



Advanced Yard Tractor Deployment & Eco-FRATIS Drayage Truck Efficiency Project

In 2006, the Port of Los Angeles in partnership with the Port of Long Beach adopted the Clean Air Action Plan (CAAP), which was updated in 2010 and 2017 (<https://cleanairactionplan.org>). The CAAP identifies strategies to reduce air pollution from every source including ships, trucks, trains, harbor craft, and cargo handling equipment. Successful technology demonstrations of near-zero and zero emission technologies may accelerate the availability of clean technologies that are necessary to implement existing strategies outlined in the CAAP or to develop future control measures, alternatives, or mitigation measures.

Project Summary

The Port of Los Angeles in conjunction with the project partners demonstrated near-zero and zero emission cargo handling equipment and an intelligent transportation system technology. This project set to enhance market acceptance of advanced vehicle and information technology in yard tractors and drayage truck applications that may reduce greenhouse gas emissions, reduce petroleum use, improve energy cost savings, and benefit disadvantaged communities. The project was funded in part by a \$5.83 million grant from California Energy Commission's Alternative and Renewable Fuels and Vehicle Technology Program. The Port of Los Angeles and project partners contributed nearly \$4 million in match share. The project was completed at the end of 2021.

Project Partners

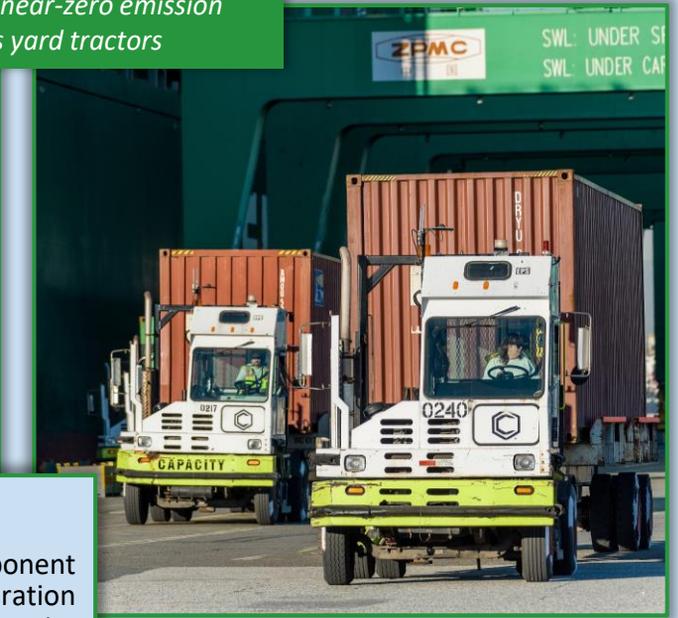
- California Energy Commission
- Everport Terminal Services, Inc.
- BYD Motors, Inc.
- Rev Group, Inc. dba Capacity Trucks
- Clean Energy Fuels Corp.
- Productivity Apex, Inc.
- University of California, Riverside (UCR)
- LA County Metropolitan Transportation Authority (METRO)
- InfoMagnus
- Harbor Trucking Association



Vehicles & Equipment Funded

- 20 near-zero emission natural gas yard tractors
- 5 battery electric yard tractors
- Intelligent Transportation System (ITS)

Capacity Trucks near-zero emission
natural gas yard tractors



Project Components

The Advanced Yard Tractor Deployment component demonstrated five (5) BYD Motors first generation battery electric yard tractors and twenty (20) Capacity Trucks near-zero emission natural gas yard tractors, fueled with renewable natural gas provided by Clean Energy Fuels.

The *Eco-FRATIS* component demonstrated the integration of ITS technologies with 100 drayage trucks in order to enhance drayage operations and improve on-road truck efficiency. The technologies integrated for the *Eco-FRATIS* component include: Freight Advanced Information System (FRATIS) deployment, which includes a suite of applications developed and currently being demonstrated in trucks; Harbor Trucking Association and InfoMagnus' *Geostamp* application, which provides real-time truck travel and terminal turn times via an automated mobile smart device application; and UCR's *Eco-Drive* application, which uses traffic signal timing information to optimize acceleration and deceleration of trucks.

Contact

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Renewable natural gas fueling and
electric charging infrastructure