

Equipment

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Project Title:

Mobile Electric Vehicle
DCFC Infrastructure
Deployment Opportunities

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Task Manager:

Hamid Ikram
Transportation Engineer (Electrical)
hamid.ikram@dot.ca.gov

Mobile Electric Vehicle DCFC Infrastructure Deployment Opportunities

To evaluate the use of mobile or semi-permanent electric vehicle (EV) charging systems for operations in Caltrans.

WHAT IS THE NEED?

Due to the increase in zero-emission vehicle implementation required by ongoing fleet regulations, the California Department of Transportation (Caltrans) will need to install adequate electric vehicle (EV) chargers to support the incoming vehicles. Currently, the installation of permanent, grid-tied, infrastructure is a long process and cannot be fully established before these vehicles arrive. Caltrans needs mobile or semi-permanent charging infrastructure that can be implemented in a similar timeframe as the mandated EV vehicle deployments. The systems must be able to trickle-charge from the existing site infrastructure, and rapidly charge multiple heavy EVs on demand.

WHAT ARE WE DOING?

Maintenance and Construction Technology (AHMCT) Research Center University of California Davis will work with project panel including representatives from Caltrans Division of Equipment (DOE) to identify candidate commercially available mobile or semi-permanent electric vehicle (EV) charging systems, procure the selected systems (by purchasing, leasing, or renting), document the system installation and/or setup for each system, and evaluate the applicability and feasibility of each EV mobile or semi-permanent charging system for Caltrans activities. The assessment will address questions regarding system suitability, maintenance requirements, integration challenges, necessary training for staff, and potential benefits of adoption for Caltrans. The contractor will also prepare a final report summarizing the evaluation results and future recommendations.



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WHAT IS OUR GOAL?

The goal of this project is to evaluate the commercially available mobile or semi-permanent EV charging systems and see if they can provide accessibility to the Direct Current Fast Charging (DCFC) units, to meet the mandated EV deployment in Caltrans fleet.

WHAT IS THE BENEFIT?

The results of this project will help determine whether the evaluated mobile or semipermanent EV charging systems are feasible for implementation in Caltrans. If they are, then the evaluated systems will enable Caltrans to meet the mandated EV deployment requirements in a reasonable fashion.

WHAT IS THE PROGRESS TO DATE?

The kick-off meeting was held on October 11, 2023, and panel meetings were held on October 30, 2023 and January 11, 2024. Contractor completed purchase orders for the two EV chargers including EVES-6060-NA and FreeWire Boost Charger 200, selected by the customer from DOE. Contractor has also developed test plans for both EV chargers.

A panel meeting was held on June 27, 2024. The FreeWire Boost Charger 200 was delivered on July 1, 2024 at the Caltrans District 8, Magana Ortega Maintenance Yard in Bloomington California. Customer from the Division of Equipment (DOE) has obtained the State Fire Marshal permit, and they are planning to work on the installation of this charger.

The EVES-6060-NA charger was delivered on August 29, 2024 at AHMCT UC Davis. AHMCT also purchased a trailer for this charger which arrived at AHMCT on September 11, 2024. The testing and evaluation of this charger continues.