

SAN PEDRO BAY PORTS CLEAN AIR ACTION PLAN

October 15, 2024

Rajinder Sahota

Deputy Executive Officer, Climate Change & Research

Edie Chang, Deputy Executive Officer, Planning, Freight & Toxics

Matt Botill, Chief, Industrial Strategies Division

California Air Resources Board

1001 I Street,

Sacramento, CA 95814

Submitted electronically at:

https://www.arb.ca.gov/lispub/comm/iframe_bcsbform.php?listname=lcfs2024

**Re: San Pedro Bay Ports Comments to the California Air Resources Board (CARB)
Regarding E-Methanol as an Opt-In Fuel for Maritime Applications within the Low Carbon
Fuel Standard (LCFS) Program**

Dear Ms. Sahota, Ms. Chang, and Mr. Botill,

The San Pedro Bay Ports (Ports) thank you for convening a meeting with key stakeholders, including HIF Global and their counsel, Lifecycle Associates, Vopak, Centerline Logistics, Idemitsu, CMA CGM, and the Methanol Institute on September 26, 2024, to explore the opportunity methanol presents as a marine fuel in the near term to reduce emissions from vessels visiting California ports. According to the 2023 San Pedro Bay Ports Emissions Inventory, vessels are the largest contributor to PM_{2.5}, diesel particulate matter, nitrogen oxides, and sulfur oxides at the two Ports. Vessels are the second largest contributor to greenhouse gas emissions. Additionally, we expect that ocean-going vessel emissions will make up a larger proportion of emissions in the South Coast Air Basin as other sources of emissions are addressed overtime. Therefore, it's critical to start expanding the suite of tools utilized today to mitigate vessel emissions, including new incentives for cleaner fuels.



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The San Pedro Bay Ports Clean Air Action Plan was developed with the participation and cooperation of the staff of the US Environmental Protection Agency, California Air Resources Board and the South Coast Air Quality Management District.

The Ports are actively collaborating with the maritime industry, including shipping lines and fuel suppliers, on the deployment of alternative fuels for vessels in California through implementation of two Green Shipping Corridors (GSC):

Ports of Los Angeles, Long Beach, and Shanghai GSC

- The Port of Los Angeles, the Port of Long Beach, and the Shanghai Municipal Transportation Commission (SMTC) with support from the C40 Cities Climate Leadership Group, aim to decarbonize goods movement between the largest ports in the United States and China, on one of the world's busiest container shipping routes. Participating partners include the City of Los Angeles, A.P. Moller - Maersk, CMA CGM, Shanghai International Ports Group (SIPG), COSCO Shipping Lines, Ocean Network Express (ONE), Evergreen, China Classification Society (CCS), and the Maritime Technology Cooperation Centre (MTCC) – Asia. In September 2023 during the North Bund Forum in Shanghai, the partners unveiled the [Green Shipping Corridor Implementation Plan \(GSCIP\) Outline](#) which details the scope of the GSC, key definitions used by the partnership, as well as its goals. As part of the historic plan, the carrier partners committed to begin deploying reduced or zero lifecycle carbon capable ships on the corridor by 2025, and to work together to demonstrate by 2030 the feasibility of deploying the world's first zero lifecycle carbon emission container ship(s). Participants of the GSC partnership also committed to taking steps to reduce carbon emissions and harmful pollutant emissions impacting air quality, through methods such as expanding the use of shore power and supporting the development of clean marine fueling infrastructure.

Ports of Los Angeles and Long Beach, and Maritime and Port Authority of Singapore (MPA) GSC

- The Port of Los Angeles, the Port of Long Beach, and MPA with support from the C40 Cities Climate Leadership Group, aim to accelerate decarbonization of the maritime industry and the development and deployment of digital technology solutions and enablers. Spanning 14,000km across the Pacific Ocean, the GSC between Singapore and the San Pedro Bay port complex will support the development and uptake of low- and zero-carbon fuels and vessels and identify digital and technology solutions to enhance voyage and route optimization. The vision of this GSC is communicated through the [Los Angeles-Long Beach-Singapore Green and Digital Shipping Corridor Partnership Strategy](#). Further, a comprehensive [baselining study](#), commissioned by C40 Cities and the ports, and conducted



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by the American Bureau of Shipping, provides a baseline of activities and energy demand requirements for vessels operating on the corridor through 2050. The study estimates the quantity of near-zero and zero-emission fuels required for this traffic by modelling the adoption of zero and near-zero carbon alternative fuels by vessels operating on the corridor, considering various parameters such as fuel production costs and fuel availability, and the targets in the 2023 International Maritime Organization's Strategy on Reduction of Greenhouse Gas Emissions from Ships.

Additionally, the Port of Long Beach is preparing to release a Clean Fuels White Paper that articulates the advantages and disadvantages of different alternative fuels, and opportunities to advance the availability and use of cleaner fuels for ships in the coming months. This paper will be shared broadly with GSC partners, regulatory agencies including CARB, and the public.

This comment letter focuses on the role that methanol can play in immediately reducing emissions from vessels given the significant interest from carriers partnering on these two GSCs, the relative ease of methanol handling, and the already significant investment in vessels that can utilize this fuel. Methanol is compatible with modified 2- and 4-stroke marine engines and is already being used by over 20 large ocean-going vessels, highlighting its viability in the maritime sector. From a cost perspective, green methanol production is significantly higher than Marine Gas Oil, primarily due to its lower energy density (requiring larger fuel tanks) and production costs. The cost ranges from \$700-\$800/mt for bio-methanol to \$1100-\$1400/mt for electrolysis-based methanol, making it 3 to 4 times more expensive than current fossil fuel alternatives. Price parity with fossil fuels is uncertain without significant incentives and further regulation. Notably, MPA, a critical partner on our Singapore GSC, is developing a Technical Reference for methanol bunkering that can be leveraged by the two Ports to support bunkering in California.

The carbon intensity of methanol varies widely based on the production source. Methanol from coal has the highest carbon intensity, while e-methanol produced with hydrogen recycling exhibits the lowest carbon intensity. E-methanol is produced through electrolysis by splitting water to create hydrogen, which is then reacted with carbon dioxide (methanation) to produce methanol.

HIF Global and the industry partners referenced at the beginning of this letter have been advocating for regulatory language that would allow e-methanol to generate LCFS credits when used in marine operations in the most recent rulemaking for amendments to the LCFS program. We support their advocacy and their letter submitted to the regulatory docket. The Ports understand



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that CARB is about to complete the currently pending rulemaking amendments. Given the significantly greater cost of e-methanol and other alternative fuels compared to conventional maritime fuels, and the urgent need for emission reductions from vessels, we strongly encourage CARB staff to request approval to proceed with a new regulatory amendment to the LCFS program under Section 95482 at the November 8, 2024 Board hearing. The amendment should at a minimum seek to incorporate e-methanol into the LCFS program. This recommendation aligns with the comment letter submitted by HIF Global and our other industry partners as part of the open LCFS regulatory amendment process.

The Ports appreciate your consideration of these comments. Please contact us at Morgan.Caswell@polb.com or MGalvin@Portla.org should you wish to discuss this letter.

Sincerely,



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Port of Long Beach



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