

IV. Project Criteria

These criteria provide the minimum requirements for Carl Moyer Program marine vessel projects. Marine vessel projects must also conform to general criteria of Chapter 2, as well as the project application, contract, reporting, and other requirements as described in Part III: Program Administration. Participating districts retain the authority to impose additional requirements in order to address local concerns.

(a) General Marine Project Criteria

(1) Marine vessels and engines utilizing an alternative compliance plan to comply with a rule, requirement, or other mandate shall not be eligible for Carl Moyer Program funds.

(2) To be eligible for Carl Moyer Program funding, a project harbor craft must have a United States Coast Guard Documentation Number, except in cases where such documentation is not required (such as fishing boats constructed outside the United States, vessels of less than five net ton displacement, or vessels owned by non-United States citizens). In such cases, a valid California vessel registration (CF) number and a copy of the California Department of Fish and Game license can be provided instead of a Coast Guard Documentation Number. This information must be included in the project application. A project application for an oceangoing vessel that does not have any of the above documentation must include the vessel's Lloyd's/IMO number.

(3) Both propulsion and auxiliary marine engines are eligible for Carl Moyer Program funding.

(4) Only marine vessel activity in California coastal waters and internal waters may be used to determine project emission reductions. Figure 9-1 depicts California coastal waters. For the purposes of the Carl Moyer Program, California water boundaries are based upon each air districts' emission inventory boundary. If a local district has not established an emission inventory boundary, the ARB and district staff will determine an appropriate boundary for use in project evaluation.

(5) Non-captive California fleets and vessels may be considered for funding on case-by-case basis if their operation in California coastal waters can be properly documented.

(6) Marine vessel engines with a functioning hour meter must base project cost-effectiveness calculations and eligibility on hours of operation. If the applicant did not have a functioning hour meter to document historical hours of operation, historical fuel usage may be used. Historical fuel usage must be based on two years of historical fuel usage documentation specific for the vessel being funded. Documentation may include fuel logs, purchase receipts or ledger entries.

(7) Excursion, ferry, tug or tow boat project applications received after February 28, 2009 must include a copy of the most recent Initial Report required by Section (h)(1) of ARB's Harbor Craft Regulation. As of this date, a project participant's Annual Reports to air districts must also include a copy of the most recent Harbor Craft Regulation Initial Report. Air districts are responsible for ensuring that the engine hours of operation and other information included in the

project application and Annual Report are consistent with that included in the rule Initial Report.

(8) Vessels which are not self-propelled (e.g. barges) are not eligible for Carl Moyer Program funding.

(9) Funding is only available for retrofit or repower projects if the baseline engine is a diesel engine.

(10) U.S. EPA Harbor Craft Emission Standards, finalized on March 14, 2008, require most harbor craft engines greater than 800 horsepower meet remanufacture emission standards upon remanufacture if a certified remanufacture kit is available. Pre-1973 model year engines and fleet owners and operators with less than \$5 million in gross annual sales revenue are exempt from this aspect of the federal regulation. Since this new federal requirement has the potential to impact the default baseline emission level for a Carl Moyer Program project, vessels with a baseline engine greater than 800 horsepower shall be evaluated for funding on a case-by-case basis. District staff must consult with ARB prior to funding such a project to determine project emission reductions and cost-effectiveness.

(11) Only marine engines greater than or equal to 25 horsepower are eligible for Carl Moyer Program funding.

(12) Engines on marine vessels with wet exhaust systems are eligible for Carl Moyer Program funding if the project vessel meets all other applicable program requirements. The wet exhaust systems themselves are not eligible for Carl Moyer Program funding. A wet exhaust factor of 0.80 must be applied to the baseline and reduced emission propulsion and auxiliary engine emission calculations for all projects on vessels with wet exhaust systems. See Appendix D for an example of how to calculate project emission reductions and cost-effectiveness for a vessel with a wet exhaust system.

(13) Tables 9-3 and 9-4 summarize the dates by which projects on harbor craft subject to ARB's Harbor Craft Regulation must be complete to be eligible for Carl Moyer Program funding. In the case of engine repowers, the Moyer Project Completion Deadline indicated in these tables reflects the date by which the new vessel engine must be installed and operational. In addition, project life for an engine cannot extend beyond that engine's compliance deadline. For example, a 1980 model year engine operating 750 hours annually that is installed in December 2008 has a compliance deadline of December 31, 2012 (assuming vessel homeport outside of the South Coast), and therefore would have a maximum project life of four years.

(14) Harbor craft engines between 25 and 50 horsepower are exempt from ARB's Harbor Craft Regulation and are therefore not required to be repowered three years prior to the compliance deadlines in tables 9-3 and 9-4 to be eligible for Carl Moyer Program funding.

(15) The following criteria apply to engines subject to ARB's Harbor Craft Regulation:

(A) Harbor craft engines receiving a rule compliance extension are ineligible for Carl Moyer Program funding.

(B) Harbor craft engines demonstrating compliance with the regulation

through an Alternative Control of Emissions (ACE) are ineligible for Carl Moyer Program funding.

(C) Engines that demonstrate rule compliance through a mechanism other than engine replacement or installation of an ARB- or U.S. EPA-verified retrofit device are not eligible for Carl Moyer Program funding.

(D) To ensure project eligibility is not based on a Carl Moyer Program-funded compliance extension, vessel engines rebuilt or remanufactured to a cleaner emission standard (such as an IMO standard) with Carl Moyer Program funds prior to January 1, 2008 shall use the engine model rather than the date of remanufacture to determine funding eligibility and project life. Vessel engines rebuilt with a rebuild kit certified by U.S. EPA or the International Maritime Organization to achieve at least a 25 percent PM emission reduction shall use the engine model year plus five years, consistent with Section (e)(6)(C) of the ARB Harbor Craft Regulation, to determine the engine model year used in tables 9-3 and 9-4. Projects basing surplus reductions on this model year plus five option must include documentation of the original rebuild kit U.S. EPA or IMO certification to achieve the required PM reductions as part of their project application.

(b) Repower

To date, most Carl Moyer Program marine vessel projects have involved replacing or “repowering” an old harbor craft engine with a newer, cleaner engine. Most of these projects have involved replacing an older mechanical engine with a newer electronically controlled engine.

(1) All new harbor craft engines and replacement engines purchased for Carl Moyer Program harbor craft repower projects must be certified to meet U.S. EPA Tier 2 or cleaner marine engine emission standards. Tier 2 engines that are less than or equal to 100 horsepower and are installed after January 1, 2009 are only eligible for Carl Moyer Program funds if it can be demonstrated that a Tier 3 engine is unavailable or technically infeasible.

(2) For all Carl Moyer Program engine repowers, any replacement engine must provide at least a 15 percent NO_x reduction relative to the baseline engine. If the replacement engine is significantly modified or re-configured in any way during the project life, emissions testing must be conducted to determine its new emission rates.

(3) The maximum project life for a marine vessel repower project is 16 years. A longer project may receive case-by-case approval if applicants provide justifying documentation. The maximum project life does not consider regulatory requirements and may be shorter.

(4) The maximum percent of the total marine engine repower costs eligible for Carl Moyer Program funding depend upon the vessel type and newer engine Tier, as follows:

(A) Tier 2 Repower:

- Excursion, ferry, tug, or tow boats – 50 percent
- Fishing, pilot/work, or crew & supply vessels – 80 percent

(B) Tier 3 Repower:

- All vessels – 85 percent

(5) A Carl Moyer Program grant for a marine vessel repower shall not exceed the total project repower cost multiplied by the percent of eligible funding for each vessel category, as identified above (i.e. the Carl Moyer Program may pay up to 50 to 85 percent of the total repower cost, depending upon the vessel type and new engine tier).

(6) The total project repower cost may include charges for the following:

(A) The capital cost of the new engine.

(B) Purchase of or modifications to the cooling system; fuel and exhaust system; wiring, panel, and harness system; power take-offs; propulsion control system; gauges and alarms; and radiator and ventilation, if attached to or integral to the functioning of funded engine.

(C) Frames needed to be extended or other parts needed to be cut or modified in order to accommodate the new engine, as well as paint or coating needed to protect those specific areas that were cut or modified.

(D) Tax and transport for eligible parts or costs.

(E) Labor for installation of or modification to parts eligible for funding.

(7) The total project repower cost may not include charges for the following:

(A) Rudders or propellers.

(B) Steering system.

(C) Sea trials and dry docking.

(D) Paint, coatings, or hull work not directly related to the engine repower.

(E) Tax and transport for ineligible parts or costs.

(F) Labor for installation of or modification to parts ineligible for funding.

(G) Any parts or labor typically included as part of the vessel or engine overhaul, maintenance, repair, or upkeep.

(H) These and other items may be eligible for funding on a case-by-case basis if it can be proven that they are not part of the typical vessel overhaul, repair, upkeep or maintenance and are a necessary part of the engine repower.

(8) All engines replaced as part of a marine vessel repower project must be scrapped, consistent with the requirements of Part III, Section 31.

(c) Shore Power (Cold Ironing)

To date, interest in Carl Moyer Program funding for shore power projects has been limited. However, due to concern about increased emissions from oceangoing vessels at California ports, as well as increased regulatory efforts, demand for project funding is expected to increase.

(1) Up to 50 percent of the total cost of a shore power transformer (whether on board the vessel or at dock) is eligible for Carl Moyer Program funding.

(A) Shore-side transformer costs at goods movement berths (i.e. berths involved in the movement of goods rather than passengers) in the South Coast, Bay Area, and San Diego air districts, as well as Port Hueneme, are not eligible for Carl Moyer Program in any fiscal year in which bond funding is available for shore power projects. Shore-side costs for goods movement vessel berths in these areas may be eligible for Carl Moyer

Program funding on a case-by-case basis if it can be reasonably demonstrated that Proposition 1B funding is unavailable.

(2) Up to 100 percent of on-board (non-transformer) retrofit costs specifically required to allow the vessel to plug into shore power are eligible for Carl Moyer Program funding.

(3) The Carl Moyer Program shall fund only the marine vessel retrofit modifications necessary for a vessel to receive shore power while at berth, including costs for a transformer, whether the transformer is on the ship or at the marine vessel terminal. The Carl Moyer Program shall not pay for modifications or enhancements made to the shore-side electrical infrastructure needed to bring power to the terminal. All State grant and local match funding used for a shore power project, including Proposition 1B funds, shall be included in the Carl Moyer Program project cost-effectiveness calculation.

(4) The Carl Moyer Program shall not pay for energy costs (fuel or electricity), shore power routine maintenance, or labor costs for connection and disconnection of the vessel to shore power.

(5) Only a port authority, terminal operator, or marine vessel owner or authorized operator may apply to receive Carl Moyer Program funding for a shore power project.

(6) Applicants for a shore power project must demonstrate that usage of shore power will be adequate to meet the Carl Moyer Program cost-effectiveness cap. A demonstration of usage must include, for shore-side transformer funding, the names of vessels that are able and committed to the use of shore power for a specific number of visits and hours. Applicants for on-ship retrofit funding must demonstrate availability of shore power and commit to a number of vessel visits and hours per year. The commitment of hours made by the applicant must be used in the project cost-effectiveness calculation and must be required by the contract between the applicant and the air district.

(7) The Carl Moyer Program shall pay for a shore power project based on project usage. The project contract must include a provision that if the shore power is not used for the total hours committed to in the contract, the project participant shall return the pro-rated contract amount (commensurate with the shortfall in usage) to the air district. Alternately, if the project was not funded at the Carl Moyer Program cost-effectiveness cap, the district may opt to require the applicant return only those funds associated with the usage shortfall had the project been funded at the program cost-effectiveness limit. Finally, the project participant may opt to extend the life of the contract to ensure the usage requirement is met. However, terminal operators and vessels subject to a regulation may not extend their contract beyond the regulation's initial compliance deadline, unless the project is surplus to the regulation.

(8) Shore power projects at terminals or on vessels subject to ARB's Shore Power Regulation must be complete and operational no later than January 1, 2011 in order to achieve three years of surplus emission reductions and be eligible for Carl Moyer Program funding. All contracts for Carl Moyer Program funding of shore power projects must include a stipulation that receipt of program funding is contingent on the project being complete and operational by this date,

unless the original funding application provides evidence that the project shall be surplus to the 2014 implementation requirements of ARB's Shore Power Regulation.

(9) Shore power projects have a maximum project life of 20 years. A longer project may receive case-by-case approval if applicants provide justifying documentation. The maximum project life does not consider regulatory requirements and may be shorter. Oceangoing vessels and terminals subject to an ARB's Shore Power Regulation must use a project life which concludes no later than the regulation's initial compliance deadline. Projects with a project life that extends beyond 2014 may be eligible for funding on a case-by-case basis if it can be proven that the project funds only emission reductions which are surplus to the ARB Shore Power Regulation.

(10) Terminals using or intending to use the Equivalent Emission Reduction Option to demonstrate compliance with the Shore Power Regulation are only eligible for Carl Moyer Program funding on a case-by-case basis, if it can be demonstrated that the project shall achieve emission reductions surplus to the rule.

(11) Applications for Carl Moyer Program funding of shore power projects submitted after July 1, 2009 shall include a copy of the Initial Terminal Plan, as identified in Section (g) of the Shore Power Regulation. All subsequent project reports to air districts shall include any new or updated Terminal Plans in order to evaluate compliance with the project contract.

(12) The emissions from vessels using grid power in lieu of the vessels auxiliary engines when the vessel is at berth are assumed to be reduced by 90 percent. The emission reductions from a shore-side transformer project are calculated as the total emission reductions from each participating ship. Each ship's emission reductions calculated as:

(Ship emission rate * berthing time * power requirements * number of visits * 0.9)

Estimated berthing time shall include the time needed to connect and disconnect the vessel to shore power. Ship emission rates and power requirements are included in Appendix B.

(d) Engine Remanufacture Kit

Engine remanufacture kits have the potential to reduce emissions from older engines in cases when an engine repower is not technically feasible. However, emission reductions from engine remanufacture kits have the potential to be shorter lived than reductions from an engine repower, and some of these kits may result in increased PM emissions in order to achieve NOx reductions. Carl Moyer Program criteria for engine remanufacture kit projects help ensure these reductions are real and endure for the full project life.

(1) Engine remanufacture kits must be certified by ARB, U.S. EPA or the International Maritime Organization (IMO) to meet marine Tier 2 or cleaner emission standards for NOx, PM, and hydrocarbons. Remanufacture kits certified to meet emission standards for NOx only are not eligible for Carl Moyer Program funding.

(2) The percent of marine engine remanufacture costs eligible for Carl Moyer Program funding are:

(A) Tier 2 Remanufacture:

- Excursion, ferry, tug, or tow boats – 50 percent
- Fishing, pilot/work, or crew & supply vessels – 80 percent

(B) Tier 3 Remanufacture: All vessels – 85 percent

(3) Remanufacture kit projects have a maximum project life of six years. If fuel injectors are required to be replaced by the U.S. EPA Emissions Warranty for the project kit before the end of the project life, the applicant must commit to replace the injectors as required with equivalent low-emission injectors. The Carl Moyer Program project cost may include funds for the replacement injectors. The project annual reports must include documentation that all required maintenance identified in the U.S. EPA Emissions Warranty (if applicable) is completed on schedule. Maintenance other than replacement of low-emission fuel injectors is not eligible for Carl Moyer program funding.

(e) Retrofit

Retrofits involve hardware modifications to the engine or exhaust system to reduce emissions, and include selective catalytic reduction, diesel oxidation catalysts or diesel particulate filters. Because of the lack of retrofit devices verified for use on a marine vessel engine, a marine vessel retrofit device which is not yet verified may be considered for funding on a case-by-case basis.

(1) A retrofit device must be ARB-verified to reduce emissions from the project engine in order to be eligible for funding. Non-verified technologies may be considered on a case by case basis if: 1) an application for verification of the retrofit or add-on equipment on the proposed engine category is pending; 2) the retrofit or add-on equipment has been verified or certified by ARB for use on a similar engine category; or 3) project emission benefit, durability, and applicability have been or shall be demonstrated through in-situ testing.

(2) Retrofits considered for funding on a case-by-case basis must be clearly demonstrated to achieve the expected emission reductions for the full project life, to function properly under the project vessel engine duty cycle, and to not harm the vessel engine.

(3) Up to 100 percent of the total cost of a marine retrofit project is eligible for Carl Moyer Program funding.

(f) New Purchase

New marine vessels with propulsion and auxiliary engines certified to be at least 30 percent cleaner than the applicable NOx emission standard are eligible for Carl Moyer Program funding on a case-by-case basis. While no marine vessel propulsion engines currently are certified as such, engines meeting these emission limits may become commercially available as engine technologies continue to advance.

(1) The eligible costs for a marine vessel new purchase project shall reflect the difference between the cost of the cleaner-than-required vessel and the cost of a similar vessel that meets existing standards.

(2) New purchase of a ferry is not eligible for Carl Moyer Program funding due to the ARB Harbor Craft Regulation requirement that new ferries utilize BACT.