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Leviton Manufacturing Comment Letter on 2025 Building Energy Efficiency Standards, Title 24 Parts 1 and 6, Express Terms, 45-Day

Leviton Comments on 2025 Building Energy Efficiency Standards, 45-Day Language

Additional submitted attachment is included below.

May 13, 2024

California Energy Commission
Docket #24-BSTD-01
715 P Street
Sacramento, CA 95814

Re: Docket Number: 24-BSTD-01 – **Leviton Manufacturing Comment Letter** on 2025 Building Energy Efficiency Standards, Title 24 Parts 1 and 6, Express Terms, 45-Day Language

Dear CEC Commissioners and Staff,

Leviton extends our appreciation for all that has been done to improve the energy code and respectfully submits the below listed comments on the California Energy Commission's (CEC) 2025 Building Energy Efficiency Standards, Title 24 Parts 1 and 6, Express Terms, 45-Day Language (Energy Code). At Leviton, we build what's next to light, power, and connect everyday spaces, encompassing electrical, lighting, data networks, and energy management. With a rich history spanning over 115 years, Leviton develops thoughtful solutions that streamline processes, elevate safety standards, increase efficiency, and enhance productivity. We are committed to our people as their innovation, ingenuity, and dedication to safety and quality are fundamental to the success of every product we deliver to our customers.

Leviton has had the opportunity to work collaboratively with the CEC, Compliance & Enforcement stakeholders, the California Statewide Utility Codes and Standards Enhancement (Case) Team, NEMA (National Electrical Manufacturers Association), and the CEA (California Energy Alliance) on improving and expanding upon the 2022 Building Energy Efficiency Standards. The joint work that we participated in included mandatory lighting controls, lighting control acceptance requirements, electrical power distribution, and residential lighting control requirements. Leviton is thankful that the CEC adopted much of the recommendations from the 2025 Title 24 Lighting Language Cleanup Initiative (Docket No: 22-BSTD-01, TN# 250676) that led to the elimination and clean-up of much of the confusion found in these sections of the Energy Code.

Leviton commends the CEC for the attention given to the stakeholder's comments and then working to make the necessary updates to the Energy Code which will contribute to the reduction of greenhouse gas emissions by continuing to maximize efficiency. However, Leviton would like to provide the following comments on and address areas of concern in the 2025 Energy Code Express Terms, 45-Day Language.

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The following comment and recommendation relates to "Demand Response" requirement of the Energy Code:

1) **Demand Response requirements:**
   a) **Subsection 110.12(a)1B**
      i) Clarification is needed, as current wording makes it unclear as to who the certification is to be provided to by the Manufacturer
      ii) **Change wording to add underlined:** Certified by the manufacturer, to the California Energy Commission, as being capable of responding to a demand response signal from a certified OpenADR 2.0b Virtual End Node by automatically implementing the control functions requested by the Virtual End Node for the equipment it controls.

The following comments and recommendations relate to "Mandatory Indoor Lighting Control" requirements of the Energy Code:

2) **Manual Control remote location clarification**
   a) **Subsection 130.1(a)2**
      i) The word display creates confusion as to what the nature of the display needs to be for compliance when all that is required is to see the status and this could be a simple pilot light or other method of status indication.
      ii) **Change wording to remove display:** Be located in the same enclosed ~~area~~ space, or be located such that ~~with~~ the controlled lighting ~~it controls~~ or status ~~display~~ of the controlled lighting can be seen when operating the controls; and

3) **Current Multilevel Control Requirements.**
   a) **Subsection 130.1(b)**
      i) Multiple change recommendations:
         (a) Grammar correction
         (b) Should be based on watts per square feet so remove 100 square feet
         (c) Lowering of connected lighting load threshold from 0.5 W/sf to 0.4 W/sf
      ii) Change wording to: Multilevel lighting controls. The general lighting of any enclosed ~~area~~ space ~~100 square feet or larger~~ with a connected lighting load ~~that exceeds~~ greater than ~~0.5~~ 0.4 watts per square foot shall be provided with multilevel lighting controls ~~that allow the level of lighting to be adjusted up and down.~~ The multilevel lighting controls shall provide and enable continuous dimming from 10 to 100 percent of lighting power to achieve illuminance uniformity. The multi-level controls shall:

   b) Exception 1 to Section 130.1(b)
      i) Remove this exception based on the increased cost-effectiveness of today's continuous dimming LED lighting and control solutions compared to stepped dimming LED products and the fact that most classrooms are designed using 0-10V controls.
      ii) **Remove this section:** ~~Classrooms with a connected general lighting load of 0.6 watts per square foot or less shall have a minimum of one control step between 30 and 70 percent of full rated power, regardless of luminaire type.~~

4) **Full of Partial-Off**
   a) **Section 130.1(6)**
      i) Although this is mentioned in the Exception portion of 130.1(c) – there is the definite possibility that it would be missed as it is stated as a requirement to meet Section 1008 and not as an exception and therefore should be moved to 130.1(c)6 or included again since this is the section that pertains to Partial-Off.
      ii) **Add underlined wording:** Full or partial-OFF occupant sensing controls are required for warehouse aisle ways, and warehouse open areas ~~in warehouses~~, library book stack aisles, corridors and stairwells, and offices greater than 250 square feet, parking garages, parking areas, and loading and unloading areas. The lighting providing for means of egress illumination, as defined in the California Building Code, must be configured to provide no less than the illumination required by California Building Code Section 1008 while in the partial-off mode. Lighting installed in the following areas shall meet the requirements below in addition to complying with Section 130.1(c)1.

5) **Occupancy Sensing and Full or partial-Off**
   a) **Sections 130.1(c)5 and 6**
      i) Recommend making the titles shorter to reference easier.
      (1) 130.1(c)5. Occupant sensing controls. ~~are r~~Required for specified offices, multipurpose rooms, classrooms, conference rooms and restrooms.
      (2) 130.1(c)6. Full or partial-OFF occupant sensing controls. ~~are r~~Required for warehouse aisle ways, and warehouse open areas in warehouses, library book stack aisles, corridors and stairwells, and offices greater than 250 square feet, parking garages, ~~parking areas,~~ and loading and unloading areas.
   b) Editorial comment for Section 130.1(c)6E
      i) Section 130.1(c)6E This section says “space” instead of “zone”.
      ii) 130.1(c)6Eiii. The occupant sensing controls shall be capable of automatically turning the lighting fully ON only in the separately controlled ~~space~~ zone, and shall be automatically activated from all designed paths of egress.

6) **Error in Daylighting Threshold Wattage**
   a) **Sections 130.1(d) and 160.5(b)4D**
      i) Typographical error in Exception 3 to Sections 130.1(d) and 160.5(b)4D. The 45-Day Language states less than “85” watts when requirement threshold is “75” watts
      ii) Exception 3 to Section 130.1(d): Where daylight responsive controls are not required for the primary sidelit daylit zones, and where the total wattage of general lighting luminaires in the secondary sidelit daylit zones is less than ~~8~~75 watts, daylight responsive controls are not required for the secondary sidelit zone.

The following comments and recommendations relate to "Mandatory Outdoor Lighting Control" requirements of the Energy Code:

7) **Outdoor Lighting Controls**
   a) **Sections 130.2(c)2B and 130.2(c)3B**
      i) Remove the newly added word "partially" as it creates confusion in the requirements.
      ii) 130.2(c)2B. Automatic scheduling controls shall be capable of ~~partially~~ reducing the outdoor lighting power by 50 to 90 percent, and separately capable of turning the lighting OFF, during scheduled unoccupied periods.
      iii) 130.2(c)3B. Motion sensing controls shall be capable of ~~partially~~ reducing the outdoor lighting power of each controlled luminaire by 50 to 90 percent, and separately capable of turning the luminaire OFF, during unoccupied periods.

8) **Outdoor Lighting Motion Controls**
   a) **130.2(c)3C**
      i) Simple wording correction is needed to change dim to Partial-off
      ii) Change strike and underlined: Motion sensing controls shall be capable of reducing the lighting to its ~~dim~~ <u>partial off</u> or OFF state no longer than 15 minutes after the area has been vacated, and of returning the lighting to its ON state when the area becomes occupied.

The following comments and recommendations relate to "Acceptance Testing" requirements of the Energy Code:

9) **Acceptance Testing Requirements**
   a) **Section 130.4(a)1**
      i) Reinstating Plan Review Requirements for Enhanced Title 24, Part 6 Compliance in Section 130.4(a)1 per Docket 22-BSTD-01, TN# 252276. This proposal is essential for ensuring Energy Code compliance while introducing a more collaborative approach with the Authority Having Jurisdiction (AHJ). CEA respectively asks the CEC to reconsider the TN#252276 proposal with the following update:
      ii) Change "Certifies" to "Review"
         (1) "~~Certifies~~ <u>Review</u> plans, specifications, installation certificates, and operating and maintenance information meet the requirements of Part 6."
      iii) Reinstating these requirements allows the Acceptance Test Technician to be involved earlier in the design phase to help the responsible parties, such as the lead architect or engineer, with compliance by alerting them of any gaps in energy code requirements prior to construction.

The following comments and recommendations relate to "Residential Indoor Lighting Control" requirements of the Energy Code:

10) Residential Indoor Lighting Controls

- **a) Section 150.0(k)3C**
  - i) The 2nd sentence in this subsection was added for the indoor lighting controls Section 150.0(k)2D, but it doesn't belong in the outdoor controls section as dimmers, for instance, are not required for outdoors. CEA recommends striking this sentence.
  - ii) C. An energy management control system (EMCS) or other controls that provides the specified lighting control functionality and complies with all requirements applicable to the specified controls may be used to meet these requirements. ~~No controls shall bypass control functions of a dimmer, occupant sensor, or vacancy sensor where the dimmer or sensor has been installed to comply with Section 150.0(k)3.~~

The following comments and recommendations relate to "Residential Outdoor Lighting Control" requirements of the Energy Code:

11) Residential Outdoor Lighting controls

- **a) Section 150.0(k)3**
  - i) This requirement should be for all permanently installed outdoor lighting not just outdoor lighting that is mounted to a building. The current requirement leaves out lighting poles and other hardwired lighting. Permanently does not include solar lights or plugged in lights.
  - ii) 150.0(k)3A. Outdoor <u>permanently installed</u> lighting ~~permanently mounted to a residential building or to other buildings on the same lot~~ shall meet the following requirements:

The following comments and recommendations relate to "Residential Outdoor lighting" requirements of the Energy Code:

12) Receptacle Control requirements

- **a) Section 130.5(d)**
  - i) Change wording for clarification as the additional wording creates confusion instead of clarification.
  - ii) Install at least one controlled receptacle within 6 feet from each uncontrolled receptacle ~~or install a splitwired multiple receptacle with at least one controlled and one uncontrolled receptacle~~. Where receptacles are installed in modular furniture in open office areas, at least one controlled receptacle shall be installed at each workstation; and

13) Separation of Loads for Energy Monitoring

a) Section 130.5(b)

i) 2019 Title 24, Part 6 changed wording to “separation of Electrical Circuits for Energy Monitoring” – Leviton suggests that the requirements for metering be included in this section in order to properly line up with current energy codes 2021 IECC and ASHRAE 90.1

ii) Change working to the following:

SECTION 130.5

(b) ~~Separation of Electrical Circuits for~~ Electrical Energy Monitoring. ~~Electrical power distribution systems shall be designed so that measurement~~ measurement devices ~~can~~ shall be installed to measure, monitor and record the electrical energy usage of load types ~~according to~~ per the aggregation requirements of TABLE 130.5-B to enable effective energy management. The electrical energy usage for all loads shall be recorded a minimum of every 15 minutes and reported at least hourly, daily, monthly, and annually. The data for each tenant space shall be made available to that tenant. In buildings having a digital control system, the energy usage data shall be transmitted to the digital control system and graphically displayed. The system shall be capable of maintaining all data collected for a minimum of 36 months.

14) Section 100.1 Definitions

a) Section 100.1

i. Multilevel Lighting Control: Recommend clarifying the definition.

ii. Multilevel Lighting Control ~~enables the level of lighting to be adjusted upward and downward across multiple levels~~ is a lighting control that enables the illumination to be raised or lowered in addition to ON and OFF.

We appreciate the opportunity to submit these comments and are available in the event that clarification is required on any of the comments.

Sincerely,

John Busch

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