

**Appliance Standards Awareness Project  
American Council for an Energy-Efficient Economy  
Northeast Energy Efficiency Partnerships  
Northwest Energy Efficiency Alliance  
Alliance to Save Energy  
Consumer Federation of America**

June 16, 2017

Honorable Andrew McAllister, Ph.D.  
Commissioner  
California Energy Commission  
1516 Ninth Street  
Sacramento, CA 95814-5512

RE: Docket 17-AAER-07

Dear Commissioner McAllister:

This letter includes the comments of the Appliance Standards Awareness Project (ASAP), American Council for an Energy-Efficient Economy, Northeast Energy Efficiency Partnerships, Northwest Energy Efficiency Alliance, Alliance to Save Energy, and Consumer Federation of America on the California Energy Commission (CEC) Phase II Pre-rulemaking for general service lamps (GSL) Docket No. 17-AAER-07. We applaud the CEC for undertaking this Pre-rulemaking, and for the opportunity to provide comment.

***1. The CEC should adopt the current US DOE definition for GSL as part of California's Title 20 appliance regulations.***

We recommend that the CEC adopt the expanded definition of GSLs included in two final rules published by the Department of Energy (DOE) in the Federal Register on January 19, 2017. This expanded definition comes into effect federally on January 1, 2020 and significantly increases savings by closing several loopholes created by exemptions for some lamp types under the prior GSL definition, and by covering some additional popular lamp types which had previously fallen under other standards. During the federal rule-making process many of the co-signers to this letter recommended that DOE adopt an even broader definition of GSLs than the agency proposed in the Notice of Proposed Definition and Data Availability (NOPDDA). In its final rule DOE significantly expanded the types of lamps covered, but actually narrowed the GSL definition from what it had proposed in the NOPDDA. Although we supported

a broader GSL definition than DOE ultimately adopted, we believe that DOE’s rulemaking process was transparent, inclusive and thorough and that the GSL definition expressed in the January 19, 2017 final rule effectively balances the interests of stakeholders. In particular, DOE held extensive discussions with the lighting industry during the rulemaking and the final rule GSL definition takes into account the status of the GSL market, the transition to solid-state lighting, and the availability of complying products in different categories.

California will realize significant benefits from adopting the expanded GSL definition. The CEC “Standards for State-Regulated General Service Lamps -Tier II” of 45 lumens per watt is scheduled to come into effect on January 1, 2018. Currently, this California state standard covers GSLs as defined in the 2007 EISA federal legislation (“old GSLs”), which had been in place prior to DOE’s publication of the expanded GSL definition (“new GSLs”) referenced above. Old GSLs are primarily A-line lamps which have already seen substantial replacement of incandescent technology by more efficient options. By the third quarter of 2016, over 45% of A-line lamps shipped were already either LEDs or CFLs<sup>1</sup>. About 45% of homes in the “Pacific” region in DOE’s most recent Residential Energy Consumption Survey (data collected in 2015) reported all or most bulbs installed as either CFLs or LEDs. By the time it comes into force on January 1, 2018, the CEC 45 lpw standard for old GSLs will confirm a transformation of the California residential lighting market that is already substantially underway. The standard will significantly accelerate the exit of inefficient light bulbs that would otherwise might linger in the market for a long time.

The situation is different for the lamp types that were added under DOE’s new GSL definition (e.g. incandescent reflector lamps, decorative and globe-shaped lamps). Collectively, the nationwide installed stock of these new lamp types is at least 80% as large as the stock of old GSLs, and the vast majority of the installed stock of these new lamp types is primarily incandescent<sup>2</sup>. In a recent study<sup>3</sup>, Lawrence Berkeley National Laboratories (LBNL) estimated 27 quads of savings nationally from lamps shipped between 2020 and 2049 after DOE’s 45 lpw GSL standard comes into effect for the expanded GSL definition on January 1, 2020. If we prorate these projected savings by California’s 10.4% share of US housing units<sup>4</sup>, the expected source energy savings would be on the order of 2.8 quads<sup>5</sup>. The LBNL report estimates the net present value from expanding scope to according to the revised definition to be from \$120 - \$220 billion to consumers nationally (in 2015 dollars)<sup>6</sup>, with the net present value of prorated savings to California consumers ranging from \$12.5 – \$22.9 billion. This conservative estimate does not include the additional savings that California would realize if the CEC were to adopt the new GSL definition, and apply the 45 lpw backstop standard, before January 1, 2020 as scheduled for the federal standard. The estimate of California consumer savings is also conservative because LBNL calculated national consumer savings using national average retail electricity rates, while California electricity rates are currently 49% higher than the national average<sup>7</sup>.

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<sup>1</sup> NEMA lamp index <http://www.nema.org/Intelligence/Pages/Lamp-Indices.aspx>

<sup>2</sup> *Impact of the EISA 2007 Energy Efficiency Standard on General Service Lamps*, LBNL-1007090, January 2017

<sup>3</sup> Ibid

<sup>4</sup> US Census data <https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmm>

<sup>5</sup> Quadrillion BTUs of full fuel cycle energy savings—which includes the energy required to extract, refine, and deliver primary fuel sources.

<sup>6</sup> Depending upon discount rate chosen. The ends of this range reflect a 3% and 7% discount rate respectively.

<sup>7</sup> US Energy Information Agency Electricity Data Browser values for March, 2017.

**2. The CEC should adopt the expanded GSL definition to come into effect as soon as possible.**

In addition to energy savings, the CEC's adoption of the federal GSL definition will also provide protection for California, and possibly for other states as well, if the federal government fails to enforce the 45 lpw backstop. If the CEC adopts the expanded GSL definition to become effective around 18 months from now, it would create a beneficial tiered implementation sequence. Lamps that meet the old GSL definition, primarily A-line lamps where the majority of products sold and in stock in California are probably already CFLs or LEDs, would be required to meet the 45 lpw standard on January 1, 2018. Then, the expanded GSL definition would become effective about 1 year later, extending the 45 lpw standard to more varieties of lamps. This two-tier approach would give these predominantly incandescent lamp types more time to transition.

Although we have yet to see as dramatic a market adoption of LED versions of many of the "new GSLs" that we have seen for the A-line "old GSLs", this is not due to any technical barrier or lack of product availability for new GSLs. Reflector, decorative and globe LED lamps of many different styles and light output levels are widely available at major retailers. The new lamp types covered under DOE's expanded GSL definition have either been exempt from energy efficiency standards or subject to relatively less stringent requirements<sup>8</sup>, therefore industry has been slower to introduce LED versions. We are not aware of any lamp types that are covered by the expanded DOE GSL definition that cannot be manufactured in an LED version compliant with a 45 lpw standard.

The CEC already has standards in place for LED lamps and Small Diameter Directional Lamps (SDDL) that become effective at different times starting with January 1, 2018. Both types of lamps would be included within the expanded definition of GSL, and in both cases the minimum efficiency requirements in the existing standards are greater than 45 lpw and the expanded GSL definition would not interfere with the existing standards.

**3. The CEC should adopt the expanded GSL definition as published in the Federal Register on January 19, 2017, but should extend the range of products covered to include dimmer lamps.**

The expanded GSL definition published by DOE on January 19, 2017 applies to lamps with light outputs from 310 to 3,300 lumens. The existing California LED standard applies to medium screw-base LED lamps starting at 200 lumens, and to candelabra base LED lamps starting at 150 lumens. We recommend that the CEC also apply the minimum lumen output range from the LED standard to general service lamps. This would make California GSL efficiency standards applicable to lamps with a medium screw base that produce between 200 and 3,300 lumens, and lamps with a candelabra base that produce between 150 and 3,300 lumens. Some 40 W incandescent lamps today are rated at 300 lumens, which may create a loophole at the low light output end of the national market once the federal 45 lpw backstop comes into effect. Extending coverage in the California GSL definition down to 200 or 150 lumen output for medium and candelabra base lamps respectively would be consistent with existing California standards for LEDs, and would ensure that the potential loophole in the federal GSL definition does not lead to lost savings in California.

Thank you for the opportunity to comment on these proposed standards. We commend the CEC for initiating this process and look forward to a conclusion by the end of 2017.

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<sup>8</sup> E.g. incandescent reflector lamps (IRL) which may still be incandescent under the existing IRL standard.

Sincerely,



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