



## **CEE Comments on ENERGY STAR Program Requirements for Residential Light Fixtures Draft 1 Eligibility Criteria – Version 4.0**

The CEE Residential Lighting Committee (Committee) appreciates the opportunity to provide comments on the proposed changes to the ENERGY STAR Residential Light Fixtures specification. The Committee has been very supportive of this program since its inception and looks forward to working together to ensure its continued success.

The following comments and recommendations are made on behalf of the CEE Residential Lighting Committee and are supported by the organizations listed on page 6.

### **TOP PRIORITY RECOMMENDATIONS**

#### **1. Lamp Base Compatibility and ANSI Standardization**

The Committee supports EPA's efforts to provide guidance to manufacturers regarding pin base configurations by requiring ANSI-standardized bases be used whenever possible. However, the group strongly recommends that EPA create additional guidelines for manufacturers on this key issue.

The Committee's desired outcome is that consumers are able to easily identify and purchase replacement lamps for ENERGY STAR-qualified fixtures. The group has discussed the following potential course of action, which presumes that technology remains constant (e.g. that universal ballasts are not a viable option). Under this scenario, EPA could take up a recommendation raised at a January 2004 ALA meeting and begin work with NEMA and ALA to identify a small number of recommended lamp bases per wattage range. Following identification of the bases, EPA could develop a consumer-oriented identification system (e.g. color, number, letter, etc.), and establish associated labeling guidelines in the specification. The Committee urges EPA to consider this and other actions that would meet the stated objective while taking into account the current dynamic market and fast pace of technology innovation.

In addition, the Committee would like additional information from EPA as to why non-ANSI bases are allowed to be used at all, as allowing the proliferation of non-standard bases seems contrary to the direction that the group would like to see the specification head.

#### **2. Maximum Ballast Case Temperature**

The Committee is pleased that EPA has continued its emphasis on testing ballast temperatures, as numerous studies have shown that high ballast temperatures are correlated with decreases in ballast life and early product failure. Due to the importance of this issue, the Committee believes that manufacturer self-certification is not an acceptable path. The Committee strongly recommends that third-party testing and verification be required.

**3. Lamp Life Testing**

The CEE Lighting Committee supports EPA’s proposed requirement for lamp life testing, as it believes testing could help to prevent potential consumer dissatisfaction with ENERGY STAR products. However, in order to improve the likelihood of satisfying a consumer, testing should be required prior to labeling to prevent products that will fail early from ever earning the ENERGY STAR label. To that end, the Committee believes that 1,000 hours of testing before initial qualification is not sufficient. While full life (10,000 hour) testing prior to qualification would be ideal to demonstrate compliance, Committee participants recognize that the length of time required may be burdensome. Therefore, the Committee recommends that EPA maintain consistency with the DOE ENERGY STAR CFL Program, which requires lamp life testing for initial qualification be completed at 40% of rated life (4,000 hours).

In addition, due to the importance of temperature to performance, the Committee recommends that EPA require the lamp life testing be done at either elevated temperature or in a “real-world” environment. Testing of lamp ballast combinations should also be done in the base-down position to simulate the worst case scenario in terms of light output.

**4. Tier II Requirements**

The Committee supports EPA’s efforts to establish a Quality Assurance mechanism within the ENERGY STAR Fixture Program. However, the group strongly recommends that EPA provide more detail regarding what the Quality Assurance protocol might look like, how it would function, what would happen with products are de-listed, etc. The Committee suggests that EPA coordinate with the DOE ENERGY STAR CFL Program as they develop and implement a QA protocol of their own. In addition, the group recommends that the heading of the section should be re-titled “Quality Assurance,” for clarity.

**5. Replaceable Ballast Requirement**

The Committee supports the proposed requirement that ballasts be easily replaceable without damage to the housing or surrounding carpentry. This addition to the specification should enable consumers to more easily replace a ballast if it fails prematurely without having to replace the entire fixture (likely with a non-ENERGY STAR product).

As a related issue, the group recommends that EPA consider using the Lighting Research Center Line Voltage Socket “Design Competition” winner as a starting point in developing a specification component for line voltage socket bases. While placing easily replaceable ballasts between the line voltage socket and the lamp base offers many opportunities to manufacturers and designers, the Committee is concerned that the development of multiple base types could be confusing to the consumer.

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| <b>GENERAL RECOMMENDATIONS</b> |
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### **1. Efficacy Improvements**

The Committee strongly supports the increases in efficacy that EPA has proposed.

### **2. Lumen Maintenance Testing**

The Lighting Committee supports the inclusion of lumen maintenance testing at 40% of rated life. The group believes that consistent lumen output is a key determinant in consumer satisfaction with an ENERGY STAR fixture, and lauds EPA for including this important test as part of the specification. However, as with lamp life testing above, the Committee urges EPA to require that the testing is done prior to, not after, initial qualification is granted.

### **3. Eligibility of Incandescent Lamps with Sensors**

Several Committee members raised anecdotal evidence that the inclusion of incandescent lamps with sensors in the specification is detrimental to the program. They cited anecdotal evidence from their programs that these fixtures do not function as intended once they are installed. The Committee's recommendation is that EPA consider requiring manufacturers to perform additional testing for this product category to ensure that the sensors are fully functional in a variety of outdoor conditions and over time. Specifically, the Committee has concerns about the performance of sensors when they become dirty, and recommends that EPA develop a test that is a proxy for this condition that can be performed prior to each fixture earning the ENERGY STAR label. If this testing demonstrates significant problems across the product category, the Committee recommends that EPA consider the removal of incandescent fixtures with sensors from the program.

### **4. Reflector Testing**

Due to the diffuse light output from CFL recessed cans, anecdotal evidence demonstrates that many consumers are disappointed with perceived low light levels. The Committee recommends that EPA institute a test of fixture efficiency with a minimum qualifying level to address this problem.

### **5. Removal of Magnetic Ballasts**

The Committee supports EPA's stated goals with regard to the exclusion of magnetically ballasted products from the program. The group agrees that acceptable starting times, low levels of noise, and high efficacy levels are all important to the consumer, and to the ultimate success of the ENERGY STAR Fixture Program. However, the Committee recommends that EPA consider creating performance criteria within the specification that would achieve these goals, rather than disallowing magnetically-ballasted products altogether. While it is unlikely, it is not out of the question that a significant development in technology would allow magnetic ballasts to meet the objectives of the specification.

In the event that EPA pursues the prescriptive approach and excludes magnetic ballasts, the Committee seeks clarification as to whether they would be permissible in outdoor fixtures that use CFLs. The draft specification states that magnetic ballasts are allowed in

outdoor fixtures that use HID light sources, but does not explicitly state that they are disallowed for CFL sources. Because technically CFLs are a discharge source (though not an HID source), this ambiguity could lead to confusion. The group recommends that EPA clarify this point in the specification.

On a related topic, the Committee recommends that EPA maintain noise testing requirements for all outdoor fixtures that use magnetic ballasts. The group agrees with EPA that noise testing is unnecessary for fixtures that use electronic ballasts, though it urges EPA to maintain testing for magnetically-ballasted fixtures that are allowed.

#### **6. End of Life Protection**

Due to the relevance of this specification criterion to consumer safety, the Committee supports the proposed increase in testing for end of life protection for T4 and T5 lamps. However, Committee participants question why all fixtures are not required to have some form of end of life protection, and recommend that EPA consider strengthening this component of the specification.

#### **7. Requirement to Ship with Lamps**

The Lighting Committee supports the proposal to require fixture manufacturers to ship lamps with their fixtures, with the understanding that this will help to ensure the proper pairing of lamp with ballast and will help to lessen compatibility problems. The group would question EPA as to why recessed cans are exempted from this requirement, as lamp/ballast matching for this “high-risk” category of fixture is equally, if not more, important than other types of ENERGY STAR fixtures.

On a related note, the Committee would also like to express support for the requirement that lamps shipped with fixtures be labeled with manufacturer and model number. The Committee supports EPA’s contention that this will assist during third-party evaluation, and further states that the requirement should help consumers to find appropriate replacement lamps.

#### **8. Recessed Can Requirements – IC and AT**

The Committee supports the Insulated Ceiling (IC) and Air Tight (AT) testing and labeling requirements that EPA has proposed within this draft specification, and would like to make additional suggestions to strengthen the proposed changes.

First, the group recommends that the IC and AT ratings also be required to be printed internally within the fixture, not solely printed on the packaging. This addition would enable efficiency program (and building code) staff that inspect recessed cans to ensure that local requirements are being met. Secondly, the Committee recommends that the words, “or caulk” be removed from the draft specification (pg. 11), because they imply that qualification for a product specification rests with the installer of that product. On a related point, the Committee recommends that EPA consider creating recommended best practices for a proper installation of ICAT cans.



## 9. CCT Changes

The Committee supports the proposed changes with regard to measurement of Correlated Color Temperature (CCT), with the understanding that these changes will help ensure that the color of ENERGY STAR-qualified fixtures meets consumer expectations in terms of warmth and consistency.

The Committee would also like to clarify that the CCT (and CRI) testing that is required by the specification be done on the same lamp/ballast combination as all other required testing. The group believes that the draft language is somewhat ambiguous on this point, and recommends that EPA add specific text to prevent any misunderstanding.

## 10. Packaging Requirements

The Committee supports the packaging requirements presented in the draft specification, and recommends that EPA consider an additional labeling requirement for outdoor fixtures. CEE members from northern climates have shared anecdotal evidence that some ENERGY STAR-qualified fixtures fail to start in cold climates. The Committee recommends that a packaging requirement be added to address both starting capability, light output, and life degradation in low outdoor temperatures.

## 11. Effective Date, Grandfathering, and Sunset Date

The Committee supports the proposed effective date of the specification.

Due to the substantive changes proposed in Version 4.0 of the specification, the Committee supports the proposed policy that would require all fixtures be re-tested for qualification.

Similarly, the Committee supports the proposed policy of re-qualification three years after qualification. However, the group recommends that EPA clarify what date will be used to calculate the re-qualification date: initial qualification or full qualification.

Once again, the Committee would like to thank the Environmental Protection Agency for the opportunity to comment on the draft revisions to the ENERGY STAR Fixture specification. These comments are endorsed by the Supporting Organizations listed below. Please contact CEE Residential Program Manager Rebecca Foster at (617) 589-3949 ext. 207 with any questions about these comments.

Sincerely,

Marc Hoffman  
Executive Director



Together We Can Change  
National Markets

CC: Ed Wisniewski, CEE

**Supporting Organizations:**

American Council for an Energy-Efficient Economy  
Cape Light Compact  
Efficiency Vermont  
Massachusetts Electric  
Narragansett Electric  
Natural Resources Defense Council  
Northeast Energy Efficiency Partnerships  
Northwest Energy Efficiency Alliance  
NSTAR  
Pacific Gas & Electric  
Puget Sound Energy  
Sacramento Municipal Utility District  
San Diego Gas & Electric  
Tacoma Power  
The United Illuminating Company  
Western Massachusetts Electric Company  
Wisconsin Division of Energy