



SAN PEDRO BAY PORTS CLEAN AIR ACTION PLAN

Status Update on Current Technology
Demonstrations
March 8, 2023

Questions or comments? Chat us or
submit via caap@cleanairactionplan.org

Rose Szoke, Port of Long Beach
Jacob Goldberg, Port of Los Angeles



Overview

Update on the Ports' Technology Advancement Program, or TAP:

- Revisions of TAP Guidelines Underway
- New TAP Projects Identified in 2022 and 2023
- Ongoing TAP Demonstration Projects
- Update on the Ports' Grant-Funded Technology Demonstrations



Technology Advancement Program Update

Revised TAP Guidelines

- Last updated in January 2020

The Guidelines will be revised to reflect:

- Advances in zero-emission technologies for Port source categories
- Changes in funding eligibility

Document anticipated for finalization in March/April 2023.

Program Guidelines




Updated: February 2023



Technology Advancement Program Update

New Project Concepts Submitted to the TAP RFI in 2022 & 2023

- Project concepts may be submitted via www.cleanairactionplan.org/TAP
- 5 eligible proposals and 1 ineligible proposal were received in 2022.
- Of the 5 eligible proposals, 4 projects were recommended for funding by the TAP AC while 1 project proposal is currently under review.



Request for Information
San Pedro Bay Ports Technology Advancement Program
CONCEPT PAPER

Instructions: Read the "San Pedro Bay Ports Technology Advancement Program Guidelines" in its entirety. These guidelines contain information about applicant eligibility, project eligibility, match funding requirements, and the evaluation process. Concepts that do not conform to the guidelines will be rejected, and proposers will be unable to resubmit this same concept for a full calendar year. Fill in all fields in the form below; if you cannot answer a question, write "N/A." Note: Proposers should be aware that documents submitted to the Ports are considered public record.

Company Information		
Company Name:		Year Established:
Address:		
City:	State:	ZIP Code:
Primary Point of Contact:	Title/Position:	
Phone Number:	Email:	
Technical/Engineering Contact:	Title/Position:	
Phone Number:	Email:	
Technology Description (500 characters max)		
Target Source Category		
<input type="checkbox"/> Heavy-Duty Trucks (Class 8)	<input type="checkbox"/> Locomotives	
<input type="checkbox"/> Cargo-Handling Equipment	<input type="checkbox"/> Infrastructure	
<input type="checkbox"/> Ocean-Going Vessels	<input type="checkbox"/> Other, please describe:	
<input type="checkbox"/> Harbor Craft		
Funding		
Total Project Cost:	TAP Funding Requested:	
Total Secured Match Funding (\$):		
Match Funding Source:	Amount:	
Match Funding Source:	Amount:	
<i>For additional match funding sources and amounts, please upload an attachment.</i>		
Partners		
Do you have a demonstration partner?		
<input type="checkbox"/> Yes, describe: _____		
<input type="checkbox"/> No		
Have you approached other agencies to fund or support this technology demonstration?		
<input type="checkbox"/> Yes		
<input type="checkbox"/> No		
If yes, please describe: _____		



Technology Advancement Program Update

New Projects Approved in 2022 & 2023

- South Coast AQMD Joint Electric Truck Scaling Initiative (JETSII) Demonstration
- Toyota Tsusho Hydrogen Fuel Cell Top Handler and Hydrogen Mobile Demonstration
- SSA Hydrogen Fuel Cell Top Handlers Demonstration



Upcoming Projects for 2023 – PENDING BOARD APPROVAL

- PHL Battery Charging System Demonstration
- South Coast AQMD Low-Pressure Exhaust Gas Recirculation Retrofit and Multi-Fuel Injection OGVs
- Crowley Hybrid Battery-Electric Tug Demonstration





Ongoing TAP Demonstration Projects Update





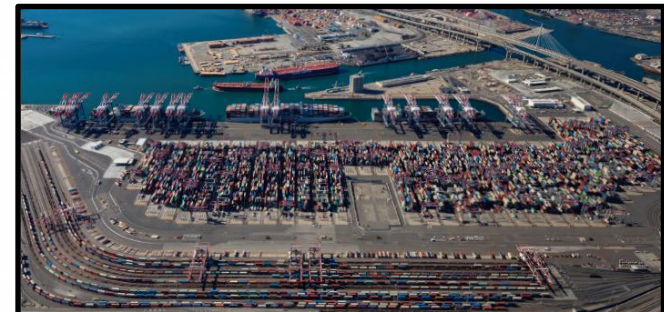
Ports Grant-Funded Demonstration and Deployment Updates

- The Ports have secured a combined ~\$185 M in grant funds to support the advancement of technology.
- In 2022, the Port of Long Beach received \$30.1M from MARAD for the Middle Harbor Terminal Zero Emission Conversion Project.
- The Ports have helped deploy a total of 122 grant-funded ZE vehicles and equipment to date.
- The Ports have secured funding to support deploying an additional 71 grant-funded ZE vehicles and equipment over the next 3 years.
- While most deployments are zero emissions, the Ports have historically deployed a smaller number of near-zero emission trucks, vessels and cargo-handling equipment.



Middle Harbor Terminal Zero Emission Conversion Project - NEW

- \$30.1 million awarded to the Port of Long Beach from the U.S. Maritime Administration under the Port Infrastructure and Development Program in 2022 for:
 - Acquisition of 60 manually operated, ZE yard tractors at Long Beach Container Terminal
 - Installation of the supporting charging infrastructure
 - Power committed to and provided by SCE
 - Software equipment designed for compatibility with LBCT's terminal operating system
 - Training



Middle Harbor Terminal Zero Emission Conversion Project

**Prepared for U.S. Department of Transportation
Office of the Secretary**
Port Infrastructure Development Program
(PIDP) 2022

Submitted By
Port of Long Beach
415 W. Ocean Blvd., Long Beach, CA 90802 | 562-283-7100

May 16, 2022



ZE TRUCKS

PORT OF LONG BEACH - PETERBILT/MERITOR - SHIPPERS TRANSPORT EXPRESS

PORT OF LOS ANGELES - KENWORTH/TOYOTA - UPS, TTSI, SCE AND TLS



ZE YARD TRACTORS

PORT OF LONG BEACH

- BYD – LBCT, ITS
- DINA/MERITOR – SSA (PIER C)

PORT OF LOS ANGELES

- BYD – PASHA, WBCT, EVERPORT
- KALMAR – PASHA
- TRANSPower/MERITOR – PASHA



ZE TAYLOR TOP HANDLERS

TAYLOR/BYD - PORT OF LOS ANGELES - EVERPORT

TAYLOR/BYD - SHIPPERS TRANSPORT EXPRESS (OAKLAND)



HYDROGEN INFRASTRUCTURE

SHELL (ONTARIO AND WILMINGTON SITES) – PORT OF LOS ANGELES





Looking Forward

- Both Ports continue to seek additional opportunities to partner on technology development and demonstration projects and to secure further grant funding
- CA State – Proposed budget includes \$6.1 billion for zero-emission vehicle funding, including future year recommendations for Port specific funds
- Federal – Bipartisan Infrastructure Law and the Inflation Reduction Act each will continue to fund major emissions reduction grant programs and projects
 - EPA Clean Ports Funding Program
 - MARAD Port Infrastructure Development Program (PIDP)



Contacts/Information

- Jacob Goldberg, Port of Los Angeles: jgoldberg@portla.org
- Rose Szoke, Port of Long Beach: rose.szoke@polb.com
- www.cleanairactionplan.org
- www.polb.com/zeroemissions
- <https://www.portoflosangeles.org/environment/air-quality/zero-emissions-technologies>

An aerial photograph of a large city harbor, likely Seattle, showing a dense urban area, a large marina filled with boats, and a deep blue body of water. A semi-transparent teal banner is overlaid across the center of the image, containing the text "Thank you!".

Thank you!

The background of the slide is a wide-angle photograph of a busy port. In the foreground, there are stacks of colorful shipping containers (red, blue, yellow, green) and large blue gantry cranes. In the middle ground, there are more containers and a road with some vehicles. In the background, there are hills and a city skyline under a clear blue sky.

SAN PEDRO BAY PORTS
CLEAN AIR ACTION PLAN

**San Pedro Bay Ports
2022 Accomplishments
& 2023 Priorities**

Teresa Pisano
Port of Los Angeles

Morgan Caswell
Port of Long Beach



Joint Ports' 2022 Accomplishments

- ✓ Commenced Clean Truck Fund (CTF) Rate collection on April 1, 2022
- ✓ Established Year 1 Spending Plans for CTF
- ✓ Provided funding to support 100 zero emission (ZE) truck pilot through AQMD's JETSI project (\$1.5 Million per Port)
- ✓ Prepared and released each Port's respective:
 - Air Monitoring Report (2021)
 - Emissions Inventory (2021)
- ✓ Prepared and released the 2021 TAP Annual Report
- ✓ Completed the 2021 CHE Feasibility Assessment
- ✓ Approved 1 new TAP project
- ✓ Initiated green shipping corridors with transpacific partners



Port of Long Beach

- ✓ Secured \$30.1 million through the Port Infrastructure and Development Program for 60 ZE yard tractors and infrastructure
- ✓ Completed the \$1.5 million DERA Project (2019)
 - Replaced 3 diesel RTG cranes with hybrid RTG cranes
- ✓ Opened the first two public chargers for drayage trucks in the U.S.
- ✓ Released a Public Truck Charging Request for Information
- ✓ Published an Electric Public Charging Toolkit for Heavy-Duty Trucks
- ✓ Hosted a joint agency drayage truckers workshop
- ✓ Executed two leases with companies that will provide public charging to drayage trucks
- ✓ Held a grant workshop for Port tenants
- ✓ Continued to implement grant funded projects



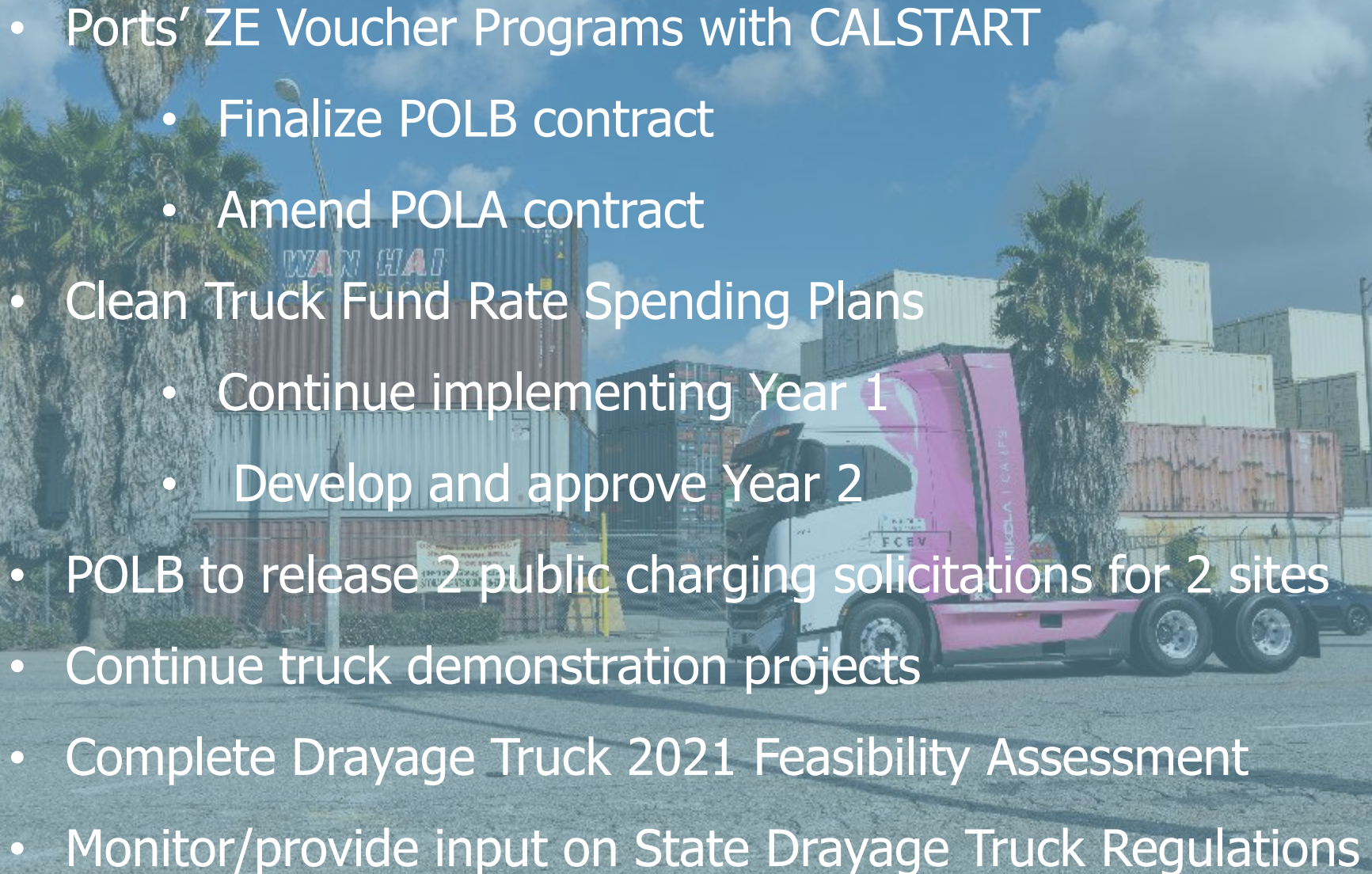
Port of Los Angeles

- ✓ Contracted with CALSTART to start the POLA ZE Truck Voucher Incentive Program
 - Released an initial \$5 million (funding source – CTF Rate)
- ✓ Board approved two proposals from the ZE 25 Truck Deployment RFP
 - Each project will provide \$3 million for a total of 22 trucks (funding source – CTF Rate)
- ✓ POLA purchased new air monitoring equipment for all four monitoring stations
 - Public meetings will be held on air monitoring efforts
- ✓ Completed Everport Advanced Yard Tractor Project
- ✓ Continued to implement major grant funded projects
 - Pasha Green Omni-Terminal (anticipated completion in 2023)
 - Everport Advanced Cargo Handling Equipment Project
 - WBCT Advanced Infrastructure Demonstration
 - Shore to Store Project (anticipated completion in 2023)
- ✓ Completed POLA Public Charging Study (Volvo LIGHTS project)

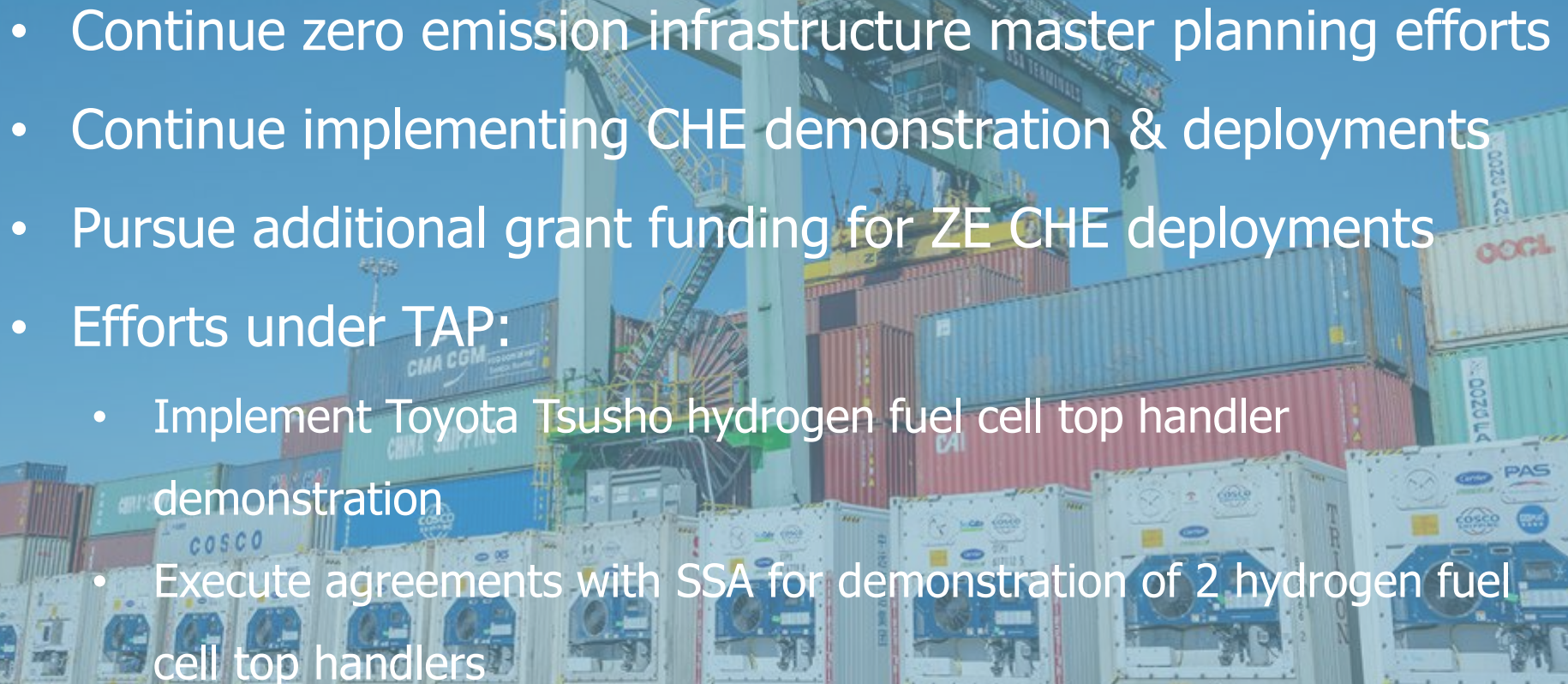
An aerial photograph of a coastal city and harbor. The image shows a dense urban area on the left, a large harbor with numerous piers and ships in the center, and a residential area with a beach on the right. A semi-transparent blue text box is overlaid in the center of the image.

2023 Priorities

Truck Priorities

- Ports' ZE Voucher Programs with CALSTART
 - Finalize POLB contract
 - Amend POLA contract
 - Clean Truck Fund Rate Spending Plans
 - Continue implementing Year 1
 - Develop and approve Year 2
 - POLB to release 2 public charging solicitations for 2 sites
 - Continue truck demonstration projects
 - Complete Drayage Truck 2021 Feasibility Assessment
 - Monitor/provide input on State Drayage Truck Regulations
- 
- A white and pink electric truck (FCEV) is parked in a yard with shipping containers and palm trees. The truck has 'FCEV' and 'ANGELA I CALES' written on it. The background shows a large stack of shipping containers, some with 'WAN HAI' visible, and palm trees under a blue sky with clouds.

CHE Priorities

- Continue zero emission infrastructure master planning efforts
 - Continue implementing CHE demonstration & deployments
 - Pursue additional grant funding for ZE CHE deployments
 - Efforts under TAP:
 - Implement Toyota Tsusho hydrogen fuel cell top handler demonstration
 - Execute agreements with SSA for demonstration of 2 hydrogen fuel cell top handlers
- 
- A photograph of a port terminal. In the background, a large green gantry crane stands over stacks of colorful shipping containers (blue, red, green, white). In the foreground, a long trailer carries a row of white hydrogen fuel cell top handlers. The handlers have various logos, including COSCO, PAS, and others. The sky is clear and blue.

OGV Priorities


- Support implementation of at berth terminal plans
 - Support the efforts of the Green Shipping Corridors
 - Shanghai
 - Singapore
 - Continue to implement OGV demonstration projects
 - Execute agreements for OGV projects under TAP
- 
- A large container ship, the PASHA HAWAII, is shown sailing on the ocean. The ship is dark blue with a red hull and is heavily loaded with colorful shipping containers. The name 'PASHA HAWAII' is visible on the side of the ship. The ship is moving from left to right, leaving a white wake behind it. The sky is a clear, light blue.

Harbor Craft

- Support implementation of CARB Commercial Harbor Craft Rule
- Continue to oversee harbor craft demonstration projects
- Pursue additional grant funding for ZE Harbor Craft deployments



Locomotives

- 
- Implement clean locomotive demonstration projects
 - Execute agreements for a ZE locomotive demonstration under T
 - Monitor CARB Locomotive In-Use Rule Development
 - Pursue additional grant funding for ZE Locomotive deployments



Emission Inventories and Air Monitoring

- 2022 Emission Inventories
- 2022 Air Monitoring Reports





Grants

- Monitor local, state, and federal funding opportunities to support the CAAP
- Noteworthy programs for consideration:
 - Inflation Reduction Act of 2022
 - MARAD Port Infrastructure Development Program
 - EPA Diesel Emission Reduction Act (DERA)
 - SCAQMD Carl Moyer Program
 - CEC Clean Transportation Program
 - CARB Low Carbon Transportation Investments and Air Quality Improvement Program

An aerial photograph of a large city harbor, likely Seattle, showing a dense urban area, a large marina filled with boats, and a deep blue body of water. The text 'Thank you!' is overlaid in a white, bold font on a semi-transparent blue rectangular background in the center of the image.

Thank you!



SAN PEDRO BAY PORTS CLEAN AIR ACTION PLAN

Update on Clean Truck Program Implementation
and Clean Truck Fund Rate

Leela Rao – Port of Long Beach
Environmental Specialist

Amber Coluso – Port of Los Angeles
Air Quality Environmental Specialist

CAAP Stakeholder Implementation
March 8, 2023



Joint Port Trucks Today*

- 20,827 trucks are in the Port Drayage Truck Registry (PDTR)
- 12,875 2014+ trucks registered in the PDTR and make 82% of moves
- 98% of trucks in the PDTR have engines meeting 2010 EPA standards
- 2% of trucks in the PDTR are engine year 2007-2009
- 904 LNG/CNG trucks are in the PDTR and perform 6% of moves
- 461 trucks with the Cummins natural gas fueled 0.02g/bhp-hr NOx engines are in the PDTR
- 63 Zero Emission (60 battery-electric, 3 Hydrogen Fuel Cell) trucks in the PDTR

* Snapshot from January 2023



Clean Truck Fund Rate

- Boards of Harbor Commissioners approved the Clean Truck Fund (CTF) Rate in November 2021.
- Collection began at both Ports on April 1, 2022
- Charge \$10 per loaded TEU or \$20 per loaded FEU
 - Charged to BCOs or their specified agents for loaded containers hauled by truck
 - Zero-emission trucks are exempt
 - Port-specific exemptions for low NOx trucks



Current CTF Rate Status

- Collection mechanism did not cause any major delays to port operations
- Approximately \$2.5-4 million collected by each port monthly
- Total for San Pedro Bay Ports to distribute through January 2023
Approximately \$67.2 million
- Amount allocated to ZE trucks & infrastructure
Approximately \$14 million



Current CTF Rate Status

- Ports have not heard of any incidents of the rate being passed along to drivers
- Drivers are encouraged to contact the Ports with any comments or concerns
 - By email at : caap@cleanairactionplan.org
 - By phone at : (866) 721-5686.



CTF Rate Revenue Spending Priorities

- Both Ports prioritized zero emission truck vouchers of Year 1 funds
- Smaller portion of Year 1 funds went to early truck deployment projects
- POLB also funded zero emission infrastructure with a portion of Year 1 funds
- POLA funded some zero emission infrastructure through the early truck deployment projects of Year 1 funds
- Year 2+ spending priorities to be taken for Boards' consideration in 2023



POLB Public Charging Infrastructure

- Completed the Public Truck Charging and Fueling Assessment in September 2021
- Issued a [Request for Information](#) (RFI) in February 2022 to obtain information on potential development of the “Tier 1” sites identified in the Assessment
- The Port is preparing solicitations for development of public charging at two sites, which may be partially funded using CTF Rate dollars



ZE Truck Voucher Incentive Program

- In September 2022, POLA released an initial \$5 million for vouchers through the CARB Hybrid and Zero Emission Truck and Bus Voucher Incentive Project (HVIP)
- Currently 4 vouchers applications have been submitted and are currently under review; CARB has \$25M in FY 21-22 HVIP funds remaining as well
- Due to low demand, Ports' adjusting program to direct CTF Rate voucher funds to plus-ups to CARB's HVIP vouchers
 - \$150,000 CARB HVIP Voucher + \$75,000 Port plus-up (\$100,000 for fleets < 10 trucks)



POLA Early ZE Truck Deployment

- POLA released a RFP in late 2021 for 10 or more ZE trucks and associated infrastructure to be deployed before the end of 2022
- POLA Board approved 2 out of the 3 proposals for a total of \$6 million (22 trucks)
- A third proposal for \$3 million is pending future Board approval (20 trucks)



Year 2 Spending Priorities

The Ports are considering the following spending priorities for Year 2:

1. Prioritize infrastructure spending (POLB: 75%)
 - a. Incentivize both public and private infrastructure
2. Continued funding of Voucher Incentive Program (POLB: 20%)
 - a. Prioritize continuation of voucher supplements
 - b. Include flexibility to fund full vouchers at higher amounts dependent on availability of CARB funds
3. Small set aside for pilot and demonstration projects (POLB: 5%)



Outreach on Year 2 Spending Priorities

The Ports will conduct the following outreach on the Year 2 Spending Plans:

- Feedback received today will be incorporated into the draft spending plans
- Draft spending plans will be released for public comment
- Meetings will be conducted with key stakeholders, including trucking and industry associations, community and environmental justice advocates, and transportation and funding agencies



CARB Truck Regulations

- Advanced Clean Fleets – First CARB Board hearing for adoption took place October 27, 2022
 - 15-day change language expected in March 2023
 - Second CARB Board hearing scheduled for April 2023
 - Rule finalization by the end of 2023
 - Expected implementation starting January 1, 2024



Next Steps

- Both Ports to continue to monitor implementation of CTF Rate and spending plan roll-out
 - Evaluate if additional near-term adjustments to spending programs needed
- Public engagement and input into Year 2 spending plan
- ~April 2023 - Board consideration of funding priorities for Year 2

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