

SAN PEDRO BAY PORTS

CLEAN AIR ACTION PLAN

Clean Air Action Plan Implementation Stakeholder Advisory Meeting

MEETING SUMMARY

July 30, 2024

The meeting was held in person at the Board Hearing Room in the Port of Los Angeles Harbor Administration Building located at 425 South Palos Verdes Street in San Pedro and webcasted via Zoom.

1. Welcome

- Heather Tomley, Port of Long Beach (POLB) Managing Director of Planning and Environmental Affairs and Lisa Wunder, Port of Los Angeles (POLA) Acting Director of Environmental Management provided opening remarks.

2. Status Update on the Green Shipping Corridors

- The Ports presented an update on the Green Shipping Corridor (GSC) effort focusing on the corridor between the San Pedro Bay Ports (SPBP) and the Port of Shanghai as well as a separate corridor with the Maritime & Port Authority of Singapore.
- The GSCs are informed by the International Maritime Organization's (IMO) revised Greenhouse Gas (GHG) Strategy to meet net-zero greenhouse gas emissions by 2050.
- The Ports outlined the following near-term goals for the Shanghai GSC:
 - By 2025, begin deploying zero-carbon capable ships into the corridor; and
 - By 2030, demonstrate the feasibility of deploying a zero-lifecycle carbon emission container ship into the corridor.
- Under the Shanghai GSC, the Port partners with support from C40 Cities have created a work plan that includes multiple working groups such as energy supply, carriers, and ports.
- Three mission statements have been agreed upon under the Singapore GSC related to:
 - Implementing near-zero and net-zero fuels;
 - GHG reporting; and
 - Scaling up energy efficiency technologies.
- Moving forward, the GSCs will be focused on:
 - Working group discussions for the Shanghai GSC;
 - On-boarding shipping line partners for the Singapore GSC;
 - Facilitating development of clean marine fueling guidelines, safety standards, training, and standard operating practices; and
 - Begin deploying zero-carbon capable ships into the corridor.

Public comments and questions to Port Staff:

- A question was raised by an attendee about the current status of methanol ships in production and deployment. Port staff answered that there are approximately 200

methanol ships currently in production, although only a handful have been deployed so far. Staff noted that a methanol ship was planning to visit the SPBP in August 2024.

- Another attendee asked about the environmental impact of producing e-methanol, specifically regarding the solid and biowaste used in its production. Port staff clarified that while there is no standard definition for e-methanol, also known as renewable methanol or "green methanol." It is produced from low carbon sources and is generally considered a net zero-carbon fuel. Maersk defines green methanol as having 65% lower emissions compared to traditional oil-based fuels.
- Concerns were also expressed about the competitiveness of acquiring near-zero and zero-emission (ZE) fuels. In response, Port staff emphasized that international coordination and adherence to IMO regulations are essential for managing the transition to cleaner fuels. The Ports are actively collaborating with maritime stakeholders on this issue.

3. Status Update on the Clean Truck Program

- The Ports presented the latest statistics on the various types of trucks that are registered in the Ports Drayage Truck Registry (PDTR). As of July of 2024, there were 358 ZE drayage trucks (324 battery-electric, 34 hydrogen fuel cell) signed up in the PDTR.
- Both Ports continue to collect the Clean Truck Fund (CTF) Rate, totaling approximately \$173.6 million through June 2024. The funds will be used in accordance with the CTF Rate Revenue Spending Priorities which have been approved by both Port's respective Board of Harbor Commissioners (BHC).
- POLA reported updates on their Request for Proposals (RFP) for ZE Truck Deployment released in late 2021. POLA's BHC approved two proposals for a total of \$6 million to fund 22 trucks. One project has deployed all 10 trucks. A second project has ordered 12 trucks and is waiting for infrastructure installation, which is expected to be completed in Q2 of 2025.
- The Ports gave an update on the collaboration with California Air Resources Board (CARB) to provide Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP) supplemental funding (CARB HVIP voucher + \$75,000 Port plus-up, or \$100,000 for fleets with less than 20 trucks) using CTF Rate funds through the Ports' ZE Truck Voucher Incentive Program. Each Port has made \$30 million available for this round of voucher funding.
- POLB developed solicitations for public charging at two sites, which would be partially funded using CTF Rate dollars. The first solicitation at the Terminal Access Center is closed and under real estate negotiations. The second solicitation for Pier B / Carrack Ave was released on July 22nd.
- POLA released an RFP for a site in Wilmington in January 2024, which closed on March 2nd. A preliminary selection has been made and the agreement is being prepared for POLA BHC consideration.

- The Ports have approved their own separate Memorandum of Understanding (MOU) with South Coast Air Quality Management District (SCAQMD) on behalf of the Mobile Source Air Pollution Reduction Review Committee (MSRC) to support public infrastructure for ZE drayage trucks. The MOUs allocate funding to 8 projects that will together deploy over 200 electric chargers. The total project cost of selected projects is \$135 million and the Ports are contributing a combined total of \$25 million in CTF Rate funding (\$12.5 million per port).

Public comments and questions to Port Staff:

- An attendee asked for an estimate of how much power is needed to re-charge battery-electric trucks. Port staff answered that currently battery-electric drayage trucks are designed to receive a charge of approximately 100 to 350 kilowatts per hour. However, there is demand for trucks capable of receiving as much as one megawatt (MW) per hour. To achieve this, the battery-electric truck manufacturers will have to re-design their trucks to be capable of receiving such a fast charge. Because trucks sold today do not have this capability, Port charging infrastructure projects funded to date, including those funded through the MSRC, do not include MW charging. The Ports may consider demonstrating the faster charging at their sites in the future. The same attendee further shared that they believe that bidirectional charging is the future and noted the low participation in the uptake of charging incentives provided by CARB and the Ports. Port staff acknowledged the need for more charging for drayage trucks throughout the region because the lack of available charging infrastructure is a barrier for owners transitioning to these new trucks.
- An attendee inquired if there are any other incentives for early adopters such as “Green Lanes” at the terminal gates to incentivize owners to invest in new battery-electric trucks. Port staff responded that they are exploring incentive payments made directly to truck owners each time they pick up or drop off a container at the Ports with a ZE truck. In addition, one terminal at POLA has implemented a pilot Green Lane system designed to prioritize ZE trucks. This initiative is further supported by an \$8 million grant aimed at demonstrating the effectiveness of a green priority online appointment system, which is being integrated with the existing appointment framework.
- An attendee inquired about CARB’s responsiveness in providing Heavy-Duty Inspection and Maintenance (also known as Clean Truck Check) database access to Ports of registered trucks in compliance. The Ports responded that they are currently working through registration challenges with CARB, noting that the registration levels are not where they need to be. Efforts are ongoing to coordinate information from both the Ports' and CARB’s databases to address these issues.
- Participants discussed the issue of out-of-state trucks not being registered in the Clean Truck Check system and the related waiver challenges. The Ports acknowledged that they could not comment extensively on out-of-state trucks due

to a lack of information, but noted that the California Department of Motor Vehicles registration hold is resulting in higher compliance rates for in-state trucks. A significant amount of outreach has been conducted through emails and in-person events at the Ports focused primarily on local and in-state trucks.

- A participant asked where any hydrogen fueling stations for heavy-duty on-road trucks are located. Port staff reported that there are currently four active heavy-duty on-road truck hydrogen fueling stations, including one Shell station in Wilmington next to POLA, one Shell station on the Toyota terminal at POLB, and two stations in Ontario (one owned by Shell and one owned by Nikola). Staff also noted the need for more hydrogen fueling infrastructure to support future growth.
- A participant inquired about the delay in infrastructure for POLA's demonstration project involving 12 battery-electric trucks. POLA staff explained that the delay is due to the utility company's schedule for bringing in the necessary power, which has pushed back the project timeline.

4. Status Update on the Feasibility Assessments

- The Ports began updating their feasibility assessments for 2024, focusing on cargo handling equipment (CHE) and drayage trucks. This update builds on the framework from the 2017 Clean Air Action Plan (CAAP) and will continue to assess technologies based on five key parameters: Technical Viability, Commercial Availability, Operational Feasibility, Availability of Infrastructure and Fuel, and Key Economic Considerations.
- Port staff shared their screening process for new technology feasibility, which involves a two-step approach. First, the technology's commercial availability and technical viability will be assessed. If a technology passes this initial evaluation, it will then undergo a deeper analysis to determine its operational, economic, and infrastructure feasibility.
- To support these evaluations, the Ports have selected two new consultants to complete the assessments. Burns & McDonnell will be leading the development of the CHE feasibility assessment and ICF is preparing the drayage truck feasibility assessment.
- These assessments will only focus on the feasibility of ZE battery-electric and hydrogen fuel cell technologies, including the necessary infrastructure for charging and fueling.
- The assessments will specifically target Class 8 drayage trucks and four major types of cargo handling equipment: yard tractors, rubber-tired gantry cranes, top handlers, and large capacity forklifts.
- The Ports' goal is to deliver two streamlined Feasibility Assessments with graphics to support reporting and clear visualization. The Ports plan to complete the assessments by June 2025.

Public comments and questions to Port Staff:

- One attendee expressed concern about potentially missing opportunities for early emission reductions by exclusively focusing on ZE technologies for CHE. It was suggested that some units could be converted to ZE, and interim technologies, such as hydrogen internal combustion engines (H2 ICE) that have minimal nitrogen oxide emissions, should also be considered. The participant also believes this proposed approach aligns with both international and federal definitions of ZE. The participant acknowledged that the current focus of the Ports remains on ZE technologies, but

the participant would like to see data regarding H2 ICE incorporated into the assessment as more information comes available and investment from major original equipment manufacturers increases. Port staff indicated that they would meet to discuss these concerns, including how H2 ICE is defined by other agencies, and report back to the group at a later date.

- There was a question about hydrogen fueling stations and the role that the Alliance for Renewable and Clean Hydrogen Energy Systems (ARCHES) will play in hydrogen fueling for trucks. It was explained that ARCHES will support the installation of truck fueling stations, however, the on-road trucking portion of the ARCHES proposal will be managed by another project partner and not the Ports. Currently, the Ports' anticipated ARCHES funding will be focused on projects that include hydrogen fuel cell CHE and their supporting fuel dispensing infrastructure.
- One attendee listed several challenges that the trucking industry is experiencing as they transition to ZE technologies. These challenges include high purchase prices for ZE trucks in addition to steep insurance costs for truck owners, difficulty meeting the requirements of the widely advertised HVIP, and operational issues such as limited range and lengthy charging times. Port staff agreed that these were significant challenges and indicated that these would be examined under the new assessment.

5. Closing Remarks:

- Attendees in person and online were thanked for attending the meeting. Port staff apologized for technical difficulties regarding the slides not displaying properly via Zoom during a portion of the meeting, and reminded attendees that they could review the presentation slides online at www.cleanairactionplan.org. The Ports encouraged everyone to submit any further public comments by email at caap@cleanairactionplan.org.