State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER G-16-024
May 2016

WHEREAS, sections 39600 and 39601 of the Health and Safety Code authorize the Air Resources Board (ARB or Board) to adopt standards, rules, and regulations and to do such acts as may be necessary for the proper execution of the powers and duties granted to and imposed upon the Board by law;

WHEREAS, section 39003 of the Health and Safety Code charges the Board with coordinating efforts to attain and maintain ambient air quality standards, to conduct research into the causes of and solution to air pollution, and to systematically attack the serious problem caused by motor vehicles, which is the major source of air pollution in many areas of the State;

WHEREAS, sections 39666 and 39667 of the Health and Safety Code authorize the Board to adopt regulations and measures to reduce emissions of toxic air contaminants from vehicular and non-vehicular sources;

WHEREAS, chapter 3.2 commencing with section 39625 of the Health and Safety Code established the Proposition 1B: Goods Movement Emission Reduction Program (Program) to implement the Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006, also known as Proposition 1B, which authorizes one billion dollars ($1,000,000,000) in bond-funded incentives for ARB to reduce emissions associated with the movement of freight along California's trade corridors;

WHEREAS, in Resolution 08-12 adopted on February 28, 2008, the Board adopted the Proposition 1B: Goods Movement Emission Reduction Program Guidelines for Implementation (Program Guidelines);

WHEREAS, in Resolution 15-20 adopted on June 25, 2015, the Board adopted updated Program Guidelines;

WHEREAS, in Resolution 10-18, the Board affirmed the existing authority of ARB staff to interpret or clarify the Program Guidelines, and delegated to the Executive Officer, or his or her designee, the authority to adopt changes to the Program Guidelines that he or she deems necessary to enable effective implementation of the Program, provided that such changes are consistent with statute and the goals established by the Board, modifications can be found in Attachment A;

WHEREAS, Regulatory Advisories issued for the Ships At-Berth Regulation include changes that impact funding options for the Program;

WHEREAS, Program Guidelines must be updated to describe how newly approved alternative technologies will be incorporated into the Program;

NOW, THEREFORE, IT IS ORDERED that pursuant to the delegation of authority by the Board in Resolution 10-18, the Executive Officer, or his or her designee, hereby approves the changes to the Program Guidelines shown in Attachment A for implementation of local agency ships at-berth projects awarded Fiscal Year 2015-16 (Year 5) Program funds;

Executed at Sacramento, California this 17th day of May 2016.

Cynthia Marvin, Chief
Transportation and Toxics Division

ATTACHMENT A

Proposition 1B: Goods Movement Emission Reduction Program
General Modifications to the Program Guidelines

REVISIONS TO THE SHIPS AT BERTH EQUIPMENT PROJECT SPECIFICATIONS FOR PROJECTS RECEIVING FISCAL YEAR 5 FUNDS

- **Revise Eligible Applicants.** Revise eligible applicants to allow manufacturers of emission capture and control system equipment to apply for funding of Option 3 "Emissions Capture and Control System" at existing cargo ship berth or cargo terminal or via a barge-based system at a seaport located within the four California trade corridors.

- **Clarify eligible costs.** Clarify that emissions capture and control system equipment must be newly manufactured.

Shown below are revisions to the Appendix C of the Program Guidelines. Revisions are shown in <u>underline</u> to indicate additions.

APPENDIX C Ships at Berth

A. Equipment Project Specifications

Eligible Equipment	**Option 1 and 2:** Existing cargo ship berth or existing cargo ship terminal at a seaport located within the four California trade corridors that receives visits **solely** by vessels not subject to the control requirements of ARB's Ships at-Berth Rule in effect as of 2015. **Option 3:** Existing cargo ship berth or existing cargo ship terminal or barge-based system at a seaport located within the four California trade corridors.

General Requirements (applicable to all project options)	Equipment owner shall:
	• Commit to the project life specified with the applicable equipment project option.
	• Have written commitments from the tenant shipping line(s) to:
	  o Meet the minimum number of ship visits or hours.
	  o Sign the equipment project contract (or other written agreement as approved by ARB).
	• Adhere to all Program requirements during the project life.
	• Comply with record-keeping, reporting, and Program review or fiscal audit requirements.
	• Owners of barge-based systems must sign a legally binding contract with the local agency, including project milestones and completion dates.
	• Owners of stationary equipment, which is attached to real property, must sign a legally binding contract with the port and the local agency (if the local agency is not a port) including project milestones and completion deadlines.
	• If the equipment owner is also the local agency administering the grant, the local agency must sign a legally binding contract with ARB including project milestone and completion deadlines.
	• Properly maintain all equipment in good operating condition and according to manufacturer's recommendations.
	• Demonstrate proof of equipment warranty and insurance on new equipment.
	• Comply with local permitting requirements.
	• Comply with the Supplemental Procedures available on the Program website.
	• Certify that there are no outstanding ARB violations or non-compliance with ARB regulations associated with the equipment or the owner.

Ships at Berth (Cont.)

Option (1) Grid-Based Power	Partial funding (see options below) to install permanent, grid-based electrical power at a cargo ship berth that receives visits **solely** by vessels not subject to the control requirements of ARB's Ships at-Berth Rule in effect as of 2015. Project shall be eligible to compete for funding only if the cost-effectiveness is equal or greater than 0.10 pounds of weighted emissions reduced per State dollar invested. 1. The lower of 50% of the eligible cost or $2,500,000 if the cost-effectiveness is equal or greater than 0.10 pounds of weighted emissions reduced per State dollar invested. 2. The lower of 60% of the eligible cost or $3,500,000 if the cost-effectiveness is equal or greater than 0.20 pounds of weighted emissions reduced per State dollar invested. Up to 80% of eligible project costs are authorized for early reimbursement in accordance with the requirements of Chapter IV.B.2.e. Final payment of funds held in retention shall be paid upon completion of a satisfactory post-inspection. Eligible costs may include design, engineering, equipment necessary to purchase and install infrastructure to supply electrical power, utility construction, and costs associated with increasing the capacity of electrical power to the port. Ineligible costs include shipside modifications to accept shore-based electrical power, consulting, environmental review, legal fees, permits, licenses and associated fees, taxes, metered costs, insurance, operation, maintenance, and repair.
Requirements	In addition to the General Requirements listed previously, equipment owner shall: • Commit to a project life of 10 years. • Demonstrate operability with a cargo ship fully powered by shore-based electrical power supplied by the grid-based equipment.

Ships at Berth (Cont.)

Option (2) Non-Grid-Based Power	Partial funding of up to $200,000 per megawatt of the eligible costs of an electricity generating unit that provides power at a cargo ship berth or multiple berths that receive visits **solely** by vessels not subject to the control requirements of ARB's Ships at-Berth Rule in effect as of 2015. This unit can be portable or fixed on the terminal. Only zero emission units (e.g., fuel cell, solar), or natural gas engines equipped with selective catalytic reduction to control NOx emissions are eligible. Eligible costs may include equipment necessary to generate electrical power and connect the equipment to cargo ships at berth. Ineligible costs include construction and protection of infrastructure (e.g., natural gas lines) used to supply fuel for non-grid-based electrical generation, shipside modifications to accept electrical power, barge or other acquisition and modification for a portable system, design, engineering, consulting, environmental review, legal fees, permits, licenses and associated fees, taxes, utility construction or metered costs, insurance, operation, maintenance, and repair.
Requirements	In addition to the General Requirements listed previously, equipment owner shall: • Commit to a project life of 5 years of 100% California operation at the following levels or greater: o Port of Los Angeles and Port of Long Beach: - 1,500 hours per year. o All other ports within the four California trade corridors: - 1,000 hours per year. • Demonstrate operability with a cargo ship fully powered by shore-based electrical power supplied by the electricity generating unit. • Obtain a 5 year manufacturer's warranty which includes labor and materials to repair and/or replace system component(s) as needed to correct any mechanical, electrical or control system equipment or installation problems resulting in significant loss of usability. The manufacturer's warranty may exclude minor items that are subject to normal wear and tear if approved by ARB. • Perform source testing to measure emissions from the unit every 1,000 hours of operation, according to the source test requirements contained in ARB's Ships at-Berth Rule.

Ships at Berth (Cont.)

Option (3) Ship Emissions Capture and Control System	Partial funding of up to the lower of 50% of the eligible costs or a level commensurate with a cost-effectiveness of at least 0.10 pounds of weighted emissions reduced per State dollar invested for the purchase and installation of a ship emissions capture and control system (a.k.a. hood or bonnet) to reduce diesel PM and NOx emissions at 80% from ships at berths. Only units that have ARB-approved capture and treatment efficiency rates for PM and NOx consistent with ARB's Ships at Berth Rule are eligible for funding. Ship visits that are required to have emissions control under ARB's Ships-at-Berth Rule cannot be used for calculation of the extra emission reductions attributable to the Proposition 1B grant.
Requirements	Eligible costs may include purchase and installation of the emission treatment system and ducting, and hoods or bonnets necessary to connect to cargo ships at berth. Equipment must be newly manufactured. Ineligible costs include shipside modifications to accept capture and control system, barge or other acquisition and modification for a portable system, design, engineering, testing, consulting, environmental review, legal fees, permits, licenses and associated fees, taxes, utility construction or metered costs, insurance, operation, maintenance, and repair. In addition to the General Requirements listed previously, equipment owner shall: • Commit to a project life of 10 years of 100% California operation at the following levels or greater: o Port of Los Angeles and Port of Long Beach: - 1,500 hours per year. o All other ports within the four California trade corridors: - 1,000 hours per year. • Commit to 100% operation within the four California trade corridors for the duration of the project life. • Document the system is commercially available and achieves an overall efficiency rate of at least 80% for the capture and removal of NOx and PM. • Demonstrate system performance and efficiency with source testing prior to funding and annually thereafter by capturing emissions from a cargo ship at port. Performance measures include: (i) no visible emissions after bonnet is connected to the vessel (opacity <20%); and (ii) establish overall system efficiency rate is at least 80% using ARB approved methods for flow rate (Methods 1 to 4), NOx (ARB Method 100), and PM (ARB Method 5). Any alternative test methods must be approved by ARB. • Obtain a 10-year manufacturer's warranty (including labor and materials), or if the equipment owner is the manufacturer, provide a guarantee to repair and/or replace system component(s) as needed to correct any mechanical, electrical or control system equipment or installation problems which may cause significant loss of capture, treatment efficiency or usability. The manufacturer's warranty may exclude minor items that are subject to normal wear and tear if approved by ARB.

Ships at Berth (Cont.)

Project Cost Assumptions	• Option (1): Total shore-side cost of equipping a berth with permanent grid-based electrical power is ~$3-$5 million/berth; some ports may incur higher costs to bring new/additional power capacity to the port that may increase the total cost to $5-$7 million/berth. • Option (2): Total cost of distributed generation power is anticipated to be $2 million/megawatt (MW) unit. • Options (1) & (2): Shipside modifications will cost ~$500,000-$1 million/ship. • Option (3): Ship emissions capture and control system estimated capital cost is approximately $6 million for the current standard design of one 12,500 scfm unit with single bonnet.