Solutions for Ports & Freight: Opportunities for New, Cleaner Technologies

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2017 CAAP Update

Overview of Strategies

- Ocean-Going Vessels
- Harbor Craft
- On-Road Trucks
- Terminal Equipment
- Efficiency Improvements
2017 CAAP Update

Zero Emissions Goals
Terminal Equipment by 2030
On-Road Trucks by 2035
Real-World Demonstrations

Technology Advancement

Accelerate verification and commercial availability
World’s Most Advanced Technologies
Middle Harbor
Electrified Terminal Operations
Middle Harbor

World's Most Advanced Technologies

Electrified Terminal Operations
Challenges

Emerging technologies under tough operating conditions with limited infrastructure and high cost
Strengths

Established goals, increasing incentive dollars and interest, plus strong partnerships
Feasibility Assessments

- Trucks
- Terminal Equipment
Scope

- Technical Viability
- Commercial Availability
- Operational Feasibility
- Infrastructure Availability
- Key Economic Considerations
Technology Development

- Demonstrations of Zero Emission On-Road Trucks and Development of 50 to 100 Truck Pilot Deployment
- Evaluation of Vessel Energy Efficiency Technologies and Demonstration of Vessel At-Berth Technologies
- Demonstration of Harbor Craft Technology
- Near-Zero Switcher Locomotive Demonstration
- Demonstrations of Zero Emission Terminal Equipment
- 2018 TAP Call for Projects
Technology Development

POLB’s Electric Vehicle Blueprint

Map the path to zero emissions evaluating electric infrastructure needs, financing, workforce components and community impacts
Technology Development

POLB’s Zero Emission Terminal Equipment Transition Project

- Convert 4 LNG trucks to plug-in hybrid electric
- Convert 9 RTGs from diesel to electric
- Demonstrate 12 battery-electric yard tractors and charging infrastructure
Technology Development

C-PORT: **Commercialization of the Port of Long Beach Off Road Technology Demonstration Project**

- Demonstrate 1 battery-electric top pick, 1 battery-electric yard tractor and 1 fuel cell yard tractor
- Demonstrate 2 battery-electric top picks
Port Advanced Vehicle Electrification (PAVE) Project

Demonstrate 6 battery electric yard tractors, install electrical charging infrastructure for nearly 40 piece of terminal equipment, demonstrate DC fast charging and battery storage
Technology Development

POLB Microgrid – Resilience for Critical Facilities

Install solar panels, battery storage, and microgrid controls to allow JCCC to continue operations during an outage.
Technology Development

GE Port Optimizer

A first-of-its-kind port information portal to demonstrate the benefits of digitizing maritime shipping data and making it available in real time to cargo owners, shipping lines and supply chain operators.