September 27, 2021

BUILDING STANDARDS COMMISSION
2525 Natomas Park Drive, Suite 130 Sacramento, California 95833-2936
Via Email: cbsc@dgs.ca.gov

RE: CALGreen New Construction, Prioritizing EV Workplace Charging, Electric Vehicle Infrastructure, Nonresidential ALMS

Dear Building Standards Commissioners and Staff,

We commend the HCD and the BSC for pursuing opportunities to expand EV charging infrastructure for residential and nonresidential new construction in the 2022 CALGreen code cycle.

EV Workplace Charging

For the nonresidential sector, we recognize that EV Workplace Charging is strategically important to increasing EV adoption and for improving equity for those in existing multi-family housing (MFH) or older homes, where EV charging is scarce today. It is critical that nonresidential charging prioritizes employees at a workplace location. In many cases employees have long dwell times at work, much like the long overnight dwell times available to those who live in single family housing, making EV charging at work a very convenient and affordable option. For this reason, EV Workplace Charging is the second most important location for EV charging behind home charging, and will play a critical role enabling California to meet its climate and emission reduction goals and improve equity for low income EV drivers.

To facilitate EV adoption, the location and nature of EV Workplace charging for employees should be designed with convenience, low cost and extended dwell times in mind, since more expensive public EV charging may be the only other option for those in existing Multi-Family Housing (MFH).

We understand it may be late in the current code cycle for due consideration to be given to this strategic priority; if so, we recommend that it be considered of highest importance in the next nonresidential code cycle.

Automatic Load Management System (ALMS) Recommendations

ALMS is defined in the nonresidential code changes as follows:

> ***AUTOMATIC LOAD MANAGEMENT SYSTEM (ALMS).*** *A system designed to manage load across one or more electric vehicle supply equipment (EVSE) to*

share electrical capacity and/or automatically manage power at each connection point.

In the nonresidential specifications in the current code cycle, the term ALMS has been defined and applied to effectively share power among multiple vehicles, and minimum provisions have been specified.

However, it is important that the code supports the variety of topologies that are currently available to deploy ALMS. These include a distributed approach with EVSEs that have more than one connection point, such as ClipperCreek's HCS-D Dual Charging Station. These EVSEs are capable of managing and sharing one 40 ampere circuit for charging two or more vehicles.

The code in section 5.106.5.3.2 is inconsistent with EVSEs that can manage more than one connection point. For clarity, the proposed code's use of ALMS and "connection point" terms needs to be applied in a consistent manner.

We recommend clarifying EVSE with multiple connectors be aligned with the ALMS wording in Section 5.106.5.3.2.

> ***5.106.5.3.2 Electric vehicle charging stations (EVCS).*** *EV capable spaces shall be provided with EVSE to create EVCS in the number indicated in Table 5.106.5.3.1. The EVCS required by Table 5.106.5.3.1 may be provided with EVSE in any combination of Level 2 and Direct Current Fast Charging (DCFC), except that at least one Level 2 EVSE shall be provided.*
>
> *One EV charger with multiple connectors capable of charging multiple EVs simultaneously shall be permitted if in accordance with 5.106.5.3.3 ~~if the electrical load capacity required by Section 5.106.5.3.1 for each EV capable~~*
>
> *The installation of each DCFC EVSE shall be permitted to reduce the minimum number of required EV capable spaces without EVSE by five and reduce proportionally the required electrical load capacity to the service panel or subpanel.*
>
> ***5.106.5.3.3 Use of automatic load management systems (ALMS).*** *ALMS shall be permitted for EVCS. When ALMS is installed, the required electrical load capacity specified in Section 5.106.5.3.1 for each EVCS may be reduced when serviced by an EVSE controlled by an ALMS. Each EVSE controlled by an ALMS shall deliver a minimum 30 amperes to an EV when charging one vehicle and shall deliver a minimum 3.3 kW while simultaneously charging multiple EVs.*

For the residential and nonresidential code we recommend more clarity in the descriptions used for EV charging. There are several places throughout the BSC and HCD documents where the words "EV Chargers", EVSE and EVCS are used interchangeably and inconsistently. This is likely to lead to confusion for the Authority Having Jurisdiction, and should be corrected.

Please reach out if you have any questions or require clarification.

Thank you for considering the above recommendations.

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* Organizations are listed for identification purposes only