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Additional submitted attachment is included below.

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BEFORE THE CALIFORNIA ENERGY COMMISSION
Docket No.: 25-BSTD-03
Project Title: 2028 Building Energy Efficiency Standards (Energy Code) Pre-Rulemaking
Subject: Comments of Tesla, Inc. in Strong Support of Proposed Outdoor Lighting Control Provisions for DC Fast Charging Infrastructure (Section 601.2.3.2)

1. Executive Summary

Tesla, Inc. ("Tesla") respectfully submits these comments in support of the California Energy Commission's ("CEC" or "Commission") Pre-Rulemaking Draft Regulatory Text for the 2028 California Energy Code (Title 24, Part 6). Specifically, Tesla commends Commission staff for introducing targeted exceptions to outdoor lighting control requirements for Direct Current Fast Charging Electric Vehicle Supply Equipment ("DCFC EVSE") in Section 601.2.3.2:

1. **Exception to Section 601.2.3.2.3(3)**: Permitting outdoor motion-sensing controls for luminaires directly illuminating DCFC EVSE to utilize a vacancy time delay of up to 30 minutes (increased from 15 minutes).
2. **Exception 1 to Section 601.2.3.2.2**: Exempting luminaires illuminating DCFC EVSE from mandatory automatic scheduling controls (time clocks) when equipped with compliant motion-sensing controls and acceptance-tested under Reference Nonresidential Appendix NA7.8.1.

These modifications provide a balance between the Commission's core energy efficiency objectives and the operational and safety realities of publicly accessible, 24/7 fast-charging infrastructure. By aligning control timeframes with real-world driver dwell times and eliminating non-functional hardware requirements, the proposed draft enhances driver safety, protects infrastructure against vandalism, and maintains genuine energy savings when stations are truly unoccupied. Tesla strongly urges the Commission to adopt both provisions as written in the formal 45-day express terms.

2. Operational Justification: 30-Minute Vacancy Delay Aligns with Real-World California Dwell Time

Under current Title 24 standards (Section 130.2(c)3 / proposed Section 601.2.3.2.3), luminaires must reduce lighting power by 50% to 90% within 15 minutes after an area is vacated. While this 15-minute threshold functions effectively for standard parking facilities, where motorists exit vehicles and immediately vacate stalls, it creates significant operational friction at DC fast charging stations.

DC fast charging is an active, unstaffed fueling and financial transaction environment. During nighttime charging sessions, customers typically remain stationary inside their vehicles or standing adjacent to them. Standard pole-mounted passive infrared (PIR) sensors calibrated for

vehicular traffic cannot reliably detect minor movements inside a tinted glass cabin. Consequently, under a 15-minute timer, luminaires regularly dim while an occupant is actively charging, creating a false-vacancy condition.

Operational Dwell-Time Realities

Network operational data collected across public fast-charging infrastructure in California confirms that customer dwell time routinely exceeds the 15-minute standard:

- Across public fast-charging sessions conducted during evening and nighttime hours throughout California, typical charging and stall dwell times routinely range between 25 to 40 minutes, with average total physical stall occupancy approaching 30 minutes.
- The physical duration that an occupant remains tethered to the charger from plug-in to cable disconnect aligns closely with a half-hour operational window.

Because an active charging event routinely approaches 30 minutes, extending the vacancy delay under proposed Exception to Section 601.2.3.2.3(3) ensures that customers maintain consistent, safe illumination throughout the duration of their session. Once the vehicle disconnects and departs the stall, the station transitions to its energy-saving dimmed state, capturing true vacancy-based efficiency without impacting active users mid-charge.

3. Hardware Efficiency: Eliminating Redundant Automatic Scheduling Controls (Time Clocks)

Proposed **Exception 1 to Section 601.2.3.2.2** exempts DCFC luminaires from automatic scheduling controls (time clocks) when paired with compliant motion sensors. Tesla endorses this clarification.

The statutory intent of automatic scheduling controls is to reduce lighting power during "scheduled unoccupied periods" (e.g., commercial retail lots closing at 10:00 PM). However, public DCFC stations operate 24 hours a day, 365 days a year to support as needed charging, including for shift workers, rideshare drivers, and long-distance travel. Because there are no scheduled unoccupied periods, network operators complying with the current code must program physical time switches to an "always-on" state.

This creates a "dummy device" requirement that consumes capital, design, and maintenance resources while achieving zero incremental kilowatt-hour savings. Pairing dusk-to-dawn photocells (mandated under Section 601.2.3.2.1) with 30-minute motion-sensing controls provides a comprehensive, automated control package: fixtures shut off during daylight hours and dim reliably during genuine nighttime vacancy, making physical scheduling hardware redundant.

4. Critical Driver Safety, Kiosk Accessibility, and Vandalism Deterrence

Beyond energy metrics, consistent illumination during active charging sessions directly supports key state and federal safety mandates:

1. **Safe Access to Mandated Point-of-Sale Kiosks**: Under California law (Senate Bill 454 / Electric Vehicle Charging Open Access Act) and state grant programs (CALeVIP), all new public DC fast charging stations must provide on-site credit card payment terminals. Customers who choose to utilize the payment terminal must navigate the physical path between their vehicle, , and the payment kiosk at night. This operational reality aligns directly with ANSI/IES RP-8 Table 17-1, Footnote 7, which categorizes DC fast charging under *"Transaction Machines / Transaction Areas."* Prematurely dimming fixtures mid-session introduces tripping hazards and compromises visibility during financial transactions.
2. **Preserving the Customer's Secure Barrier**: When arriving at a station, vehicle movement ensures full illumination while the customer plugs in and returns to their vehicle. However, because an average session lasts roughly 30 minutes, a 15-minute vacancy timer causes luminaires to unexpectedly dim by 50% to 90% midway through the session while the customer remains seated inside. This forces an occupant to either sit in darkness, exit their locked vehicle in a dimmed environment simply to wave their arms and re-trigger sensors, or eventually disconnect high-voltage cables at the end of their session under reduced visibility. Extending the vacancy delay to 30 minutes preserves a secure, fully lit environment from initial plug-in through final disconnect and departure.
3. **Deterrence of Copper Cable Theft and Tampering**: Unstaffed charging infrastructure has increasingly become a target for copper wire theft and mechanical vandalism across California. Uninterrupted, predictable illumination during active dwell intervals is recognized by the U.S. Department of Justice (Crime Prevention Through Environmental Design – CPTED guidelines) and the Federal Highway Administration (23 CFR § 680.106) as an essential physical security countermeasure.

5. Clear Regulatory Boundaries Protect General Parking Rules

Tesla emphasizes that the proposed exceptions are narrowly and appropriately scoped:

- **Restricted to DCFC EVSE**: The language strictly governs luminaires illuminating DC Fast Charging EVSE (operating at high voltages and short dwell times), excluding Group R residential occupancies and general retail parking.
- **Level 2 Remains Distinct**: Long-dwell Level 2 charging (e.g., workplace and overnight parking lasting 4 to 8 hours where drivers immediately leave the vehicle) remains fully governed by standard 15-minute controls.
- **Energy Savings are Maintained**: Luminaires are still required to dim by 50% to 90% once the 30-minute delay expires without detected occupancy, preserving the Energy Code's decarbonization goals.

6. Conclusion

The Commission's proposed amendments to Section 601.2.3.2 resolve a longstanding operational conflict for electric vehicle drivers in California while preserving rigorous energy standards. Tesla therefore supports the proposed regulatory text as drafted and urges the Commission to retain both exceptions through the formal rulemaking process.

Respectfully submitted,

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