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West Coast Clean Transit Corridor Comments on 22-EVI-04, Electric Vehicle Charging Infrastructure Standards Workshop

The West Coast Clean Transit Corridor is please to provide comments on the 22-EVI-04 Electric Vehicle Charging Infrastructure Reliability Standards Workshop that was held on October 21, 2022. The comments are attached in the file submission below.

Thank you,
Bill Boyce
WCCTC Secretariat
Bill Boyce Consulting LLC

Additional submitted attachment is included below.

West Coast Clean Transit Corridor comments on the Electric Vehicle Charging Infrastructure Reliability Standards Workshop

22-EVI-04

11/11/22

RE: the California Energy Commission Workshop on Electric Vehicle Charging Infrastructure Reliability Standards held on October 21, 2022

The West Coast Clean Transit Corridor (WCCTC) is an informal group of West Coast Utilities who are actively promoting the development of charging infrastructure to support long distance travel for electric vehicles of all types (Light-Medium-Heavy Duty Vehicles) across the Western United States and Canada. The group was formed in 2019 and began studying electrification of long-distance truck travel and goods movement along the Interstate-5 Transportation corridor. An initial feasibility report was completed in 2020 [1]. After that initial effort the WCCTC utilities evaluated electrical grid distribution capacity at upwards of 80 potential sites to support large scale charging operations of up to 3.5MW. Currently the WCCTC is moving forward to support development of large-scale charging along the West Coast and looks forward with working with all industry stakeholders to make that happen. The utilities supporting the WCCTC from north to south include: BC Hydro, Puget Sound Energy, Avista, Snohomish Public Utility District, Seattle City Light, Tacoma Public Utilities, Lewis County Public Utility District, Cowlitz County Public Utility District, Clark Public Utilities, Portland General Electric, Eugene Water & Electric Board, Springfield Utility Board, Pacific Power, Redding Electricity Utility, Northern California Power Agency, Sacramento Municipal Utilities District, Silicon Valley Power, Pacific Gas & Electric, Los Angeles Department of Water and Power, Southern California Public Power Agency, Southern California Edison, San Diego Gas & Electric.

Thank you for this opportunity to provide comments,

Bill Boyce, West Coast Clean Transit Corridor Secretariat
Bill Boyce Consulting, LLC

[1] West Coast Clean Transit Corridor Initiative Final Report, June 2020
+https://westcoastcleantransit.com/resources/Final%20Report%20Files.zipJune

Recommendation 1: Consider development of a comprehensive plan that would address the malfunction categories identified in the workshop to improve reliability as needed by the industry to meet consumer/driver expectations.

While the workshop was primarily about meeting AB2061 requirements which are focused on identifying and reporting charging system operational problems, the real need is to achieve higher reliability to meet consumer/driver expectations. A state and federal goal of 97% reliability has already been identified as an initial target. While there is much debate on whether a 97% uptime requirement is adequate to meet consumer/driver expectations, there has been less dialog on how the industry is going to achieve that goal.

In the workshop, an excellent graphic of the overall charging ecosystem was presented with subsequent individual charts that showed "subsystem failure" groupings, along with associated malfunction categories. Addressing these malfunction categories will be key in improving overall ecosystem reliability but there was little identification or discussion of how those malfunction categories would/could/or are being addressed to improve reliability. The Commission is doing a lot to address some of these malfunction categories already such as support for standards development/adoption, Vehicle Grid Innovation Lab testing, EVSE workforce training etc. but a comprehensive and systematic plan should be developed to address all those malfunction categories and show how the current actions are helping to improve reliability and meet driver expectations.

Recommendation 2: Require periodic reviews to go over charging ecosystem reliability problems.

As well as developing a comprehensive plan to address charging ecosystem reliability, periodic reviews of the data and corrective actions for the specific malfunction categories would help gauge progress in improving reliability and identify areas where additional effort or resources are needed to overcome barriers. Twice yearly reviews are probably warranted now given the criticality of this topic to the industry. After progress is made on key malfunction categories the review schedule could be relaxed. The reviews could help surface problems and identify potential solutions to help the Commission prioritize actions and resources to address the needs. Using processes such as root cause analysis would also help in bringing rigor and consistency with how the issues are being identified, studied, and addressed.

Recommendation 3: Incorporate additional operating requirements for charging hardware.

When much of the original DC Fast Charging hardware was deployed in the mid 2010's, the hardware was plagued by operational issues that limited charging operations in high temperature weather conditions. Much of the hardware at the time reduced charging rates when the environmental temperature reached the mid 90°F region and some of the hardware even shut down when the temperature got above 104°F. These operating characteristics were very frustrating for EV drivers at the time and led to significant charging dissatisfaction. While much of the hardware now available in the industry has addressed these types of issues, the CEC should not assume that hardware capable of meeting these types of requirements will be supplied without specified requirements. Therefore, CEC incentive programs for charging infrastructure should be very explicit and very detailed and establish

environmental performance type requirements to preclude these types of problems from occurring and build on lessons learned already. For temperature performance requirements, it should be noted that charging systems need to be operational in both hot and cold climates, so both extremes need to be addressed.