

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



OFFICE OF  
AIR AND RADIATION

September 15, 2008

Richard Karney  
ENERGY STAR Product Program Manager  
U.S. Department of Energy  
1000 Independence Avenue, SW, EE-2J  
Washington, DC 20585-0121

Dear Mr. Karney,

This letter is in response to your August 15<sup>th</sup> e-mail to stakeholders on the topic of additions to Category A of DOE's ENERGY STAR SSL criteria. We believe there are a number of important issues that need to be better understood and addressed before such an expansion of Category A is prudent. We have concerns that proceeding with this expansion prior to addressing these issues may interfere with, rather than help, the successful adoption of SSL fixtures by today's consumers. We encourage you to work with the U.S. EPA as well as other stakeholders to explore and address these issues prior to expanding the DOE specification.

Our overall concern is that we believe, consistent with a fifteen year program history, that the ENERGY STAR program should be a technology neutral program offering a level playing field across manufacturers and technologies that can meet established energy efficiency and quality criteria. Efficiency requirements for one technology should not be greater or less than the requirements for another technology. The result is that consumers receive the savings they expect from ENERGY STAR labeled products and many organizations can participate in the market place as part of manufacturing and delivering these products and their energy savings to the consumer. We appreciate that SSL technologies are new and have different qualities and that this requires the review and potential modification of existing testing procedures, as well as the development of new testing procedures as necessary. However while test procedures may vary, performance levels should not. Currently, the ENERGY STAR requirements for residential light fixtures offer about 75 percent savings over the typical incandescent alternatives. As we move forward to effectively incorporate SSL fixtures into the ENERGY STAR program, we want to be confident that (1) SSL light fixtures that earn the ENERGY STAR will perform at least as well as the light fixture products already earning the ENERGY STAR and (2) consumers will have a successful experience with the SSL fixtures that earn the ENERGY STAR.

EPA's program requirements call for a technology neutral performance level, which allows SSL to compete with other light sources in the marketplace on performance levels and EPA's requirements are consistent with how consumers purchase lighting products. We have also

outlined robust program requirements that do not limit consumer's choices of fixture types. However, at this point there has been insufficient discussion, analysis, and collection of data to know how the DOE approach to SSL will deliver on the two points above. Our key issues are as follows:

- We remain concerned that the efficiency requirements that go into effect under DOE's SSL specification on September 30, 2008 could result in the qualification of SSL fixtures that do not deliver the 75% savings (over incandescent) promised by the ENERGY STAR label for most residential fixtures. This concern also applies to the efficiency requirements outlined for the expanded set of light fixture applications.
- We are interested in a publicly accessible analysis of the information used to establish the "light loss factors" that DOE uses to establish efficiency criteria for SSL lighting applications. It is important that DOE show that these criteria routinely serve to recognize fixtures that are at least as efficient as those earning the ENERGY STAR through the existing Residential Light Fixture requirements.
- We have concerns that a test procedure that emphasizes the efficiency of the whole fixture will first be used to recognize fixture types that do not meet consumer aesthetics, a concern that should be addressed prior to expanding the DOE specification to light fixtures that are more decorative in nature. We do not want the ENERGY STAR to become inadvertently associated with less desirable products nor for the first set of recognized SSL products to be less desirable.
- We remain concerned that an industry standard lifetime test for the DOE specification to be effective September 30, 2008 has not been established.
- We question the approach of "ratcheting" up energy efficiency requirements on a pre-determined schedule as opposed to one informed by market information such as product adoption rates, demonstrated energy savings, and product prices and whether this automatic approach helps consumers find efficient, cost-effective, quality lighting fixtures.

We believe the time to address these issues is now as DOE's proposed expansion to additional lighting applications greatly increases the overlap of the EPA and DOE efforts in residential lighting. For example, *ceiling mounted luminaires with diffusers*, one of the applications DOE proposes to add, is a category with over 5,000 models currently qualified under RLF 4.2. We are concerned that this proposed addition will create market confusion, as consumers will see ENERGY STAR fixtures side by side that could look identical but have different energy savings levels. It is paramount that the issues raised above are addressed so that we know that any *ceiling mounted luminaire with diffuser*, for example, earning the ENERGY STAR is delivering the expected energy savings while meeting other quality criteria. Our key issues are explained in greater detail below.

### **Efficiency Requirements**

We remain concerned that the efficiency requirements that go into effect under DOE's SSL specification on September 30 could result in the qualification of SSL fixtures that do not deliver the 75% savings (over incandescent) promised by the ENERGY STAR program for residential

fixtures in these product categories. It is important that ENERGY STAR fixtures deliver these savings both to meet consumer expectations and to provide organizations such as energy efficiency program sponsors a platform that delivers consistent energy savings as a result of their use of ratepayer dollars.

This concern also applies to the efficiency requirements outlined for the expanded set of light fixture applications. For example, DOE's proposed level of 30 lumens per watt (LPW) performance for ceiling mounted luminaires with diffusers appears to be too low. While other fixture types such as residential downlights benefit greatly from the directionality of LEDs, this is not the case with ceiling mounted luminaires. DOE is allowing each such SSL fixture a 40 percent correction factor, regardless of the opacity of the diffuser. Additional information is necessary so as to understand why DOE believes that the performance levels for these expanded categories will deliver the same savings as the products that will earn the ENERGY STAR through RLF v4.2.

### **Transparency in Selection of Light Loss or Correction Factors**

The selection of a light loss factor for use as a correction factor to determine performance parity with EPA's residential light fixture program is a very important decision. We believe that the testing, analysis, and decision rationale behind the determination of these factors should be made public so that there is a better understanding of their derivation and the overall level of performance equivalency.

### **Impacts on Consumer Choice**

An important question raised by the "whole fixture with correction factor" efficiency level is whether it will limit consumer choice by discouraging decorative lighting diffusers that use optically inefficient, but popular, diffuser types used by residential lighting designers, such as alabaster. Because of the importance of the proposed performance levels, DOE should provide documentation to explain how the proposal achieves the stated goal of performance parity with EPA's existing ENERGY STAR fixture program, while also offering a wide variety of fixture types common to the residential market.

### **Lifetime Test**

EPA is very concerned about the lack of an established test procedure for demonstrating LED life as part of the DOE process. Demonstrating LED life is one of the most important performance issues for SSL today. DOE has consistently indicated that it would not move forward with its program until test procedures were complete. Specifically, one of the key test procedures that DOE is relying on, LM-80 will not include a methodology to project LED life using interim data by September 30, 2008 as DOE had originally anticipated. In the interest of not repeating the hard lessons learned from CFLs, it is critical that the necessary time be taken so that any modification to LM-80 for purposes of projecting LED life be developed through an open process with input from a range of stakeholders. To address this concern, we request that DOE announce a delay in the effective date of the ENERGY STAR SSL specification until the test procedures are completed and there has been sufficient time to complete the necessary testing.

## **Ratcheting**

EPA believes DOE's stated approach to ratcheting, which is to move up the ENERGY STAR minimum requirements on a "ratcheting" schedule, raises important questions in terms of whether ENERGY STAR is the appropriate tool for advancing the Department's objectives. As described by DOE, this approach will likely lead to a constant flow of new products that are more efficient and more expensive than their predecessors. While driving technological advances is an important aspect of achieving greater efficiency within the lighting sector, the ENERGY STAR Program was not designed for this purpose. In fact, the ENERGY STAR Program has been successful by directing consumers to those products currently on the market that are broadly available, cost effective and perform the same or better than standard products.

## **Conclusion**

In light of the important questions and concerns outlined above, EPA requests that DOE delay its proposed addition of product categories at this time and instead undertake an effort in concert with the EPA to address these issues. EPA also requests that DOE delay the September 30, 2008 effective date for Category A until there is an established lifetime test as outlined above. We believe that working together and getting the program requirements right, rather than meeting pre-announced program dates is the important objective at this point. We look forward to continuing to work with you in maintaining the long term value of ENERGY STAR.

Sincerely,



Peter Banwell  
Manager  
ENERGY STAR Product Marketing