



May 15, 2023

Submitted via email: cbsc@dgs.ca.gov

Re: PowerFlex's Comments on the 2022 Intervening Code Cycle 45-Day Changes of the CalGreen Code

PowerFlex is a leading installer and operator of electric vehicle supply equipment (EVSE) and Automated Load Management Systems (ALMS). We have installed and operate more than 10,000 level 2 EVSE in California, each equipped with and providing ALMS, giving us unique insight into the benefits, challenges, and opportunities of ALMS. We appreciate the efforts of the Building Standards Commission (BSC), Division of the State Architect (DSA), and the Department of Housing and Community (HCD) to revise building codes to accommodate increased electric vehicle (EV) adoption. Accordingly, PowerFlex comments on the following proposed changes:

- EV Capable at sites that deploy/will deploy ALMS should be able to size panel space to 3.3 kW
- HCD should adopt the same ALMS requirements as the other agencies
- ADA revisions

PowerFlex respectfully requests that, if the agencies are unable to make these changes at this time, these proposals be added to the list of proposed changes to discuss during the next code cycle.

EV Capable Sized to 3.3 kW

CalGreen codes currently allow sites that use ALMS on installed EVSE to reduce the maximum required electrical capacity to each space served by the ALMS. The electrical system and any on-site distribution transformers shall have sufficient capacity to deliver at least 3.3 kW simultaneously to each EV charging station (EVCS) served by the ALMS. However, EV capable spaces must have enough transformer capacity to deliver 6.6 kW, even if the EVSE to be installed in the future will provide ALMS.

PowerFlex proposes that EV Capable spaces that will use ALMS when the EVSE is installed in the future have enough onsite capacity to provide 3.3 kW. This would keep the EV Capable requirement consistent with EV Ready when using ALMS. PowerFlex has many sites in California where it is installing EV Capable spaces and where it needs only 3.3 kW for each EVSE as it will be using ALMS at these EVSE when they are installed. However, we must oversize the transformer and onsite distribution infrastructure capacity at 6.6 kW to meet current EV Capable rules. Thus, this rule change would reduce the costs of EV Capable spaces that will be using ALMS.

A potential concern with this approach is that if a site sizes to 3.3 kW for each EV Capable space but then does not want to use ALMS. In these situations, these sites would either need to upgrade onsite infrastructure to provide 6.6 kW to all non-ALMS EVSE, or the customer would need to use ALMS anyway.

Thus, PowerFlex proposes the following language (in red) be added to the CalGreen Code:

5.106.5.3.1 EV capable spaces. [N] EV capable spaces shall be provided in accordance with Table 5.106.5.3.1 and the following requirements:

1. Raceways complying with the California Electrical Code and no less than 1-inch (25 mm) diameter shall be provided and shall originate at a service panel or a subpanel(s) serving the area, and shall terminate in close proximity to the proposed location of the EV capable space and into a suitable listed cabinet, box, enclosure or equivalent. A common raceway may be used to serve multiple EV capable spaces.
2. A service panel or subpanel(s) shall be provided with panel space and electrical load capacity for a dedicated 208/240 volt, 40-ampere minimum branch circuit for each EV capable space, with delivery of 30-ampere minimum to an installed EVSE at each EVCS. **EV Capable spaces using ALMS in the future may follow section 5.106.5.3.3 sizing rules.**
3. The electrical system and any on-site distribution transformers shall have sufficient capacity to supply full rated amperage at each EV capable space. **EV Capable spaces using ALMS in the future may follow section 5.106.5.3.3 sizing rules.**
4. The service panel or subpanel circuit directory shall identify the reserved overcurrent protective device space(s) as “EV CAPABLE”. The raceway termination location shall be permanently and visibly marked as “EV CAPABLE.”

PowerFlex proposes that similar language be added to BSC, DSA and HCD requirements to be consistent for all non-residential customers and multi-unit dwellings.

HCD ALMS Requirements

Unlike the BSC and DSA, HCD allows ALMS to be used only when EVSE “are installed beyond the minimum required.”¹ Thus, while BSC and DSA allow required EVSE using ALMS to size onsite capacity to deliver 3.3 kW simultaneously, HCD allows only those EVSE installed beyond the minimum to size onsite capacity to deliver 3.3 kW. In PowerFlex’s experience of operating EVSE at multi-unit dwellings, there are many opportunities to use ALMS to reduce onsite infrastructure without interfering with driver charging. Given that multiunit dwellings are typically long dwell times for EVs, there is generally ample time to manage EV charging and still meet customer needs. Thus, HCD should allow required EVSE that use ALMS to size onsite distribution infrastructure to deliver a minimum of 3.3 kW. We therefore propose the following language changes to section 4.106.4.2.2:

Where low power Level 2 EV charging receptacles or Level 2 EV chargers are installed **beyond the minimum required**, an automatic load management system (ALMS) may be used to reduce the maximum required electrical capacity to each space served by the ALMS.

Accessibility Revisions

PowerFlex fully supports Americans with Disabilities Act (ADA) parking stalls and offers the following proposed revisions in an attempt to make ADA stalls with EVSE treated consistently with non-EVSE ADA stalls. Thus, PowerFlex proposes the following revisions be made to Accessibility Spaces:

¹ See section 4.106.4.2.2

- Section 11B-228.3.2 Minimum Number:
 - Existing non-EVSE ADA stalls should be allowed to be converted to EVSE accessible stalls. This would not change the number of accessible stalls or the required number of EVSE accessible stalls at a site. Allowing the overlap would make it much easier to install EVSEs in existing facilities. Having to add additional accessible stalls to an existing structure that was specifically designed for the minimum number of required non-EVSE ADA stalls can be incredibly difficult and slows charger deployment. Additionally, as we eventually move to 100% of parking spaces having EVSE, we would no longer have non-EVSE ADA spaces at all. Thus, allowing required ADA spaces to be converted to EVSE accessible stalls is where we will need to go as the percentage of required EV charging spaces increases.
 - There should not be EVSE Ambulatory stalls. There is no non-EVSE ADA equivalent, so this is an unfair requirement for EVSE.
- Section 11B-812.6 Vehicle Spaces
 - EVSE accessible van stalls should be granted to same sizing exemptions as non-EVSE ADA van stalls, which are allowed to be 9' with an 8' access aisle instead of 12' with a 5' access aisle. This would give EVSE accessible van stalls the same flexibility as non-EVSE van stalls.

PowerFlex appreciates the opportunity to provide these comments and supports the agencies as they seek to incorporate EV charging into CalGreen building codes.



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