAR's efforts to protect the consumer. However, the current proposal would affect the longevity of efficiency programs' savings estimates and their cost/benefit calculations. For example, if the finalized TM-21 test report indicates that a product lasts 50,000 hours, efficiency programs would like to "count" on those savings for that entire lifetime, at least for higher hours of use applications. We ask that ENERGY STAR further consider the implications of this requirement on efficiency programs and perhaps allow manufacturers to claim greater lifetime if they provide sufficient data (e.g. test reports indicating they are under-driving the LEDs or performing more than 6,000 hours of testing).

Minimum Light Output

The proposed minimum light output for non-directional luminaires is a minimum 850 lumens, which is roughly equal to a 60-75W incandescent. While CEE understands EPA's desire to prevent

under-lighting and falling short of consumers' expectations, we are concerned that the proposed minimum lumen level could lead to over-lighting in some applications. We ask that ENERGY STAR further consider this requirement, specifically whether it makes sense to have a minimum light output requirement for all non-directional luminaires versus specific applications, such as outdoor and to provide further rationale for why 850 lumens is the desired minimum level.

Correlated Color Temperature (CCT)

In the draft specification, EPA has identified allowable CCTs up to 4100K for indoor luminaires. We note that it is easier for SSL manufacturers to produce higher efficacy luminaires at cooler color temperatures and want to prevent a situation where the majority of ENERGY STAR luminaires are at the cool end of the spectrum. Therefore we support this requirement with the understanding that it will help ensure that the color of ENERGY STAR-qualified luminaires meets consumer expectations in terms of warmth and consistency. However, we ask ENERGY STAR to consider expanding the range of allowable CCTs in the future once there is significant market share of ENERGY STAR luminaires at warmer color temperatures. We believe that a full range of color temperatures would more completely meet the needs of consumers (commercial customers in particular) and enable ENERGY STAR luminaires to be used in a wider range of applications.

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

Sincerely,

Marc Hoffman

Executive Director

CC: Richard Karney, DOE

Jim Brodrick, DOE

Supporting Organizations

Avista Utilities

BC Hydro

Cape Light Compact

Efficiency Vermont

Lawrence Berkeley National Laboratory

National Grid

New York State Energy Research and Development Authority

Northeast Energy Efficiency Partnerships

NSTAR Electric & Gas

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