August 5, 2009

Richard Karney
US Department of Energy
1000 Independence Avenue SW, EE2J
Washington, DC 20585

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

Dear Mr. Karney and Mr. Baker:
The Consortium for Energy Efficiency (CEE) respectfully submits the following comments in response to the proposed criteria for ENERGY STAR Solid State Lighting (SSL) Outdoor Area & Parking Garage Luminaires, released by DOE on July 1, 2009. CEE's continuing interest is in having an effective ENERGY STAR Program that includes SSL, and therefore our comments are addressed to both EPA and DOE. CEE's previous comments on ENERGY STAR SSL stand and are supplemented by this letter.

The following comments, which were developed by the CEE Lighting Committee (Committee), are supported by the organizations listed below.

Overarching Comments on Program Coordination

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 35 U.S. states and 5 Canadian provinces. In 2008, CEE members directed 83 percent of electric efficiency program budgets and 90 percent of gas 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 members highly value the role ENERGY STAR plays in differentiating energy efficient products and services that they support locally. For ENERGY STAR to effectively play this role, we believe it is critical that there is consistency across products and services regardless of the managing agency. CEE members need ENERGY STAR to develop and convey consistent messages to stakeholders and to speak with one voice.

As we have noted in previous comments, there are conflicting specifications for ENERGY STAR lighting. These include specifications for discrete SSL applications (Category "A"), general illumination products (Category "B"), and decorative products (RLF, v. 4.3). We have raised concerns about multiple SSL specifications because they hinder members' use of ENERGY STAR in their promotional activities. For example, given the multiple specifications currently in place, members cannot be assured that products with the ENERGY STAR label will have equivalent performance. As a result, some CEE members are considering the promotion of SSL products that do not necessarily adhere to either definition ascribed by the two agencies and are creating their own basis for inclusion in their programs. This type of program approach presents

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difficulties in using the ENERGY STAR label as a marketing tool. The implication is a diminished value of ENERGY STAR and potentially confusing messaging to consumers.

We look to EPA and DOE to resolve these issues as soon as possible with the goal of enabling greater leverage of ENERGY STAR for greater lighting related savings. We look forward to the swift resolution of the confusion caused by conflicting specifications for ENERGY STAR SSL and stand ready to assist in any way possible.

Technical Comments on Proposed ENERGY STAR Requirements

We continue to emphasize that our greatest need is for a unified ENERGY STAR lighting program that accommodates and offers consistent treatment of solid state light sources relative to other sources of lighting. With that said, CEE members have considered the recent proposal by DOE and have developed technical comments, which are grouped into several categories below. Due to the complexities associated with these product categories, we believe a 3rd round of stakeholder review and comment is needed before this specification is finalized to clarify additional points.

Overarching Comments for Outdoor Applications

Approach to Setting Efficacy

The cover letter circulated with the proposed specification indicates that efficacy levels for these applications are set to yield at least 20% energy savings over the dominant incumbent light source for the application in question. CEE is withholding comment on the specific efficacy levels proposed under the specification (though our initial analysis indicates very few products qualify and thus, they may be too stringent) until ENERGY STAR provides additional information on this approach.

Specifically, we require more information on the methodology and data sources used to define the dominant incumbent technology for each application. One overarching question is for which product categories has this methodology been used in the past, and why? It is our understanding that for each application, the efficacy of 100 fixtures was reviewed, the 75th percentile efficacy level was selected as a baseline, and a 20% improvement was calculated from this baseline. Specific questions are regarding this practice are: 1) Is our understanding of this process accurate? 2) How were the fixtures were selected, e.g. was sales volume considered? 3) Were the fixtures selected representative of the different light sources commonly used in different applications? Once we have a complete understanding of the methodology used to develop the dominant incumbent technology baseline, we will be in a better position to comment both on that methodology and the resulting proposed efficacy levels.

Controls

In past comment letters, CEE has drawn attention to the importance of controls and dimming to energy efficiency programs. Reasons for this interest are related to market acceptance and demand response (presuming that controlled lighting results in energy

and peak savings). While we recognize the challenges associated with achieving fully controllable lighting (identified in the DOE LED Application Series document: Dimming LEDs), there are also challenges posed by delaying such a requirement. For example, due to the long lifetimes of SSL luminaires, each ENERGY STAR fixture installed that is *incompatible* with controls represents a potentially significant lost opportunity. To help address this issue, we urge ENERGY STAR to begin working in earnest with all stakeholders on the issue of dimming and controls so that these features can be incorporated into the specification in the very near future.

Outdoor Pole-mounted Area and Roadway Luminaires

Scope

The type and number of applications encompassed by this proposed category is quite broad, including park pathways, parking lots, suburban streets, and major highways. We understand that there is commonality across these applications in terms of desired efficacy and luminous flux and that any given fixture may be appropriate for use in several of these applications. Both of these points argue for the large scope outlined in the proposed specification. However, this approach limits ENERGY STAR's ability to add requirements that are appropriate and would increase energy savings within some applications but that may not be appropriate for others. One example—though there may be others—is motion and photo sensing controls, which may be desirable for fixtures illuminating walkways and plazas but not necessarily appropriate for roadway fixtures. Before finalizing this structure, CEE asks ENERGY STAR to explain how this scope is addressable within a single category and consider how any drawbacks are being addressed.

Minimum Light Output

In its past comments, CEE asked ENERGY STAR to consider both initial and mean lumens in setting minimum light output levels to accommodate for the fact that SSL and incumbent technologies have different lumen depreciation curves. We note that in the second draft, the proposed minimum light output requirements for all three applications have been reduced and we appreciate the information about which incumbent technologies were used as benchmarks for the outdoor wall-mounted area and parking garage/canopy luminaires. However, no such detail was provided for the outdoor pole-mounted area and roadway luminaires category. We request additional information from ENERGY STAR regarding the decrease from 2,300 initial lumens to 1,000 initial lumens for this application. Specifically, was the proposed requirement for SSL chosen based on benchmarking to a 50W High Pressure Sodium replacement lamp?

Fitted Target Efficacy

In general, CEE supports the concept of evaluating fixtures based on the uniformity of light distribution and the two assumptions underlying the proposed metric. However, we require the additional information indicated below in order to fully evaluate the proposal.

Creating a new metric, Fitted Target Efficacy, to evaluate luminaire efficacy is a significant undertaking for the ENERGY STAR program. CEE asks for more information

about how the new proposed metric was developed and vetted with groups such as the Lighting Research Center, the International Dark Sky Association, and the Illuminating Engineering Society of North America, all of which have significant expertise in issues of uniform illuminance and glare.

CEE also seeks additional information from ENERGY STAR regarding why Fitted Target Efficacy is proposed for outdoor pole-mounted area and roadway fixtures but not for parking garage/canopy fixtures, where uniform illumination would also seem to be desirable. If there are any limitations to this metric, we ask that those be aired before it is finalized and incorporated into the program.

Maximum Luminous Flux

CEE requests additional detail as to why the proposed specification references, but is not fully consistent with, the Backlight, Uplight, and Glare (BUG) ratings as defined by IESNA-TM-15-07, which we understand is a widely accepted standard in the lighting industry.

CEE supports the 3.0% maximum luminous flux allowed in the 80-90° zones, though we believe that the 4.0% allowed in the 90-180° zone is too high. We suggest that the maximum luminous flux in the 90-180° zone be lowered and that the additional light be redirected to the 0-80° zone. This arrangement would continue to minimize glare in the critical 80-90° zone while also helping to minimize light trespass and dark skies issues.

Parking Garage/Canopy Luminaires

Earlier in this comment letter, CEE raised questions about the appropriateness of applying the same specification requirements to diverse applications within the outdoor pole-mounted area and roadway luminaires category. While we asked for ENERGY STAR to address the drawbacks of such an approach, we stopped short of recommending that certain applications be removed and placed into separate categories.

However, in the case of the parking garage/canopy luminaires category, we have reached a different conclusion. Lighting at petroleum filling stations represents an important efficiency opportunity as evidenced by recent pilots in Vermont and initial assessments by CEE members show no products that would meet all of the requirements set forth in the draft specification. Due to the differences in mounting heights between parking garages and petroleum filling stations and the differences in minimum light output levels, we recommend that canopies at petroleum filling stations be broken out as a separate application.

Thank you for your consideration of these comments. Please contact CEE Senior Program Manager Rebecca Foster at (617) 377-9265 with any questions.

Sincerely,

Marc J. Hoffman

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Executive Director

CC: Kathleen Hogan, EPA
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Supporting Organizations

Avista Utilities
Cape Light Compact
Efficiency Vermont
Midwest Energy Efficiency Alliance
New York State Energy Research and Development Authority
Pacific Gas & Electric
San Diego Gas & Electric
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