



January 20, 2006

The NEMA Lamp Section submits the following written comments in response to the Department of Energy's Energy Star Program request for stakeholder input on the second draft of proposed revisions to the CFL Energy Star specification dated December 21, 2006.

We are pleased that the second draft reflects that a number of comments we made on the first draft issued in August have been accepted. However, having reviewed the second draft in detail, we believe strongly that additional changes are needed before we can be reasonably satisfied that the final Version 4.0 criteria will help to drive greater market penetration and consumer adoption of Energy Star-qualified medium screw-base compact fluorescent lamps, resulting in significant energy savings over older lamp technologies in wide use today.

In that spirit of collaboration, we offer the following comments on Draft 2.

Efficacy levels for bare and covered products

We note that the efficacy criteria for the bare lamps have, in general, been lowered in Draft 2 from Draft 1, and we think this is a good step toward increased energy savings. For the bare product, a new efficacy tier (55 LPW) has been created between 10 and 15W. Our original proposal called for 50 LPW in this region and we ask that a flat 50 LPW be adopted for the range of bare products less than 15W. We think this adjustment will continue to provide energy savings without forcing design compromises. We note that the efficacy values for the covered lamps were, in general, not lowered, and again we strongly urge that these values be lowered to those we previously recommended:

lamp power < 15	45 LPW
15<= lamp power < 19	48 LPW
19<= lamp power < 25	50 LPW
25<= lamp power	55 LPW

The issue is not one of mere technical feasibility. The proposed Draft 2 efficacies can be met, but only with design compromises that we believe will limit the market appeal, and market penetration, of these CFLs. Specifically, we think that these compromises, and especially size compromises in covered lamps that must be made to reach the highest efficacy values, adversely affect the market penetration of CFLs, with the consequence of less energy saved. As a general statement, higher efficacies favor longer discharge tubes and lower currents (spiral designs), which all NEMA CFL manufacturers sell, but these designs are not uniformly preferred and are not always the most compact design option – especially for covered products. We do not think the Energy Star criteria should zero-in on one design concept as the only permitted one. Even for spiral designs, ever-higher efficacies will lead to ever larger, less customer friendly designs. We think this is the wrong way to go if the goal is to save energy.

We should not lose sight of the fact that market penetration is a much stronger driver of energy savings than merely raising the efficacy bar for the already efficient CFLs. We suggest that, as a guideline, Energy Star should take as an efficacy criteria for covered product something like “3X the efficacy of the A-line (or G-line or R-line) incandescent lamp it is meant to replace”, then steer the Energy Star efforts toward driving market penetration by addressing customer “dissatisfiers” (reasons why a lamp consumer declines to purchase a CFL over an incandescent lamp or replaces a CFL they have installed with an incandescent product.) Even today, with Energy Star version 3.0, we do not see either lamp efficacy or “\$ saved in energy costs” as being a significant dissatisfier that limits market penetration. To expand the CFL market and drive energy savings, we need to make these lamps suitable for a wider variety of applications, not only “highest LPW” applications.

Further, we reflect on two of the Energy Star program's guiding principles: "save energy" and "no degradation of performance". We believe that raising today's LPW criteria will penalize smaller lamp designs, and thus limit market applications for CFLs. We see this elimination of smaller designs as a degradation of performance in a way that will result in less energy savings. We urge Energy Star to reconsider their approach.

Another design compromise (besides size) that must be sacrificed if the highest efficacy values are to be reached is the inclusion of features – extra compactness, dimmability, 2-way or 3-way operation, reduced harmonics, dual purpose lamps, etc. All of these require some additional energy to realize, and in the case of 2-way, 3-way, and dual purpose lamps, the same discharge tube will surely not be optimal at all settings. We repeat our earlier suggestion (NEMA 10/14/05 comments, page 3) that lamps capable of being dimmed to less than 50% of full wattage, and 2-way and 3-way lamps in which the lowest wattage is less than or equal to 50% of the highest wattage, should be exempt from an efficacy criterion. If this is not acceptable, then we strongly suggest an efficacy criterion 20% below that of the “regular” value (for the highest wattage) should be considered. To give these lamps the same LPW efficacy criterion as lamps without these features does not promote the energy savings we all are targeting. Sales of many energy-saving lamps with features consumers want go unrealized because these lamps are not part of the Energy Star program.

Moreover, we once again recall the detailed discussions that took place during the development of the version 3.0 Energy Star specification to the effect that the efficacy standards should not be changed until some control was gained over the allowable chromaticities (CCT) of the lamps. The proposed version 4.0 specification sets chromaticity limits on lamps, but we have no experience on the effect of these chromaticity limits on the efficacies found in the marketplace. We think it is better to gain some field experience before making big efficacy changes. We favor a more gradual approach.

In summary, in the interest of driving energy savings, we believe that Energy Star’s focus should shift from raising efficacy levels to driving consumer satisfaction and thus market penetration of Energy Star-qualified CFLs. Please see the numerical example in the Attachment.

Individual Lamp Deviations from Lumen Maintenance and CRI Values

We noted with interest that Draft 2 makes a change in the number of sampled lamps (from 2 to 3) allowed to have lumen output, at 40 percent of rated life, less than 75 percent of the initial value. We reiterate our view that an average lumen maintenance (and CRI) metric is appropriate. Placing a limit on the number of outlying data points on the low side of the distribution requires a corresponding offset on the high side if the data are normally distributed. Such a wide range is unlikely to occur in practice. In other words, variation on only the low side is likely the result of special cause variation. The QA requirements in Section 11 should minimize this variation and the need to limit outlying data points. As noted during the September stakeholders' meeting, and in our earlier comments, this problem is not one based on field reports, and we feel in principle that manufacturers should be encouraged to emphasize high quality rather than lower, but more uniform quality.

We have the same opinion about the parallel criterion for CRI. We do not believe the problem is a real one, and in any case, if 2 or more lamps have exceptionally low CRI, we think it impossible that this can be compensated for by lamps with exceptionally high CRI, assuming the same phosphor blends are used.

To be clear, we favor dropping all of the new language designed to tighten the uniformity of lumen maintenance and CRI performance beyond the average values specified.

Correlated Color Temperatures

As mentioned many times in the past, there is a strong technical link between correlated color temperature (CCT) and efficacy, and for that reason, we think increases in efficacy should be gradual until we know the effect of the new chromaticity limits. Energy Star has been very responsive to this coupling in the past, and both Energy Star and NEMA companies are working together to address the issue.

In addition, we note that the proposed specification provides that manufacturers must identify one of a set of CCTs for marketing their products. We are concerned that these "Kelvin" designations will mean little or nothing to the consumer. The DOE, EPA and NEMA have been active in 2005 with the LRC to develop a better way to communicate the concept of CCT to the consumer. We suggest that the Energy Star specification remain flexible on how this CCT information is to be conveyed until the results of our joint effort are formalized in early 2006. If no clear improved communication tool is agreed upon by the time v. 4.0 is ready for release, then we will request a meeting with DOE to review the status of the NEMA-DOE color designation project at that time.

Run-up time

We note with appreciation the changes made in Draft 2 showing that Energy Star understands the issues regarding run-up time for bare lamps and the use of amalgam technology.

We acknowledge that longer run-up time can be perceived by a consumer as a "dissatisfier" and suggest that Energy Star include in its consumer education materials information about the link

in this case of energy-saving performance to consumer expectations. Moreover, we question what the reasoning would be (from the end users' perspective) for the different allowable run-up times. If 3 minutes is acceptable to the end user for a CFL of one type, then we recommend that it be acceptable for all types.

Operating Frequency and Electromagnetic Interference

Regarding operating frequency, we applaud the change made in Draft 2 to the sample size (1 unit per model), and that the recognition that manufacturer self-certification is acceptable for this test.

Similarly, we welcome Energy Star's acknowledgement that the FCC regulatory requirement for EMI provides sufficient protection for Energy Star customers and thus EMI will be exempt from the re-qualification provisions unless a CFL design changes sufficiently to warrant additional FCC testing as is already required by FCC Rules. However, we disagree that the sample size requirement for initial qualification should be left to the testing laboratory, which has a financial interest in the testing. The number should be specified in the requirements. We suggest 1 sample.

Outdoor Reflector CFLs

We note that the requirements for Outdoor reflector CFLs are the same as base and covered products. However, the word "Outdoor" is not defined in this revision. Thus we ask that Energy Star accept our definition of an outdoor CFL as "A reflector CFL that is designed and marketed for use in outdoor applications."

Interim Lifetest

In the latest revision, text has been added to the Interim Lifetest requirement that makes the accredited testing laboratory responsible for the product failure report if there are two failures before 40% of rated life. We request that this language be changed to read "from the manufacturer." The reason is that the testing laboratory personnel generally do not have the intimate technical knowledge of the lamp and its processes required to identify the root cause of the failure.

CFL/Incandescent Equivalency

We question the text added in Draft 2 regarding displaying an incandescent equivalence for reflectors. CFL reflector lamps are replacements for incandescent reflectors only by virtue of shape and socket. They do not have the same photometric characteristics, i.e. beam angle, beam lumens, or center beam candle power. Comparing total lumens does not really compare performance in the application.

Elevated Temperature Testing for Reflector CFLs

The general objective of elevated temperature lifetesting is to stress the R-CFL more than the open rack lifetesting currently in use. We fundamentally disagree with the text as proposed, and

discussions with PNNL have not been fruitful. We plan to have a viable and effective alternate protocol proposal later this year, keeping PNNL informed of our progress.

Re-qualification

We reiterate that if we are to be Energy Star Partners, we will have to have a specification that reflects the costly business we are in, and that lets us recover our investments.

We are disappointed and concerned that no changes were made in Draft 2 to the re-qualification timeline to accommodate manufacturers' development, manufacturing, and marketing of new products.

The proposed six-month window for re-qualification of existing, qualified products is not acceptable. This is especially true for products currently being engineered under the version 3.0 requirements and moving towards launch. The new specification will likely incorporate some new requirements that will require additional effort and resources by the manufacturers to modify or redesign these products to comply with the new requirements, especially for manufacturers that have invested in developing a broad product range.

To cover the transition needs we reiterate our original proposal for two additional re-qualification cases:

Case A

If the initial qualification date of the product was more than 36 months prior to the Effective Date of the version 4.0 specification, then that product must be re-qualified by the Effective Date + 12 months.

Case B

If the initial qualification data of the product was less than 36 months prior to the effective date of the version 4.0 specification, then that product must be re-qualified by the initial qualification date + 48 months.

This proposal is meant to ensure that a manufacturer who has developed a product in good faith can recoup a minimum of 3 years of Energy Star listing before needing to program the resources and incur the expense and effort to re-qualify it.

Quality Assurance

The first paragraph of this section requires OEM Partners to provide "a manufacturing process control plan". This plan is typically proprietary and confidential and may contain trade secrets. Thus we ask that those specific words be stricken and the paragraph revised as follows: "...required to provide documentation that describes the measures they are taking ..."

Independent Third Party Testing

Goals

Item 12 B lists the goals of the program. The third bullet point essentially states that the verification program is the basis upon which DOE can reasonably make decisions about compliance of qualified products. The test methods and standard Energy Star procedures are supposed to do that, while this program is a quality assurance program. By keeping this statement in, DOE is being inconsistent with the guidelines of the Energy Star process.

Product Selection Committee

Draft 2 proposes that industry representation on the product selection committee could be from “manufacturers or distributors.” We ask that the language be specific that CFL manufacturers are represented on the committee. Specifically, we propose that lamp manufacturers be assured of at least one position on the committee, and preferably two.

Technical And Research Committee

Draft 2 proposes membership in the Technical and Research Committee be open to "equipment manufacturers" as well as other stakeholders? We recommend that this be replaced with “CFL manufacturers.”

Product Nominations

Under Item 12 F 1, the text should be changed to read: “Products will be selected for third party testing on both a random and nomination selection basis. The program will target to test 20% of the total number of current qualified bulbs during a calendar year; half of the products will be selected via a random generator, the other half will be selected by DOE. Utilities, manufacturers, states, efficiency program sponsors or other government entities...” Furthermore, we propose that these organizations nominating the remaining products be Energy Star Partners.

Under Item 12 F 3, the maximum of “six bulbs” should be changed to a maximum of “six models.”

Similarly, under Item 12 F 6, the first bullet should be changed from “two products” to “two models.”

Laboratory-Partner Logistics

To the sentence, “This quotation will include the testing, procurement, and shipment costs and a confidentiality clause that automatically permits the test laboratory to release the data to the Third Party Program Administrator and to the manufacturer”, the following should be added: “and only to them.”

Information Flow and Data Management & Costs and Funding of Third Party Testing and Verification Program

Ongoing dialogue still has not resolved the issue of how the contract between DOE and D&R International as the Third Party Testing Program Administrator will work. Is DOE still expecting to expand D&R's existing scope of work? Will the contract be written between the test labs and the Third Party Testing Administrator or between the manufacturers and the TPTA? Or will there be a contract? All this leads to the issue of cash flow and the cost of administration.

The proposal in Draft 2 is to charge everyone \$2,500 for the consolidated test data reports. However, Item 12 K 4 states that the fees will go towards offsetting testing and administrative costs. This offsetting should not be necessary, since the fees should cover the costs, as stated in 12 K 2.

We suggest that DOE (or D&R) provide a financial outline of the anticipated administration and management costs, including tasks, expected number of hours needed to complete these tasks, employee levels that would be used to complete these tasks, weighted hourly rates for these employee levels, and other direct and indirect costs. If DOE were to issue a contract, it would require this information anyway. This information will allow Partners to see how much DOE and D&R expect the program to cost, including the cost of the report development. Only after such an analysis would there be a good basis for setting a rate for the report.

As we previously conveyed, we feel that non-Partners, including other Energy Star stakeholders who are not funding the testing program, should pay for these reports. While the money exchanged may or may not be large, depending on the fee structure, we see this as a basic "fairness" consideration. Our preference is that the report fees be substantial enough to prevent the abuse of the distribution system and to help spread the costs among those standing to benefit the most.

Lastly, Figure 3 in the Appendix to Draft 2 is still inconsistent with nomenclature. The Program Administrator should always be written as the Third Party Testing Program Administrator so as not to be confused with the Energy Star program manager from D&R. We strongly suggest that Figure 3 be re-examined to include the important steps of compiling and dissemination of trend data are included.

Disqualification Appeals Process

We presume that item 13 A 4 applies to all related SKUs, although that is not explicitly stated.

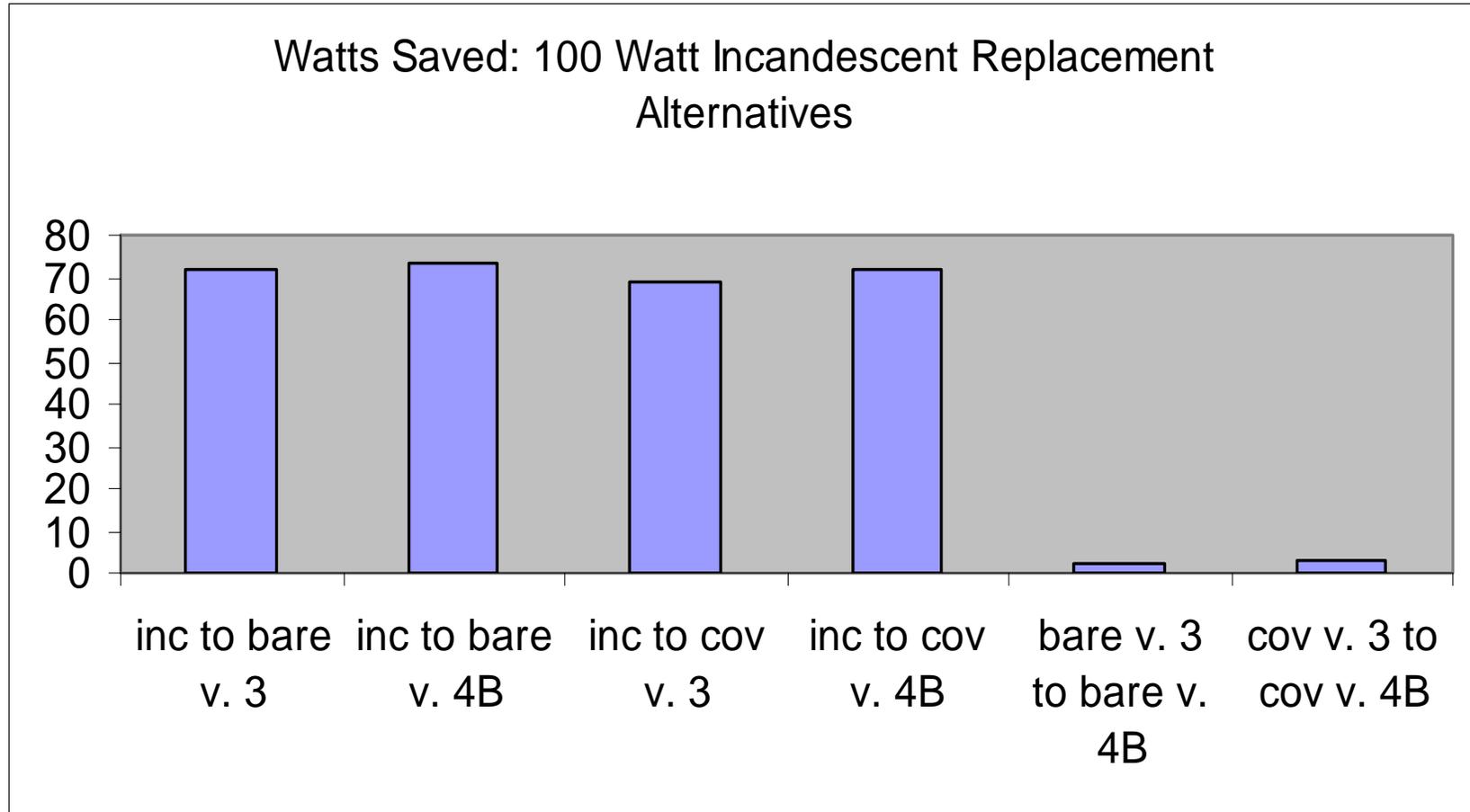
Effective Date

We noted with interest the proposed changes to the effective date made in Draft 2, but they do not go far enough in providing appropriate lead time for manufacturers to take advantage of the revised specification to keep – or, in fact to broaden – the range of qualified products available to the consumer. We propose Energy Star take a step further and set the effective date as 12 months

after publication of the finalized specification. Manufacturers must know with a high level of certainty what requirements must be incorporated in engineering design programs.

Thank you for the opportunity to provide these comments. We look forward to working with Energy Star and other partners toward a final Version 4.0 specification that seeks to drive consumer adoption of CFLs without simultaneously pushing this energy saving technology further out of their reach.

END MAIN TEXT OF COMMENTS



V.3 = Current Energy Star criteria, Version 3.0

V.4B = Draft 2 of Version 4.0 criteria

Energy saved

- by replacing 1 incandescent lamp by a ES v. 4B bare CFL = 73.7W
- by replacing 1 incandescent lamp by a ES v. 3 bare CFL = 71.5W
- by replacing 1 incandescent lamp by a ES v. 4B covered CFL = 71.5W
- by replacing 1 incandescent lamp by a ES v. 3 covered CFL = 68.9W
- by replacing 1 v. 3 bare CFL by a v. 4B bare CFL = 2.2W
- by replacing 1 v. 3 covered CFL with a v. 4B covered CFL = 2.6W

Conversion	Watts saved
inc to bare v. 3	71.5
inc to bare v. 4B	73.7
inc to cov v. 3	68.9
inc to cov v. 4B	71.5
bare v. 3 to bare v. 4B	2.2
cov v. 3 to cov v. 4B	2.6

Energy Star today allows both bare and covered consumer preferences. We would like Energy Star to allow for other preferences as well (compact size, dimming, 3-way, etc.). Clearly, the road to energy savings is by replacing more incandescent lamps, not simply raising Energy Star efficacy targets incrementally.