

Chapter 7: OFF-ROAD COMPRESSION-IGNITION EQUIPMENT

This chapter describes the minimum criteria and requirements for Carl Moyer Program mobile, self-propelled off-road compression-ignition (CI) projects, such as construction and agricultural equipment.

This chapter does not cover stationary and portable agricultural equipment (see Chapter 10). Criteria and requirements for the off-road equipment replacement category can be found in Chapter 9. Local air districts may set more stringent requirements based upon local priorities.

I. Projects Eligible for Funding

ARB has adopted two fleet rules affecting off-road CI equipment: the In-Use Off-Road Diesel Vehicle Regulation (Off-Road Regulation) and Cargo Handling Equipment at Ports and Intermodal Rail Yards Regulation (CHE Regulation). There are limited funding opportunities for equipment subject to these rules.

**Table 7-1
Summary of Off-Road CI Engine Funding Opportunities**

Equipment Type	Subject to ARB Fleet Rule?	Moyer Funding Opportunities ¹
Mobile agricultural equipment	No	Funding opportunities exist for engine repowers and retrofits.
Cargo handling equipment at ports/ intermodal rail yards	Cargo Handling ² Equipment Regulation	Very limited opportunities.
Most other off-road equipment (e.g. construction, mining, rental, airport ground support and other industries)	Off-Road Regulation ³	Small fleets: Tier 1 and cleaner repowers; retrofits through 2/29/12 – limited opportunities for retrofits after this date. Medium and large fleets: Limited opportunities.

¹ Limited opportunities means a fleet's compliance status with the ARB regulation must be determined. Contact district Moyer Program staff or consult fleet rule Moyer implementation charts at: <http://www.arb.ca.gov/msprog/moyer/guidelines/supplemental-docs.htm> in addition to these guidelines.

² Regulation for Mobile Cargo Handling Equipment at Ports and Intermodal Rail Yards: <http://www.arb.ca.gov/ports/cargo/cargo.htm>

³ Regulation for In-Use Off-Road Diesel Vehicles” <http://www.arb.ca.gov/msprog/ordiesel/ordiesel.htm>

Project Types: Taking the above table into consideration, the following categories are eligible projects:

- **Repower Existing Equipment Repowers**
- **Retrofit Purchase**
- **New Equipment Purchase**: Case-by-case approval.
- **Equipment Replacement**: Purchases of new or used CI equipment replacing an uncontrolled, fully functional CI piece of equipment may be eligible. For these projects, refer to Chapter 9 or the Off-Road Voucher Incentive Program.

Please see Section IV (Project Criteria) for detailed minimum eligibility requirements for all off-road CI project categories. Projects may be subject to more stringent requirements as described in Section III.

II. Maximum Eligible Funding Amounts

The Carl Moyer Program only pays the incremental cost of clean air projects. Table 7-2 specifies the maximum eligible funding for each project type. All projects are also subject to the cost-effectiveness threshold as defined in Chapter II – General Criteria and surplus requirements as defined in the Project Criteria below.

**Table 7-2
Maximum Percentage Eligible for
Carl Moyer Off-Road Compression-Ignition Projects**

Project	Maximum Amount Eligible for Carl Moyer Program Funding
Tier 1 Repower	75 percent
Tier 2 Repower	80 percent
Tier 3 and Tier 4	85 percent
Retrofit	100 percent

III. Regulatory Background

New engine and in-use standards have progressively and substantially reduced NOx and PM emissions from off-road diesel equipment.

In-Use Regulations

ARB In-Use Off-Road Diesel Vehicle Regulation: This regulation applies to self-propelled diesel-fueled vehicles with engines 25 horsepower and greater that cannot be registered and licensed to drive on-road. These vehicles are commonly used in construction, mining, rental, airport ground support and

other industries. The initial compliance dates are earliest for large fleets, followed by medium fleets, and then small fleets. Table 7-3 lists the initial compliance dates and the regulatory requirements for the different fleet sizes.

**Table 7-3
In-Use Off-Road Diesel Vehicle Regulation Initial Compliance Dates and
Regulatory Requirements**

Fleet Size	Description*	Initial Compliance Date	Regulatory Requirements
Large	A fleet with a total maximum power greater than 5,000 horsepower	March 1, 2010	PM and NOx
Medium	A fleet that is not a small or large fleet	March 1, 2013	PM and NOx
Small	A fleet with a total maximum power of less than or equal to 2,500 hp	March 1, 2015	PM

* Complete fleet size definitions may be found in Section VI.

Detailed information regarding ARB’s In-Use Off-Road Diesel Vehicle Regulation can be found at:

<http://www.arb.ca.gov/msprog/ordiesel/ordiesel.htm>

- **ARB’s Cargo Handling Equipment at Ports and Intermodal Rail Yards Regulation:** This regulation establishes best available control technology (BACT) requirements for new and in-use cargo handling equipment that operate at California’s ports and intermodal rail yards. The regulation requires in-use yard trucks to meet BACT performance standards primarily through accelerated turnover of older yard trucks to those equipped with 2007 model year and later on-road engines. Non-yard truck equipment is also required to meet BACT requirements, which is a menu of options that includes replacement to cleaner on-road or off-road engines and/or the use of retrofits. Cargo handling equipment that does not operate at a port or intermodal rail yard is not subject to this regulation but may be subject to the Off-Road Regulation.

Detailed information regarding ARB’s Cargo Handling Regulation can be found at: <http://www.arb.ca.gov/msprog/offroad/cargo/cargo.htm>.

Emission Standards

- **Off-Road Compression Engine Regulations:** ARB and U.S. EPA have adopted regulations for exhaust emission standards for new off-road engines and equipment. These engine exhaust emission standards may be found in Table 7-4. The project criteria in Section IV detail the availability of funding for engines manufactured under these provisions.

**Table 7-4
ARB and U.S. EPA Exhaust Emission Standards for
New Off-Road Diesel Engines ≥ 25 hp
(g/bhp-hr)**

Maximum Rated Power (hp)	Tier	Model Year	NOx	HC	NOx+NMHC	CO	PM
25=<50	Tier 1	1999-2003 ^(a)	—	—	7.1	4.1	0.60
	Tier 2	2004-2007	—	—	5.6	4.1	0.45
	Tier 4 Interim	2008-2012	—	—	5.6	4.1	0.22
	Tier 4	2013 and later	—	—	3.5	4.1	0.02
50=<75	Tier 1	1998-2003 ^(a)	6.9	—	—	—	—
	Tier 2	2004-2007	—	—	5.6	3.7	0.30
	Tier 3 ^(b)	2008-2011	—	—	3.5	3.7	0.30
	Tier 4 Interim	2008-2012	—	—	3.5	3.7	0.22
	Tier 4	2013 and later	—	—	3.5	3.7	0.02
75=<100	Tier 1	1998-2003 ^(a)	6.9	—	—	—	—
	Tier 2	2004-2007	—	—	5.6	3.7	0.30
	Tier 3	2008-2011	—	—	3.5	3.7	0.30
	Phase-Out						
	Phase-In						
	Alternate NOx ^(c)	2012-2014	2.5	0.14	—	3.7	0.01
	Tier 4	2015 and later	0.3	0.14	—	3.7	0.01
100=<175	Tier 1	1997-2002 ^(a)	6.9	—	—	—	—
	Tier 2	2003-2006	—	—	4.9	3.7	0.22
	Tier 3	2007-2011	—	—	3.0	2.6	0.22
	Phase-Out						
	Phase-In						
	Alternate NOx ^(c)	2012-2014	2.5	0.14	—	3.7	0.01
	Tier 4	2015 and later	0.3	0.14	—	3.7	0.01
175=<300	Tier 1	1996-2002	6.9	1.0	—	8.5	0.40
	Tier 2	2003-2005	—	—	4.9	2.6	0.15
	Tier 3 ^(d)	2006-2010	—	—	3.0	2.6	0.15
	Phase-Out						
	Phase-In						
	Alternate NOx ^(c)	2011-2013	1.5	0.14	—	2.6	0.01
	Tier 4	2013 and later	0.3	0.14	—	2.2	0.01
300=<600	Tier 1	1996-2000	6.9	1.0	—	8.5	0.40
	Tier 2	2001-2005	—	—	4.8	2.6	0.15
	Tier 3 ^(d)	2006-2010	—	—	3.0	2.6	0.15
	Phase-Out						
	Phase-In						
	Alternate NOx ^(c)	2011-2013	1.5	0.14	—	2.6	0.01
	Tier 4	2013 and later	0.3	0.14	—	2.2	0.01
600=<750	Tier 1	1996-2001	6.9	1.0	—	8.5	0.40
	Tier 2	2002-2005	—	—	4.8	2.6	0.15
	Tier 3 ^(d)	2006-2010	—	—	3.0	2.6	0.15
	Phase-Out						
	Phase-In						
Alternate NOx ^(c)	2011-2013	1.5	0.14	—	2.6	0.01	

≥750	Tier 4	2013 and later	0.3	0.14	—	2.2	0.01
	Tier 1	2000-2005	6.9	1.0	—	8.5	0.4
	Tier 2	2006-2010	—	—	4.8	2.6	0.15
	Tier 4 Interim	2011-2014	2.6	0.30	—	2.6	0.07
	Tier 4	2015 and later	2.6	0.14	—	2.6	0.03

^(a) EPA model years, ARB model year for Tier 1 starts at 2000 for 25=<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) The implementation schedule shown is the three-year alternate NOx approach. Other schedules are available.

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

IV. Project Criteria

These criteria provide the minimum requirements for Carl Moyer Program off-road compression-ignition projects.

(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
 - (D) Farm equipment (all projects) 10 years

A longer project life may be granted case-by-case approval if an applicant provides justifying documentation. The maximum project life does not consider regulatory requirements and may be shorter. Districts are required to offer a 10 year project life for farm equipment; however, applicants may request a project life less than 10 years. Regulatory requirements may reduce actual project lives below these maximum values.

- (2) Propulsion engines greater than 25 horsepower on mobile off-road equipment are eligible for funding.
- Auxiliary engines on mobile equipment and portable engines are not eligible for funding.
 - For projects in which the actual engine horsepower cannot be determined based on the engine label, manual, and engine records, then the engine horsepower can be estimated by the following formula:
Engine hp = Power Take Off (PTO) hp X 115%.
- (3) Emission reduction technologies must be certified/verified by ARB or by the United States Environmental Protection Agency (EPA) for federally preempted engines 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 at least 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 at least two years of historical fuel usage documentation specific for the equipment being funded. Documentation may include fuel logs, purchase receipts or ledger entries.
- (5) For the determination of emission reductions, future annual hours of equipment operation must be based only on readings from an installed and fully operational hour meter. If equipment does not have a functioning hour meter at the time of the project, the hour 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. Alternatively, if fuel usage has been approved by ARB 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) The certification emission standards and Tier designation for the engine must be determined from the Executive Order or U.S. EPA Certification 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>.
- (7) Engines that are participating in the "Tier 4 Early Introduction Incentive for Engine Manufacturers" program, as detailed in Cal. Code Regs., tit. 13, § 2423(b)(6), are eligible for Carl Moyer Program funding provided that they are certified to the final Tier 4 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. Districts must retain this documentation in the project file.
- (8) For equipment with baseline engines manufactured under the flexibility provision, detailed in Cal. Code Regs., tit. 13, § 2423(d), baseline emission rates shall be determined by using the previous applicable Tier emission standard for that engine model year and horsepower rating. The ARB Executive Order for these engines indicates that the engines are certified under this provision. Districts must retain this documentation in the project file.
- (9) 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.

- (10) As a result of the Off-Road Regulation, districts must be able to determine an applicant's fleet size in order to determine project eligibility. All documentation submitted must be signed and dated by the applicant, and include language certifying that the fleet list provided is accurate and complete.
- Applicants should use the online fleet average calculator (<http://arb.ca.gov/msprog/ordiesel/documents/documents.htm>) to determine their fleets' compliance status and submit the information to the districts.
 - Applicants are not required to submit information on exempted equipment. Information on exempted off-road equipment can be found in the Off-Road Regulation, Cal. Code Regs., tit. 13, § 2449(e)(3-4), 2449(e)(7), 2449(e)(10-13).

(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) 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.
- (4) Equipment manufactured under the "Flexibility Provisions for Equipment Manufacturers", as detailed in Cal. Code Regs., tit. 13, § 2423(d), are ineligible for Carl Moyer Program funding as a replacement engine.
- (5) For repower plus retrofit projects, the datalogging cost can be included in the total project cost.
- (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 or U.S. EPA Certificate of Conformity with the certified emission standards is required to determine the appropriate emission standard. If the engine family matching the Executive Order or Certificate of Conformity 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 not available 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 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. 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 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 district staff.
- (8) Notwithstanding Section IV(b)(7), repower to Tier 1 is eligible for funding only in the following cases:
- (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, Cal. Code Regs., tit. 13 , § 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 at the time a district reviews the application for eligibility, the applicant must

install the highest level verified retrofit, 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 the Off-Road Regulation, Cal. Code Regs., tit. 13, § 2449(e)(8).
- (10) If offered by a District, an applicant may opt-out of the default retrofit requirement for equipment not subject to an approved in-use regulation.
- (A) Applicants must sign a waiver acknowledging that due to future regulations they may be required to install a retrofit on the funded equipment at their own cost.
 - (B) Districts that offer the waiver and 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. For the sole purpose of ranking projects, when calculating cost-effectiveness, 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.
 - (C) 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.
 - (D) 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 an ARB-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>.

- (1) 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.
- (2) 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. The datalogging cost of a retrofit-only project cannot be included in the total project cost.
- (3) Carl Moyer funded projects may not be used to delay compliance and will receive no additional credit applicable to the In-Use Off-Road Regulation.
- (4) Interim Tier 4 off-road compression ignition engines equipped with original engine manufacturer aftertreatment devices are ineligible for retrofit funding due to issues with engine warranty and anti-tampering provisions.

(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) Projects Subject to the In-Use Off-Road Diesel Vehicle Regulation

- (1) 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. For large and medium fleets, very limited funding opportunities exist.
- (2) Large Fleets
The first compliance date for large fleets is March 1, 2010. Fleets must be in compliance with the regulations three years early in order to receive 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).
- (3) Medium Fleets
The first compliance date for large fleets is March 1, 2013. Fleets must be in compliance with the regulations three years early in order to receive funding. Additionally, to ensure that projects are surplus to regulatory

requirements fleets are only eligible to receive funding once after July 26, 2007. Medium fleets may have additional requirements, see Section IV(e)(7).

(4) Small Fleets

Small fleets qualify for incentive funds in two ways:

- (A) PM Reductions: 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. Small fleets are also eligible for funding to turnover to an engine equipped with an original engine manufacturer (OEM) filter. After March 1, 2012, funding opportunities are limited.
- (B) NOx and ROG Reductions: Small fleets have no NOx or ROG requirements in the regulation and are not required to turnover their equipment. As such, funding for NOx and ROG reductions will always be eligible for incentive funds. Fleet owners will be eligible for grants based only on NOx and ROG reductions. Therefore, 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.

- (5) Captive attainment area fleets are only subject to the PM requirements of the regulation regardless of fleet size. Fleets may meet their PM requirements either by retrofitting their equipment with PM filters or repowering with an engine equipped with an OEM filter. Funding for captive attainment area fleets 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 compliance status of the fleet.

(6) SOON Program

- 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.
- Participating fleets that receive SOON funds may be eligible to receive funds more than once.
- Interested fleets should contact their local air district to determine if this program is available in their air district.

- (7) For more information on eligibility of off-road diesel equipment, please see the In-Use Off-Road Diesel Vehicles Regulation 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**
- (1) 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. Much of the cargo handling equipment must already be in compliance with the regulation. Therefore, very limited funding opportunities exist.
- (2) 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 at <http://www.arb.ca.gov/msprog/moyer/guidelines/supplemental-docs.htm>.

V. Minimum Project Application Requirements

Districts must ensure project applications include the specific information needed to determine project eligibility and populate the Carl Moyer Reporting Log, including the information needed to track the project and calculate project cost-effectiveness.

VI. Definitions

For the purposes of the Carl Moyer Program, off-road compression-ignition project definitions are as follows:

BACT: Best Available Control Technology.

Captive Attainment Area Fleet: a fleet or an identified subpart of the fleet (fleet portion, consistent with, Cal. Code Regs., tit. 13, § 2449(d) in which all of the vehicles in the fleet or fleet portion operate exclusively within the following counties: Alpine, Colusa, Del Norte, Glenn, Humboldt, Lake, Lassen, Mendocino, Modoc, Monterey, Plumas, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz, Shasta, Sierra, Siskiyou, Trinity, Tehama, and Yuba. A fleet or identified fleet portion that operates one or more vehicles outside the counties listed above is not a captive attainment area fleet.

Class 7 Forklift: Rough terrain forklift trucks (pneumatic tires).

Farm Equipment: Off-road equipment used in agricultural operations as defined in the Regulation for In-Use Off-Road Diesel Vehicles, Cal. Code Regs., tit. 13, § 2449(c)(1).

Federally Preempted Engines: Engines that fall under the Clean Air Act, Section 209(e), that do not have an ARB certification.

Fleet Size for Vehicles Subject to the Off-Road Regulation: These are the definitions as stated in the Off-Road Regulation.

Large Fleet: A fleet with a total maximum power greater than 5,000 horsepower. A fleet must meet large fleet requirements of the Off-Road Regulations if the total vehicles under common ownership or control would be defined as a large fleet. All fleets owned by the United States, the State of California, or agencies thereof (i.e., an agency in the judicial, legislative, or executive branch of the federal or state government) are considered as a unit whole and must meet the large fleet requirements of the Off-Road Regulation.

Medium Fleet: A fleet that is not a small or large fleet.

Small Fleet: A fleet with a total maximum power of less than or equal to 2,500 hp that is owned by a business, non-profit organization, or local municipality, or a local municipality fleet in a low population county irrespective of total maximum power, or a non-profit training center irrespective of total maximum power.

Mobile Cargo Handling Equipment: Any motorized vehicle used to handle cargo delivered by ship, train, or truck such as yard trucks, rubber tired gantry cranes, top picks, dozers, and excavators. This is the definition as stated in the Cargo Handling Regulation.

Off-Road Compression-Ignition Equipment: Equipment that cannot be registered and driven safely on-road or was not designed to be driven on-road. Newer equipment uses engines certified to the off-road compression-ignition, or diesel, engine standards. This equipment is most commonly used in construction, mining, agriculture, and cargo handling equipment. This does not include stationary agricultural pumps, marine vessels, or locomotives. This is the definition as stated in the Off-Road Regulation.

Retrofit: Any ARB verified device, system, or strategy employed with an in-use diesel vehicle or piece of equipment that is intended to reduce PM and/or NOx emissions.

Tier 1, 2, and 3 Engines: Engines that are subject to Cal. Code Regs., tit. 13, § 2423(b)(1)(A) and/or Title 40, CFR, Part 89.112(a). This also includes engines certified under the averaging, banking, and trading program with respect to the Tier 1, 2, and 3 Family Emission Limits (FEL) listed in Cal. Code Regs., tit. 13, § 2423(b)(2)(A) and/or Title 40, CFR, Part 89.112(d).

Tier 4 Engine: Engines that are subject to the interim, alternate NO_x, phase-in, phase-out or final Tier 4 emission standards in Cal. Code Regs., tit. 13, § 2423(b)(1)(B) and/or Title 40, CFR, Part 1039.101. This also includes engines certified under the averaging, banking, and trading program with respect to the Tier 4 FEL listed in Cal. Code Regs., tit. 13, § 2423(b)(2)(B) and/or Title 40, CFR, Part 1039.101.

Verified: A determination by the ARB Executive Officer that a retrofit meets the requirements of the Verification Procedure, Warranty and In-Use Compliance Requirements for In-Use Strategies to Control Emissions from Diesel Engines.

VII. References

ARB, 2000. Final Regulation Order: Amendments to Off-road Compression-ignition Engine Regulations: 2000 and Later Emissions Standards, Compliance Requirements and Test Procedures.

<http://www.arb.ca.gov/regact/ciengine/ciengine.htm>

ARB, 2005. Final Regulation Order: Amendments to the California Off-road Emissions Regulations for Compression-ignition Engines and Equipment.

<http://www.arb.ca.gov/regact/offrdcie/offrdcie.htm>

ARB, 2006. Final Regulation Order: Regulation for Mobile Cargo Handling Equipment at Ports and Intermodal Rail Yards.

<http://www.arb.ca.gov/regact/cargo2005/cargo2005.htm>

ARB, 2007. Staff Report: Initial Statement of Reasons (ISOR) for the Regulation of In-Use Off-Road Diesel Vehicles.

<http://www.arb.ca.gov/regact/2007/ordiesl07/ordiesl07.htm>