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Taylor Jantz-Sell
ENERGY STAR Lighting Program Manager
U.S. Environmental Protection Agency
Ariel Rios Building
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Re: ENERGY STAR Lamps V1.0 Second Draft Comments

Dear Ms. Jantz-Sell:

We appreciate the opportunity to comment on the ENERGY STAR Lamps V1.0 Second Draft. The following represents Switch Lighting's comments in response to the July 2012 ENERGY STAR Program Requirements Product Specification for Lamps: Eligibility Criteria Version 1.0, Draft 2 ("*Draft*").

BACKGROUND

Switch Lighting™ is dedicated to innovative design and technologies that create cost-effective light-emitting diode ("*LED*") lighting solutions for consumers and businesses, replacing ordinary incandescent and compact fluorescent lamps ("*CFL*") with long lasting, reliable, energy-efficient solutions.

The company's high-performance products are designed to contribute to human and planetary health with their efficiencies and reclaimable components. Using unique cooling technology, Switch Lighting is the first to announce a full line of A19 incandescent replacement bulbs for the residential, commercial, and hospitality markets. Switch Lighting is backed by VantagePoint Capital Partners and endorsed by Cradle to Cradle writer and sustainability expert Bill McDonough. The company is privately held (incorporated as Switch Bulb Company, Inc.) and headquartered in San Jose, California.

COMMENTS

Specification Scope and Lamp Classification

Standard vs. Non-Standard Shape

Regarding Non-Standard Omnidirectional Lamps, we ask EPA to provide further clarification on whether SSL lamps may still qualify, or if the Draft intends to limit Non-Standard Omnidirectional to only the CFL lamps specifically listed. We believe consistency and comparable performance to traditional lighting options will be essential for successful, widespread consumer adoption of next generation lighting technologies. As such, the ENERGY STAR specification development process should serve as a tool to move the market toward the adoption of ANSI standard designs and eliminate loopholes for less rigorous product testing.

Accordingly, it is our recommendation that EPA remove the Non-Standard specification for Directional and Omnidirectional SSL technology and put in place a phase-down of Non-Standard qualification for CFL lamps. EPA has the ability to remove this category and ensure that products receiving the Energy Star label meet the highest possible efficiency performance standards to ensure product integrity, consumer confidence, and widespread adoption.

Excluded Products

We ask that EPA either remove or develop more detail regarding specific exclusions for, "Lamps incorporating power-consumer features which do not provide illumination." As energy efficient lighting and building technologies evolve, there will likely be features added to lamps that, while not providing illumination, may result in efficiency improvements. One example of this is the inclusion of low power digital radios in lamps enabling them to communicate with home or office mesh networks in order to provide demand-response energy management. Such a feature would consume negligible power compared to the lamp, but because it is a non-illuminating feature, it would be ineligible for ENERGY STAR certification. To encourage the incorporation of advanced technology into next generation lighting solutions, we recommend changing the specification language to, "Lamps incorporating power-consuming features which are not essential to promoting efficiencies in lamp efficacy or energy demand."

Product Qualification

Beam Angle and Lamp Base Allowable Variations

Rather than allowing variations where the average of *in situ* TMP_{LED} is "within 5°C" of the maximum case temperature tested in the corresponding LM-80 report, we recommend EPA remove the lower limit from the variation so it reads, "no greater than 5°C above..." Since lower LED temperatures ultimately result in greater reliability and lumen maintenance performance, we see no reason to restrict lamps that meet ENERGY STAR standards at any TMP_{LED} cooler than the maximum case temperature, while still maintaining the flexibility for higher temperatures up to 5°C.

Lumen Maintenance and Rated Life Requirements

Elevated Temperature Life Test

We strongly disagree with increasing the Elevated Temperature Life Test for Omnidirectional SSL products $\geq 10W$ from 45°C to 55°C. While we understand EPA's desire to streamline testing procedures across technologies by creating a uniform 55°C elevated test temperature, this 22 percent increase in testing temperature is arbitrary and will prove costly for LED manufacturers—and in turn consumers—for whom the 45°C test has proven sufficient. Given the imperative to promote consumer adoption by making next generation lighting cost-competitive with conventional lighting technology, we believe that the current test temperature should *not* be increased without strong data to demonstrate that the benefit of increasing the test by 10°C outweighs the additional manufacturing costs and resulting higher lamp prices which will serve to be another barrier to adoption.

Rated Life Requirements

We appreciate that EPA responded to LED stakeholder concerns with Draft 1 by restoring rated life for non-decorative Solid State lamps to $\geq 25,000$ hours. However, we are concerned that CFL rated life remains at $\geq 10,000$. While we understand it is an increase from the current $\geq 8,000$ spec for CFLs, there remains a sizeable gap in mandated performance between the two technologies. EPA should continue to strive to get CFLs on par with LED performance and do so without lowering the bar for LEDs (as suggested in Draft 1).

Electrical Performance Requirements

Power Factor Requirements

While we support the inclusion of the "Commercial Grade" qualification at a power factor of ≥ 0.9 , we are disappointed that the normal qualification remains at ≥ 0.7 and ≥ 0.5 for SSL and CFL respectively. Higher power factors save utilities money and resources, which in turn benefits both consumers and the environment. Money saved by utilities often results in rebates to consumers, incentivizing the further adoption of energy efficient technologies (informed by the ENERGY STAR label). As such, we recommend maintaining the Commercial Grade qualification at ≥ 0.9 , and raising the normal qualification to a minimum of ≥ 0.75 across all technology categories. ENERGY STAR is fundamentally an energy efficiency standard and EPA should be focused on using the specification development process to drive improvements in energy efficiency both now and in the future.

Run-Up Time Requirements

Since run-up time is not a performance issue for LED lamps, we appreciate EPA exempting SSL products from run-up time requirements in Draft 2. However, we support enhanced run-up time requirements for CFL lamps suggested by EPA in Draft 1. Consumer dissatisfaction with CFL run-up time may affect the widespread adoption of next generation lighting technologies (including the adoption of LEDs, which do not have run-up-related performance issues). We believe that through the ENERGY STAR certification process, EPA should be challenging CFL technology providers to improve run-up time requirements to bring CFLs on par with technologies (like LEDs) that are higher performing in this area.

Lamp Labeling, Packaging & Warranty Requirements

Commercial Grade

We recommend EPA establish a separate "ENERGY STAR Commercial Grade" label to distinguish higher performance products from those that receive the standard ENERGY STAR label. We strongly support the addition of the Commercial Grade distinction in Draft 2. However, EPA should recognize this more rigorous certification process by instituting a corresponding "Commercial Grade" label. Leaving it up to individual companies to market themselves will make it difficult for consumers to distinguish between the various products on the market. Additionally, the creation of a Commercial Grade category will likely inform utility rebates for commercial electricity customers. We ask that EPA move to establish a formal Commercial Grade label to provide uniformity and certainty for stakeholders.

Thank you for your consideration of these issues.

Sincerely,



T. Tracy Bilbrough
Chief Executive Officer
Switch Lighting