SAN PEDRO BAY PORTS

CLEAN AIR ACTION PLAN

NEXT STEPS ON CLEAN TRUCKS PROGRAM 2018 2nd Quarterly Update

Teresa Pisano
Environmental Specialist
Port of Los Angeles

2017 CAAP CTP Milestones

- 2018 – Pre-2014 Trucks can no longer register in PDTR
- 2018-2019 – Clean Truck Rate Study completed
- 2018-2019 – Near Zero/Zero (NZE/ZE) emission equipment Feasibility Study completed
  - Study to be updated every 2 to 3 years
- 2019 – CARB promulgates NZE Manufacturing Standard
- 2019 – Annual Registration Fee Exemption for NZE/ZE Trucks
- 2020 – Clean Truck Rate goes into effect on non-NZE/ZE Trucks

CTP Milestones (Cont'd)

- 2023
  - Only NZE/ZE trucks can register in PDTR
  - Pre-2010 drayage trucks banned by State Truck and Bus Rule
- 2023-2035
  - Clean Truck Rate adjusts based on feasibility study and fleet composition to encourage transition to ZE by 2035
  - Informed by NZE/ZE equipment Feasibility Study updates
- 2035
  - Only ZE trucks can register in PDTR

CTP Implementation

- 2018 Tariff Modification Activities
  - Only allow 2014 or newer trucks to register in the PDTR
    - Existing pre-2014 trucks grandfathered
    - Tariff Change Board Approval Scheduled for June/July for both Ports
    - Scheduled to be effective on October 1, 2018
  - PDTR registration fee exemption for NZE/ZE trucks on hold, pending regulatory definition from the Air Resources Board

CTP Implementation

- Clean Truck Rate Study Goals
  - Assist transition to near zero and eventually zero emission equipment
  - Avoid cargo diversion
  - Maintain adequate supply of drayage trucks for Port service
- Status
  - Draft scope of work has been developed
  - Study expected to begin in late Summer 2018
  - Estimated completion 2nd Quarter 2019

CTP Implementation

- Near-Zero Emission (NZE) Truck Early Deployment Program
  - Joint incentive program with AQMD under development
    - Up to 140 NZE Trucks
    - Up to $4M ($2M each port) pending approval from Boards of Harbor Commissioners
    - AQMD has agreed to request $2M from its Board
    - California Energy Commission has preliminarily agreed to provide $8M
    - Goal to have NZE trucks on the road by the end of 2018

CTP Implementation

- Zero Emission (ZE) Truck early adopter activities
  - 50 to 100 ZE Truck Demonstration
    - Scope of Work under development
    - Trucking Fleet Survey
    - Informational Workshop to be scheduled Summer of 2018
    - RFI to Truck Manufacturers (OEMs)

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UPDATE ON TECHNOLOGY FEASIBILITY ASSESSMENTS

JUNE 26, 2018

Feasibility Assessments

- Cargo-Handling Equipment (CHE)
- Drayage Trucks

CHE Study

- OEM Survey
- Marine Terminal Operators (MTO) Survey

Truck Study

- Drayage Truck OEM Survey

Next steps

- Draft Feasibility Reports and public comment period expected in Q3.
- Final Feasibility Reports expected January 2019.


Send comments to:
caap@cleanairactionplan.org

UPDATE ON TECHNOLOGY DEMONSTRATIONS IN THE PORTS

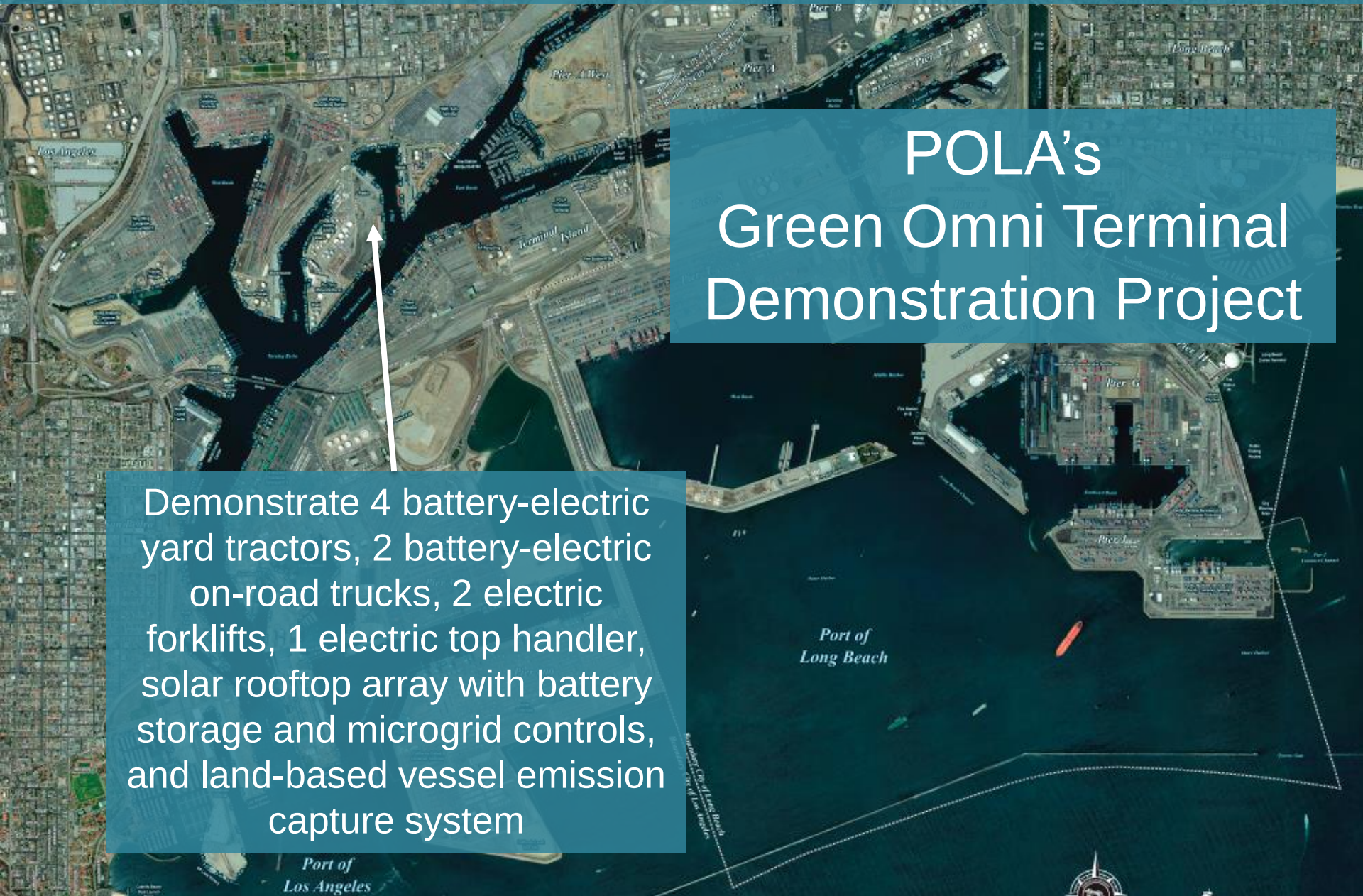
Heather Tomley
Director of Environmental Planning
Port of Long Beach

Jacob Goldberg
Environmental Specialist
Port of Los Angeles

Technology Development

- Demonstrations of Zero Emission On-Road Trucks and Development of 50 to100 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



POLA's
Green Omni Terminal
Demonstration Project

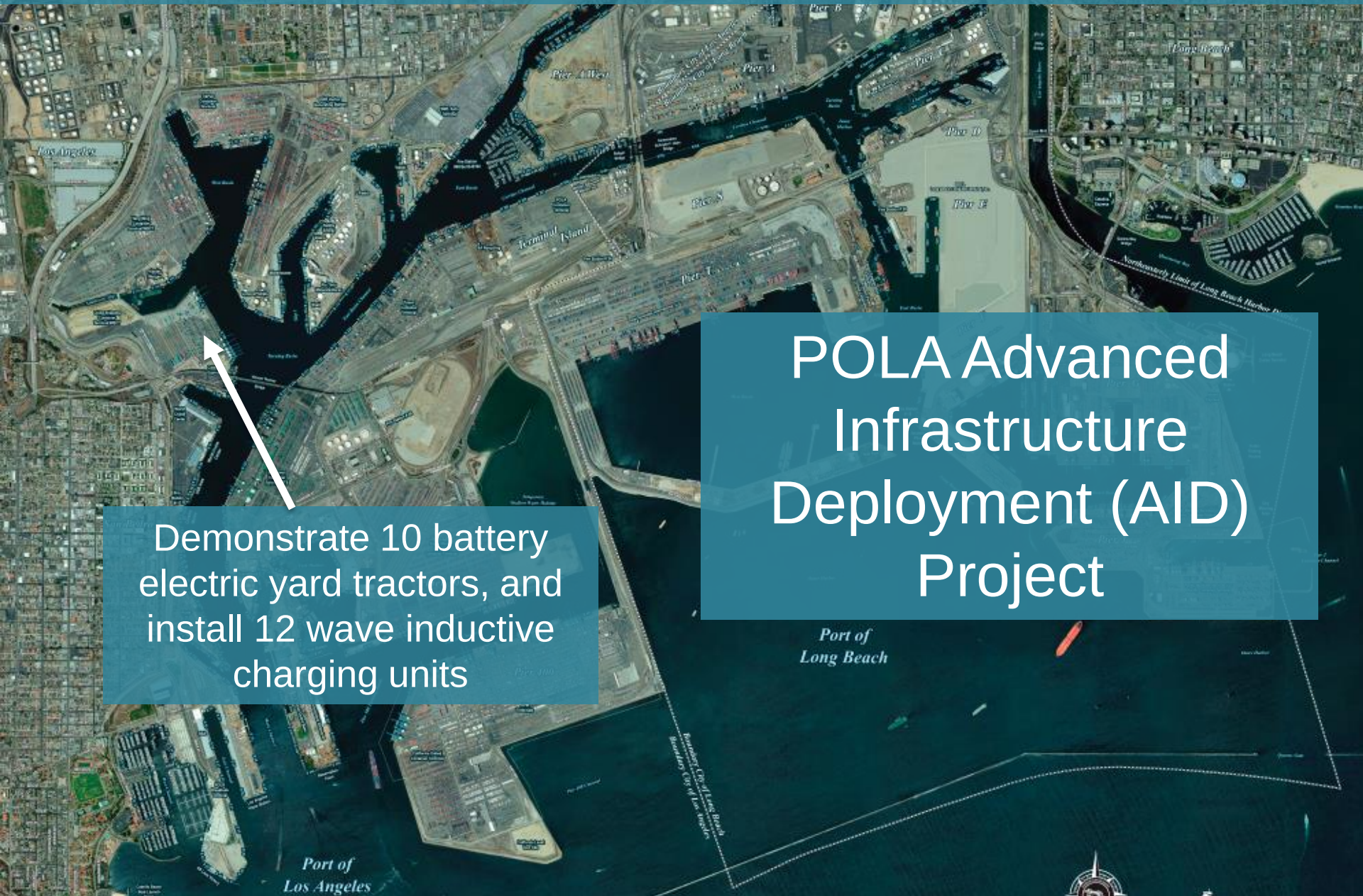
Demonstrate 4 battery-electric yard tractors, 2 battery-electric on-road trucks, 2 electric forklifts, 1 electric top handler, solar rooftop array with battery storage and microgrid controls, and land-based vessel emission capture system

Technology Development

POLA's Everport Advanced Cargo Handling Equipment Demonstration Projects

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

Technology Development



Demonstrate 10 battery electric yard tractors, and install 12 wave inductive charging units

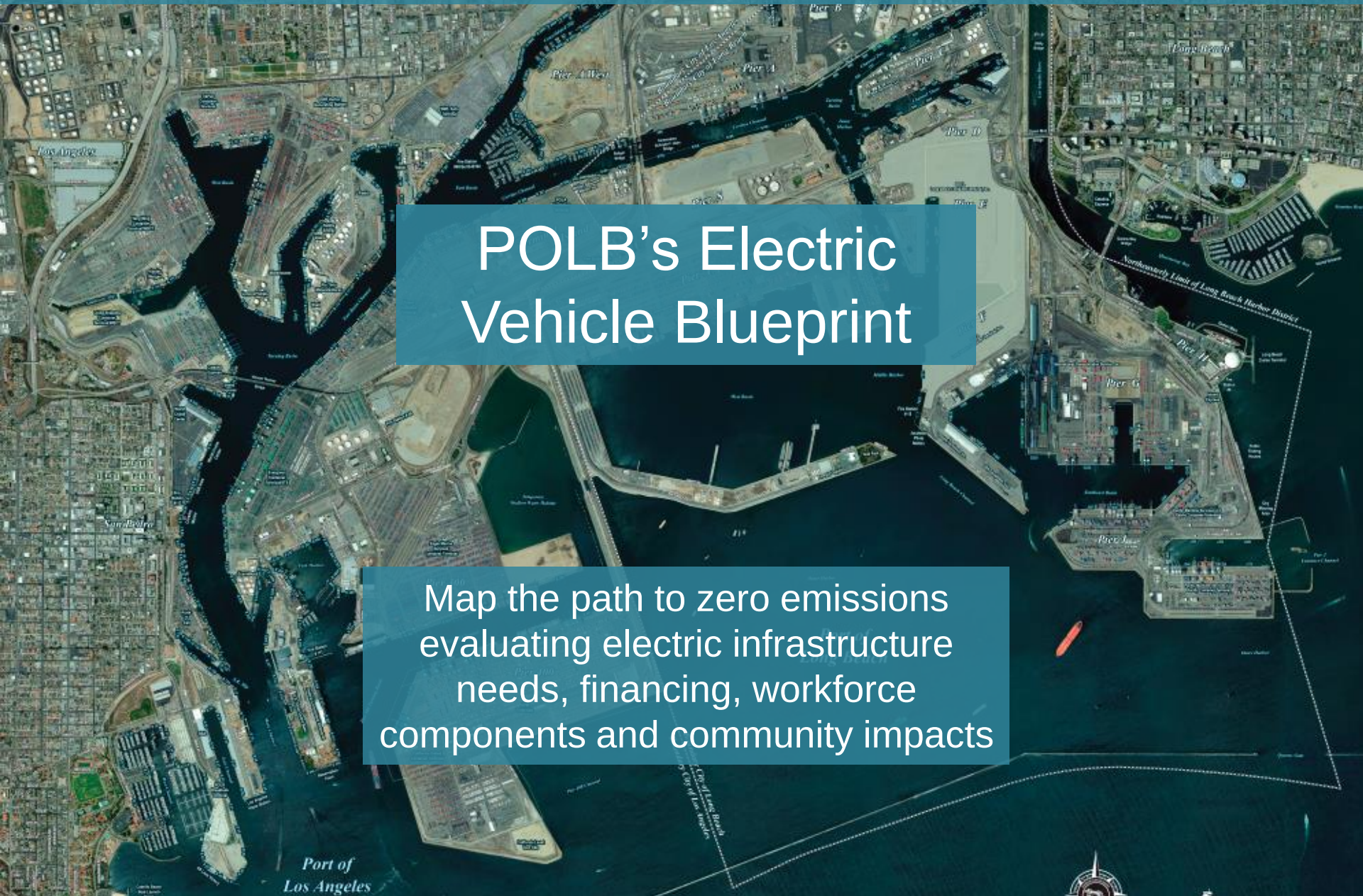
POLA Advanced Infrastructure Deployment (AID) Project

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

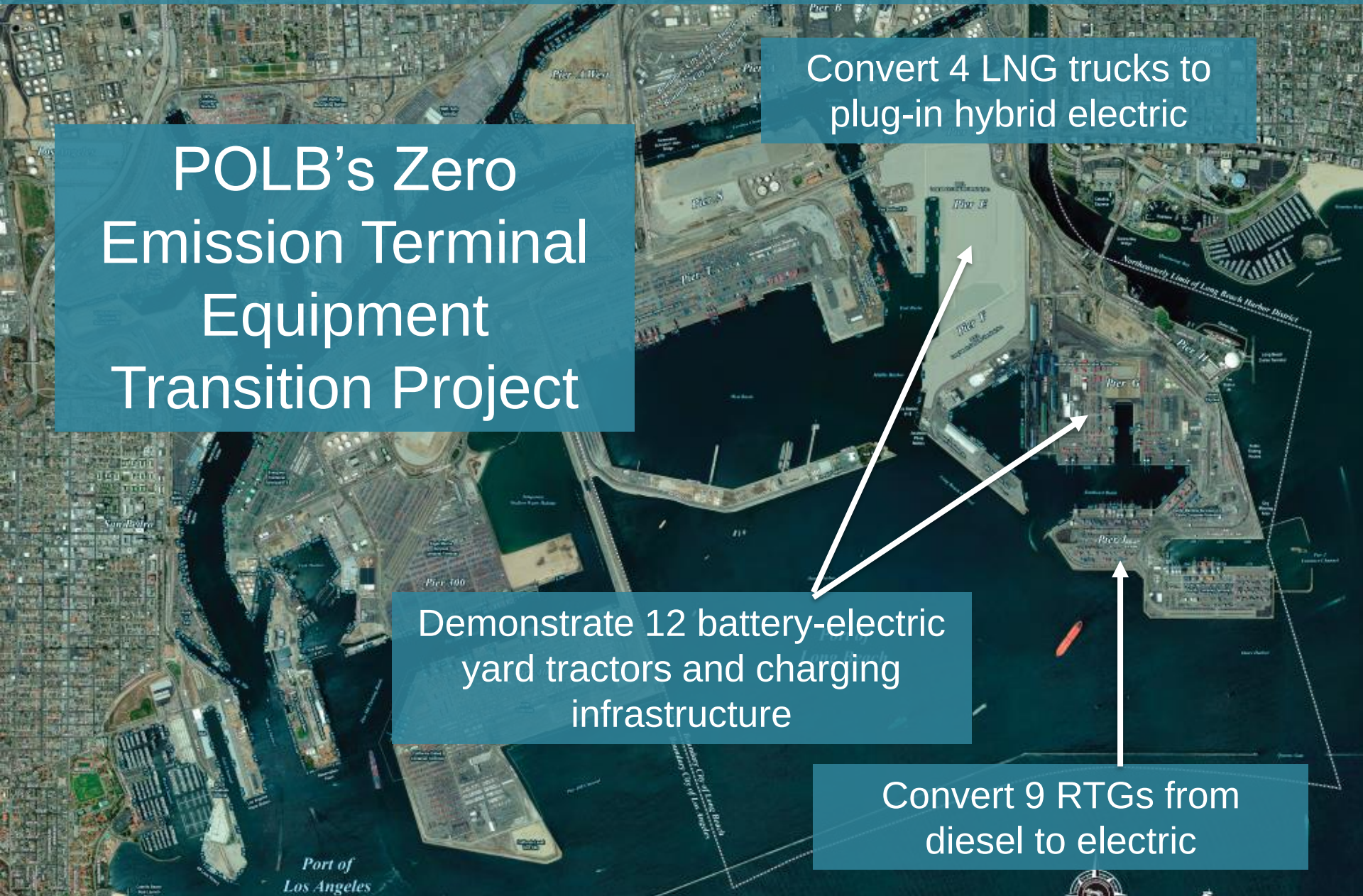
Technology Development



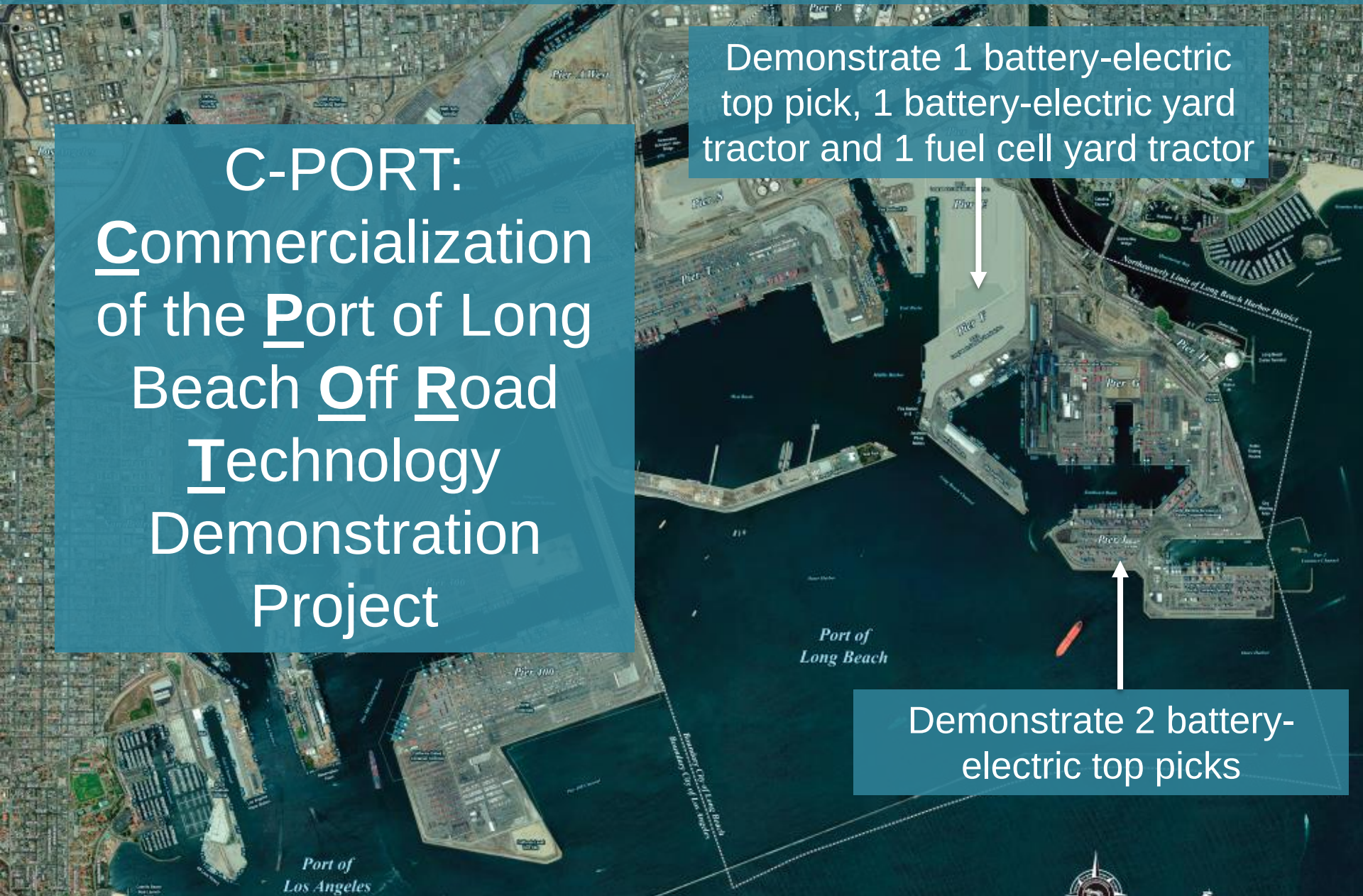
POLB's Electric Vehicle Blueprint

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

Technology Development

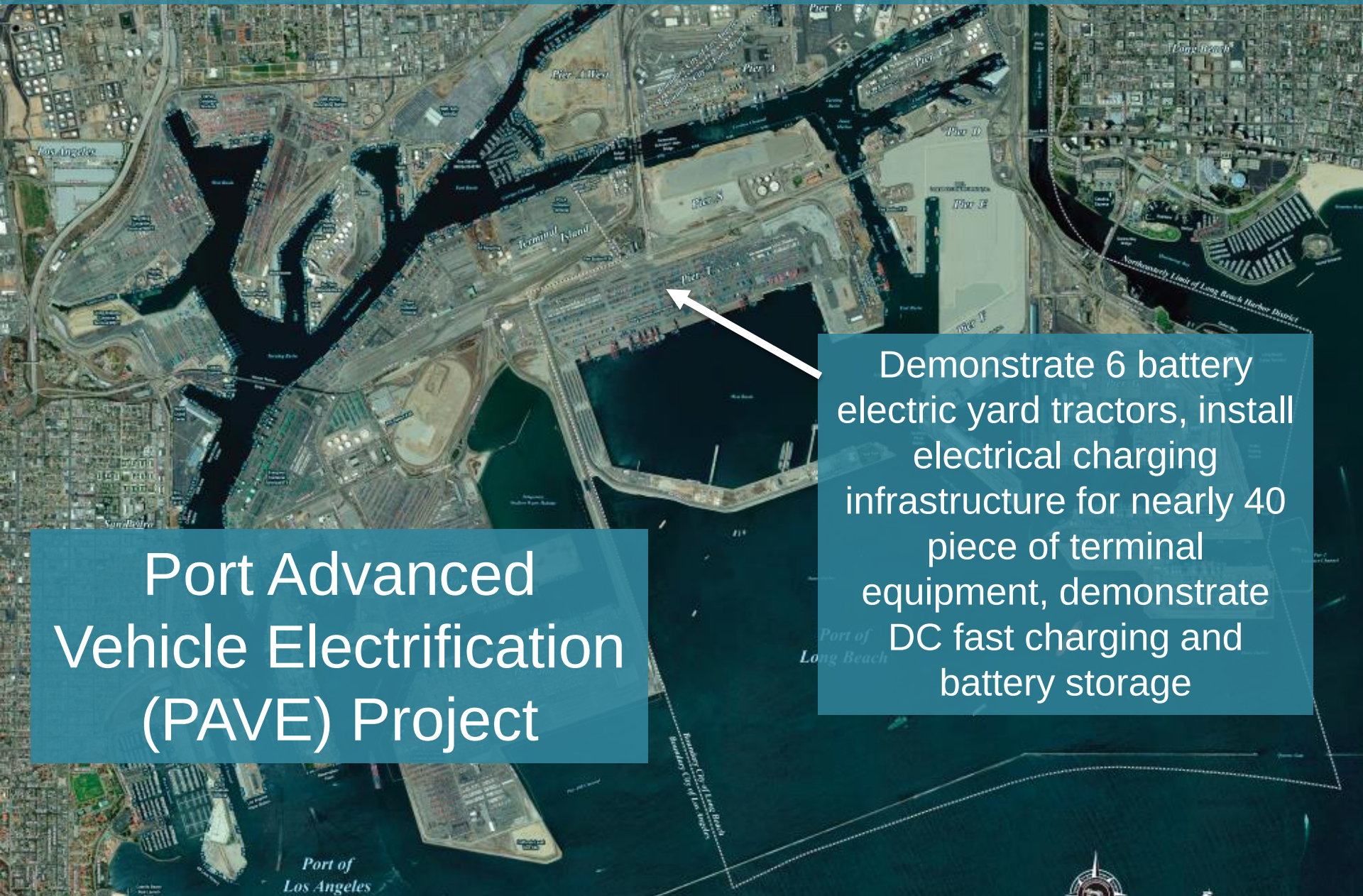


Technology Development



Technology Development

Technology Development



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

Port Advanced Vehicle Electrification (PAVE) Project

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THANK YOU FOR PARTICIPATING

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OVERVIEW OF OCEAN GOING VESSEL STRATEGIES

June 26, 2018

2005 vs. 2016

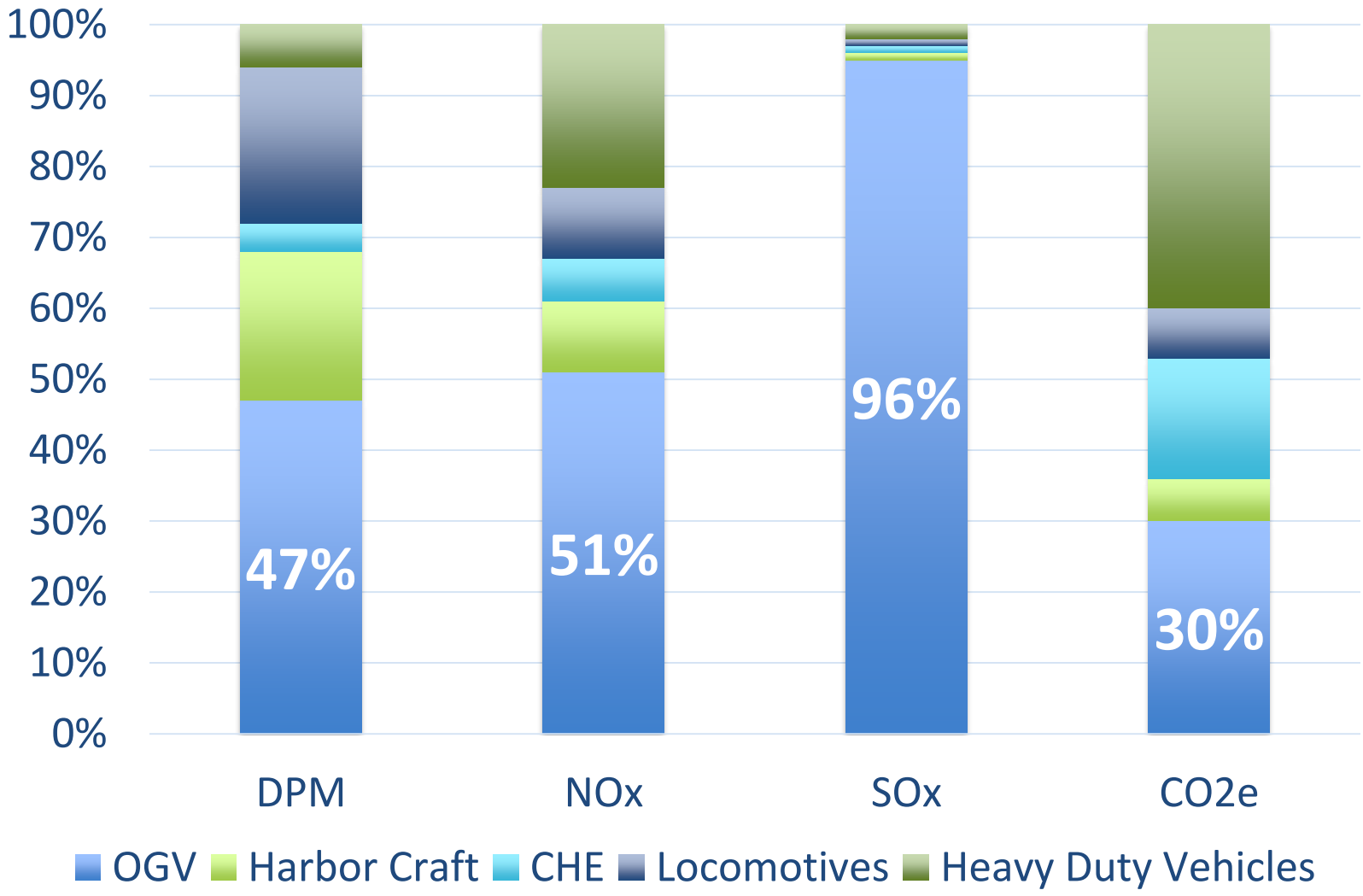
Overall Container Volumes up 10%

Containers (TEUs) per container ship calls up 40%

Container ship calls down 21%

All ship arrivals down 23%

Emissions Today



Strategies for Ships

- Incentive Programs
- Technology Solutions
- Regulatory & Funding Advocacy

Vessel Speed Reduction

Green Ships/Environmental Ship Index

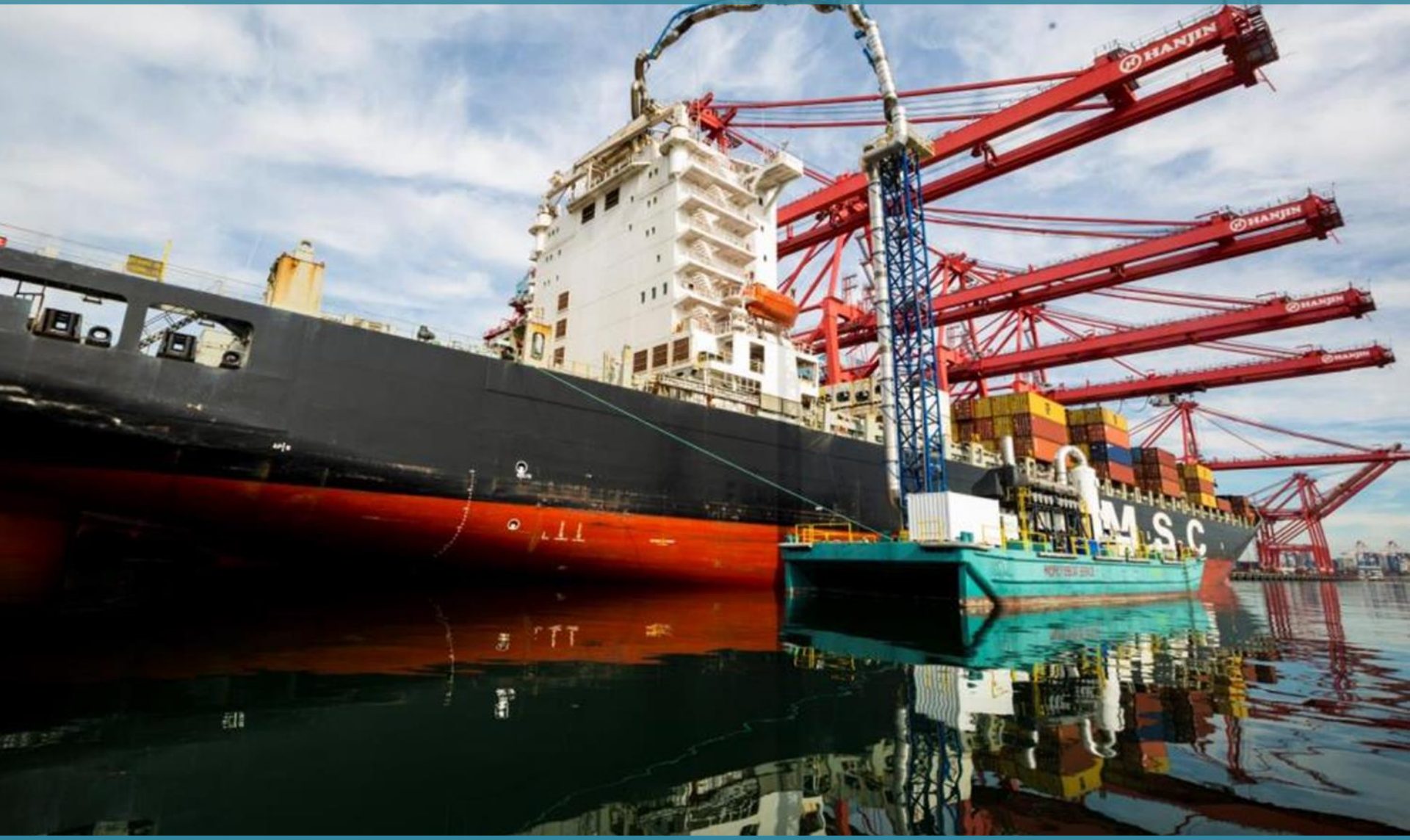
The Ports give financial incentives for ships with the cleanest engines

Shore Power

Ships have been plugging in since 2008

Equivalent of taking 42,000 cars off the road each day

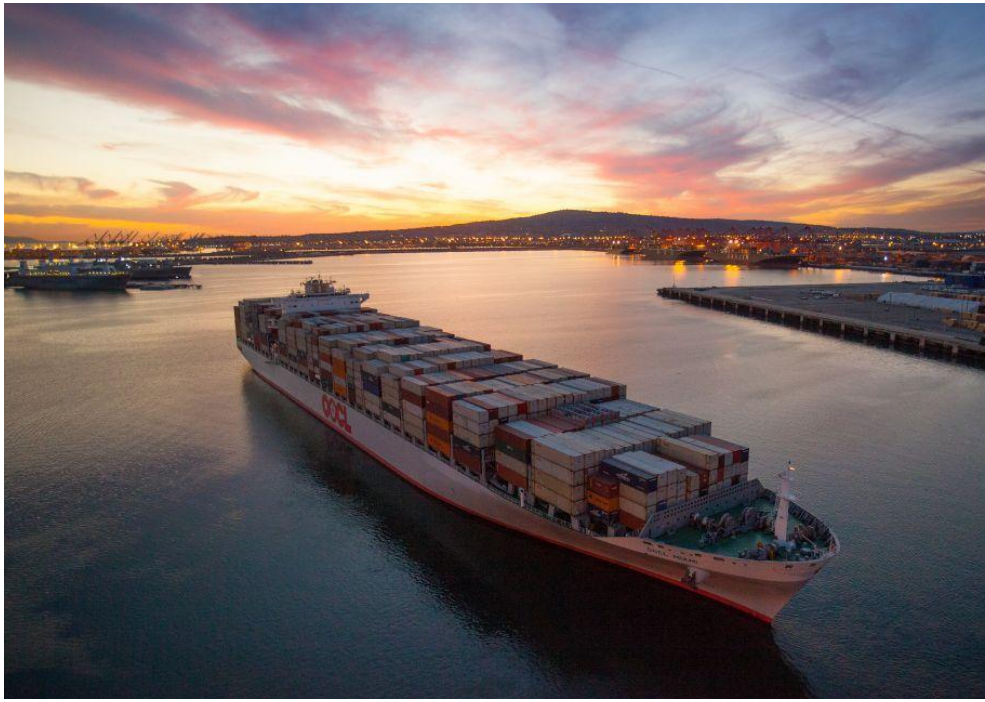
Shore Power Alternatives



Technology Advancement

Current Projects

- Land or Barge-Based OGV At-Berth Exhaust Emissions Capture & Treatment Systems RFP
- Maersk OGV Energy Efficiency Measurement Demonstration

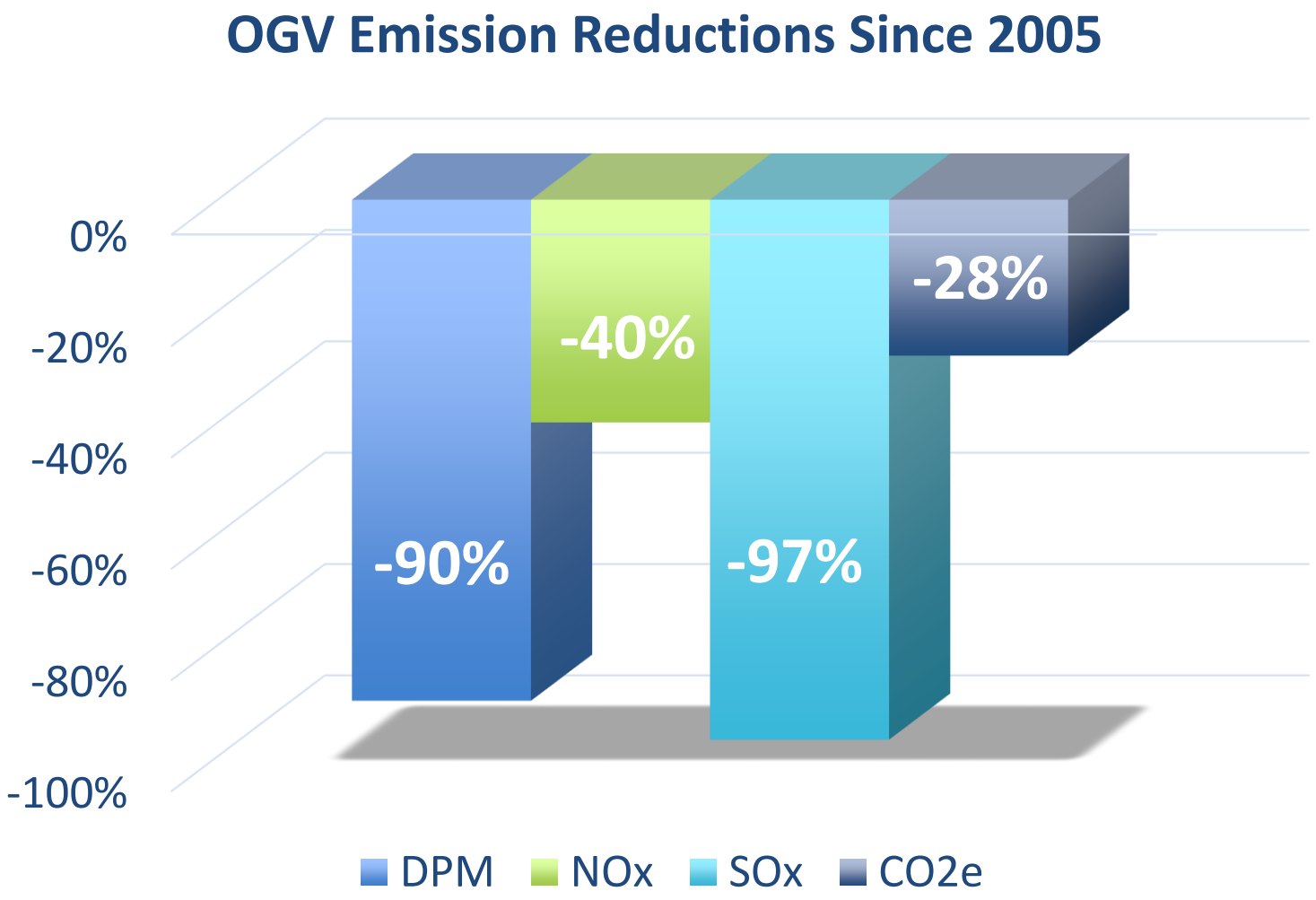


Technology Advancement

Previous Projects

- Tri-Mer Mobile Emissions Treatment System (METS-1)
- ACTI Advanced Maritime Emission Control System
- APL Singapore Slide Valve & Water-In-Fuel Emulsion
- Alternative Petroleum Technologies
- Bluefield Holdings/Krystallon Ocean Going Vessel Scrubber
- OGV Slide Valve Low-Load Emissions Evaluation

EMISSION REDUCTIONS



Strategies in the CAAP

- September 2018 - Participation in the State Amendment of Vessel At-Berth Regulation
- January 1, 2019 – RFP for Emissions Capture & Treatment Systems
- 2019 - Ship Incentive Program Modification
- 2023 - Economic Assessment for Clean Ship Rate
- 2025 - Clean Ship Differential Rate Program
- Ongoing - West Coast Ship Incentive Collaboration
- At-Berth Infrastructure Assessments
- VSR Program Modification

Progress to Date

- Participating in CARB Ports Working Group to amend at-berth regulation
- At-berth emission reduction RFP: 4 responses received; under evaluation
- Applied for grant funds to expand ship incentive programs
- Conducting outreach on VSR modifications
- Collaborating with West Coast ports on ship incentive portal and route planner – in partnership with Port of Vancouver, identifying a consultant to assist with ports facilitation and building the framework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