

CHAPTER 5: OFF-ROAD EQUIPMENT

This chapter describes the minimum criteria and requirements for Carl Moyer Memorial Air Quality Standards Attainment Program (Moyer Program) mobile, portable and stationary, off-road compression-ignition (CI or diesel), and large spark-ignition (LSI) projects such as construction, agricultural, and industrial equipment. Air quality management districts or air pollution control districts (air districts) may set more stringent requirements based upon local priorities.

A. Projects Eligible for Funding

The following off-road equipment projects may be eligible for funding.

- 1. Repower of Existing Equipment.** The replacement of the existing engine with a newer emission-certified engine instead of rebuilding the existing engine to its original specifications.
- 2. Retrofit Purchase.** The installation of an Air Resources Board (ARB) verified emission control system on an existing engine. Examples include, but are not limited to particulate filters and diesel oxidation catalysts.
- 3. Equipment Replacement.** The purchase of new or used equipment with an engine certified to the current emission standard or Tier to replace an older, fully functional piece of equipment that is to be scrapped.
- 4. Infrastructure.** See the infrastructure chapter (Chapter 10) for details regarding applicant eligibility and project types for infrastructure in support of off-road equipment. This includes infrastructure such as alternative fuel and charging stations for construction, cargo handling, and ground support equipment, as well as agricultural pump electrification.

Please see Sections C and D for determining maximum grant amounts and minimum eligibility requirements for all off-road project categories.

B. Engine Emission Standards

ARB and the United States Environmental Protection Agency (U.S. EPA) have adopted regulations for exhaust emission standards for new off-road CI and LSI engines and equipment. For reference, Tables 5-1 and 5-2 below summarize the hydrocarbon (HC), oxides of nitrogen (NO_x), and particulate matter (PM) standards in grams per brake-horsepower-hour (g/bhp-hr) for off-road CI Tier 1, 2, 3, and 4 engines. The actual standards, in grams per kilowatt-hour (g/kW-hr), may be found in the California Code of Regulations (CCR), title 13, sections 2449, et seq. Table 5-3 summarizes the exhaust emission standards for LSI engines. The complete emission standards for LSI engines may be found in the CCR, title 13, sections 2430, et seq.

Table 5-1

**ARB and U.S. EPA Tier 1, 2, and 3 Exhaust Emission Standards for
New Off-Road Diesel Engines \geq 25 Horsepower (hp)
grams per brake horsepower-hour (g/bhp-hr)**

Maximum Rated Power hp (kW)	Tier	Model Year	NOx	HC	NOx + NMHC	PM
25 \leq hp<50 (19 \leq kW<37)	Tier 1	1999-2003 ^(a)	N/A	N/A	7.1	0.6
	Tier 2	2004-2007	N/A	N/A	5.6	0.45
50 \leq hp<75 (37 \leq kW<56)	Tier 1	1998-2003 ^(a)	6.9	N/A	N/A	N/A
	Tier 2	2004-2007	N/A	N/A	5.6	0.3
	Tier 3 ^(b)	2008-2011	N/A	N/A	3.5	0.3
75 \leq hp<100 (56 \leq kW<75)	Tier 1	1998-2003 ^(a)	6.9	N/A	N/A	N/A
	Tier 2	2004-2007	N/A	N/A	5.6	0.3
	Tier 3	2008-2011	N/A	N/A	3.5	0.3
100 \leq hp<175 (75 \leq kW<130)	Tier 1	1997-2002 ^(a)	6.9	N/A	N/A	N/A
	Tier 2	2003-2006	N/A	N/A	4.9	0.22
	Tier 3	2007-2011	N/A	N/A	3	0.22
175 \leq hp<300 (130 \leq kW<225)	Tier 1	1996-2002	6.9	1	N/A	0.4
	Tier 2	2003-2005	N/A	N/A	4.9	0.15
	Tier 3 ^(c)	2006-2010	N/A	N/A	3	0.15
300 \leq hp<600 (225 \leq kW<450)	Tier 1	1996-2000	6.9	1	N/A	0.4
	Tier 2	2001-2005	N/A	N/A	4.8	0.15
	Tier 3 ^(c)	2006-2010	N/A	N/A	3	0.15
600 \leq hp \leq 750 (450 \leq kW \leq 560)	Tier 1	1996-2001	6.9	1	N/A	0.4
	Tier 2	2002-2005	N/A	N/A	4.8	0.15
	Tier 3 ^(c)	2006-2010	N/A	N/A	3	0.15
hp>750 (kW>560)	Tier 1	2000-2005	6.9	1	N/A	0.4
	Tier 2	2006-2010	N/A	N/A	4.8	0.15

(a) EPA model year. ARB model year for Tier 1 starts at 2000 for 25 hp \leq to <175 hp.

(b) Engine families in this power category may meet the Tier 3 PM standard instead of the Tier 4 interim PM standard in exchange for introducing the final Tier 4 PM standard in 2012.

(c) Caterpillar, Cummins, Detroit Diesel Corporation, and Volvo Truck Corporation agreed to comply with these standards by 2005.

**Table 5-2
ARB and U.S. EPA Tier 4 Exhaust Emission Standards for
New Off-Road Diesel Engines \geq 25 hp
(g/bhp-hr)**

Maximum Rated Power hp (kW)	Tier	Model Year	NOx	HC	NOx + NMHC	PM
25 \leq hp<50 (19 \leq kW<37)	Tier 4 Interim	2008-2012	N/A	N/A	5.6	0.22
	Tier 4 Final	2013 and later	N/A	N/A	3.5	0.02
50 \leq hp<75 (37 \leq kW<56)	Tier 4 Interim ^(a)	2008-2012	N/A	N/A	3.5	0.22
	Tier 4 Final	2013 and later	N/A	N/A	3.5	0.02
75 \leq hp<100 (56 \leq kW<75)	Tier 4 Phase-In	2012-2014	0.3	0.14	N/A	0.01
	Tier 4 Phase-Out	2012-2014	N/A	N/A	3.5	0.01
	Tier 4 Alternate NOx ^(b)	2012-2014	2.5	0.14	N/A	0.01
	Tier 4 Final	2015 and later	0.3	0.14	N/A	0.01
100 \leq hp<175 (75 \leq kW<130)	Tier 4 Phase-In	2012-2014	0.3	0.14	N/A	0.01
	Tier 4 Phase-Out	2012-2014	N/A	N/A	3	0.01
	Tier 4 Alternate NOx ^(b)	2012-2014	2.5	0.14	N/A	0.01
	Tier 4 Final	2015 and later	0.3	0.14	N/A	0.01
175 \leq hp<750 (130 \leq kW<560)	Tier 4 Phase-In	2011-2013	0.3	0.14	N/A	0.01
	Tier 4 Phase-Out	2011-2013	N/A	N/A	3	0.01
	Tier 4 Alternate NOx ^(b)	2011-2013	1.5	0.14	N/A	0.01
	Tier 4 Final	2014 and later	0.3	0.14	N/A	0.01
hp>750 (kW>560)	Tier 4 Interim	2011-2014	2.6	0.3	N/A	0.07
	Tier 4 Final	2015 and later	2.6	0.14	N/A	0.03

^(a) Engine families in this power category may meet the Tier 3 PM standard instead of the Tier 4 interim PM standard in exchange for introducing the final Tier 4 PM standard in 2012.

^(b) The implementation schedule shown is the three-year alternate NOx approach. Other schedules are available.

**Table 5-3
Exhaust Emission Standards for
New Off-Road LSI Engines >1.0 liter
(g/bhp-hr)**

Model Year	NOx+ Non-Methane Hydrocarbons (NMHC)
2001-2006 ^(a)	3.0
2007-2009	2.0
2010 and later	0.6

^(a) Standards phased in from 2001 – 2004

C. Maximum Eligible Funding Amounts (Determining Grant Amounts)

1. Table 5-4 summarizes the maximum eligible funding for each project type as a percentage. All projects are also subject to the cost-effectiveness limits specified in Appendix C.

**Table 5-4
Maximum Percentage Eligible for
Moyer Program Off-Road Projects**

Project	Maximum Percentage Eligible
Diesel repower	85%
LSI repower	85%
Repower to zero-emission	85%
Mobile equipment replacement	80%
Portable equipment replacement (excludes stationary)	80%
Retrofit	100%

The ARB has adopted in-use fleet rules affecting equipment with off-road CI and off-road LSI engines. For equipment subject to these rules, additional limitations may apply according to Sections E through I.

2. Project Life:

- (A) Maximum project life

**Table 5-5
Maximum Project Life**

Type	Project Life
Repower only (no retrofit)	7 years
Farm equipment (all projects)	10 years ^(a)
Replacement and repower to zero-emission	10 years ^(b)
Retrofit only	5 years
Replacement Excavators	3 years
Replacement Skid steer loaders	3 years
Replacement Rough terrain forklifts	3 years
Replacement All other non-farm (existing diesel only)	5 years
Replacement All other non-farm (existing LSI only)	3 years

^(a) Air districts are required to offer a ten year project life for farm equipment; however, applicants may request a project life fewer than ten years. Farm equipment is defined in Appendix B and does not include stationary agricultural equipment.

^(b) Section C.2.(E) allows a maximum project life of ten years for zero-emission replacements.

- (B) The maximum project life does not consider regulatory requirements that may shorten the eligible project life. Regulatory requirements may reduce actual project lives below these maximum values.
- (C) Unless otherwise stated in this chapter (see Sections D.2.(I) and E.2.(H)(1)), the minimum project life allowed is three years.
- (D) In accordance with SBx2 3 (Health and Safety Code (H&SC) § 44282.5(a)), mobile and portable farm equipment may be eligible for funding up to the compliance date of an applicable in-use regulation and a 10-year project life. In order to be eligible, farm equipment projects must be under a fully executed contract, and must be installed in the equipment and in operation prior to the applicable compliance date.
- (E) For zero-emission replacement equipment, Senate Bill 467 (H&SC § 44287.1) allows the replacement of off-road internal combustion equipment with zero-emission off-road equipment to incorporate the maximum life allowed of the equipment being scrapped (three to five years, as applicable per Section C.2.(A)) and the remaining useful life up to ten years of the equipment the applicant would have bought at the time

of normal attrition (five to seven years, as applicable). For zero-emission replacement of off-road equipment, the emission benefits from two separate transactions may be included in the cost-effectiveness calculations:

- (1) Emission reductions from existing older equipment, as applicable, to zero-emission equipment.
- (2) Emission reductions from a new piece of equipment meeting the emission standards at the time of purchase to zero emission.

3. Usage. Cost-effectiveness calculations must be hour-based. Calculation of funding amounts must be based on the average of at least the two most recent years of documented equipment usage. For projects in which the two most recent years of documented usage are not available, the minimum annual usage is required to be specified in the contract (Chapter 3, Section V.6.(B)). Fleet averages cannot be used. All project engines or equipment must have a fully operational hour meter for the project life. 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 expense.

D. Project Criteria

The minimum qualifications for off-road projects are listed below. All projects must also conform to the requirements in Chapter 2: General Criteria and in Chapter 3: Program Administration. Participating air districts retain the authority to impose additional requirements in order to address local concerns.

1. General Criteria:

- (A) New and existing CI and LSI engines greater than or equal to 25 horsepower on mobile or portable off-road equipment and stationary agricultural equipment are eligible for funding. LSI engines above 25 horsepower but with a displacement of less than or equal to one liter may be eligible for funding on a case by case basis.
- (B) Air districts have discretion to use good engineering judgment to determine project horsepower for an existing or new engine or equipment based on the engine label, manual, engine records, or other verifiable records.
- (C) For existing equipment in which the actual engine horsepower cannot be determined based upon the engine label, manual, and engine records, air districts may determine existing engine horsepower by the following formula: Engine horsepower = Power Take Off (PTO) x 120 percent.

- (D) Future annual hours of equipment operation for determining emission reductions must be based upon readings from an installed and fully operational hour meter.
- (E) The certification emission standard and/or Tier designation for the existing engine (if applicable) and the new engine must be determined from the ARB Executive Order or U.S. EPA Certificate of Conformity (for federally preempted engines) issued for that engine. ARB Executive Orders for off-road engines may be found at <http://www.arb.ca.gov/msprog/offroad/cert/cert.php>.
- (F) For existing equipment with engines manufactured under the flexibility provision, detailed in CCR, title 13, section 2423(d), the baseline emission rates shall be determined by using the previous applicable Tier emission standard for the existing engine model year and horsepower rating. Alternatively, the baseline emission rates may be determined based upon the standard or Tier associated with the actual reference family listed on the emission control information label of the existing equipment. The ARB Executive Order for these engines indicates that the engines are certified under the flexibility provision. Air districts must retain this documentation in the project file.
- (G) New engines that are participating in the “Tier 4 Early Introduction Incentive for Engine Manufacturers” program, as detailed in CCR, title 13, section 2423(b)(6), are eligible for funding provided that they are certified to the Tier 4 Final emission standards. The ARB Executive Order for these engines indicates that the engines are certified under this provision. The emission rates for these engines used to determine cost-effectiveness shall be equivalent to the emission factors associated with Tier 3 engines. Air districts must retain this documentation in the project file.
- (H) Notwithstanding Section D.1.(J) below, new engines certified to the interim Tier 4 (interim Tier 4, Tier 4 Phase-Out, Tier 4 Phase-in/Alternate NOx) and Tier 4 Final emission standards participating in the averaging, banking, and trading program that are certified to FEL higher than the applicable emission standards are eligible for funding. The appropriate emission factor for calculating emission reductions and cost-effectiveness shall be equivalent to the emission factors associated with the Tier 3 for engines 50 to 750 horsepower and Tier 2 for engines less than 50 horsepower or greater than 750 horsepower.
- (I) Notwithstanding section D.1.(J) below, new engines certified to the interim Tier 4 and Tier 4 Final emission standards participating in the averaging, banking, and trading program that are certified to a FEL below the applicable emission standards are eligible for funding. The appropriate emission factor for calculating emission reductions and cost-effectiveness

shall be the emission factor associated with the applicable interim Tier 4 (interim Tier 4, Tier 4 Phase-Out, Tier 4 Phase-in/Alternate NOx) or Tier 4 Final emission standard.

- (J) New engines eligible for off-road projects must meet the current applicable standard or Tier. If repowering or replacing with an engine meeting the current applicable standard is technically infeasible, unsafe, or not available when the air district commits to the proposed project, the new engine must meet the most practicable previously applicable emission standard. For purposes of this section, the air district's commitment (as defined in Appendix B) to a proposed project shall be consistent with that stated in their Policies and Procedures Manual. The air district shall determine eligibility of repower and replacement projects using an engine certified to a previous emission standard using the criteria listed below:
- (1) At the applicant's request, confirmation of availability of an engine meeting the most recent emission standards or Tier may be limited to the same manufacturer as the existing engine.
 - (2) If the air district and the applicant do not execute a contract for the project within six months of project commitment, then the air district must recheck for the availability of engines meeting the current standard.
 - (3) Documentation that engines meeting the current applicable standards are unavailable must be included in the air district's project file. Acceptable documentation that engines meeting the most recent emission standards are unavailable include:
 - a. Verifiable information from the engine manufacturer, engine distributor, and/or engine dealer regarding the unavailability of engines meeting the current emission standards or Tier.
 - b. Confirmation (a written declaration by the air district is acceptable) that engines from a specific manufacturer meeting the current emission standards or Tier are not certified (Executive Order is not available on ARB website). Executive Orders for off-road engines may be found at <http://www.arb.ca.gov/msprog/offroad/cert/cert.php>.
 - c. For repower projects, 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 or safety risks. 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 replacement engine. Air districts must retain the written statement of reasons in the project files.

- d. For repower projects, the engine manufacturer has provided ARB with sufficient information on engine and/or equipment models for which repowers are available, and engine and/or equipment models for which 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 air district staff.
- (K) Existing zero- or low-emission equipment are required for worker safety in the following industries, and therefore these projects are not eligible for funding: food retail stores, cold storage, and confined space operations (such as freezers).
- (L) The horsepower rating for the replacement engine must not be greater than 125 percent of the original manufacturer rated horsepower (baseline horsepower) for the existing engine. In limited situations, such as where equipment in the original horsepower range is not available or the higher horsepower equipment will result in equal or lower annual emissions, the air district may approve a greater than 25 percent increase in horsepower.
- (M) Notwithstanding D.1.(L), at an air district's discretion, new engines or equipment may be funded with horsepower greater than 125 percent of existing equipment. However, the eligible funding amount must be based upon the cost of an engine or equipment whose horsepower is no higher than 125 percent of the existing engine horsepower. The applicant must pay the additional costs associated with the higher horsepower engine, and the emission reduction calculation must be based upon the funded (higher horsepower) engine. The air district's project file must include documentation of the cost of the funded (higher horsepower) equipment as well as the method used to determine the basis for the project grant amount (e.g. dealership cost estimate of lower horsepower equipment).
- (N) New electric motors and equipment that are rated less than 19 kW are eligible for funding provided it can serve the same function and perform the same work as equipment with a 25 horsepower or greater engine that it is replacing.
- (O) No funds will be issued for maintenance or repairs related to the operation of the existing or new equipment. The participant takes sole responsibility for ensuring that the engine and/or equipment is/are in operational condition throughout the agreement period.

- (P) Existing engines replaced as part of an off-road project must be destroyed and rendered useless. At a minimum, the destruction of an engine must include:
- (1) A hole in the engine block with a diameter of at least three inches at the narrowest point. The hole must be irregularly shaped (i.e. no symmetrical squares or circles) and
 - (2) A section of the oil pan flange must be removed as part of the hole or have a line cut through it that connects the hole.
- (Q) For portable/stationary agricultural projects, State and air district rules impacting agricultural sources must be considered when determining whether projects provide emission reductions surplus to regulatory requirements. Moyer eligibility may be based on the requirements of the local rule if the local rule meets the requirements of Health and Safety Code section 39666(d). An air district requesting to have eligibility based on local rules must have its Air Pollution Control Officer self-certify via email or letter to their ARB Moyer liaison that the local rule is equally as effective as or more stringent than the Airborne Toxic Control Measure for Stationary Compression Ignition Engines (CCR, title 17, section 93115 et. seq.). Note: The self-certification described in this section applies solely to the Moyer Program and does not relieve the air district of their responsibilities under Health and Safety Code section 39666 or any other ARB program or requirement.

2. Repower

- (A) New engines manufactured under the “Flexibility Provisions for Equipment Manufacturers” as detailed in CCR, title 13, section 2423(d), are ineligible for funding to repower equipment.
- (B) New engines manufactured under the “replacement engine” provisions of CCR, title 13, section 2423(j) and/or the provisions of 40 Code of Federal Regulations (CFR) 1068.240 which are used to repower equipment are eligible for funding.
- (C) For repower plus retrofit projects, the cost of data logging the replacement engine is not eligible. Please refer to Section D.3. for additional criteria.
- (D) For repower projects with new off-road compression-ignition engines equipped with original engine manufacturer after treatment devices, addition of a retrofit is ineligible due to issues with engine warranty and anti-tampering provisions.
- (E) Repower to convert to zero-emission technology is eligible for funding. Except for stationary agricultural equipment, zero-emission repower

projects must include a three-year or 5,000-hour warranty. The warranty must cover zero-emission system parts and labor.

- (F) Variable frequency devices (VFD) may be eligible for funding provided the air district reports VFD cost and serial number information in the Clean Air Reporting Log (CARL).
- (G) In stationary electric motor projects, the grantee must provide documentation of application or payment to the local utility company for power installation.
- (H) An electric motor on an agricultural irrigation pump project that is under contract may be considered for invoice payment once the motor has been delivered to the project site, and the motor has been connected to the electricity grid.
- (I) For portable/stationary agricultural projects, except for remotely located or less than 50 hp agricultural engines (as defined in Appendix B), only Tier 3 engines are eligible to be repowered. These must repower to Tier 4 Final engines. Air districts with a local rule may repower uncontrolled, Tier 1, and Tier 2 engines to Tier 4 Final engines as long as there is at least one year of surplus emissions reductions prior to the compliance date of the local rule for the specific tier. The minimum project life in these instances is one year. When repowering a Tier 3 engine, air districts are encouraged to consider the feasibility of repowering with zero-emission technology, such as an electric motor, over a Tier 4 Final engine.

3. Retrofit

- (A) Existing off-road CI engines equipped with original engine manufacturer aftertreatment devices are ineligible for funding.
- (B) The retrofit must be verified by ARB to the highest level available for the engine being retrofitted.
- (C) Eligible project costs include:
 - (1) Retrofit system (including all essential components)
 - (2) Installation
 - (3) Maintenance (for duration of project life)
 - (4) Hour meter (if none existed on existing equipment)
- (D) The data logging cost of a retrofit-only project is not eligible.

- (E) Additional information on verified diesel retrofit systems may be found on ARB's website at <http://www.arb.ca.gov/diesel/verdev/verdev.htm>. Information on verified LSI retrofit systems may be found at: <http://www.arb.ca.gov/msprog/offroad/orspark/verdev.htm>.

4. Equipment Replacement

- (A) Equipment replacement projects are limited to mobile and portable equipment.
- (B) Equipment manufactured under the "Flexibility Provisions for Equipment Manufacturers" (Flex equipment), as detailed in CCR, title 13, section 2423(d) is eligible for funding as replacement equipment, provided the equipment meets the requirements of section D.1.(J) above.
 - (1) Eligible Flex equipment whose reference engine family is certified to an FEL is also subject to the provisions of Section D.1.(H) and (I).
 - (2) Flex equipment with an engine whose reference engine family meets a standard, Tier, or FEL less stringent than Tier 3 standard (or Tier 2 standard for engines less than 50 horsepower or greater than 750 horsepower), is ineligible for funding.
- (C) The replacement of two (or more) pieces of existing equipment with one piece of replacement equipment is eligible for funding. Each piece of existing and replacement equipment must comply with all of the appropriate criteria in this section. The replacement equipment must execute the same job as the existing pieces of equipment. For baseline emissions calculation, the annual emissions of the two pieces of existing equipment are summed. For the replacement equipment emissions calculation, the annual usage of the two pieces of existing equipment is summed for the replacement equipment usage. The horsepower rating for the replacement equipment must not be greater than 125 percent of the original manufacturer rated horsepower (baseline horsepower) for the lowest horsepower of the two existing equipment engines (unless the grantee pays for the horsepower upgrade as specified in Section D.1.(M)).
- (D) If air districts use equipment dealers in implementing the equipment replacement program, reimbursement cannot be issued until all necessary documentation is received and approved by the air district. Participants may purchase the replacement equipment from a private party, provided all required documentation is submitted and approved by the air district. This includes warranty requirements and all other equipment replacement requirements.
- (E) Existing Equipment Requirements:

- (1) Equipment Ownership: the applicant must have owned the existing equipment in California for the previous two years. The applicant must provide documentation of the following specific to the existing equipment (select one):
 - a. Bill of sale for the old existing equipment (preferred)
 - b. Tax depreciation logs
 - c. Property tax records
 - d. Equipment insurance records
 - e. Bank appraisals for equipment
 - f. Maintenance/service records
 - g. General ledgers
 - h. Fuel records specific to the existing equipment that identify the equipment owner
 - i. Other documentation approved by ARB

- (2) Operational Requirements: the existing equipment must be in operational condition to qualify for funding. A pre-inspection of the existing equipment must be performed prior to funding to verify the operational status of the equipment. In addition, the applicant must provide documentation to demonstrate that the equipment was operational for the previous year. The following types of documents are acceptable:
 - a. Revenue and usage records that identify operational, standby, and down hours for the equipment
 - b. Routine inspections which document the operating condition of the existing equipment (Occupational Safety and Health Administration or workplace required)
 - c. Employee timesheets linked to specific equipment use
 - d. Preventative maintenance/service records tied to specific hours of equipment use
 - e. Repair work orders specific to the equipment
 - f. Other documents approved by ARB

- (3) Pre-Inspection Requirements: Pre-inspection must verify the operational condition of the existing equipment. The pre-inspection must verify, at a minimum, the following items:
- a. Tires in usable condition (able to hold air, sufficient tread or tracks, etc.)
 - b. Steering wheel operational
 - c. Equipment able to start up and move backwards and forwards
 - d. Buckets, blades, rollers, etc. are working
 - e. Undercarriage structurally sound
 - f. Fuel tank in usable condition
 - g. No parts stripped
 - h. Equipment not vandalized
 - i. Clear photographs of the existing equipment must include the following views listed below. The air district will specify the required digital format.
 - i. Right side - hood down
 - ii. Front - hood down
 - iii. Left side - hood down
 - iv. Equipment serial number
 - v. Engine serial number - either tag or stamp on block
 - vi. Diesel Off-Road Online Reporting System (DOORS) Equipment Identification Number (EIN), if applicable
 - vii. Rear
- (4) Destruction and Salvage Requirements: Equipment replacement requires that the existing equipment be scrapped to permanently remove it from service. This ensures that emission reductions are real and prevents the existing equipment from being moved into another locale to continue emitting high levels of pollutants.
- a. Destruction of the equipment may occur either at an air district approved salvage yard or another facility in conjunction with an air district salvage inspection.

- b. Both the existing engine and equipment must be destroyed. Refer to Section D.1.(P) for the engine destruction method. The destruction method of the equipment will vary depending on the structure of the equipment:
 - i. Equipment with permanent frame rails running the length of the equipment: complete cuts of both frame rails between the front and rear axles.
 - ii. Equipment with removable/bolt-on frame rails: structural damage, with cuts or otherwise, that renders the main body of the equipment inoperable and unrepairable.
 - iii. Equipment without frame rails: structural damage, with cuts or otherwise, that renders the main body of the equipment inoperable and unrepairable.
 - iv. Articulated equipment: damage, cuts or otherwise, to the articulation joints of front and rear halves of the equipment so that neither half can be joined.
 - v. Other equivalent methods of destruction are acceptable if approved by the air district.
- c. The existing engine and equipment must be destroyed within 60 days of being replaced. Documentation of the destruction must be provided to the air district within 10 days of destruction.
- d. Funding is not available for the salvage of any existing equipment.
- e. The existing equipment salvage value will be negotiated between either the applicant, the dealership, and/or the salvage yard.
- f. A salvage inspection of the existing equipment must be performed by either the air district or a contracted salvage yard.
- g. Air districts which perform their own salvage inspections must be notified within 10 days of destruction so that a salvage inspection can occur.
- h. Salvage inspection must include clear photographs of the following views:
 - i. DOORS EIN (if applicable)
 - ii. Equipment serial number

- iii. Engine serial number either stamped on the block or on the tag
 - iv. Destroyed engine block as described in Section D.1.(P).
 - v. Cut structural components as described in Section D.4.(E)(4)b.
 - vi. Other views dependent on the method of equipment destruction
- i. Salvage inspection of the existing equipment must be completed prior to disbursement of funds.

(F) Replacement Equipment Requirements

- (1) The replacement equipment must serve the same function and perform the same work equivalent as the existing equipment (e.g., replacement of an agricultural tractor with another agricultural tractor).
- (2) Only items essential to the operation of the equipment and the minimum attachments normally sold with the original equipment, as determined by the air district, are eligible for reimbursement on the replacement equipment. Equipment owners may remove non-emission related body components and place them on the replacement equipment as long as the components do not exist on the replacement equipment and are not part of the paid components for the replacement equipment.
- (3) Applicants may purchase the replacement equipment from a private party, provided all required documentation is submitted and approved. This includes warranty requirements and all other equipment replacement requirements.
- (4) If an applicant elects to install a retrofit with the replacement equipment, then the retrofit must be installed prior to equipment delivery to the grantee and must stay in operation on the replacement equipment for the project life. The retrofit must meet all the requirements per Section D.3.
- (5) Warranty Requirements
 - a. All new or used replacement equipment must have a minimum one-year or 1600-hour powertrain warranty. The warranty must cover parts and labor. A separate supplemental minimum one-year or 1600-hour power and drivetrain warranty must be

purchased if the equipment does not have one. The supplemental warranty costs are not eligible for funding.

- b. It is recommended that the highest grade warranty be purchased in order to avoid expensive repairs in the future.
- c. Warranty documentation must be provided to the air district.

(6) Post-Inspection Requirements

- a. Post-inspection of the replacement equipment must be completed prior to disbursement of funds.
- b. The post-inspection must include clear photographs of the following views:
 - i. Pictures(s) of full equipment
 - ii. Equipment serial number
 - iii. Engine serial number and engine information
 - iv. Retrofit (if available)
 - v. Hour meter reading

(G) Air District Requirements

- (1) Air districts must establish an off-road equipment replacement plan before funding projects. The plan must include criteria for the following:
 - a. Development of grantee contracts which must include a generic statement of work
 - b. Inspections (pre-, post-, salvage). The required digital format for the inspections photographs must be specified.
 - c. Reimbursement procedures
 - d. Monitoring and enforcement considerations
 - e. If applicable, for air districts that contract with dealers and salvage yards, the off-road equipment replacement plan must identify the air district's requirements for dealer and/or salvage yard contracts, and the process for oversight and review of program requirements that are expected of each entity, and the repercussions for non-compliance with the terms of the contract

for each entity. For air districts that contract with dealer(s), liaison training must be provided to the dealership staff.

- (2) Air districts may fund equipment replacement projects through a regional program administered by a designated air district. The designated air district could be either an air district located within the regional program or a large air district located outside of the regional program. A regional equipment replacement implementation plan must be established, containing all the required components as required in an individual air district's equipment replacement implementation plan. A regional equipment replacement plan must also contain a detailed description of the funding mechanism among the participating air districts. All air districts participating in the regional program must sign the regional equipment replacement implementation plan and must adhere to all the requirements specified in such regional implementation plan.
- (3) Air districts are encouraged, but are not required to establish contracts with dealers and salvage yards for participation in the program.
- (4) Air districts must ensure the following are performed:
 - a. Pre-inspection of the existing equipment. This may be performed by an air district approved dealer.
 - b. Verification that the replacement equipment proof of sale and if applicable, proof of financing have been received from the dealer or participant.
 - c. Post-inspection of the replacement equipment. This may be performed by an air district approved dealer.
 - d. Salvage inspection of the existing equipment. This may be performed by an approved salvage yard.
 - e. Verification that all post-inspection of replacement equipment and salvage inspection of existing equipment were completed and all documentation is submitted and approved prior to disbursement of funds.
- (5) The air district is allowed to make full payment to the dealer at the time the dealer delivers the replacement equipment to the applicant under the following framework:
 - a. The air district must complete the pre-inspection of the existing equipment and post-inspection of the replacement equipment to

make sure that all equipment complies with program requirements.

- b. The air district must sign a contract with the dealer and the salvage yard that contains, at a minimum, the program requirements that are expected of each entity and the repercussions for non-compliance with the terms of the contract for each entity. This shall include, but is not limited to, the requirement that the dealer delivers the existing equipment to a qualified salvage yard within 30 days of the date that the existing equipment was turned in to the dealer by the applicant.
- c. The air district must ensure the equipment is scrapped within 60 days of the salvage yard's receipt of the equipment through salvage inspection with the salvage yard to properly document the destruction of the existing equipment in accordance with the Moyer Program equipment replacement program requirements.

(H) Dealer Requirements

- (1) Equipment dealers that enter into a contract with an air district must:
 - a. Provide basic information to potential applicants about the equipment replacement category. Air districts must also provide liaison training to dealership staff.
 - b. Inform potential applicants of rights and responsibilities as outlined in the air district and ARB guidelines.
 - c. Help the potential applicants correctly complete the application. It is important that the participant understands the meaning of the program and the subsequent air district contract if approved for funding. The air district will provide all forms and certificates as appendices to the application.
 - d. Ensure that an application package is complete. The dealer must verify that all the following items are included in the application package:
 - i. A signed and complete application.
 - ii. All documentation as required in Sections D.4.(E)(1) and (2).
 - iii. The following information must also be included in the documentation:

(a) Make

- (b) Model
- (c) Model year
- (d) Equipment serial number
- (e) Engine make
- (f) Engine serial number
- (g) Expected delivery date of existing equipment

iv. Documentation of replacement equipment warranty.

e. Submit the completed application package to the air district.

- (2) After the application and all required documentation have been approved by the air district, the dealer must provide the air district with proof of sale and if applicable, proof of financing of the replacement equipment. The financing package will enable the air district to determine the reimbursement costs that may be accrued in case the participant defaults on the contracted performance requirements. Proof of project financing can be a document showing the lender and the amount loaned, which at a minimum is a copy of the check given to the dealer equal to the portion of the project that was not Moyer Program funded. Proof of project financing is always required unless the grantee paid cash for the portion of the project that was not Moyer Program funded.
- (3) Prior to releasing the replacement equipment to the participant, the dealer must have documentation of an air district pre-inspection of the existing equipment and the post-inspection of the replacement equipment. Alternatively, if approved by the air district to do pre- and post-inspections, the dealer must verify that photographs of the existing equipment and the replacement equipment, as defined in Sections D.4.(E)(3)i. and (F)(6)b., are clear prior to submitting them to the air district.
- (4) Provide documentation certifying that the existing equipment will be received by a contracted salvage yard within 30 days.

(I) Salvage Yard Requirements

- (1) Equipment salvage yards must enter into an agreement with the air district to qualify for participation.
- (2) Contracted salvage yard(s) must:

- a. Destroy the existing equipment and engine within 60 days of receipt of the existing equipment in accordance with the program guidelines.
- b. Provide the air district with all photographs required under the air district's salvage inspections requirements per Section D.4.(E)(4)h. below within ten business days of salvaging the existing equipment.
- c. For each project, provide the following information:
 - i. Make
 - ii. Model
 - iii. Model year
 - iv. Serial number
 - v. Engine make
 - vi. Engine serial number
 - vii. Delivery date of the existing equipment
- d. Submit a completed certificate of equipment destruction or other similarly approved documentation to the air district.

E. Projects subject to the In-Use Off-Road Diesel-Fueled Fleets Regulation (Off-Road Regulation) (CCR, title 13, section 2449 et. seq.)

1. The existing equipment must be registered in DOORS.
2. Fleets must be in compliance with the regulation in order to be eligible for and receive funding. Fleets subject to the Off-Road Regulation that meet the final compliance requirements of the Off-Road Regulation are eligible for funding, and are exempt from the requirements of Section E.2.(E) through (I).
 - (A) Applicants must submit information regarding fleet size and compliance status. All documentation submitted must be signed and dated by the applicant and include language certifying that the fleet list provided is accurate and complete. Air districts are not required to validate submitted information and will not be held liable if fleet owners falsify fleet information. The following information shall be submitted at the time of application:
 - (1) DOORS ID of the fleet.
 - (2) DOORS EIN of the existing equipment.

- (3) Fleet size information (total horsepower) as reported to DOORS
 - (4) Information to determine compliance with the Off-Road Regulation
 - a. Large fleets and medium fleets are required to show compliance with the Off-Road Regulation.
 - b. Prior to 1/1/2019, small fleets are not required to show compliance with the Off-Road Regulation.
 - (5) For those fleets that have previously received Moyer Program funding, a list of funded equipment with the DOORS EIN of the funded equipment.
 - (6) Large fleets must certify that they have not applied for Moyer Program funding for their off-road diesel fleet in another fiscal year (July 1-June 30) after January 1, 2017, excluding applications for which no funding was ultimately received.
- (B) Applicants must submit to the air district the DOORS EIN of the replacement equipment no later than at post-inspection of replacement equipment.
 - (C) Applicants are not required to submit information on exempted equipment. Information on exempted off-road equipment can be found in the Off-Road Regulation.
 - (D) No emission reductions achieved from a funded project can count towards a fleet's regulatory requirements for the duration of the contract term.
 - (E) Eligibility for a project is based upon the Best Available Control Technology (BACT) requirements of the Off-Road Regulation.
 - (1) Any equipment funded through the Moyer program, and that is still under contract, must be deducted from the amount of equipment eligible for funding. For instance, a fleet that is eligible for funding to reduce emissions for 50 percent of its horsepower, but which has already received funding in previous years to reduce emissions from 20 percent of its horsepower, is only eligible for funding to reduce emissions from 30 percent of its horsepower.
 - (2) Equipment funded through the Moyer program must be included in the fleet's total horsepower from which the BACT requirements of the regulation are calculated.
 - (F) Large Fleets

- (1) Eligible projects for large fleets, as defined in the Off-Road Regulation must provide at least three years emission reductions surplus to the regulation with a corresponding minimum project life of at least three years.
 - (2) Projects must be installed and in operation at least three years before the BACT requirements become effective for the funded equipment.
 - a. The first compliance date for large fleets, as defined in the Off-Road Regulation, is January 1, 2014. The final compliance date is January 1, 2023. Funding for these fleets is available through December 31, 2019.
 - b. Large fleets are eligible for funding once after January 1, 2017. After January 1, 2017, for those large fleets eligible for funding a second or subsequent time, only zero-emission projects are eligible.
 - c. Large fleets may have alternative requirements per Section E.2.(I) below.
- (G) Medium Fleets
- (1) Eligible projects for medium fleets, as defined in the Off-Road Regulation must provide at least three years emission reductions surplus to the regulation with a corresponding minimum project life of at least three years.
 - (2) Projects must be installed and in operation at least three years before the BACT requirements become effective for the funded equipment.
 - (3) The first compliance date for medium fleets, as defined in the Off-Road Regulation is January 1, 2017. The final compliance date is January 1, 2023. Funding for these fleets is available through December 31, 2019.
- (H) Small Fleets (includes Captive Attainment Area Fleets)
- (1) Eligible projects for small fleets, as defined in the Off-Road Regulation must provide at least two years emission reductions surplus to the regulation, with a corresponding minimum project life of at least two years.
 - (2) Projects must be installed and in operation at least two years before the BACT requirements become effective for the funded equipment.

- (3) The first compliance date for small fleets, as defined in the Off-Road Regulation is January 1, 2019. The final compliance date is January 1, 2028. Funding for these fleets is available through December 31, 2025.
 - (l) Surplus Off-Road Opt-In for NOx (SOON) Program
 - (1) Fleets located in air districts that have opted into the SOON program and that are subject to the SOON provisions are eligible for funding in accordance with the Off-Road Regulation (CCR, title 13, section 2449.2) and must meet the applicable criteria in Sections A. through D. in this chapter.
 - (2) Projects funded under SOON, are not subject to Section E above, except for the requirements of Sections E.1., E.2.(A) through (C), and E.2.(l).
3. For more information on eligibility of off-road diesel equipment, please see the Regulation for In Use Off-Road Diesel-Fueled Fleets Carl Moyer Program Implementation Chart available at <http://www.arb.ca.gov/msprog/moyer/guidelines/supplemental-docs.htm>.

F. Projects subject to the Regulation for Cargo Handling Equipment at Ports and Intermodal Rail Yards (CHE Regulation) (CCR, title 13, section 2479)

1. Eligible Engines

- (A) For repower or replacement projects in which the equipment is subject to the CHE Regulation, only Tier 4 Final engines or cleaner are eligible for funding.
 - (B) Replacement engines participating in the averaging, banking and trading program that are certified to FEL higher than the applicable emission standards, as designated on the Executive Order, are not eligible for funding.
2. Eligible projects must provide at least three years of emission reductions surplus to the regulation, with a corresponding minimum project life of at least three years. Cargo handling fleets that have met the final compliance requirements of the CHE Regulation are eligible for funding.

G. Projects subject to the Large Spark Ignition Engine Fleet Requirements (LSI Fleet Regulation) (CCR, title 13, section 2775 et. seq.)

- 1. Eligible funding must provide at least three years of emission reductions surplus to the LSI Fleet Regulation, with a corresponding minimum project life of at least three years.

2. Large and Medium Forklift Fleets and Fleets of Four or More Sweeper/Scrubbers, Ground Support Equipment, and/or Industrial Tow Tractors: In order to be eligible for funding, large and medium forklift fleets and fleets of four or more non-forklift LSI equipment must meet the final fleet average emission level applicable on January 1, 2013.
3. Agricultural Crop Preparation Forklift Fleets Model Year 1990 and Newer: These fleets are required to either retrofit, repower, or replace 100 percent of their fleet by January 1, 2012, or currently meet a 3.0 g/bhp hr fleet average HC + NO_x level. Fleets that have met the 3.0 g/bhp-hr fleet average can apply for funding. Additionally, in accordance with SBx2 3 (H&SC § 44282.5(a)), fleets that have retrofitted/repowered 20 percent of their fleet in compliance with the regulation are eligible for funding up to the final compliance date. In order to be eligible, these projects must be under executed contract and must be installed and in operation prior to the applicable compliance date.
4. LSI fleets that have met the final compliance requirements of the LSI Fleet Regulation are eligible for funding. Due to the regulatory requirements for rental and lease equipment subject to the LSI Fleet Regulation, projects that include rented or leased equipment are not eligible.
5. Fleets with equipment not subject to the LSI Fleet Regulation are eligible for funding, including:
 - (A) Agricultural crop preparation non-forklift equipment and pre-1990 forklifts.
 - (B) Forklifts used exclusively in fields to harvest and maintain crops.
 - (C) Non-forklift LSI equipment such as aerial lifts, lawn and garden tractors, commercial turf equipment, mining and construction equipment, and industrial equipment.
 - (D) Small fleets (one to three forklifts and/or one to three sweepers/scrubbers, industrial tow tractors, or pieces of airport ground support equipment (airport GSE)).
6. Required Off-Road LSI Fleet Information: For forklifts, sweeper/scrubbers, airport GSE, and/or industrial tow tractors, an applicant's fleet size impacts project eligibility. Applicants must submit information regarding fleet size and compliance status. All documentation submitted must be signed and dated by the applicant and include language certifying that the fleet list provided is accurate and complete. Air districts are not required to validate submitted information and will not be held liable if fleet owners falsify fleet information.
 - (A) Large/Medium/Non-Forklift Fleets: For large, medium, and non-forklift fleets subject to the LSI Fleet Regulation, applicants are required to report compliance records for the entire statewide fleet as described in the regulatory language (CCR, title 13, section 2775.2).

- (1) DOORS ID of the fleet.
 - (2) DOORS EIN of the existing equipment.
 - (3) Fleet size information (total number of forklifts; total number of non-forklift LSI equipment).
 - (4) Information to determine compliance with the LSI fleet Regulation. Large and medium fleets are required to show compliance with the applicable final fleet average emission level.
- (B) Small Fleets: Small fleets are not required to maintain compliance records, but for the purposes of determining project eligibility, air districts must obtain the following information for the entire statewide fleet:
- (1) Equipment identification number (equipment identification number, fleet assigned identification, etc.)
 - (2) Equipment type (e.g., forklift, GSE, etc.)
7. If applicable, applicants must submit to the air district the DOORS EIN of the replacement equipment not later than at post-inspection of the replacement equipment.
8. Applicants are not required to submit information on exempted equipment (except as noted above for small fleets). Information on exempted LSI equipment can be found in CCR, title 13, sections 2775(b), 2775.1(c) (4), and 2775.1(d-f) of the Final Regulation Order (<http://www.arb.ca.gov/regact/lore2006/oalapprovedfro.pdf>).

H. Projects subject to the Airborne Toxic Control Measure for Diesel Particulate Matter from Portable Engines Rated at 50 Horsepower and Greater (Portable Engine ATCM) (CCR, title 17, section 93116 et. seq.)

- 1. In order to be eligible for repower projects, diesel engines regulated under the Portable Engine ATCM must be permitted or registered in an air district or registered in the Portable Equipment Registration Program. If the portable engine is not required to be permitted or registered, documentation must be included in the project file from the air district stating that a permit or registration is not required to operate in the air district.
- 2. In order to be eligible for funding, fleets must be fully compliant with the regulatory requirements in effect in 2020.
- 3. For more information on eligibility of engines used in portable equipment, please see the Portable Engine Airborne Toxic Control Measure Implementation Chart available at: <http://www.arb.ca.gov/msprog/moyer/guidelines/supplementaldocs.htm>.

I. Projects subject to the Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen and Other Criteria Pollutants from In-Use Heavy-Duty Diesel-Fueled Vehicles (Statewide Truck and Bus Regulation) (CCR, title 13, section 2025)

This regulation impacts the eligibility of all on-road heavy-duty diesel-fueled and alternative diesel-fueled vehicles operated in California with a manufacturer's GVWR greater than 14,000 pounds. Although this regulation primarily affects vehicles with on-road engines, some vehicles with off-road engines are also covered. Any application for Moyer Program funding to replace a vehicle with an off-road engine that is subject to an on-road regulation must comply with the applicable surplus requirements described in Chapter 4. For example, a yard truck with an off-road engine that is subject to the Statewide Truck and Bus Regulation (including yard trucks used primarily in agricultural operations) must meet the applicable on-road surplus requirements described in Chapter 4, Section C.2., and must also comply with all off-road project criteria described in this chapter.