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Taylor Jantz-Sell
ENERGY STAR Lighting Program Manager
U.S. Environmental Protection Agency
Ariel Rios Building
1200 Pennsylvania Avenue, NW
Washington, DC 20460
lamps@energystar.gov

Re: ENERGY STAR Lamps V1.0 Third Draft Comments

Dear Ms. Jantz-Sell:

We appreciate the opportunity to comment on the ENERGY STAR Lamps V1.0 Third Draft. The following represents Switch Lighting's comments in response to the December 2012 ENERGY STAR Program Requirements Product Specification for Lamps: Eligibility Criteria Version 1.0, Draft 3 ("**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

Semi-Directional Category and Non-Standard LED lamps

We believe that the elimination of these lamp options, as proposed by ENERGY STAR will improve the consistency and comparable performance to traditional lighting options essential for successful, widespread consumer adoption of next generation lighting technologies. In addition, it is our recommendation that the EPA put in place a phase-down of Non-Standard qualification for CFL lamps. The EPA has the ability to remove this category and ensure that products receiving the Energy Star label meet

the highest possible performance standards to ensure product integrity, consumer confidence, and widespread adoption.

"Commercial" Grade Performance Tier

We ask that ENERGY STAR reconsider the elimination of the "Commercial" grade performance tier. The inclusion of this performance tier offers the commercial and discriminating consumer market with distinguished lamps of higher performance attributes in lifetime, CRI, Power Factor and warranty. Given the long cycles between ENERGY STAR revisions this would provide leadership in setting energy efficiency and lighting quality standard direction which the current draft does not.

Excluded Products

As energy efficient lighting and building technologies evolve, there will likely be features added to lamps that, while not providing illumination but 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 under the current draft. To encourage the incorporation of advanced technology into next generation lighting solutions, we recommend allowing this classification as long as the lamp still adheres to the ENERGY STAR requirements, i.e. efficacy for that lamp form factor in the "on" state. In addition there should be a low power threshold for the lamp in the "off" state, i.e. <0.1W.

Photometric Performance

Luminous Efficacy

We support the raising of the luminous efficacy standard but would recommend not raising the wattage threshold. The vast majority of LED lamps are currently < 15 watts so by raising the efficacy standard and wattage threshold simultaneously the majority of LED lamps are therefore exempt from meaningful improvements in luminous efficacy requirements. Our recommendation would be to require 55 lm/W for lamps rated ≤ 10 watts and 60 lm/watts for lamps >10watts.

Lumen Maintenance and Rated Life Requirements

Lumen Maintenance and Rated Life

We appreciate the EPA effort to provide a technology neutral lamp specification but there remains a sizeable gap in mandated performance between the two technologies. From the consumer's experience this will continue to add confusion between the different technologies with the same ENERGY STAR rating. Lumen maintenance and rated lifetime performance are two such areas which the EPA should continue to strive to get CFLs on par with LED performance and do so without lowering the bar for LEDs.

Electrical Performance Requirements

Power Factor Requirements

We are disappointed that the power factor qualification remains at ≥ 0.7 and ≥ 0.5 for SSL and CFL respectively. Over the next year the ability to generate safe clean power will become increasingly more expensive. A high power factor means that the energy we harvest will be used efficiently, which saves utilities money and reduces the strain on our 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). Power factor has been a static requirement which we recommend making some progress on in this important specification by raising power factor 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. The draft 3 recommended ENERGY STAR Version 1 implementation time, early 2014 should give sufficient time for manufactures to comply with this initiative.

Dimming Performance

Light Output and Flicker

While we appreciate the initial steps to include dimming requirements into draft 3, as written the performance description of this section including, test methodology, definition of samples and passing requirements of testing is currently confusing and highly incomplete. To adequately address the issues another draft would be required before seriously adopting any dimming standards within the ENERGY STAR specification.

Thank you for your consideration of these issues.

Sincerely,



David H Horn
Chief Technology Officer
Switch Lighting