

KINGPORT



March 15, 2015

Mr. Adrian Ownby
California Energy Commission
E-mail: adrian.ownby@energy.ca.gov

Dear Mr Ownby:

RE: Docket No. 15-BSTD-01

As a consultant for businesses considering new lighting projects in the State, I have reviewed the 45-Day Language California Code of Regulations (CCR), Title 24, Part 6 (also known as the California Energy Code) for 2016 and have the following comment for your consideration:

I. CODE SECTIONS IN QUESTION:

A. " SUBCHAPTER 1 ALL OCCUPANCIES-GENERAL PROVISIONS

SECTION 100.1 – DEFINITIONS AND RULES OF CONSTRUCTION

Lighting Definition Page 23

Lighting Control, Self Contained is a unitary lighting control module that requires no additional components to be a fully functional lighting control.

Lighting Control System requires two or more components to be installed in the building to provide all of the functionality required to make up a fully functional lighting control. "

B. " SUBCHAPTER 2

SECTION 110.9 – MANDATORY REQUIREMENTS FOR LIGHTING CONTROL DEVICES AND SYSTEMS, BALLASTS, AND **LUMINAIRES**

(a) All lighting control devices and systems, ballasts, and **luminaires** subject to the requirements of Section 110.9 shall meet the following requirements"

C. "SUBCHAPTER 4 SECTION 130.0 – **LIGHTING SYSTEMS** AND EQUIPMENT, AND ELECTRICAL POWER DISTRIBUTION SYSTEMS – GENERAL

The design and installation of all lighting systems and equipment in nonresidential, hi-rise residential, hotel/motel buildings, outdoor lighting, and electrical power distribution systems within the scope of Section 100.0(a) shall comply with the applicable provisions of Sections 130.0 through 130.5. "

II. OBJECTIVE OF THE RECOMMENDATION AND COMMENTS:

- A. Eliminate the market confusion that **Luminaires** and **Lighting Control Systems** must be certified to the Commission under Title 20 Appliance Efficiency Requirements: allow end users to consider advanced lighting control systems whose performance exceed the requirements of the proposed Title 24 2016 45-day language in terms of energy savings and demand reduction with improved functionality.
- B. Allow technological advances and increased adoption of **advanced lighting control systems** that integrate lighting control systems into luminaires thereby facilitating Code compliance in many potential large nonresidential buildings.
- C. Allow manufacturers to continue to improve the performance of lighting control systems with new designs, including those integrated in luminaires at the factory: this integration reduces performance failures and installation that do not meet manufacturers' recommendations. These improvements will help end users meet many requirements of Title 24 2016 in cost effective installations.

California Energy Commission

DOCKETED

15-BSTD-01

TN # 75426

MAR 17 2015

III. TITLE 24 2016 PROPOSED LANGUAGE:

Many stakeholders are under the impression that Luminaires and Lighting Control Systems (as defined in Section 100) must be certified to the Commission as required under Title 20. Furthermore, many have interpreted the current Title 24 2013 as requiring the certification of luminaires manufactured with lighting control system integrated right at the factory.

This confusion is caused by the fact that Section 110.9 (page 72 of Title 24 2016) is entitled:

Mandatory Requirement For **and Luminaires**.

Furthermore, the first sentence of Section 110.9 (a) (page 72) states that,

All lighting control devices and systems, ballasts, **and luminaires** subject to the requirements of Section 110.9 shall meet the following requirements.

We recommend that you clarify in this new version of Title 24 the following intent of the Code:

- A. For nonresidential lighting applications, the luminaire **is not required** to be certified to the Energy Commission. Lighting control systems **do not** need to be certified to the Energy Commission.
- B. On the other hand, Self-contained lighting controls, such as an occupancy or daylight sensor, **must be** certified to the Energy Commission under Title 20 Appliance Efficiency Requirements per [Section 110.9](#) of the Energy Standards, **even if** the Self-contained lighting control is integrated into the luminaire or fixture. The luminaire itself (made with integrated lighting control system) **does not need** to be certified under Title 20 Appliance Efficiency Requirements per [Section 110.9](#) of the Energy Standards.

IV. PROPOSED CLARIFICATIONS AND CHANGES TO TITLE 24 LANGUAGE:

A. I recommend that you remove the word **luminaires** from the Title of Section 110.9 and first sentence of Section 110.9 (a) for the following reasons:

SECTION 110.0 already states that all systems and components must comply with either certification requirements of Title 20 and that installed systems must meet installation provisions of the SUBCHAPTER.

"SECTION 110.0 - SYSTEMS AND EQUIPMENT -

Systems, equipment, appliances and building components may be installed in a building regulated by Part 6 only if:

- a) The manufacturer has certified that the system, equipment, and appliances or building component complies with the applicable manufacturing provisions of Sections 110.1 through 110.10*
- b) The systems, equipment or building component complies with all applicable installation provisions of Section 110.1 through 110.10. "*

B. SUBCHAPTER 4 SECTION 130.0 – **LIGHTING SYSTEMS** AND EQUIPMENT, AND ELECTRICAL POWER DISTRIBUTION SYSTEMS – GENERAL

The reference to Lighting Systems having to meet all provisions of Sections 130.0 through 130.5 ensures that **" luminaires"** when removed from Section 110.9 (page 72) remain included under the provisions of Sections 130.0 -130.5.

To make this very clear and ensure compliance of all parts of a "Lighting Systems", I recommend adding a definition of what the Code defines as a **"Lighting System"**.

V. BENEFITS OF PROPOSED CLARIFICATION AND CHANGE IN WORDING OF THE SECTIONS:

A. Codes and Standards fuel technology innovations

Innovation and Standards: *" Innovation is the fuel of economic engines.*

Standards are a critical element of the formula.

In some cases, a standard will precede innovation by establishing a baseline for design and performance that will satisfy user requirements. That standard must provide enough flexibility that suppliers or manufacturers can vary features, function, or price to establish a niche that positions them with a marketplace advantage. Other times, an innovative idea that finds its place in the market becomes the foundation of a new standard, which then becomes the physical documentation of an agreed-upon solution that has already been time-tested and proven. "stated by Joe Bhatia, President and CEO American National Standards Institute"¹
I am of the firm belief that the Title 24 is at a pivotal point in becoming a catalyst for innovations in the lighting industry that will enhance resource productivity in the U.S. and globally.

B. Innovations in Lighting Industry fueled by the building, IT, digital revolution and sensory technologies:

The lighting market as many other key building industries is experiencing a rebirth with the convergence of IT, sensory, visual technologies as never before.

The integration of "intelligent components" (multiple lighting control devices) into networks of luminaires is nothing more than a wave of innovation under the "Internet of Everything".

This phenomenon is best summarized described in *How Smart, Connected Products Are Transforming Competition*, by Harvard Business School Professor Michael E. Porter and James E. Heppelman, President and CEO of PTC November 2014 : *"Information technology is revolutionizing products. Once composed solely of mechanical and electrical parts, products have become complex systems that combine hardware, sensors, data storage, microprocessors, software, and connectivity in myriad ways. These "smart, connected products"-made possible by vast improvements in processing power and device miniaturization and by the network benefits of ubiquitous wireless connectivity - have unleashed a new era of competition."*²

C. The market is embracing these innovations in all building technologies:

Consumer Report in October 2013 rates the performance of LED bulbs for the retail consumer in a room by room guide while raising awareness of Wi-fi-enabled thermostats.³

In June 2014, Consumer Reports features smart HVAC and lighting appliances that are operated remotely with a smart phone.⁴

D. The new lighting control system-integrated lighting solutions will reduce the costs of designing a lighting system, facilitate programming of lighting control systems and simplify the critical commissioning of the lighting systems. At the same time, this technological revolution requires a workforce much better trained on integration skills and less on assembling devices, components, luminaires and other key parts of an advanced lighting control system. Industry has made available such workforce training for seven years with the creation of organizations such as CALCTP and NLCAA.

I thank you very much for your time in reviewing this comment and truly appreciate all the support that the Hot Line has given us to date on projects that are seeking to meet Code.

I am available to furnish additional data or documentation to support my position. Have a wonderful and productive day. Best regards,



Lee Stevens , President

Kingport Corporation
P.O. Box 182221 San Diego, CA. 92178, Tel: 805 448-4200 ; Office: 301 576-2600
E-mail: kingportco@gmail.com; stevens.rpa@gmail.com

¹ American National Standards Institute (ANSI) - *Standards and Innovation Overview of the U.S. Standards and Conformity Assessment System and Problem Solving through Public-Private Partnerships* Presentation by S. Joe Bhatia, President and CEO American National Standards Institute. May 26, 2010
<http://publicaa.ansi.org/sites/apdl/Documents/News%20and%20Publications/Speeches/Bhatia%20-%20Catholic%20U%20-%202015-26-10.pdf>

² Professor Michael E. Porter and James E. Heppelman, CEO of PTC – *The Internet of Everything* -Harvard Business Review, November 2014 Issue Page 64.

³ Consumer Reports- *Bright Ideas To Save Energy* - October, 2013 issue page 28-29; pages 30-33

⁴ Consumer Reports – Run Your Home From Your Phone – June 2014 Issue- Page 28-31

