

MEMORANDUM OF UNDERSTANDING

THIS MEMORANDUM OF UNDERSTANDING (this "MOU") is dated for reference purposes only as of _____ by and among the SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ("SCAQMD"), the CITY OF LONG BEACH, CALIFORNIA, a municipal corporation, acting by and through its Board of Harbor Commissioners ("POLB"), and the CITY OF LOS ANGELES, a municipal corporation, acting by and through its Board of Harbor Commissioners ("POLA"; together with POLB, each a "Port," and collectively, "the Ports"). The aforementioned parties to this MOU shall be referred to individually herein as a "Party" and collectively herein as "the Parties."

RECITALS

- A. The U.S. Environmental Protection Agency ("EPA") selected the SCAQMD for a grant award in the amount of \$11,414,700, in order to retrofit two International Maritime Organization ("IMO") Tier II ocean-going vessels ("OGVs") with low-pressure exhaust gas recirculation ("LP-EGR") and multiple fuel conversion system (the "PROJECT"). The grant award includes \$10,874,000 for PROJECT costs and \$540,700 for administrative costs.
- B. For the PROJECT, Wärtsilä will retrofit two IMO Tier II OGVs owned by Mediterranean Shipping Company ("MSC" or "CONTRACTOR"). One OGV will be retrofitted with LP-EGR and the second OGV will be converted to have a multiple fuel injection system. Wärtsilä is the technology provider and MSC is the demonstration partner. SCAQMD will execute a contract with MSC. MSC will execute an agreement with Wärtsilä. The goal is to reduce at least 70 percent of nitrogen oxides (NOx) and particulate matter (PM2.5) emissions from a Tier II vessel. The fuel conversion retrofit is also expected to reduce 25 percent of CO2 emissions.
- C. The Ports are committed to encouraging the development of emission-reduction technologies. To achieve the Ports' San Pedro Bay Ports Clean Air Action Plan ("CAAP") goals, technologies are needed that reduce criteria pollutants and greenhouse gases ("GHG"). The Ports are focused on clean technologies and associated infrastructure, specifically for maritime-related sources that operate in and around ports. NOx, PM2.5, and GHG emission reduction technologies for older OGVs are essential for helping to achieve CAAP goals. Therefore, through this MOU, the Ports will commit to support the PROJECT and contribute financially to the PROJECT, as set forth herein.
- D. SCAQMD is committing \$300,000 of funding to the PROJECT. POLA and POLB are committing \$600,000 (\$300,000 per port) for a total contribution by the Parties and EPA to the PROJECT of \$12,314,700 in funding. The estimated total cost for the PROJECT is \$20,871,400, which includes \$8,456,700 million in cash and \$100,000 in in-kind contributions from CONTRACTOR.
- E. SCAQMD will manage the PROJECT and administer the funding for the

PROJECT with CONTRACTOR. The Parties are entering into this MOU in order to set forth the obligations of the Parties.

In consideration of the foregoing, and the mutual undertakings contained herein, the Parties hereby agree as follows:

1. PROJECT DESCRIPTION

Wärtsilä will retrofit two of CONTRACTOR's IMO Tier II OGVs. The first vessel will be retrofit with a Low-Pressure Exhaust Gas Recirculation ("LP-EGR"). EGR is the process by which a portion of the exhaust gases is redirected to the intake side of the engine and subsequently re-enters the cylinders. The recirculated exhaust gases reduce the oxygen ("O2") content and increase the concentration of carbon dioxide in the incoming air. As a result, peak combustion temperature reduces significantly due to reduced O2 in the combustion air, reducing NOx formation. The installation of a patent-pending particulate filter at the exhaust of a SOx scrubber is included in the design to protect the EGR cooler and provide an estimated 90 percent PM reduction.

The second vessel, MSC Topaz, will be retrofitted with a multiple fuel flexible injection platform with a gas supply system. The vessel will initially operate on diesel, LNG, and ammonia, but it will be capable of running multiple fuel types with minor modifications. Standard fuel storage tanks and pipes that are commercially available will be used to make the retrofit more adaptable. This retrofit does not require major changes to the existing engine and the patent-protected technology significantly reduces methane slip.

2. PROJECT FUNDS

- a. Project Funding. The purpose of funding the PROJECT is to assist CONTRACTOR in the development and demonstration of retrofits for OGVs.

Funding Source	Amount
EPA	\$11,414,700*
SCAQMD	\$300,000
POLB	\$300,000
POLA	\$300,000
MSC	\$8,456,700
Wärtsilä (in-kind)	\$100,000
Total	\$20,871,400

*Including \$540,700 of administrative costs

3. PROGRAM ADMINISTRATION AND PROJECT MANAGEMENT

- a. CONTRACTOR Agreement. SCAQMD will modify the agreement with CONTRACTOR for the PROJECT after the execution of this MOU to reflect the relevant provisions set forth herein. SCAQMD shall provide a copy of the modified agreement to each Port. Exhibit A attached to this MOU sets forth the PROJECT's

Proposed Milestones, Cost Contributions, Cost Share, and Estimated Schedule, which SCAQMD shall use in its agreement with CONTRACTOR. Any modifications to the tasks set forth in Exhibit A after the effective date of this MOU shall require a written amendment signed by all Parties. Modifications to the schedule in Exhibit A shall require written notice by SCAQMD to the Ports with written approval accepting the proposed modifications provided by each Port's Executive Director. The Parties acknowledge that in the event modifications to Exhibit A are not made as set forth herein, either Port's ability to make payments to SCAQMD may be prohibited.

- b. SCAQMD as Administrator. SCAQMD shall be the administrator of the PROJECT, on the terms and conditions set forth in its Agreement with CONTRACTOR and under the terms and conditions of this MOU.
- c. SCAQMD as Project Manager. As the Project Manager, SCAQMD will execute a contract with MSC, oversee, monitor and track PROJECT progress, and provide quarterly reports and updates to EPA and the Ports.
- d. Reporting. On a quarterly basis and until the PROJECT is complete, SCAQMD shall provide to the Ports written reports and one final written report with data, or access to data, containing (i) an accounting of funds received under this MOU, (ii) an accounting of any funds disbursed to CONTRACTOR by SCAQMD, and (iii) a breakdown of PROJECT costs and disbursements pursuant to each task specified in Exhibit A. Upon reasonable request of the Ports, SCAQMD shall provide copies of, or access to review, PROJECT related records.
- e. Record Retention. SCAQMD agrees to maintain data, information, records and documents related to the PROJECT for a minimum of three (3) years after the completion of the PROJECT.
- f. No Administrative Fees/Costs. Except for the Ports' contribution towards funding the PROJECT, the Ports shall have no responsibility for payment or reimbursement of any costs related to administration of the PROJECT.

4. PAYMENT OF CONTRIBUTIONS

- a. POLA and POLB shall each make payments of their respective contributions to SCAQMD by check, wire transfer or other means agreed upon by the Parties within 45 days of receipt of an invoice from SCAQMD and affirmative confirmation by SCAQMD that each PROJECT task set forth herein as condition of payment by either Port has been completed by CONTRACTOR.
- b. POLA shall pay an amount not to exceed Three Hundred Thousand Dollars (\$300,000) for the PROJECT. POLA shall pay SCAQMD \$300,000 after CONTRACTOR's completion of Task 3 – LP EGR Engineering and Design Phase as shown in Exhibit A. Payment for the task shall be made no sooner than June 30, 2023, regardless of an earlier completion date.

- c. POLB shall pay an amount not to exceed Three Hundred Thousand Dollars (\$300,000) for the PROJECT. POLB shall pay SCAQMD \$300,000 after CONTRACTOR's completion of Task 3 – LP EGR Engineering and Design Phase as shown in Exhibit A. Payment for the task shall be made no sooner than June 30, 2023, regardless of an earlier completion date.

5. TERM AND TERMINATION

- a. Term. This MOU shall become effective on the date of last signature by one of the Parties. This MOU shall terminate when all required actions hereunder have been performed, but no later than three (3) years from its effective date (Term). The Term of this MOU may be extended by mutual written agreement of the Parties.
- b. Termination. Any Party may terminate this MOU by giving not less than thirty (30) days' prior written notice to the other Parties if any of the following occur: (i) there is a change in any law or regulation or any other event (including non-appropriation of funds for this MOU by POLA for any fiscal year budget) that would prohibit or restrict a Party's performance of its obligations under this MOU; (ii) in the event of a default of this MOU by any Party after an attempt to resolve or cure has been made by the Parties pursuant to the terms of this MOU; or (iii) the termination of the agreement between SCAQMD and CONTRACTOR prior to completion of the PROJECT. Except for breach or default by a Party, the Parties agree that early termination or expiration of this MOU shall not affect the rights and obligations of the Parties occurring when the MOU was in effect.
- c. Default. In the event of a claim of default, the non-defaulting Party or Parties shall give the defaulting Party or Parties written notice of the nature of the default and shall give the defaulting Party or Parties a 14-day period or some longer period as the non-defaulting Party or Parties may agree to in which to cure the default specified in the notice. In the event that the Parties have any disagreement with respect to their obligations under this MOU, each Party shall designate a duly-authorized representative to work in good faith with the other designated representatives in an attempt to resolve such disagreement.

6. MISCELLANEOUS PROVISIONS

- a. Amendments. No amendment, modification, consent or waiver to any provision of this MOU shall be effective unless the same shall be in writing signed by a duly authorized representative of each Party.
- b. Indemnification. Except for the sole negligence or willful misconduct of either the City of Los Angeles or the City of Long Beach (singularly "City" or collectively "Cities"), or any of their respective Boards, Officers, Agents, Employees, Assigns and Successors in Interest, SCAQMD undertakes and agrees to defend, indemnify and hold harmless both Cities and any of their respective Boards, Officers, Agents, Employees, Assigns, and Successors in Interest from and against all suits and causes of action, claims, losses, demands and expenses, including, but not limited to, attorney's fees (both in house and outside counsel) and cost of litigation

(including all actual litigation costs incurred by both Cities, including but not limited to, costs of experts and consultants), damages or liability of any nature whatsoever, for death or injury to any person, including SCAQMD's employees and agents, or damage or destruction of any property of any party hereto or of third parties, arising in any manner by reason of the negligent acts, errors, omissions or willful misconduct incident to the performance of this MOU by SCAQMD or its subcontractors of any tier, which shall include CONTRACTOR. Rights and remedies available to the Cities under this provision are cumulative of those provided for elsewhere in this MOU and those allowed under the laws of the United States, the State of California, and either City.

- c. Counterparts. This MOU may be executed in any number of counterparts, each of which shall be deemed an original and all of which shall constitute together one and the same instrument.
- d. Entire Agreement. This MOU contains the entire understanding and agreement between the Parties hereto with respect to the matters referred to herein. No other representations, covenants, undertakings, or prior or contemporaneous agreements, oral or written, regarding such matters which are not specifically contained, referenced, and/or incorporated into this MOU by reference shall be deemed in any way to exist or bind any of the Parties. Each Party acknowledges that it has not been induced to enter into the MOU and has not executed the MOU in reliance upon any promises, representations, warranties or statements not contained, referenced, and/or incorporated into the MOU. THE PARTIES ACKNOWLEDGE THAT THIS MOU IS INTENDED TO BE, AND IS, AN INTEGRATED MOU.
- e. Expenses and Costs. Unless specifically provided for elsewhere in this MOU, each Party will bear all costs and expenses incurred by it in connection with this MOU and transactions contemplated herein, including travel, entertainment, marketing promotions, legal fees, consulting fees, accounting fees and taxes which are or may be imposed upon that Party based upon its activities hereunder.
- f. No Third-Party Beneficiaries. Except as otherwise provided herein, nothing under this MOU is intended or shall be construed to create any rights in, or confer any benefits upon, any person or entity other than the Parties hereto.
- g. Notices. All notices, requests, and other communications pursuant to this MOU shall be in writing, either by letter (delivered by hand) or commercial messenger service or sent by certified mail, return receipt requested, or by telecopy (fax), as follows:

SCAQMD: SCAQMD, Technology Advancement Office
 21865 Copley Drive
 Diamond Bar, CA 91765
 Attention: Wayne Nastri
 Deputy Executive Officer

Tel: (909) 396-2105
Fax: (909) 396-3525

With copies to the following individuals at the same address set forth above:

Dr. Aaron Katzenstein, Deputy Executive Officer
Mei Wang, Assistant Deputy Executive Officer

POLA: Port of Los Angeles
425 South Palos Verdes Street
San Pedro, CA 90731
Attention: Director of Environmental Management
Tel: (310) 732-3763
Fax: (310) 547-4643

With a copy to:

Los Angeles City Attorney
425 South Palos Verdes Street
San Pedro, CA 90731
Attention: Assistant General Counsel, Harbor Division
Tel: (310) 732-3750
Fax: (310) 831-9778

POLB: Long Beach Harbor Department
415 W. Ocean Blvd, 11th Floor
Long Beach, CA 90802
Attention: Director of Environmental Planning
Tel: (562) 283-7100

With a copy to:
Principal Deputy City Attorney, Harbor Division
411 W. Ocean Blvd, 9th Floor
Long Beach, CA 90802
Tel: (562) 570-2200
Fax: (562) 570-2232

All notices, demands and other communications hereunder, shall be deemed given and received: (i) if sent by registered or certified mail, on the third Business Day after deposit in the United States Mail, properly addressed, postage prepaid, return receipt requested; (ii) if sent by any other means of physical delivery (e.g., hand delivery or courier service), one Business Day after delivery to the appropriate address; and (iii) if sent by facsimile, one Business Day after being transmitted to the appropriate facsimile number and the sender's facsimile machine produces a transmission or verification report confirming that such transmission has been sent.

h. Severability. The provisions of this MOU are severable, and if any clause or

provision of this MOU shall be held invalid or unenforceable in whole or in part in any jurisdiction, then such invalidity or unenforceability shall affect only such clause provisions and shall not affect any other covenant, agreement, or condition.

- i. Force Majeure. No Party shall be liable for any failure to perform its obligations in connection with any action described in this MOU if such failure results from any act of God, riot, war, civil unrest, flood, earthquake, or other cause beyond such Party's reasonable control (including any mechanical, electronic, or communications failure, but excluding failure caused by a Party's financial condition or negligence), for only so long as any such event shall be continuing.

IN WITNESS WHEREOF, the parties hereto have caused this Memorandum of Understanding to be executed by their authorized representatives and delivered as of the date first above written.

**SOUTH COAST AIR
QUALITY MANAGEMENT
DISTRICT**

By _____
Name: Wayne Nastri
Title: Executive Officer

Date: _____, 2023

**CITY OF LONG BEACH,
CALIFORNIA**, a municipal corporation
acting by and through its Board of
Harbor Commissioners

By _____
Name: Mario Cordero
Title: Executive Director
Harbor Department

Date: _____, 2023

Attest _____
Name: Shana Espinoza
Title: Executive Officer to the Board

**CITY OF LOS ANGELES,
CALIFORNIA**, a municipal corporation
acting by and through its Board of
Harbor Commissioners

By _____
Name: Gene Seroka
Title: Executive Director,
Harbor Department

Date: _____, 2023

Attest _____
Name: Amber Klesges, Board Secretary

APPROVED AS TO FORM:

Date: _____, 2023
BAYRON T. GILCHRIST, General Counsel

By _____
Sheri Hanizavareh, Principal Deputy District
Counsel


APPROVED AS TO FORM:

Date: _____, 2023
DAWN MCINTOSH, Long Beach City Attorney

By _____
Sudhir N. Lay, Deputy City Attorney

APPROVED AS TO FORM AND LEGALITY:

Date: September 28, 2023
HYDEE FELDSTEIN SOTO, City Attorney
STEVEN Y. OTERA, General Counsel

By 
Heather M. McCloskey, Deputy

Port of Los Angeles Funding Approval Form

MEMORANDUM OF UNDERSTANDING BETWEEN
THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
THE CITY OF LONG BEACH AND
THE CITY OF LOS ANGELES

LP-EGR POLAR BEAR PILOT VESSEL CONVERSION PROJECT

_____, 2023


Account#	59965	W.O. #	78085
Ctr/Div#	0330	Job Fac.#	637-00
Proj/Prog#	000		
	Budget FY:	Amount:	
	FY2023-24	\$300,000	
	TOTAL	\$300,000	
<u>For Acct/Budget Div. Use Only</u>			
Verified by:	Erin O'Malley	Digitally signed by Erin O'Malley Date: 2023.09.28 08:08:03 -07'00'	
Verified Funds Available:		Digitally signed by Frank Liu Date: 2023.09.28 08:58:38 -07'00'	
Date Approved:	9/28/23		

Exhibit A

Table A-1 Contractor Project Tasks, Contractor Expenses, and Estimated Schedule

TASK No.	RETROFIT TECHNOLOGY	TASK DESCRIPTION	Agencies	CONTRACTOR	TASK COMPLETION DATE
1		MSC Project Management	\$200,000	Up to \$100,000	Oct-25
2		Project Plan and Milestones	\$500,000		Mar-23
3	LP-EGR	Engineering and Design Phase	\$900,000		Jun-23
4		Shipment and Installation	\$1,000,000		Dec-23
5		Commissioning and Testing for Optimization and In-Use Demonstration of the Vessel	\$1,200,000		Mar-24
6		Final Emissions Test	\$800,000		May-24
7.1	Polar Bear Pilot Vessel Conversion	Single Cylinder Test	\$4,000,000	Up to \$8,456,700	Mar-23
7.2		Design Review of Gas Injection	\$200,000		Jun-23
7.3		Classification	\$200,000		Jul-23
7.4		Production of Components	\$100,000		Sep-23
7.5		Engineering	\$100,000		Aug-23
7.6		Pre-Pilot Prep	\$100,000		Sep-23
7.7		Pre-Pilot Test	\$100,000		Sep-23
7.8		Engine Conversion	\$100,000		Jan-24
7.9		BoG gas Management	\$100,000		Jan-24
8		Auxiliary engine and boil off gas management system	\$2,000,000		Jan-24
9	Field Testing Program and Report	\$174,000	Apr-24		
10		SCAQMD Administrative Costs	\$540,700		Oct-25
	TOTAL		\$12,314,700	Up to \$8,556,700	

Table A-2
Contractor Expenses and Administrative Costs

	Amount
EPA Project and Admin Contributions	\$11,414,700
SCAQMD Contribution	\$300,000*
POLA and POLB Contributions	\$600,000**
MCS Cost Share Contribution	\$8,456,700
Wärtsilä In-Kind Contribution	\$100,000
Total	\$20,871,400

*Contributions made by SCAQMD will be used to support Tasks 2 to 6 in Table A-1.

**Contributions made by POLA and POLB are found in Sections 4b and 4c of this MOU.