San Pedro Bay Ports
Air Quality Improvements (2005-2016)

- Diesel Particulate Matter: DOWN 87%
- Nitrogen Oxides: DOWN 56%
- Sulfur Oxides: DOWN 97%
- Greenhouse Gases Equivalent: DOWN 18%

www.cleanairactionplan.org
Overview

OCEAN-GOING VESSELS
HARBOR CRAFT
ON-ROAD TRUCKS
TERMINAL EQUIPMENT
EFFICIENCY IMPROVEMENTS
Ocean-Going Vessels

- Increase vessel speed reduction compliance within 40 nautical miles
- Use at-berth emission reduction technologies
- Incentivize energy efficiency upgrades and clean technologies
- Develop a Clean Ship Program to transition the oldest, most polluting ships out of the fleet
Heavy-Duty Trucks

- Advance the Clean Trucks Program and transition to zero-emission trucks by 2035
- Adopt a reservation system at terminals to improve trucks turn times
Terminal Equipment

- Transition to zero emissions terminal equipment by 2030
- Limit idling
Additional 2017 CAAP Update Highlights

- Expand use of on-dock rail
- Accelerate deployment of cleaner harbor craft engines
- Encourage improvements in freight efficiencies
- Develop Green Terminal Recognition Program
- Ensure energy infrastructure is available to support use of cleaner technologies
Technology Development

• Demonstrations of Zero Emission On-Road Trucks and Development of 50-100 Truck Pilot Deployment
• Demonstration of Harbor Craft Technologies
• Near-Zero Switcher Locomotive Demonstration
• Vessel Energy Efficiency Improvements Evaluation and Demonstration of At-Berth Emission Reduction Technologies
• Demonstrations of Zero Emission Terminal Equipment
Technology Development

**POLB’s Zero Emission Terminal Equipment Transition Project**

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

POLA’s Green Omni Terminal Demonstration Project

Demonstrate 4 battery-electric yard tractors, 2 battery-electric on-road trucks, 2 electric forklifts, 1 electric top handler, solar rooftop array with battery storage and microgrid controls, and land-based vessel emission capture system
Technology Development

POLA’s Everport Advanced Cargo Handling Equipment Demonstration Projects

Demonstrate 20 low-NOx yard tractors, 8 battery-electric yard tractors, 2 battery-electric top picks, and charging infrastructure
Technology Development

GE Information Portal

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.