

**Responses to Additional Questions for the Record**

**Re: Testimony of Jennifer Amann**

**Buildings Program Director**

**American Council for an Energy-Efficient Economy (ACEEE)**

**To the House Energy and Commerce Committee, Subcommittee on Energy and Power**

**Hearing on H.R. \_\_\_\_\_, the EPS Improvement Act of 2016, January 12, 2016**

**Submitted February 17, 2016**

## The Honorable Frank Pallone

**1. In general, the cost and availability of solid state lighting has changed dramatically over the past decade since we enacted EPACK 2005 and directed DOE to begin regulating EPSs.**

**A. What has happened to the price, availability and market penetration of solid state lighting since 2005?**

In 2005, the market for solid state lighting was limited to a few niche applications for specialty lamps and fixtures (e.g., traffic signals, under-counter lighting, etc). Since that time, manufacturers have introduced solid state lighting products for a wide range of lighting applications including the most common general service lighting applications traditionally served by incandescent and fluorescent lighting technologies. The earliest solid state lighting products carried a very high cost premium relative to incumbent lighting technologies (e.g., the earliest screw-based LED lamps were priced around \$50.00 compared with prices of less than \$0.50 and \$5.00, respectively, for the incandescent and compact fluorescent products they were meant to replace). Today, general service LED lamps are widely available for \$5.00 and even less at virtually all hardware and grocery stores. In the commercial market, the availability of solid state lighting products for a wide range of applications has grown. While linear fluorescent lamps still dominate the office and other large commercial submarkets, solid state lighting products are beginning to make inroads.

**B. What technological, efficiency and environmental advantages, if any, do solid state light sources have over incandescent bulbs and compact fluorescent bulbs?**

Solid state light sources offer numerous advantages over incandescent bulbs and compact fluorescent lamps (CFLs) including superior energy efficiency, longer operating life, no risk of mercury exposure, and reduced solid waste disposal. These advantages translate into significant monetary savings for businesses and consumers through lower utility bills and reduced maintenance and disposal costs as well as significant reductions in pollution emissions.

**C. What impact have these changes in solid state lighting cost, availability and market penetration had on energy efficiency, consumer savings and pollution reduction?**

To date, the market for solid state lighting remains small but it is growing rapidly. DOE estimates that in 2013 LED lighting accounted for about 3% of the lighting market. As a result, the technology is just beginning to have a notable impact on energy consumption, consumer electricity bills, and pollution reduction at a national level. While the impact to date has been limited, growth forecasts for solid state lighting demonstrate the dramatic impact the technology will have over the next 10-15 years. DOE analysis predicts that solid state lighting market share will grow to 48% and reduce national lighting energy consumption by 15% in 2020. By 2030, it will dominate sales for all major lighting applications, driving a 40% reduction in lighting energy use yielding energy savings of 3.0 quads in the year 2030 alone. This savings is equivalent to roughly 3% of total U.S. annual energy consumption or the energy consumed by 24 million U.S. homes today.<sup>1</sup>

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<sup>1</sup> <http://energy.gov/sites/prod/files/2015/05/f22/energysavingsforecast14.pdf>

**2. In reference to the legislation, your written testimony states that “ACEEE is satisfied...because it removes a potential obstacle to the continued growth of a leading energy efficiency technology while preserving DOE’s ability to develop a standard on power supplies...in the future, if warranted.”**

**A. Can you elaborate on ACEEE’s concern that the current rulemaking could pose an obstacle to the continued growth of solid state lighting? Are you concerned about cost increases, manufacturing impediments, or something else?**

ACEEE’s primary concern is potential disruption in the market stemming from manufacturer uncertainty over the regulations governing a subset of solid state lighting products. As noted in my written testimony, many SSL products use power supplies, also known as SSL drivers, to power LED lighting. The broad definition of external power supplies incorporated in EPACK 2005 captures SSL drivers which were largely developed after the statute was enacted and were not the intended target of the EPS provision. SSL products operate differently than other products using EPS, cannot be tested under the required EPS test method, and cannot be shown to comply with the EPS standard. This leaves manufacturers at risk since their products are technically covered by the regulation, but they cannot perform the required test procedure or show compliance with the mandatory standard. While DOE has mechanisms in place to grant waivers in this type of situation, the waiver process would be unduly burdensome for such a large and diverse set of products. This remedy would impose significant costs on industry and DOE and lead to delays in getting innovative new SSL products to market. Such costs and delays are of particular concern given that SSL drivers were never the intended target of the EPS standard.

**3. Your testimony also states that the “provision in the bill explicitly granting DOE authority to set future standards on these products is critical to ACEEE’s support for the bill.” Our goal here is only to surgically remove solid state lighting drivers from the current rulemaking for EPSs, so ensuring the Secretary’s ability to set efficiency standards for solid state lighting drivers is very important to me and many Committee members, too. However, I believe the Secretary would still be able to set such efficiency standards in the future pursuant to other, existing authorities in EPCA regardless of the inclusion of the provision you reference in your testimony.**

**A. What advantage does the language in the current legislative proposal provide over using existing authorities to promulgate efficiency standards for solid state lighting in the future?**

The language in the current legislative proposal gives DOE explicit authority to promulgate standards for SSL drivers in the future, if warranted. At present, SSL drivers are not a covered product nor are other SSL products (e.g., SSL luminaires or fixtures) that incorporate SSL drivers. It is unclear whether SSL drivers would meet the criteria for a separate coverage determination under DOE’s existing authority under EPCA. The language would ensure that DOE has the authority to set standards for these products without a coverage determination. Congress previously gave this authority to DOE for televisions.