Zero Emissions Technology Demonstrations

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Port of LONG BEACH
The Green Port

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

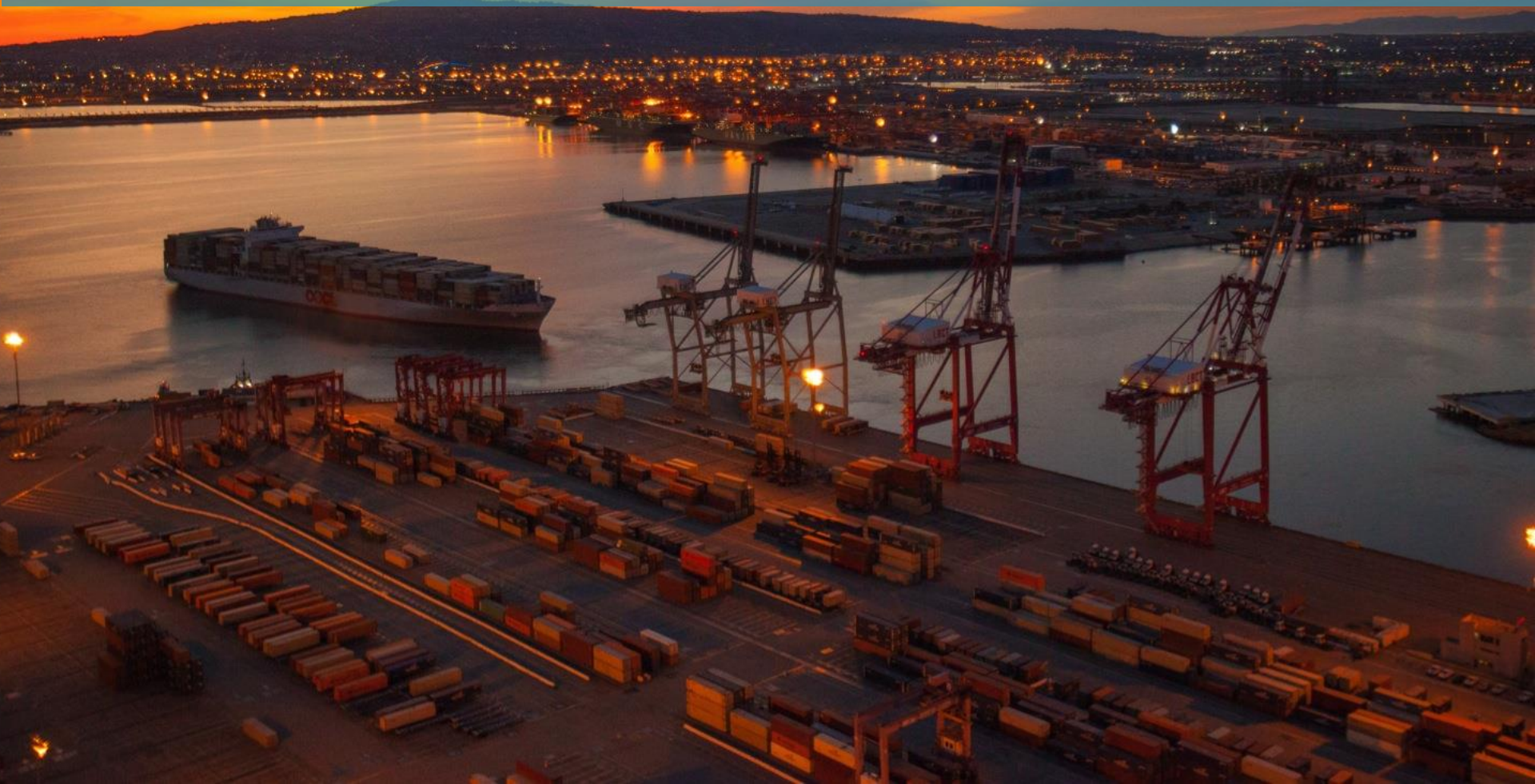
World's Most Advanced Technologies

Middle Harbor

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

Purpose

- Assess feasibility of near-zero and zero-emissions
- Evaluate progress toward CAAP goals
- Identify actions to overcome challenges
- Determine if timelines need to be adjusted

Scope

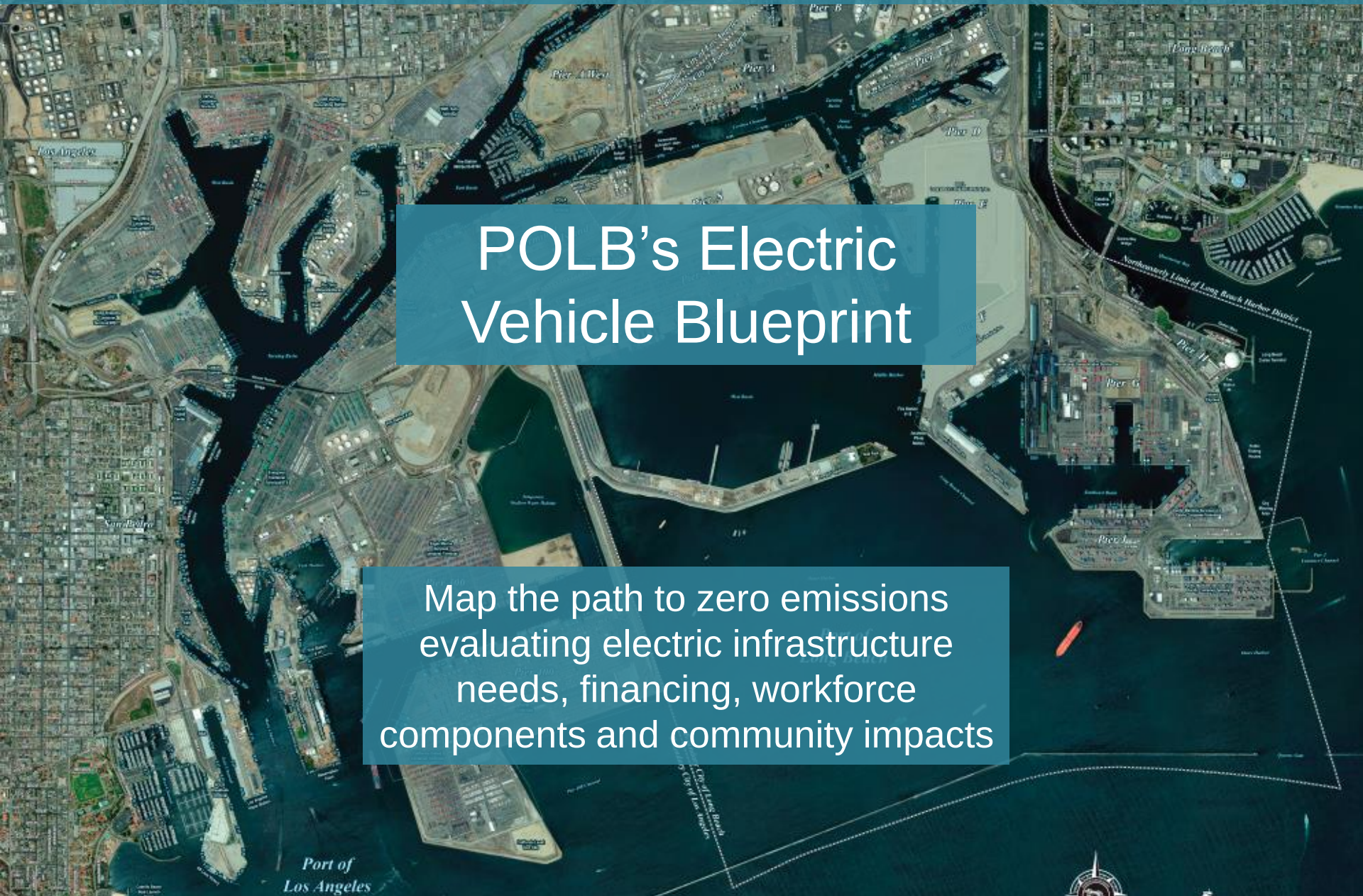
- Technical Viability
- Commercial Availability
- Operational Feasibility
- Infrastructure Availability
- Key Economic Considerations

Technology Development

Zero Emission Technology Demonstrations

- Demonstrations of Zero Emission On-Road Trucks and Development of 50-100 Truck Pilot Deployment
- Switcher Locomotive Demonstration
- Demonstrations of Zero Emission Terminal Equipment

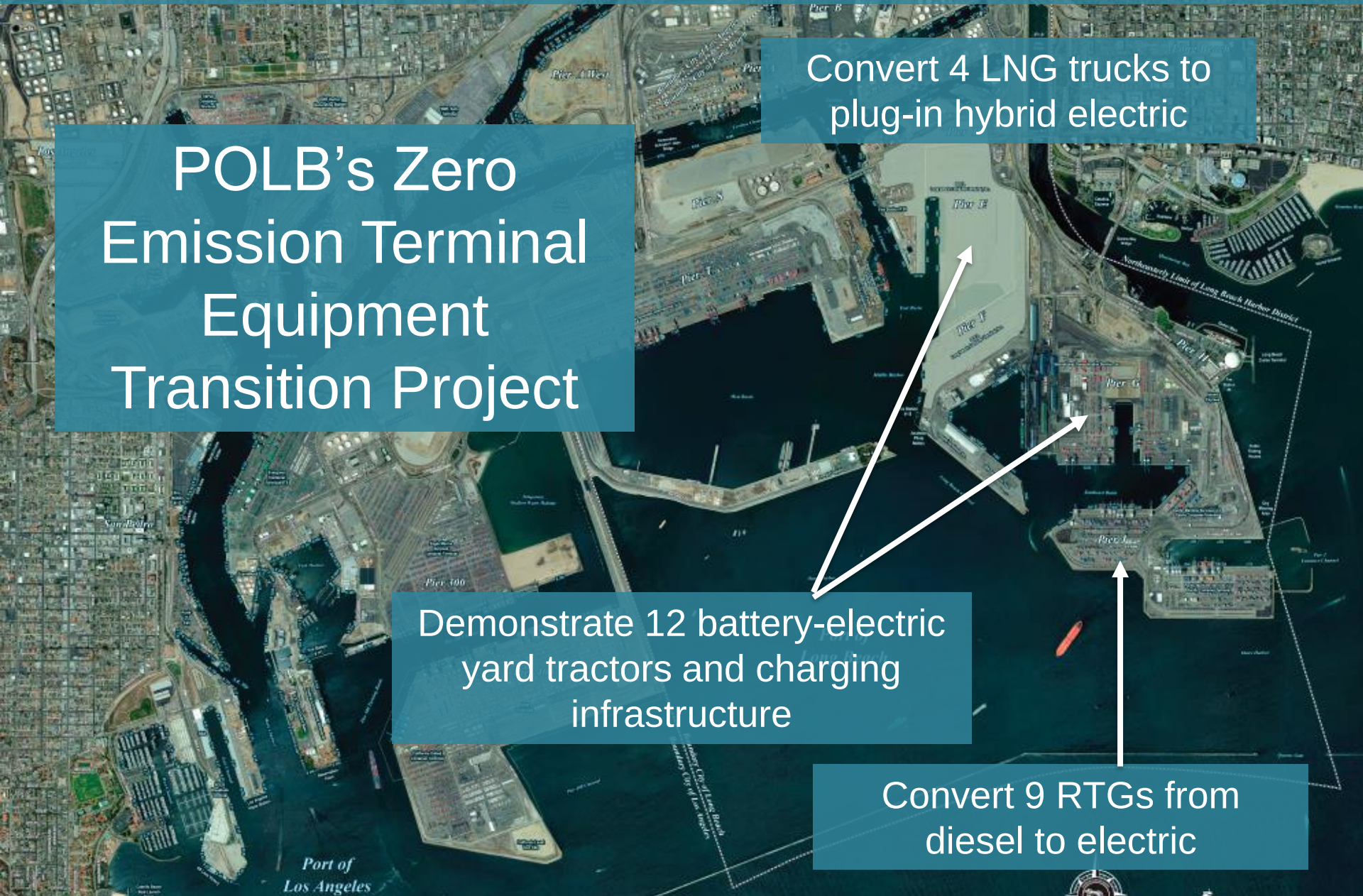
Technology Development



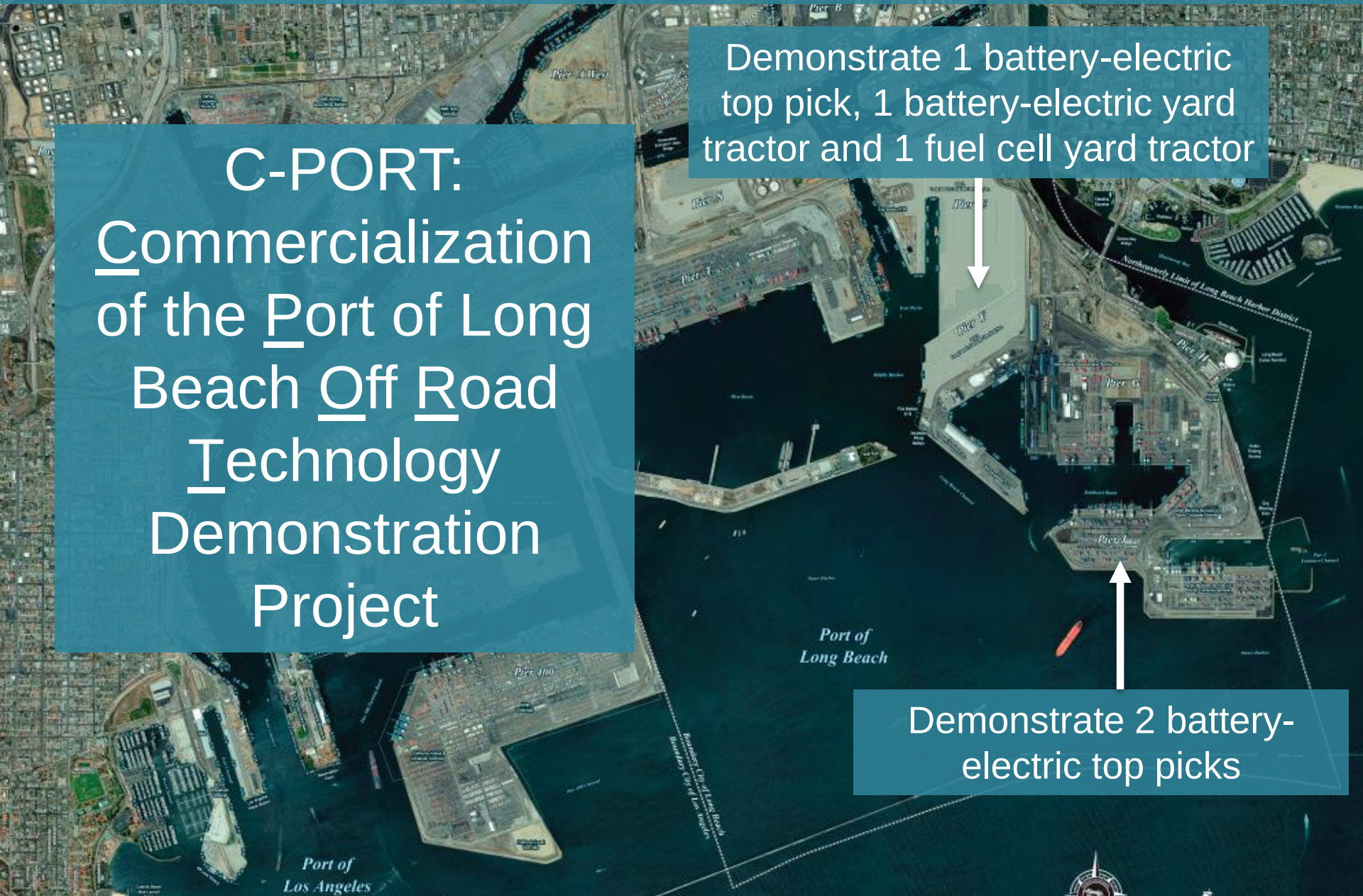
POLB's Electric Vehicle Blueprint

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

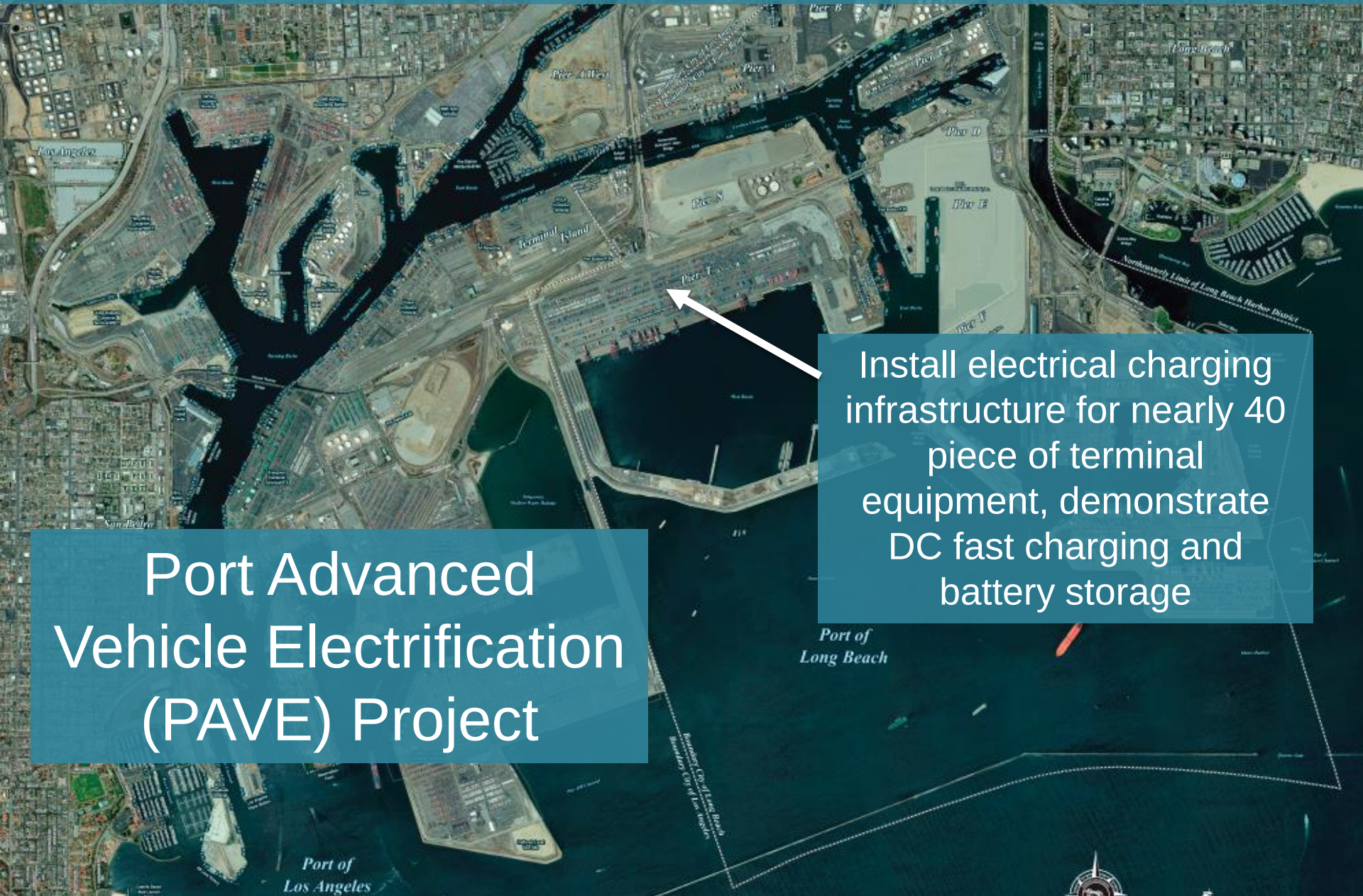
Technology Development



Technology Development



Technology Development



Install electrical charging infrastructure for nearly 40 piece of terminal equipment, demonstrate DC fast charging and battery storage

Port Advanced Vehicle Electrification (PAVE) Project

Technology Development