Setting Standards for Excellence

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VIA EMAIL TO: lamps@energystar.gov

Ms. Taylor Jantz-Sell
Mr. Peter Banwell
Environmental Protection Agency
ENERGY STAR Lighting Program Manager
1200 Penn. Ave NW 6202J
Washington, DC 20460

NEMA Comments on Draft ENERGY STAR® Program Lamp Specification v2.0 Draft 3

Dear Ms. Jantz-Sell and Mr. Banwell,

The National Electrical Manufacturers Association (NEMA) appreciates the opportunity to provide the attached comments on the subject proposal. These comments are submitted on behalf of NEMA Light Source Section companies.

As you may know, NEMA is the trade association of choice for the electrical manufacturing industry. Founded in 1926 and headquartered near Washington, D.C., NEMA represents nearly 400 electrical and medical imaging manufacturers. Our combined industries account for more than 400,000 American jobs and more than 7,000 facilities across the U.S. Domestic production exceeds $117 billion per year.

Thank you for your consideration of these comments. We look forward to working with you further on this important project. If you have any questions on these comments, please contact Alex Boesenberg of NEMA at 703-841-3268 or alex.boesenberg@nema.org.

Sincerely,

Kyle Pitsor

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Vice President, Government Relations

NEMA Comments to ENERGY STAR Lamps Specification Version 2.0 Draft 3

1. **General Comments:**
   - We ask EPA to clarify/confirm that there are no intended changes to the "ENERGY STAR Lamps V1.0 Final Test Methods and Recommended Practices"[1] document which contains information regarding some of the tests given in the proposed draft v2.0.

   - We continue to express our concern that the EPA has elected to proceed with an update to the program specification without a Final DOE Test Procedure for LED Lamps in place. We are concerned at the potentially burdensome situation this creates if the DOE Test Procedure changes, again, following public comments to the recent Supplemental Notice of Proposed Rulemaking version. The DOE TP has changed significantly from one version to another, and another similar change could put the EPA's specification significantly out of sync, causing a retesting burden and costs on industry as well as delays to product introduction and requalification. In weighing the public and private burdens and benefits in this instance, the balance of these interests clearly mandates that EPA wait for the completion of the DOE Test Procedure before revising the ENERGY STAR Lamps specification. *NEMA therefore requests that EPA not proceed until the DOE Test Procedure is finalized.*

2. **Product Scope**
   - With respect to the scope statement, we note that the spec draft 3 was not updated to reference all the ANSI Standard Lamp Shapes allowed and we request EPA consider adding some new lamp shapes due to market interest.
   - Section 1.1 – We request that EPA add the ANSI Standard G53 base, in addition to the G4 and G9 bases proposed in draft 3. The G53 base is a low-voltage base used with lamps that meet the PAR36 bulb outline (also referred to as AR111) and is referenced in ANSI C81.61-2009, as well as in IEC 60061-1 (Sheet 7004-134-1). Halogen PAR36/AR111 lamps are primarily used in retail applications where the low-voltage operation and large lamp diameter allows a narrow, well-controlled beam. The larger diameter also allows higher power than MR16 lamps. There is no CFL (or other high-efficacy light source) equivalent, because CFL cannot reach the beam control of a low-voltage halogen. Thus, substantial energy savings will be gained in this category when replacing a typical PAR36/AR111 lamp with an LED lamp. Allowing the G53 base into the ENERGY STAR program will encourage further adoption of energy-efficient alternatives to Halogen PAR36/AR111.
   - Note box 2 indicates that products with G4 and G9 bases can be certified as Omnidirectional or Decorative. We proposed that this direction be moved into the body of the specification, as the note boxes typically disappear when the final version is published.
   - Section 9.2 – Light Output: Directional lamp type should list MRX along with PAR and MR
   - Section 9.5 – Luminous Intensity Distribution: ST should be included in the ANSI Standard Decorative Lamp types along with B, BA, C, CA, DC, F and G

[1] https://www.energystar.gov/sites/default/files/specs//ENERGY%20STAR%20Lamps%20V1%200%20Final%20Test%20Methods%20and%20Recommended%20Practices.pdf

3. **Section 4 – Definitions**

We offer comments on the following definitions: Labeled Wattage, Lumen Maintenance, and Rated Wattage.

- Labeled Wattage – this new term should be removed from the definition section. It was coined by the DOE in their recent proposed Test Procedure for CFLs. Their rationale is that it is required to avoid confusion with the term 'rated wattage' as used in ANSI standards for non-integrated CFLs. Non-integrated, or pin-based CFLs represent a very small part of the market and NEMA is on record with comments to the DOE opposing their inclusion in the rulemaking. We ask that the term be removed until the DOE TP is finalized as the term may change between now and the final TP. The definition of labeled wattage should be removed from the document as it is not used anywhere in Draft 3 outside of the definitions section. Also, the definition has the potential to create confusion during packaging review as it refers to the highest wattage marked on the lamp and/or packaging. Many consumer lamp packages refer to an incandescent equivalency, i.e., 60W replacement. In this case, 60W is the highest wattage marked on the package and could possibly be misinterpreted as the labeled wattage. *It is our assessment that DOE added this definition as part of their attempt to establish a test procedure for externally-ballasted pin-based CFLs. Since EPA does not allow this type of lamps to participate in the program, there is no need for this definition.*

- Lumen Maintenance – the definition of lumen maintenance was changed for Draft 3 with no apparent rationale provided. This is an important definition, and when it is changed, each word in the new definition is parsed to ascertain if the meaning is changed and how. As far as we can tell, the intent is the same, but we ask that the definition revert to the prior wording to eliminate any question or doubt regarding how to calculate lumen maintenance. Since there is no apparent reason or need for the changes, we propose they be struck since the current definition appears to be working well and changes might lead to confusions in interpretation.

- Rated Wattage – in follow-on to our comment above about labeled wattage, the reference to Labeled Wattage should be removed here as well.

4. **Section 5**

- **5.1** – In paragraph 4, remove the words "least efficient". The text related to this addition in a previous draft has been removed in draft 3.

5. **Section 9 – Photometric Performance**

- We commend the EPA for incorporating the new ANSI CCTs of 2200K and 2500K as requested, following the publication of the ANSI Standards including them.

- **9.1 – Luminous Efficacy – 65 lpw for all lamps.** The uniform 65 lpw requirement for all lamps is a significant leap from Lamps v1.1 – as much as 40%. This is incredibly stringent and will prevent most decorative and reflector CFLs, as well as lower wattage LED MR16s, from being certified as ENERGY STAR.
  We disagree with the EPA's decision to consolidate efficacy requirements to a single limit for decorative lamps. The cover letter that accompanied Draft 2 stated that the reduced efficacy of 55 LPW for Decorative Products was based on "…information received from partners about challenges unique to decorative products, and is intended to facilitate design features that will advance adoption of these lamp types, such as dimming and improved aesthetics. " Nothing has changed in the few months since the

comments to draft 2 were submitted, so we ask that the agreed-upon limit of 55 LPW be restored for lamps at 7W or less.

- **Color tunable lamps** – these lamps are not a mature technology, but they are increasingly in demand by consumers for their novel capabilities. We commend the EPA for including them in the spec, but caution against hampering performance or innovation by setting overly restrictive performance levels on this first iteration of their inclusion in the program. Overly restrictive performance requirements for color-tunable products could limit their performance or restrict their availability in the program, neither of which is a desirable outcome. To forestall unintended hampering of this new, innovative technology, we recommend that a separate category for luminous efficacy be created for these lamps set at 60 lpw, until such time as the technology has matured.

- **9.2 and 9.5** – we refer the EPA to our comments in item 1 regarding lamp shapes.

6. Section 10 – Lumen Maintenance and Rated Life

- **10.1 – Lumen Maintenance.** In the column titled "Lamp Type/Wattage" for CFLs, the category "All other omnidirectional and decorative lamps" should be clarified to read "…lamps not covered by DOE" to avoid confusion with the category below it, "Lamps covered by DOE." Furthermore, it might be clearer if the "Lamps covered by DOE" rows appeared FIRST in the table, and then the "all others", as it were, followed them.

- **10.2 – Rated Life.** The proposed change from 90% operational to "all tested units shall be operational" is inconsistent with the new DOE LED Lamps Test Procedure SNOPR. Since EPA stated during the August 21st webinar that a choice between the ENERGY STAR test procedure OR the DOE LED Lamps TP would be allowed for some period of time, it makes no sense to change the EPA test procedure when it is inevitable that the DOE test procedure will overtake it in a few months anyway. Put another way, there is no reasons for ENERGY STAR to change the rated life evaluation tools, until after the DOE method is made final.
    - Conclusion: restore the 90% operational requirement.

7. Section 11 – Electrical Performance

- **11.5 – Run-Up Time CFL.** As we noted in our comments to draft 2, covered and decorative lamps are unable to meet the proposed 45 second run-up, and we propose they be allowed 120 seconds. Furthermore, the run-up time of ≤45 seconds is too stringent to be applied across all categories in a blanket fashion, and should be broken out to allow additional time for covered lamps and reflector lamps. We propose a few alternatives, in order of preference:
    - ≤ 120 sec for Covered and Reflector CFLi, and ≤ 60 sec for other CFLi
    - Keep the ≤ 60 sec for all CFLi requirement from E* Lamps Version 2 Draft 1. See clause 11.5: *Reported value of time for lamp to achieve 80% stabilized light output shall be ≤ 60 seconds.*
    - A tiered approach: ≤ 45 sec for CFLi < 15W, and ≤ 60 sec for other CFLi. Higher-wattage CFLi have a longer discharge path from electrode to electrode, which can negatively affect run-up time.

- **11.7 – Standby Power Consumption: All Lamps.** The exception for lamps with integral controls or connected functionality is set too low.

  The market for connected lighting is quickly growing, and lighting is being integrated into more connected features beyond simple "on/off" via smart phones. A basic online search for LED bulbs and wireless, cameras, infrared, and/or motion sensor reveal more than 24 individual manufacturers with dozens of products with standby power ranging from .3W to 2.25W. The market is growing quickly, as shown by ENERGY STAR's search revealing only 12 products.

  We note that there is an award-winning lamp currently on the market that includes a WiFi repeater, allowing a homeowner to use lighting to provide wireless access throughout the home. The stated wattage for standby mode of each of these lamps is 1W.
  - We recommend the standby mode wattage be set at 1W

  We note that EPA has granted some allowances for greater standby power when it is associated with increased functionality and connectivity in the Luminaires Specification, and suggest that our request is along those same lines.

  We also refer the EPA to our comments to clause 12.6 on this subject.

8. <u>Section 12 – Controls Requirements: Lamps Employing Any Control Mechanism</u>

- We note approvingly that ENERGY STAR has reduced the burden on manufacturers by eliminating the requirement to test a dimmer with four lamps.

- **12.1** - In the second paragraph of this section, the following phrasing appears to be redundant: "…requirements and the controls must be listed on the lamp packaging. An asterisk next to "dimmable" on lamp packaging/online product listing marketing materials must be included and point to an "only compatible with …" statement."

  We suggest the following changes to the wording to reduce redundancy and potential confusion: "… <u>requirements. The lamp packaging and online product marketing materials must call out the controls that can be used with the lamp. An asterisk or similar mark should appear next to the word 'dimmable' and point to a statement similar to "Only compatible with …" statement. The statement should indicate which dimmers the lamps are compatible with.</u>"

- **12.6 – Products with Connected Functionality**. We recommend that the requirement for power in standby mode be set at 1.0W. Please see comment to clause 11.7 above. We respect the EPA's desire to reduce standby power requirements, but the ever-increasing functionality being demanded for controllable and connected products is moving in the opposite direction to some degree. Consumers are demanding connected products, at times with high-levels of functionality, which comes at a cost to standby power. The EPA should respect consumer preferences and not ignore them, nor should EPA preclude the participation of these high-function products in ENERGY STAR. We believe 1W is an achievable maximum which will allow sufficient leeway and request the EPA wait for another iteration of products and analyze their associated performance data before pushing lower. NEMA has attempted to analyze standby power consumption versus functionality and versus communications protocol, but the variability

has proven too great at this time for an informal, inexpensive study. The current catalog-based surveys conducted by sub-watt proponents have not included functionality or protocol considerations, and therefore should be dismissed from argument.

12.8. Open-standards and Open-access
We recommend the following changes to the text of draft 3 for this section:

- To enable interconnection with the product; an interface specification, Application Programming Interface (API) or similar documentation shall be made available to interested parties that enables sections 12.9, 12.10 and 12.11 connected functionality, and includes accuracy, units and measurement or estimation interval for Energy Consumption Reporting.

9. Section 15 – Labeling

- **15.1 Lamp Labeling** – We wish to reemphasize our comment from Draft 2[2] and ask that the last bullet be removed. This point was discussed in detail during an industry call with ENERGY STAR on May 22, 2015. This language is already required when a product is certified for safety, thus it is redundant and should be removed. The proposed text also suggests to us that manufacturers may not be in compliance with this requirement if they unilaterally add additional application exception language for other reasons, i.e., declaring that a product should not be used in totally enclosed fixtures even when safety certification permits use in enclosed fixtures.

- **15.2 Maximum Operating Temperature** – NEMA believes this information is more useful to lamp and luminaire manufacturers, and it is not useful to consumers. Furthermore, it was our understanding during the April 20th stakeholder meeting that this would be removed. Therefore this requirement should be removed from the specification.

[2] See comment #3 of this document
http://www.nema.org/Policy/Documents/NEMA%20Follow%20On%20Comments%20ES%20Lamps%20V2_0%20Draft%202%2001June15%20v3.pdf