

#### **IV. Project Criteria**

These criteria provide the minimum requirements for Carl Moyer Program off-road compression-ignition projects. Such 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 Off-Road CI Equipment Project Criteria**

(1) Maximum project life:

(A) Repower Only (no retrofit) 7 years

(B) Repower + retrofit 5 years

(C) Retrofit 5 years

A longer project life may receive case-by-case approval if applicants provide justifying documentation. The maximum project life does not consider regulatory requirements and may be shorter.

(2) Funding is available for propulsion engines greater than 25 horsepower on mobile off-road equipment. Auxiliary engines on mobile equipment and portable engines are not eligible for funding.

(3) Emission reduction technologies must be certified/verified by the ARB and must comply with durability and warranty requirements. For the purposes of the Carl Moyer Program, a technology granted a conditional certification/verification by ARB is considered certified/verified.

(4) Cost-effectiveness calculations must use the hour based formula as discussed in Appendix C. Historical hours of operation must be based on the average of the two previous years use. Fuel usage may only be used with case-by-case approval from ARB. If using the fuel based formula, usage must be based on two years of historical fuel usage documentation specific for the equipment being funded. Documentation may include fuel logs, purchase receipts or ledger entries.

(5) Future annual hours of equipment operation for determining emission reductions must be based only on readings from an installed and fully operational hour meter. If equipment does not have functioning hour meter at the time of the project, the meter must be repaired or replaced. If during the project life the hour meter fails for any reason, the hour meter must be repaired or replaced as soon as possible at the owner's cost. If case-by-case approval was provided by ARB to use fuel usage for determining emission reductions, then future annual fuel usage must be based on fuel logs, purchase receipts or ledger entries specific to the funded equipment.

(6) Engines participating in the averaging, banking, and trading (ABT) program that are certified to family emission limits (FEL) higher than the applicable emission standards, as designated on the Executive Order, are ineligible to participate in the Carl Moyer Program.

(7) The certification emission standard and Tier designation for the engine must be determined from the ARB Executive Order issued for that engine. Executive Orders for off-road engines <http://www.arb.ca.gov/msprog/offroad/cert/cert.php>

(8) Engines that are participating in the “Tier 4 Early Introduction Incentive for Engine Manufacturers” program, as detailed in Title 13, CCR, section 2423(b)(6), are ineligible for Carl Moyer Program funding. The ARB executive order for these engines reference that the engines are certified under this citation.

(9) For equipment with baseline engines manufactured under the flexibility provision, as detailed in Title 13, CCR, section 2423(d), baseline emission rates shall be determined by using the previous applicable Tier emission standard for that engine model year and horsepower rating. Districts must retain this documentation in the project file. The ARB executive order for these engines reference that the engines are certified under this citation.

(10) The only forklifts eligible for funding under this chapter are class 7 diesel forklifts. The district must obtain and verify documentation of the classification of the forklift prior to funding.

(11) All case-by-case projects must receive approval from ARB prior to funding. These projects must follow the requirements as described in Part III, Section 28.

### **(b) Repower**

A repower is the replacement of the existing engine with a newer emission-certified engine instead of rebuilding the existing engine to its original specifications. Although these are commonly diesel-to-diesel repowers, significant NOx and PM benefits are achieved due to the high emission levels of the uncontrolled engine being replaced.

(1) Funding is not available for projects where a spark-ignition engine (i.e., natural gas, gasoline, etc.) is replaced with a diesel engine.

(2) Repowers that are not performed by the OEM, must follow the process set out in the 2005 Carl Moyer Program Guidelines Appendix G.

(3) The maximum percent of repower costs eligible for Carl Moyer Program funding are:

(A) Tier 1 Repower – 75 percent

(B) Tier 2 Repower – 80 percent

(C) Tier 3, Interim Tier 4, and Tier 4 Repower – 85 percent

(4) For repower projects, the replacement engine must be certified to a NOx emission standard that is at least 15 percent lower than the emission standard(s) applicable to the existing engine and be certified to either the current applicable emission standard, except as noted below, or to a FEL NOx or NOx+NMHC level that is lower than the required emission standard.

(5) Equipment manufactured under the “Flexibility Provisions for Equipment Manufacturers”, as detailed in Title 13, CCR, section 2423(d), are ineligible for Carl Moyer Program funding as a replacement engine.

(6) The replacement engine used in vehicle repower projects may be a new, rebuilt, or a remanufactured engine. Rebuilt and remanufactured engines that are not re-certified to new emission standards shall use the emission standards associated with the original engine block. An ARB Executive Order with the certified emission standard is required to determine the appropriate emission standard. If the engine family matching the Executive Order is not listed on the engine’s data plate, then other means of verifying that the engine is certified may

be used (e.g., verify engine serial number or model with manufacturer) and documented in the project file.

(7) If repowering with an engine meeting the current applicable standard is technically infeasible, unsafe, or cost prohibitive to develop at the time of obligation of funds, the replacement engine must meet the most current practicable previously applicable emission standard. The district shall determine eligibility of a repower project using an engine certified to a previous emission standard by one of the two following methods:

(A) A written statement of reason(s) provided by the engine manufacturer verifying that a particular piece of equipment cannot accommodate an engine meeting current standards without major modifications, safety risks, or exorbitant cost. The letter must include information on the equipment being repowered, the engine being replaced, the reason why an engine meeting the currently applicable standard cannot be used (including applicable supporting documentation), and the proposed Tier 1/Tier 2 replacement engine. Districts must retain the written statement of reasons in the project files.

(B) The engine manufacturer has provide ARB with sufficient information on engine and/or equipment models for which Tier 2/Tier 3 repowers are available, and engine and/or equipment models for which Tier 2/Tier 3 repowers are not available or feasible. Engine manufacturers who are interested in pursuing this option should contact ARB. ARB staff will maintain a list of such engines and/or equipment models and make that list available to district staff.

(8) Notwithstanding Section IV(b)(7), repower to Tier 1 is ineligible for funding with the following exceptions:

(A) In a fleet meeting the small fleet definition of the Off-Road Regulation.

(B) In a fleet defined as a captive attainment area fleets in the Off-Road Regulation.

(C) Equipment specifically exempted from the performance requirements of the Off-Road Regulation section 2449(d).

(D) Equipment that is not subject to the Off-Road Regulation.

(9) If an ARB-verified retrofit is available for the replacement engine, ARB requires installation of the retrofit verified to the highest level, as discussed in Section IV(c) of this chapter.

(A) If the additional cost of the retrofit causes the cost-effectiveness to be above the cost-effectiveness limit as defined in Chapter 2(h), then the retrofit is not required.

(B) If documentation can be provided to the district or ARB that the retrofit is not technically feasible, available, or safe, then the retrofit is not required.

Documentation for a retrofit that impairs the safe operation of a vehicle must follow the process set out in section 2449(e)(8) of the Off-Road Regulation.

(10) ARB is providing limited flexibility for one year after Board approval of these Guidelines that allows the applicant to opt-out of the default retrofit requirement.

(A) This flexibility will expire one year after Board approval of these Guidelines

unless the flexibility is reevaluated by the ARB Executive Officer.

(B) Projects utilizing this flexibility must have fully executed contracts prior to expiration of this flexibility.

(C) Applicants must sign a waiver acknowledging that due to existing or future regulations they may be required to install a retrofit on the funded equipment at their own cost.

(D) Districts must provide information regarding existing or future regulations to applicants upon request. The availability of this information must be made known to applicants upon signing of the waiver.

(E) Districts that rank projects based on cost-effectiveness must evaluate repower plus retrofit projects solely on the repower portion of the project for ranking and selecting purposes. When calculating cost-effectiveness for this purpose, if the applicant requested the maximum project life for repower plus retrofit (i.e., five years) then a seven year project life should be used, unless shortened by other regulatory requirements. If the applicant requested anything below five years, then cost-effectiveness shall be based on the requested project life.

(F) If two projects, one with repower plus retrofit and one with repower only, have the same cost-effectiveness when ranked and the district only has enough funds to pay for one project, then the district must select the repower plus retrofit project.

(G) Districts have the option to not offer this additional flexibility and are encouraged to evaluate individual projects based on the near source health impacts.

(11) All engines replaced as part of an off-road repower project must be destroyed and rendered useless, consistent with the requirements of Part III, Section 31(c).

### **(c) Retrofit**

Retrofit is the installation of a verified diesel emission control system on an existing engine. Examples include, but are not limited to, particulate filters and diesel oxidation catalysts. More information on retrofits may be found at <http://www.arb.ca.gov/diesel/verdev/verdev.htm>. Equipment that has been issued an exemption from retrofit installation from specific manufacturers may be found at <http://www.arb.ca.gov/msprog/moyer/retrofit/exemptions.htm>.

(1) Retrofit projects that reduce NOx emissions must be verified by ARB to a NOx reduction level of at least 15 percent from the baseline engine to claim NOx reductions from the project.

(2) Retrofit projects that control PM must use the highest level technically feasible technology available for the equipment being retrofitted. ARB considers the retrofit device that achieves the highest level of PM reductions (level 3 - 85 percent) and the highest level of NOx reductions to be the highest level retrofit.

(3) The cost of the retrofit, filters, and maintenance of the retrofit device needed during the project life is eligible for incentive funding, provided its inclusion in the project cost still meets the weighted cost-effectiveness limit.

(4) The maximum % of retrofit costs eligible for Moyer funding are: 100 percent.

#### **(d) New Purchase**

New purchase of equipment with engines meeting the Blue Sky Standards, certified on-road engines, and electric motors will be considered by the district and ARB on a case-by-case basis. These projects are seldom technically feasible or practical and very few have been funded up to this time.

#### **(e) In-Use Off-Road Diesel Vehicle Regulation**

(1) Projects are subject to the general program criteria listed above.

(2) Funding is available for achieving reductions required by the regulation at least three years prior to regulatory compliance deadlines and for reductions not required by the regulation.

##### **(3) Large Fleets**

The first compliance date for large fleets is March 1, 2010 so very limited funding opportunities exist. Since fleets must be in compliance with the regulations three years early in order to receive funding, a high initial investment will be required by fleets to take advantage of Carl Moyer Program funding. Additionally, to ensure that projects are surplus to regulatory requirements fleets are only eligible to receive funding once after July 26, 2007. Large fleets may have additional requirements, see Section IV(e)(7).

##### **(4) Medium Fleets**

The first compliance date for medium fleets is March 1, 2013 so some opportunities for funding exist. Medium fleets can apply for Carl Moyer Program funding for projects that will be installed and in operation by February 28, 2010. For projects that will be installed and in operation after March 1, 2010, funding opportunities are limited in a manner similar to large fleets. To ensure that projects are surplus to regulatory requirements, fleets are only eligible to receive funding once after March 1, 2010.

##### **(5) Small Fleets**

The first compliance date for small fleets is March 1, 2015 so greater opportunities for funding exist. Small fleets qualify for incentive funds in two ways:

(A) Compliance with the PM requirement begins on March 1, 2015. Small fleets are eligible for incentive funds to pay for the full cost of retrofits that are installed and in operation by February 28, 2012. After March 1, 2012, funding opportunities are limited.

(B) Small fleets have no NO<sub>x</sub> requirements in the regulation and are therefore not required to turnover their equipment. As such, funding for NO<sub>x</sub> and ROG reductions will always be eligible for incentive funds. Fleet owners can apply for Carl Moyer Program funds to repower their equipment and will be eligible for grants based only on NO<sub>x</sub> and ROG reductions. Since the Carl Moyer Program requires retrofit on all repower projects if verified and available, up until February 28, 2012 both the repower and the retrofit are eligible for funding. After February 28, 2012, the retrofit will still be required but must be paid for by the fleet owner.

(6) Captive attainment area fleets are only subject to the PM requirements of the regulation regardless of fleet size and are therefore only required to retrofit their

equipment. As such, funding for NOx and ROG reductions will always be eligible for incentive funds. This means that fleet owners can apply for Carl Moyer Program funds to repower their equipment and are eligible for grants based only on NOx and ROG reductions. The retrofit would still be required but must be paid for by the fleet owner. Funding opportunities for PM reductions would be limited based on the size of the fleet as discussed previously.

(7) Certain fleets operating in Districts that are participating in the SOON program may be required to apply for incentive funds to achieve the 2014 and 2017 fleet average targets early. Participating fleets will be required to submit compliance plans for the Off-Road Regulation to ensure projects are surplus to regulatory requirements. Fleets receiving SOON funds may be eligible to receive funds more than once. Fleets should contact their local air district to determine if this program is available.

(8) For more information on eligibility of off-road diesel equipment, please see the In-Use Off-Road Diesel Vehicle Regulation Carl Moyer Program Implementation Chart available through your local district or at <http://www.arb.ca.gov/msprog/moyer/guidelines/supplemental-docs.htm>.

#### **(f) Regulation for Cargo Handling Equipment at Ports and Intermodal Rail Yards**

Much of the cargo handling equipment must already be in compliance with the CHE regulation. Thus, the high initial investment that will be required by fleets to participate, and the lack of current technology that is cleaner than what is required by the regulation makes it unlikely that fleets will be able to take advantage of Carl Moyer Program funds.

Funding may be available for retrofits in certain circumstances.

(1) Projects are subject to the general program criteria listed above.

(2) Funding is available for achieving reductions required by the regulation at least three years prior to regulatory compliance deadlines and for reductions not required by the regulation.

(3) For more information on eligibility of cargo handling equipment, please see the Regulation for Cargo Handling Equipment at Ports and Intermodal Rail Yards Carl Moyer Program Implementation Chart available through your local district or at <http://www.arb.ca.gov/msprog/moyer/guidelines/supplemental-docs.htm>.