

## DOCKETED

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**On Proposed Nonresidential Lighting Measures for the California Code of Regulations, Title 24, Part 6**

*Additional submitted attachment is included below.*

July 14, 2017

Submitted via email: [doCKET@energy.ca.gov](mailto:doCKET@energy.ca.gov)

Docket # 17-BSTD-01

Mr. Andrew McAllister  
Commissioner  
California Energy Commission  
1516 Ninth Street  
Sacramento, California 95814

**Proposed Nonresidential Lighting Measures for the California Building Energy Efficiency Standards California Code of Regulations, Title 24, Part 6; Pre-rulemaking # 17-BSTD-01**

Dear Commissioner McAllister,

Acuity Brands appreciates the opportunity to provide comments regarding the Title 24 Building Energy Code. Acuity Brands has a long history of working with the Commission and contractors to promote the adoption of the state building code to promote high efficiency lighting installations. We look forward to discussing our comments and working collaboratively on revisions necessary to ensure an effective building code.

Acuity Brands is the leading manufacturer of luminaires and lighting controls in North America. We operate facilities throughout California under the Peerless, Hydrel, Lighting Control & Design and Sunoptics product brands. In addition, our western region manufacturing and distribution center is located in Ontario, CA. The California building code has a direct impact on our investment of nearly 400 California based employees.

Our comments are based on the CEC staff presentations from the June 22, 2017 pre-rulemaking workshop and the contents of the draft CASE reports posted at <http://title24stakeholders.com/#> under the 2019 CASE Topics pull down menu for Nonresidential Lighting, and focus primarily on the proposed nonresidential lighting requirements for outdoor lighting sources, indoor and outdoor lighting controls, updates to the lighting alteration requirements, and procedural issues. We also have included recommendations for your consideration.

Please contact Cheryl or Tanya to discuss our comments in more detail.



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1. **Procedural Observations** - We have worked collaboratively with the CEC staff and contractors for many previous iterations of the Title 24 code development, and noted in our comments during the previous code cycle that we were concerned with procedures issues that limited involvement from industry. We would like to thank the Commission for returning to a more collaborative process during the pre-rulemaking phase of the 2019 code development. As a supporting member of the California Energy Alliance (CEA), Acuity Brands welcomes the opportunity to provide input to CEC through CASE proposals early in the standards cycle. Additionally, we are hopeful that the Commission will continue to be sensitive to:
  - a) scheduling public meetings at times that are known in advance to present significant conflicts for lighting industry members,
  - b) providing workshop schedules and agendas 21-days in advance, and
  - c) making workshop documents and presentations publicly available at the time of the workshop.
  
2. **Lighting General Issues** - A general request for stakeholder input on several lighting topics was issued during the workshop. These topics included smart lighting, IoT, big data, demand response, networked lighting controls, white color tuning, and human centric lighting and are indeed timely topics in the lighting industry. It is our hope that the Commission will begin to look at these trends in a holistic manner and consider developing a framework to establish a method of evaluating and reporting non-lighting energy consumption separate from lighting energy consumption. Lighting strategies that include networked lighting controls, smart lighting and IoT will inevitably incorporate devices that consume energy to allow the facilitation of data and communication protocols. These functions will need energy bandwidth separate from lighting power density.
  
3. **Lighting Alterations** - Lighting alterations are critical to California in achieving its energy goals and it is our opinion that the current proposals do not maximize the energy savings potential to meet California's energy goals. We expect that the Commission will move forward with significant revisions to the lighting alteration requirements in the 2022 code cycle when wireless technologies will be broadly available and cost effective. Until then, we are in support of the CEA proposal that incorporates simple language to make applying the code easier. We request that the Commission consider eliminating the individual requirements for luminaire replacements and luminaire modifications and combine the requirements for these types of projects. We also favor the lower LPD threshold of 80% for Option 2 which will promote greater use of lighting controls option for more significant energy savings for lighting alteration projects. In addition, we recommend a pre-alteration certification to verify existing conditions and assist with validating energy savings after the lighting alteration project is completed.
  
4. **Outdoor Light Sources** –
  - a. **Lighting Power Allowances** - The Commission is proposing a new set of outdoor lighting power allowance values using LED lighting as the baseline. We support utilizing LED technology as the baseline for the lighting power allowances and believe that the values in Table 140.7-A and Table 140.7-B will be achievable by 2019, however, the values are aggressive given that there was a 40% reduction in Z3 in the 2016 code. We recommend that the Commission review the values for applications using decorative post tops and other luminaire types that have an

efficacy handicap due to the dissimilar design criteria and features from area lighting products to ensure that the use of these solutions is not eliminated from the code.

- b. Exemption (by wattage) for Cutoff Distribution** - Previously luminaires with wattage less than 150W were exempt from the maximum zonal limits for uplight and glare, and the Commission is proposing to lower the wattage for this exception from 150W to 30W based on lower wattages of LED technology. Again, we recommend that the Commission review luminaire wattage data for multiple LED luminaire types, including decorative post tops, and move forward with an exemption to ensure that the 30W threshold does not eliminate the use of decorative or other specialty type of products from the code. The current proposal is an 80% reduction from the previous standard, however LED technology has not yet achieved that level of reduced energy performance. We recommend that 75W is a more appropriate threshold for this exemption in the 2019 standard.
- 5. Indoor Lighting Controls – Automatic Daylighting Dimming Plus OFF** – The Commission is proposing the addition of a "plus-OFF" portion of the daylighting controls to allow a daylight "gap" of 25 percent of design illuminance between the minimum dimming level and turning lights completely OFF. We agree with the stakeholder concerns acknowledged in slide 31 of the workshop presentation. If the occupants believe lights are not working although the system is functioning as intended, the likelihood exists that the daylighting controls will be disabled, negating the energy savings. We do not believe the market supports this feature, and although the "plus OFF" daylighting provision is in alignment with ASHRAE/IES/ANSI 90.1, it is not in IECC, the more pervasive energy code.
- 6. Outdoor Lighting Controls –**
  - a. Motion sensors to control building façade, ornamental hardscape, outdoor dining, and outdoor sales frontage lighting** – In the draft CASE report, the use of motion sensors has been proposed for a number of outdoor lighting applications. In the pre-rulemaking workshop, the Commission's recommendation limited those applications to building façade, ornamental hardscape, outdoor dining, and outdoor sales frontage lighting. We agree with limiting the applications and are pleased that outdoor sales lot lighting was not included. We recommend that the Commission go further with exemptions for the motion sensing requirement and include building façade, ornamental hardscape, outdoor dining, and outdoor sales frontage lighting. Motion sensing coverage will likely be a design issue, and scheduling is a more desirable solution for these particular applications. These lighting applications have utility beyond the area covered by a sensor and would likely require a complex network of sensors that are not incorporated with the luminaire. This would result in installations that are difficult to commission, would not likely dim in a manner intended for the application and would not be cost effective.
  - b. Scheduled dimming during normally occupied hours** – The draft CASE report is proposing revisions to the language for occupancy-based, bi-level controls by establishing schedules of normally occupied and normally unoccupied times. In the provision for scheduled dimming during normally occupied hours, the lighting power of each luminaire shall be reduced by at least 50% but not exceeding 90%. We do not

agree that the Commission should mandate lights to be left ON, even if dimmed to 90%. It is ultimately a business owner's decision for OFF during normally occupied hours. We support requiring the 90% dimming capability but recommend not limiting the potential energy savings by requiring ON at 90% dimmed in normally occupied scheduled periods.

7. **Advanced Daylighting Design** – We applaud the CASE team's work on Tubular Daylighting Devices (TDD), and are still digesting the details. Our initial review highlighted a concern with the equivalence study for developing a Min VTannual for TDDs. It is not clear if the performance comparison of traditional skylights to TDDs is a direct "apples-to-apples" comparison, especially in an open ceiling application. We believe that using NFRC 200 or ASTM E972 as a static comparison to NFRC 203 leaves room for assumptions. Traditional skylights will distribute light over a larger area than a TDD and this difference should be accounted for in the equivalence study. The equivalence study to determine Min VTannual should perhaps be done on a per square foot of aperture basis to ensure that the difference in size does not result in different amount of daylight in a space from a TDD and traditional skylight. We request that the Commission evaluate the equivalence study and address this concern in the next review cycle.