REQUEST FOR INFORMATION (RFI)

San Pedro Bay Ports Methanol Bunkering Pilot Project

C40 Cities Climate Leadership Group, Inc.
120 Park Avenue, 23rd Floor
New York, NY 10017
United States of America

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SECTION I. Introduction & Background

The global maritime sector is in the midst of a major transformation as ports, shipping lines, and fuel suppliers accelerate efforts to cut greenhouse gas emissions and transition to low- and zero-carbon fuels. Methanol (CH_3OH), a simple liquid alcohol, has emerged as one of the most promising alternatives. It is liquid at ambient temperature, sulfur-free, and capable of reducing nitrogen oxides, particulate matter, and greenhouse gas compared to conventional marine fuels. Critically, its environmental performance and decarbonization potential depend on its production pathway, with renewable methanol (bio- and e-methanol) offering near-zero life-cycle emissions.

Worldwide, methanol is gaining traction: Rotterdam, Singapore, and Shanghai have already demonstrated methanol bunkering operations, supported by rising vessel demand and rapid supply chain investment. More than 300 methanol-capable vessels are now on order, and by 2030, global supply of green and low-carbon methanol could exceed 50 million tons per year.

The San Pedro Bay Ports (Ports of Los Angeles and Port of Long Beach), as the largest container gateway in the U.S. and one of the most emissions-intensive port complexes in California, are uniquely positioned to lead in this transition. Building on the Clean Air Action Plan and Green Shipping Corridor initiatives, San Pedro Bay Ports (SPBP) with the support of C40 Cities are now exploring a pilot-scale methanol bunkering demonstration. This initiative would advance California's broader climate and clean energy goals and provide a replicable model for other U.S. ports preparing for methanol adoption.

SECTION II. Objectives of the Pilot Project

The methanol bunkering pilot project at SPBP seeks to:

- ✔ **Demonstrate operational feasibility**: Show that methanol bunkering can be conducted safely, efficiently, and reliably at a major U.S. port.
- ✔ **Strengthen clearer regulatory pathways**: Work with the U.S. Coast Guard, local fire departments, and other authorities to establish clear permitting and streamlining permitting process and compliance frameworks for methanol fueling.

- ✔ **Generate operational insights**: Measure, collect, and report on safety performance, emissions, logistics, and crew training outcomes to inform future standards and best practices.
- ✔ **Support market readiness**: Provide confidence for shipowners, suppliers, and infrastructure providers investing in necessary infrastructure, delivery system, and methanol-capable vessels by ensuring fuel availability and operational support at SPBP.
- ✔ **Reduce early-adopter risks**: Explore opportunities for collaborative risk-sharing through public–private partnerships (PPPs) and other supportive mechanisms, which could help reduce early-stage risks and facilitate future pathways toward commercial operations..
- ✔ **Accelerate California's leadership**: Position SPBP as a national model for clean marine fuel adoption, aligning with state decarbonization targets and international shipping climate commitments.

SECTION III. Questions for Respondents

To develop a clear and actionable RFP for a methanol bunkering pilot, several important gaps must be addressed through this RFI. Pilot project sponsors will need additional clarity on operational scope, commercial terms, and permitting requirements to prepare meaningful proposals. The RFI stage is necessary to gather this information from potential suppliers, port stakeholders, and local authorities before issuing a formal RFP. Below is a list of questions that was compiled to collect the necessary information.

All parties who are interested in a potential methanol bunkering operation at either or both San Pedro Bay Ports (SPBP) should consider submitting an Information Package under this RFI. This includes but is not limited to vessel owners and operators, fuel suppliers, bunkering service providers, fuel terminal (liquid bulk terminal operators), maritime technology and equipment vendors, and any other entities, including regulatory authorities, involved.

Please respond to each question to the best of your ability. If a question falls outside your area of expertise, please:

- Specify if your response is speculative or based on certain assumptions; or
- Leave the question blank and note which partner(s) might be better suited to answer; or

- Feel free to collaborate with relevant partners (e.g., a shipping line, a fuel supplier, or a delivery partner) to provide a more complete response together.

3.1. Vessel Demand and Operational Requirements (for Shipping Lines)

- What vessel(s) in your fleet could potentially call at the Ports of Los Angeles and/or Long Beach for methanol bunkering?
- What is the anticipated frequency of calls?
- What volume of methanol would be required per bunkering operation?
- What range of volumes (minimum and maximum) should be considered for planning purposes?
- What level of interest, if any, does your organization have in ongoing off-take agreements for methanol supply at LA/LB?
- If interested, what contract duration (e.g., 1 year, 3 years, 5 years) and what approximate volumes would be under consideration?
- What bunkering method(s) would be most suitable for your vessels at LA/LB (e.g., truck-to-ship, barge-to-ship, shore-to-ship)?
- Are there specific infrastructure, safety, or scheduling requirements that should be factored into planning?

3.2. Fuel Supply Requirements

- What type and volumes of methanol (bio-, e-methanol, or blends) could you supply for the pilot program? Please specify typical, minimum, and maximum delivery quantities.
    - Do you have multi-year offtake agreements in place? If so, to the extent possible, please specify counterparty, term length, and volumes.
- What is the expected carbon intensity (CI) of your methanol supply?
    - Can you provide recognized certification? E.g., International Sustainability and Carbon Certification (ISCC), or Roundtable on Sustainable Biomaterials (RSB).
- What lead times would be required to set up a viable methanol bunker supply operation?
    - How would you handle supply chain disruption (e.g., delayed ship arrivals, procurement or storage constraints)?

3.3. Safety, Regulatory, and Permitting

- What experience do you have complying with IMO IGF Code, MSC.1/Circ.1621, SOLAS, and MARPOL Annex VI requirements?
- What are the current gaps and challenges, and how can state and local regulatory, permitting, and safety agencies help address it?
    - Do you have experience with meeting local permitting requirements in other ports? If yes, to the extent possible, what lessons did you learn from their processes?
- What fire suppression and emergency response capabilities would you provide in your operations?
- What personal protective equipment (PPE) and training protocols and lessons would you require for your crew?

3.4. Infrastructure Readiness

- What methanol storage, transfer, and bunkering infrastructure (e.g., trucks, barges, tanks) do you currently have available?
- What infrastructure upgrades would be required to support methanol bunkering, including retrofitting existing bunkering barges and storage tanks or new builds? Please describe the types of upgrades and estimated timelines for implementation.
- What are your estimated capital (CAPEX) and operating (OPEX) costs associated with these infrastructure upgrades?
- How would you anticipate your proposed solution scaling from pilot operations to full commercial volumes?

3.5. Bunkering Operations

- Which bunkering methods are you intending to use (e.g., truck-to-ship, ship/barge-to-ship, terminal/shore-to-ship)?
    - Would your bunkering system be compatible with high-pressure or low-pressure methanol fuel supply systems?
- Can your bunkering operations support simultaneous operations (SIMOPS), such as bunkering during cargo handling? If so, under what conditions?
- What spill prevention, containment, and recovery systems would you put in place?
    - Will your proposed approach require compliance with other regulatory requirements, such as the OSHA Process Safety Standard 1910.119, or EPA Risk Management Planning, either at the pilot stage or during scale-up?

- Can you provide any checklists you own, or have used, or are planning to use to ensure safe bunkering operations?

3.6. Commercial & Risk Allocation

- What pricing mechanisms would you propose (index-based, cost-plus, fixed) and why?
- What contract duration(s) would you consider for the pilot project?
- How would you propose allocating risks across supplier, port, and terminal operators (e.g., liability, insurance)?
- Would you be open to public–private partnership (PPP) models or co-funding arrangements? If yes, describe your preferred model.

3.7. Partnership

- Are you responding to this Request for Information (RFI) as an individual entity or as part of a partnership/consortium?
- Would you expect that shipping lines prefer bilateral offtake agreements with a single supplier, or a consortium-based approach with multiple suppliers?
- Could joint purchasing groups (e.g., multiple shipping lines aggregating demand) make offtake agreements more attractive for suppliers?
- What governance or communication mechanisms would be needed to maintain trust and transparency in a multi-party partnership?
- What role, in your opinion, should the Port play in convening shipping lines and fuel suppliers (e.g., roundtables, bilateral matchmaking, joint working groups)?
- Would suppliers and shipping lines value a marketplace or registry where demand and supply signals are shared transparently?
- How frequently, in your opinion, should the Port facilitate engagement to provide you the support to ensure a safe and smooth operation (e.g., quarterly workshops and annual forums to share lessons learned)?

3.8. Data, Reporting & Digitalization

- What emissions, safety, and operational data could you provide from each bunkering operation?
    - How would you like to verify carbon intensity of methanol (e.g., mass balancing)?
    - What tools or systems (e.g., digital platforms, real-time coordination) would you think can support efficient methanol bunkering operations?

3.9. Training & Certification

- What crew and staff training programs would you provide for methanol handling and safety?
    - How often would you conduct refresher training?
    - Can you supply proof of training qualifications for your personnel and vessels?
- How would you propose coordinating with local emergency responders for joint drills?

3.10. Additional Information

- What are the main barriers or risks you foresee in implementing a methanol bunkering pilot at this port?
    - What incentives (e.g., reduced port fees, grants) or policy support would help accelerate adoption of methanol bunkering?
- What are the main barriers or risks do you foresee to scaling from a pilot project to full commercial operations in the U.S.?
    - What role do you see the Ports play in this pilot?
    - How can local governments and authorities support this pilot?

SECTION IV. Q&A, and Post-RFI Process

For any questions related to this Request for Information (RFI), please reach out to Yana Prokofyeva at yprokofyeva@c40.org and Hong Yang at hong.yang@icf.com.

Following the receipt of RFI responses, responses will be categorized and examined based on the completeness, relevance, technical feasibility, and applicability to the San Pedro Bay Ports context. Respondents may be contacted for follow-ups, ensuring that information collected is fully understood and implementable.

SECTION V. Submission Instructions

The responding period to this RFI closes at 23:59 (Pacific Time) on October 22, 2025, unless extended by C40 Cities. Responses should be in PDF format and sent via e-mail to:

[yprokofyeva@c40.org], [ports@c40.org] AND [hong.yang@icf.com]

In your email, please include the name(s) of the respondent(s) and identify the primary point of contact in case C40 or ICF have any questions or require additional information and clarification.

SECTION VI. About

About C40 Cities

C40 is a network of nearly 100 mayors of the world's leading cities working to deliver the urgent action needed right now to confront the climate crisis and create a future where everyone, everywhere, can thrive. Mayors of C40 cities are committed to using a science-based and people-focused approach to limit global heating in line with the Paris Agreement and build healthy, equitable and resilient communities. We work alongside a broad coalition of representatives from labour, business, the youth climate movement and civil society to support mayors to halve emissions by 2030 and help phase out fossil use while increasing urban climate resilience and equity.

The current co-chairs of C40 are Mayor Sadiq Khan of London, United Kingdom, and Mayor Yvonne Aki-Sawyerr of Freetown, Sierra Leone; three-term Mayor of New York City Michael R. Bloomberg serves as President of the Board. C40's work is made possible by our three strategic funders: Bloomberg Philanthropies, Children's Investment Fund Foundation and Realdania.

To learn more about the work of C40 and our cities, please visit our website or follow us on X, Instagram, Facebook and LinkedIn.

About the Port of Los Angeles

The Port of Los Angeles is North America's leading trade gateway and has ranked as the No. 1 container port in the United States for 24 consecutive years. In 2023, the Port generated $292 billion in trade and handled a total of 8.6 million container units, sustaining its top rank among U.S. ports. The Port remains focused on community investment, commitment to sustainability and environmental leadership, workforce development, and infrastructure improvement. San Pedro Bay port complex operations and commerce facilitate one in nine jobs across the Southern California counties of Los Angeles, Orange, Riverside, San Bernardino, and Ventura.

About the Port of Long Beach

The Port of Long Beach is a global leader in green port initiatives and top-notch customer service, moving cargo with reliability, speed and efficiency. As the premier U.S. gateway for trans-Pacific trade, the Port handles trade valued at $200 billion annually and supports 2.6 million jobs across the United States, including 575,000 in Southern California and 1 in 5 jobs in Long Beach. In 2024, industry leaders named it "The Best West Coast Seaport in North America" for the sixth consecutive year. The second-busiest port in the United States, it moved more than 8 million twenty-foot equivalent units in 2023. During the next 10 years, the Port is planning $2.3 billion in capital improvements aimed at enhancing capacity, competitiveness and sustainability.