



July 23, 2014

Mr. Andrew McAllister
Commissioner
California Energy Commission
1516 Ninth Street
Sacramento, California 95814
Docket #2014-BSTD-01

Submitted via email: docket@energy.ca.gov

Acuity Brands Comments on June 24, 2014 Staff Workshop on Proposed Lighting Efficiency Measures for Residential and Nonresidential Buildings

Dear Commissioner McAllister,

Thank you for the continued opportunity to participate in the development of Title 24 standards helping the state of California achieve robust energy goals. The staff workshop in June was valuable to Acuity Brands to understand the preliminary thoughts regarding proposals for the 2016 building energy standard. Acuity Brands offers the following comments regarding the code proposals.

RESIDENTIAL

- **Requirements are becoming very prescriptive.**
 - Consumers like choice and quality means different things to different people. The proposal includes a variety of “quality” criteria, but there are tradeoffs between most of these. We appreciate the interest and share the concern to promote the adoption of quality LED products, but the proposal appears to be requiring the best of class or high quality in every attribute and has less emphasis on energy reductions. All LED products include a variety of quality attributes on the carton or on catalog sheets.
RECOMMENDATION: Rather than mandating the highest quality in every category, the Commission should consider a requirement that allows the owner to evaluate the tradeoffs and select products within a range that best suit their preference.
 - The only limitation to the energy used in a residential building is the budget for the equipment. We recognize past comments regarding the complexity of a building method approach to residential applications, but we are not convinced that a building method has to be complex. The building method allows homeowners and designers more flexibility in the application of the lighting solutions, while ensuring a limit to the overall energy used. The current method should continue to be available for those who prefer a product based compliant solution. The compliance for the building method could be similar to the non-residential documentation, but would be much simpler since it would be based on overall power density and certain lighting controls. This optional compliance path could provide valuable insight to energy use in residential buildings.
RECOMMENDATION: We recommend that a simple power density based building method approach with control requirements be developed as an alternate path to compliance for the 2016 code.

- **Potential for limited fixture supply and choice**

- We appreciate the revisions allowing screw based lamps to now qualify if they meet the performance requirements in Appendix JA8. However, the 2016 proposal requires ALL fixtures in a home to be high efficacy. Because the high efficacy products have to meet a variety of quality attributes, we believe that the code will restrict fixture supply and choice because the cost evaluations provided were not based on the combined impact of the multiple quality attributes proposed in JA8. We support a higher threshold for high efficacy products, but have a concern that the quality attributes may not provide added consumer benefits for all areas of a residence.
RECOMMENDATIONS: 1) consider implementing fewer quality attributes; 2) consider allowing a range or lower threshold for the quality attributes, enabling consumers to make the choice about what they prefer and the tradeoffs; 3) include a requirement for the contractor to provide the owner with the specifications, product costs and Lighting Facts labels for products selected before the installation so that the owner is fully aware of the tradeoffs.

- **Excessive requirements in JA8.**

- It is our understanding that JA8 will apply only to LED High Efficacy products, however in the staff workshop, the slides indicated that JA8 would be technology neutral. This has resulted in confusion about the applicability of JA8 light sources, luminaires, and specific source technologies.
- The 90 CRI requirement results in tradeoffs in other attributes, such as efficacy. When combined with other proposed quality attributes, it drives up cost for a level of performance that may not be required in every space in a home. If additional quality attributes will be required in 2016, the Commission should consider a compliant “range” of performance rather than a minimal threshold. This will allow a broader set of cost effective lighting solutions and allows the designer and homeowner to evaluate the tradeoffs for each space in the home.
- The 90 CRI requirement as proposed for the 2016 standard would apply to outdoor products, which was exempt in the 2013 standard. It is not appropriate to stipulate a high CRI for applications where this degree of color performance is not necessary.
- We would suggest that the Commission should not mandate business and financial considerations such as product warranties in an energy standard. While Energy Star includes a warranty requirement, it is a voluntary program and manufacturers can choose to list a product or not.
- There is a significant opportunity for with screw based high efficacy downlight retrofits kits. We recognize past concerns regarding thermal performance. However, these products are tested in-situ condition. This results in more accurate thermal, light output and color performance in the recessed application than a screw based lamp which is tested in open air. We encourage the Commission to consider these retrofit technologies as a compliant product solution.
- Flicker thresholds and test procedures are not currently defined. While we appreciate the interest in limiting flicker, we believe it is premature at this time to include it as a quality attribute in the 2016 code.
- Labeling can be costly and distractive to the aesthetics of the product. Product cartons and specification sheets provide sufficient information to support compliance requirements and are readily available to designers, contractors, homeowners and inspectors.

RECOMMENDATIONS: 1) provide clarification regarding the applicability of JA8; 2) conduct a more thorough cost evaluation of the proposed requirements based on the combined quality attributes; 3) consider a CRI compliance range rather than the 90 CRI threshold in conjunction with the quality attributes; 4) exempt the outdoor CRI requirement; 5) eliminate the warranty requirement from the Title 24 scope; 6) consider the inclusion of screw based high efficacy downlight retrofits as compliant products for downlights; 7) postpone any requirements related to flicker until thresholds and test

methods are defined; 8) allow compliance data to be included on the product itself or on the product carton or spec sheets.

- **Color Preference**
 - We appreciate the removal of the proposed revisions to the color temperature range, recognizing that color appearance is based on consumer preference and application specific.
- **Light Pollution**
 - It was suggested by a workshop participant that outdoor products should include requirements for light pollution. This is not an appropriate consideration for the residential energy standard. Light pollution issues are defined and enforced by municipal ordinances. A product attribute will not take into account the installation and whether a porch or other architectural or landscape elements block the light. While we believe controlling light pollution is an important issue, the Title 24 residential standard is not an appropriate method to regulate this.
RECOMMENDATION: Do not include light pollution criteria in Title 24 residential standards.

NON-RESIDENTIAL INDOOR

- **Lighting Retrofits**
 - The single largest energy reduction opportunity in California is the renovation or replacement of existing lighting. However the energy code requirements often cause building owners to postpone simple renovations that may require additional code compliance that increases the overall cost. There are a variety of quality lighting retrofit solutions available that are cost effective, easy to install and provide 50% or more reduction in the energy use. Today, there is a potential for some retrofits to be exempt from the multi-level controls requirement and others are not. We encourage the Commission to revisit the definitions and requirements related to “Luminaire Modifications-in-Place” and the multi-level control requirements to ensure that they encourage energy efficiency improvements and apply consistently to all retrofit solutions. We are willing to work with the contractors to assist with this opportunity.
RECOMMENDATION: Reevaluate the requirements for lighting retrofits and controls to promote broader adoption of retrofit solutions.

NON-RESIDENTIAL OUTDOOR

- **Outdoor LPA baseline**
 - We endorse a baseline for the LPA models utilizing solid state lighting solutions. These solutions have progressed significantly since the 2013 code and the market adoption is also increasing significantly. We are anxious to review the models, equipment and assumptions supporting the proposed LPA values prior to the next workshop. Specifically, we are interested in understanding why the percent changes from the 2013 to proposed 2016 power allowances are disproportionately higher for the higher lighting zones.
RECOMMENDATION: Utilize LED technology for the baseline models for the power allowances, provide an explanation regarding the varying degree of reductions by lighting zone and provide the models for public review as soon as possible.

- **Adding Lighting Zone 0**
 - While it was not in the staff workshop proposal, there was discussion at the June workshop to modify the LZ definitions to add LZ0. Since the California lighting zones are based on population density, they have never been consistent with the IES definitions. Adding LZ0 would have minimal to no impact on statewide energy use and would require a revision to the definitions for all the lighting zones. This would result in the need to modify all the power density models relative to the new zone definitions.
RECOMMENDATION: Do not expand the definition of lighting zones in California to include Lighting Zone 0.
- **Spectral content of light**
 - While it was not in the staff workshop proposal, there was discussion at the June workshop to include a requirement related to the spectral content of the outdoor lighting. There are efficacy tradeoffs when specifying spectral content, especially when the requirements limit the high efficacy blue portion of the spectrum. Primary research related to human health relate to illuminance levels associated with interior light exposure during nighttime and do not typically relate to the illuminance levels at the retina from exposure to outdoor lighting. There is inconclusive research related to spectral content and defining limits could impact security cameras and other security measures.
RECOMMENDATION: Do not include requirements for spectral content for outdoor lighting at this time.
- **Outdoor Retail and Canopies Automatic Lighting Controls**
 - Occupant responsive controls have been utilized for these applications and are reliable and cost effective. We are working with the Title 24 contractors to contact facilities utilizing these solutions.
RECOMMENDATION: We support the inclusion of Outdoor Retail and Canopies in the 2016 outdoor controls requirements.
- **Dimming Range**
 - We acknowledge and thank you for extending range from 80% to 90%. However, Title 24 is an application standard not a product standard. With all the fixtures on at a 90% dimmed state, there is a potential for wasted energy in many applications. Appropriate security lighting can be achieved with the majority of fixtures turned off during times when the site is vacant except for a few lights on for security at a reduced lighting level.
RECOMMENDATION: Modify the proposal to allow some lights to be fully extinguished when an area is vacant.

Thank you for the opportunity to provide this input. Acuity Brands is anxious to help promote solutions to achieve greater energy savings with high quality lighting solutions. Please feel free to contact me with any questions.



Cheryl English
 VP, Government & Industry Solutions
 Acuity Brands
Cheryl.English@AcuityBrands.com
 770-860-2660