

US Hybrid On-Board Charger for Zero Emission Cargo Transport Demonstration

Technology Manufacturer

US Hybrid

Co-Participants

Port of Long Beach, Port of Los Angeles

Background

In 2016, the Ports completed a project with US Hybrid to augment the charging capabilities of two battery-electric trucks being developed and tested under a separate project led by the South Coast Air Quality Management District (SCAQMD). US Hybrid, which provides powertrain and power conversion systems for medium- and heavy-duty electric, hybrid, and fuel cell vehicles, was selected by SCAQMD to develop and demonstrate two battery-electric zero-emissions Class 8 trucks under the 2012 Department of Energy Zero Emissions Cargo Transport (DOE ZECT I) grant. Originally, US Hybrid had planned to charge the trucks using off-board chargers. However, based on feedback from fleet operators and the available electric-vehicle charging infrastructure for heavy-duty trucks at the demonstration sites, US Hybrid upgraded its electric trucks with on-board chargers for this project. This change offered streamlined charging logistics and cost savings for fleet operators and ensured compatibility between the US Hybrid charging platform and platforms used by other zero-emission truck manufacturers.

Project Objective

US Hybrid designed, developed, and integrated two 60 kW 3-phase on-board chargers into two Class 8 battery electric drayage trucks. The 60kW charger is an enhancement to the existing 6.6 kW Level II on-board charger, giving the truck dual plug capability for fast- or slow-charging. The on-board chargers are now compatible with the charging infrastructure at Total Transportation Services, Inc. (TTSI), where the trucks are in demonstration service.

Technology Description

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Status

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Results

US Hybrid successfully integrated the on-board chargers in the two trucks and submitted a final report documenting the project activity and results. Under the SCAQMD's ZECT I project, a demonstration of these trucks is underway. The 24-month demonstration, which includes ongoing monitoring of the on-board chargers, is expected to be completed in early 2018.

Benefits

This project supported the TAP's interest in standardizing charging methods for zero-emission vehicles and equipment and in priming technologies for commercialization by taking operator acceptance into account.

Project Costs

The combined TAP funding from both Ports was \$75,000, which was matched by SCAQMD for a total project cost of \$150,000.

Contact Information

Abas Goodarzi, Ph.D., P.E.

President, CEO

US Hybrid Corporation

445 Maple Ave., Torrance, CA 90503-3807

Tel: 310-212-1200 Ext: 111, Fax: 310-212-1102

abas@ushybrid.com

www.ushybrid.com

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