CEE

CONSORTIUM FOR ENERGY EFFICIENCY, INC.

Expanding Markets for Super-Efficient Technologies$_{sm}$
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January 24, 2003

Rich Karney
ENERGY STAR Program Manager
U.S. Department of Energy
1000 Independence Avenue SW
Washington, DC 20585

Dear Mr. Karney,

On behalf of the CEE Lighting Committee (the Committee), I would like to thank you for the opportunity to submit comments on the first round of revisions for the ENERGY STAR CFL specification. The Committee's comments fall into two general categories, of high priority comments, and general recommendations. A list of the CEE member organizations supporting these comments is listed in an attachment.

Top Priority Recommendations

1. Full Life Cycle Testing

Recommendation: If DOE adopts the proposed full life cycle testing requirement, the Committee recommends that DOE require testing to 6,000 hours only, and allow product life claims to be monitored by the consumer protection division of the Federal Trade Commission.

The Committee supports requiring full life cycle testing in advance of ENERGY STAR qualification. The Committee recognizes the potential however, for fewer new product entries at 8,000 and 10,000 hour lifetime ratings.

Further, the Committee recommends that DOE require testing only to 6,000 hours (the minimum required to meet the specification). This would remove any incentive for manufacturers of long life CFLs to de-manufacture their products in order to be competitive and market their products under the ENERGY STAR label on a similar timeline as shorter-lived CFLs. Unwarranted average life claims would then be policed, as any other product claims are currently policed.

2. Increasing Efficacy Requirements

Recommendation: The Committee recommends that DOE reconsider current efficacy requirements. Higher efficacy products have been included recently in an Energy Conservation Program run in China and may be relevant for the ENERGY STAR Program.

During the 2001 specification revision, the Committee urged DOE to revise efficacy levels for specific product classes of CFLs, which are listed below. This recommendation was based upon a report completed by Ecos Consulting and sponsored by the Natural Resources Defense Council, which is

attached. In addition, the development of an industry-supported Energy Conservation Program being implemented in China with higher efficacy levels than ENERGY STAR also signals that the time has come for DOE to reconsider efficacy. The chart below contains a possible starting point for industry consideration and discussion.

Product Type	Current Levels	CEE Previously Proposed Levels	Chinese Levels
Bare Lamp			
Lamp Power <15	45	50	50, 58
Lamp Power ≥15	60	N/A	65, 70
Covered Lamp (no reflector)			
Lamp Power <15	40	48	N/A
15≤ lamp power <19	48	53	N/A
19≤ lamp power <25	50	53	N/A
Lamp power ≥25	55	N/A	N/A
Covered lamp (w/reflector)			
Lamp power <20	33	N/A	N/A
Lamp power ≥20	40	N/A	N/A

3. De-listing Protocol

Recommendation: The Committee recommends that DOE add a greater level of detail to the de-listing protocol described in the draft specification to specifically describe the manufacturer's responsibilities.

Efficiency program administrators have experienced varying levels of compliance in the past when products are de-listed. While the draft specification includes more detailed language on the steps DOE will take when de-listings occur, the Committee recommends that responsibilities of the manufacturer should be clearly articulated as well. Addressing items such as the following would provide additional assurance:

- Are manufacturers required to remove de-listed products from retail shelves, or is covering the ENERGY STAR label with a sticker adequate?
- Is there a process by which manufacturers are required to inform DOE of their activities and progress in removing de-listed products from retail?
- After the 60 day grace period, what repercussions will a manufacturer face if it's products are still sold with the ENERGY STAR label?

In addition, the Committee would like to comment on the draft language with regard to the de-listing protocol for privately labeled products. Currently, the draft specification states that "if an original qualified model is removed from the ENERGY STAR qualified list by the manufacturer or by DOE, the corresponding private-label model(s) will be unqualified immediately on the qualified product list." The Committee recommends that DOE extend this language to cover the alternative situation, by adding the following language to the specification, "if the private-label product is removed, the corresponding originally qualified model will also be disqualified."

4. Correlated Color Temperature (CCT)
Recommendation: The Committee recommends that DOE adopt the same method reflected in ANSI C78.375 for measuring CCT, that the required CCT be one of three discreet temperatures (2700K, 2850K, or 3000K), and that CCT be printed on product packaging to inform consumer purchase decisions.

It is the Committee's belief that the intent of the current CCT requirement is intended to match the warmth of the most common residential lighting types, namely incandescent and halogen. In practice, manufacturers produce three discreet temperature-rated products within the accepted ENERGY STAR range of 2700K-3000K. The Committee recommends that DOE consider narrowing the accepted CCT values to three discreet temperatures: 2700K, 2850K, and 3000K. As with the current CCT test, the Committee recommends that the proposed ANSI test method be required at 100 hours of lamp life.

Further, the Committee recommends that DOE adopt requirements that limit the amount of CCT variation within a SKU number.

5. Bi-annual Reporting of Shipment Data
Recommendation: The Committee supports the proposal to require manufacturers to submit shipment data to DOE bi-annually, and recommends that DOE require the data be submitted both nationally and by state. The Committee recommends that this information, in an aggregate form, is shared with efficiency program administrators to assist with their program evaluation and future planning efforts.

As program approaches move from consumer rebates to special promotions and industry partnerships, sales and shipment data have become an important part of efficiency program evaluation. Aggregate state level data collected by DOE and disseminated bi-annually to efficiency program administrators would serve this key informational need, and would help ensure the continuation of efficiency programs.

General Recommendations

1. Candelabra-base Lamps
Recommendation: Due to a growing interest in promoting specialty CFLs and advances in manufacturing that enable production of smaller products, the Committee recommends that DOE consider widening the scope of the specification to include candelabra base products.

The Committee recognizes that candelabra-base CFLs may require slightly different efficacy levels than currently covered products, and urges the initiation of necessary research to set these levels. If DOE chooses not to include this class of product in this iteration of the specification, the Committee urges DOE to develop a schedule for consideration of candelabra-base CFLs in advance of the next revisions to the specification, and to announce to industry the intent to have this product class covered in the future.

2. Testing Dimmable CFLs
Recommendation: The Committee recommends that DOE verify claims of dimmability by adding a requirement that dimmable products show dimming capability from 100-30% of full light output.

This addition to the specification would align the ENERGY STAR CFL specification with the ENERGY STAR fixture specification requirement with regard to dimmability, and would help ensure that consumers are receiving the dimming capability that they expect from quality lighting products. As the Committee understands that there is no decline in dimming capability over time, we recommend that this test be required at 100 hours of lamp life.

3. Additional Packaging Requirements for Reflector CFLs

Recommendation: The Committee recommends that DOE require additional language on packaging to inform consumers of the appropriate applications for CFL reflector lamps

Current packaging on reflector lamps does not convey the unique characteristics of reflector CFL light distribution. If a consumer purchases such a product for a spot application, the consumer may be dissatisfied with the light output of the reflector CFL. The Committee recommends that DOE require a statement on reflector CFL packaging that states that the product is intended for general illumination only, and may not provide sufficient light concentration for spot applications.

4. Lamp Position for Testing

Recommendation: The Committee recommends that DOE implement consistent reporting requirement language for lamp testing position, consistent with that of efficacy test footnote 1. "The lamp efficacy shall be the average of the lesser of the lumens per watt measured in the base up and base down positions."

The Committee understands the current language to indicate that an average of all 10 samples (5 base up, and 5 base down) is used to calculate many of the specification components, including CCT, lumen maintenance, and others. However, for the efficacy test, the Committee understands that 10 lamps should be tested (5 base up and 5 base down) and that the reported efficacy should be the average from only 5 lamps, measured in whichever position is less efficacious. The Committee recommends that all averages be calculated consistent with the efficacy test requirements.

5. Run-up Time

Recommendation: The Committee recommends that DOE add an additional data collection point in the run-up time test to reflect that there may be decreases in lumen output after 3 minutes. The Committee recommends that the second data point be required at 1 hour after the lamp is started.

Anecdotal evidence from program administrators indicates that many consumers are dissatisfied with the length of time CFLs take to reach "full" brightness, and that they would prefer a shorter run-up time. The Committee recommends that DOE reconsider the current requirement that allows a lamp 3 minutes to reach 80% of light output.

In addition, there is recent evidence that some products experience lumen depreciation after the 3 minute reporting point. Consumers may see a decrease in lumen output below 80% of the rated lumen level as required by the specification. To ensure that CFLs are satisfying consumer expectations, the Committee recommends that DOE require a second measurement after the CFL temperature has stabilized, at approximately 45 minutes – one hour after the lamp is started.

6. End of Life Sensing Requirement

Recommendation: The Committee recommends that DOE consider adding a requirement for end of life sensing technology to the ENERGY STAR CFL specification (consistent with the full scope of the program) to mitigate potential risk for consumer injury in the case of electrode failure.

Efficiency program administrators report anecdotal evidence consumer inquiries regarding "melting" CFLs. This phenomenon may occur if/when an electrode fails and the ballast overheats, causing the plastic casing to melt, and may represent a serious risk to consumer safety. The Committee recommends inclusion of an end of life sensing requirement to address this matter. Suggested language, consistent with the ENERGY STAR Fixture specification, follows:

> End of Life Protection: Required for all T5 and smaller lamps. Manufacturer must submit laboratory data or an engineering description outlining the scheme that is used to achieve the end of life function within the ballast. [Tests for these protection circuits are under development by ANSI subcommittee C82-1 for inclusion in C82.11. ENERGY STAR may require further documentation when standard is adopted.]

7. Testing Reflectors in an Insulated Ceiling Environment

Recommendation: The Committee recommends that DOE begin consideration of a testing protocol for reflectors that more accurately represents real-life conditions within an insulated ceiling environment. Specifically, the Committee urges DOE to consider adoption of a test protocol based upon the experience of the Pacific Northwest National Laboratory (PNNL) after short- and long-term test results become available in early 2004.

As DOE is aware, recessed cans with screw based sockets are among the most popular fixtures in new construction, and due to heat build up in insulated ceiling environments, reflector CFLs are among the CFL types with the highest consumer return rates. The Committee urges DOE to implement a testing protocol that approximates the insulated ceiling environment as soon as possible.

8. Listing Lumens/Watt on Packaging

Recommendation: The Committee recommends that DOE consider adding a lumens/watt table to the list of packaging requirements.

The Committee believes that an explicit statement of lumens/watt, along with an incandescent equivalent, is an important consumer education tool, and urges DOE to consider adding such a table to the packaging requirements during this specification revision.

9. Tightening Testing Protocols

The Committee recommends that DOE explicitly state how failures are to be treated in testing.

Currently, the draft specification makes no mention of how products that fail during testing are to be included in calculating averages. It is unclear to the Committee whether a CFL that fails during a test is counted as a zero and still included in any calculations, or if that product is thrown out and the sample size used to calculate averages is reduced by one. The Committee recommends that in case of failure,

more extensive testing be required to determine that failure rates are in an acceptable range.

10. Re-qualification Requirements
The Committee recommends that DOE investigate the potential for re-qualification of CFLs over time.

Due to changes in manufacturing CFLs that may occur over time, such as changes in component suppliers, processes, or location of production, the original "product" tested may not be the same "product" that a consumer actually purchases. The Committee recommends that DOE investigate the impacts that periodic re-qualification would have on manufacturers, and consider including this type of requirement in the future.

11. Effective Date
The Committee applauds DOE's extensive coverage of changes within the first draft, and hopes that this will enable the second round of comments to continue as articulated in the original schedule. The Committee supports DOE's efforts to meet the April 1 effective date that was issued with the draft specification.

To capture the consumer benefits of any testing changes in a timely manner, the Committee urges that DOE issue a final rule as soon as possible. While the Committee understands that industry requires time to implement changes, DOE has stated that this revision was undertaken to raise the quality of CFLs in the program and the Committee believes that the issuance of a final specification and the effective date should not be delayed.

Once again, the Committee would like to thank the Department of Energy for the opportunity to comment on the draft revisions to the ENERGY STAR CFL specification. 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

cc: Ed Wisniewski, CEE
Ronald Lewis, DOE
Susan Gardner, D&R International

Attachments: List of Supporting Organizations
Ecos Consulting Report on Efficacy

LIST OF SUPPORTING ORGANIZATIONS

American Council for an Energy Efficient Economy
Cape Light Compact
Efficiency Vermont
Long Island Power Authority
Los Angeles Department of Water & Power
Midwest Energy Efficiency Alliance
National Grid
New York State Energy Research and Development Authority
Northeast Energy Efficiency Partnerships
Northwest Energy Efficiency Alliance
NSTAR
Pacific Gas & Electric
Sacramento Municipal Utility District
San Diego Electric & Gas
Tacoma Power
Unitil: The Fitchburg Gas & Electric Company
Western Massachusetts Electric Company