

## Chapter 10: PORTABLE AND STATIONARY AGRICULTURAL SOURCES

This chapter describes the minimum criteria and requirements for Carl Moyer Program portable and stationary agricultural engine projects and non-engine agricultural projects as defined in Health and Safety Code § 39011.5. Requirements for self-propelled agricultural use equipment (e.g. tractors) may be found in Chapter 7: Off-Road Compression Ignition Equipment. Local air districts may set more stringent requirements based on local priorities.

### I. Projects Eligible for Funding

Most engines eligible for funding under this chapter are regulated under either the Stationary ATCM or the Portable ATCM. There are limited funding opportunities for engines subject to this rule.

**Table 10-1  
Summary of Agricultural Sources Funding Opportunities**

| Engine or project type  | Subject to ARB Rule?   | Moyer Funding Opportunities <sup>1</sup>  |
|---|--|---|
| Stationary diesel agricultural engines                        | Agricultural Provisions of the Stationary Engine Air Toxic Control Measure (ATCM) <sup>2</sup> | Uncontrolled engine repowers: Very limited funding opportunity  |
| Portable diesel agricultural engines                          |  | Tier 1 and 2 engine repowers: Eligible through 12/31/13<br>Tier 1 and 2 engine repowers: Limited funding through 12/31/15 |
| Portable diesel agricultural engines                          | Portable Engine ATCM <sup>3</sup>  | Limited funding opportunities   |
| Stationary spark-ignited agricultural engine repower projects | No   | Limited funding opportunities   |
| Electric motors new purchase and repower projects             | No   | Limited funding opportunities   |
| Non-engine agricultural use projects                          | No   | Limited funding opportunities   |

<sup>1</sup>Limited funding opportunities means that a projects funding opportunities may be impacted by the compliance dates of the ATCM. Contact district Moyer Program staff or consult Stationary Diesel Engine Air Toxic Control Measure Moyer implementation charts and Portable Diesel Engine Air Toxic Control Measure Moyer implementation charts <http://www.arb.ca.gov/msprog/moyer/guidelines/supplemental-docs.htm> in addition to these guidelines.

<sup>2</sup>Stationary Engine ATCM: <http://www.arb.ca.gov/diesel/statport.htm#Stationary>

<sup>3</sup> Portable Engine ATCM: <http://www.arb.ca.gov/diesel/peatcm/peatcm.htm>

Project Types: Considering the above table the following categories are eligible projects:

- **Engine Repower.**
- **New Purchase.** The Carl Moyer Program allows funding for the purchase of electric motors for new, non-replacement stationary equipment installations.
- **ARB-verified Retrofit Device**
- **Non-Engine Agricultural Use Projects.** Non-engine agricultural use projects may receive Carl Moyer Program funding with approval from ARB staff on a case-by-case basis.

Please see Section IV (Project Criteria) for detailed minimum eligibility requirements for all agricultural sources project categories.

## II. Maximum Eligible Funding Amounts

The Carl Moyer Program pays only the incremental cost of clean air projects. Table 10-2 summarizes specifies the maximum eligible funding for each project type. All projects are also subject to the cost-effectiveness threshold defined in Chapter 2 – General Criteria and surplus requirements as defined in the Project Criteria below.

**Table 10-2**  
**Maximum Percent Funding for Carl Moyer Portable and Stationary Agricultural Sources Projects**

| <b>Project</b>                | <b>Maximum Eligible for Carl Moyer Program Funding</b> |
|-------------------------------|--|
| Diesel Engine Repower         | 85 percent   |
| Certified SI Engine Repower   | 85 percent   |
| Electric Motor Engine Repower | 85 percent   |
| Electric Motor New Purchase   | 20 percent   |
| Retrofit                      | 100 percent  |

## III. Project Criteria

These criteria provide the minimum requirements for Carl Moyer Program agricultural source projects. All projects must also conform to general criteria of Chapter 2, as well as the requirements described in Chapter XX: Program Administration. Participating districts retain the authority to impose additional or more restrictive requirements to address local concerns.

### (a) General Agricultural Sources Project Criteria

- (1) The maximum project life for agricultural use engine projects is as follows:

|     |  |          |
|-----|--|----------|
| (A) | Diesel engines                         | 7 years  |
| (B) | Spark-ignited engines                  | 7 years  |
| (C) | Electric motors                        | 10 years |
| (D) | Portable Farm equipment (all projects) | 10 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. Districts are required to offer a 10 year project life for portable farm equipment; however, applicants may request a project life less than 10 years. Farm equipment as defined in Appendix B

- (2) In general, projects must have a minimum project life of three years. A one year project life is allowed for engines subject to the agricultural engine requirements in the Stationary Diesel Engine ATCM. In accordance with SBX2\_3, portable farm equipment may be eligible for funding up to the compliance date of an applicable in-use rule. In order to be eligible, portable farm equipment projects must be under fully executed contract, and must be installed in the equipment and in operation prior to the applicable compliance date.
- (3) Engines greater than 25 hp (19 kW) are eligible for funding.
- (4) Rental and agricultural service provider equipment/engine used in agricultural require case-by-case approval by ARB.
- (5) Cost-effectiveness calculations must use the hour based formula as discussed Appendix C. 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.
- (6) 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.
- (7) All case-by-case projects must receive approval from ARB prior to funding. These projects must follow the requirements as described in Chapter 3, Section 28.

- (8) 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 eligible to participate in the Carl Moyer Program. Emission rates shall be determined by using the previous applicable Tier emission standard for that engine model year and horsepower rating.
- (9) 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 may be found at <http://www.arb.ca.gov/msprog/offroad/cert/cert.php>
- (10) 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. The ARB Executive Order for these engines references that the engines are certified under this citation.
- (11) For equipment with baseline engines manufactured under the flexibility provision, as 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. 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.
- (12) Costs for necessary peripheral equipment associated with electric motor projects from the service pole forward (e.g. service pole with guy wire, control panel, motor leads, precast concrete pad, headshaft or gear head and tubing if required for diesel to motor conversion, and up to 150 feet of connecting electric line from the pole forward to the motor) may be included in the grant award amount.
  - (A) Variable frequency devices are eligible for funding if the applicant provides justification for adjustable water needs.
  - (B) Reduced voltage starting (“soft start”) technology is eligible for funding if it is required by the electric service provider. Project applicant must provide the air district documentation from the electric service provider. The district should place a copy of this justification in the project file.
- (13) District match funds may be used for infrastructure purchase and installation (e.g. line extension for electric motor projects for only Moyer qualifying project categories except as prohibited in Health and Safety Code §44287(j)).
- (14) Electrical line extension costs are not eligible for funding if a motor is not included with the project.

- (15) District match funds may be used to offset the higher cost of electricity relative to diesel fuel, if applicable. In this case, the fuel cost difference will be accounted for when calculating the cost-effectiveness of the project.
- (16) In electric motor projects, the applicant must have documentation of payment to the local utility company for power installation. This documentation requirement applies to new motor and repower installations.
- (17) An engine must be rated at greater than 25 hp, which is equivalent to an electric motor greater than 19 kW. An electric motor less than 19kW or 25 hp may be funded if the applicant provides documentation from the equipment dealer that the electric motor less than 19 kW performs the same work as a greater than 25 hp diesel engine.

**(a) Repower**

A repower is the replacement of the in-use engine with an electric motor or a new, current model year engine instead of rebuilding the existing engine to its original specifications.

- (1) A repower of an engine must be with one of the following:
  - (A) A new electric motor.
  - (B) A new off-road diesel engine certified to the current applicable emission standards.
  - (C) A new off-road spark-ignited (SI) engine certified to the current applicable emission standards.
  - (D) A new SI engine that exceeds local district emission requirements and is subject to and complies with local district permitting, monitoring, record keeping and reporting requirements
- (2) New engine/motor repower horsepower sizes greater than 50 increase from the existing engine require a case-by-case approval from ARB.
- (3) One new engine/motor repower for two existing engine requires a case-by-case approval from ARB.
- (4) New engine horsepower size greater than 50 percent of the existing engine will require a case-by-case review by ARB.
- (5) Diesel engines regulated under the Stationary Diesel Engine ATCM greater than 50 hp must be registered (or permitted) in a local air district to be eligible for repower projects.

- (6) If portable diesel engines are required by the local air district to be registered or permitted then these engines must have registration or permits to be eligible for engine repowers.
- (7) SI engines cannot be replaced with diesel engines.
- (8) Electric motors may replace diesel or SI engines.
- (9) Gen set engines are not eligible for repowers.
- (10) A repower of an emissions-controlled SI engine with a new SI engine that meets or exceeds local district emission requirements and is subject to and complies with local district permitting, monitoring, record keeping and reporting requirements, must use an engine that provides a NOx emission reduction of at least 15% from the baseline engine NOx emissions.
- (11) An uncontrolled stationary engine subject to the Stationary Diesel Engine ATCM may use a project life for a repower project with a new diesel engine as follows:

| Horsepower range | Project Life                       |
|------------------|------------------------------------|
| > 750 hp         | 3 year project life until 12/31/11 |
|                  | 2 year project life until 12/31/12 |
|                  | 1 year project life until 12/31/13 |

- (12) A Tier 1 or Tier 2 stationary engine subject to the Stationary Diesel Engine ATCM may use a project life for a repower project with a new diesel engine as follows:

| Horsepower range | Project Life**                       |
|------------------|--------------------------------------|
| < 174 hp         | 3 year project life until 12/31/2012 |
|                  | 2 year project life until 12/31/2013 |
|                  | 1 year project life until 12/31/2014 |
| 175 – 750 hp     | 3 year project life until 12/31/2011 |
|                  | 2 year project life until 12/31/2012 |
|                  | 1 year project life until 12/31/2013 |
| > 750 hp*        | 3 year project life until 12/31/2011 |
|                  | 2 year project life until 12/31/2012 |
|                  | 1 year project life until 12/31/2013 |

\*Tier 4 engines will be available starting in 2015.

\*\*Project life may be determined by the compliance date or 12 years after the initial installation date, whichever is later.

- (13) Uncontrolled portable engine subject to the Stationary Diesel Engine ATCM are not eligible for engine repowers.

- (14) Tier 1 or 2 engine subject to the Portable Diesel Engine ATCM repowers may use a project life until the 2013 fleet compliance requirement if the engine meets the farm equipment definition and is subject to SBX2\_3.
- (15) Engines > 750 hp are not eligible to be repowered with Tier 2 engines.
- (16) 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.
- (17) 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.
- (18) Uncontrolled portable engines owned by rental companies are not eligible for Carl Moyer Program funding due to the Portable Equipment ATCM compliance dates of January 1, 2010 and January 1, 2011.
- (19) Tier 1 and 2 engines owned by rental companies may be eligible for Carl Moyer Program funding.
- (20) Off-road diesel engines must be certified for sale in California and must comply with durability and warranty requirements. Agricultural engines rated less than 175 hp are required to have federal certification, to the extent one exists.
- (21) The use of a non-certified SI engine shall be subject to approval by ARB staff.
  - (A) Non-certified SI engines shall be required to include currently available emission control components such as closed-loop fuel control systems, and three-way catalysts.
  - (B) Non-certified SI engines shall be subject to source testing with an ARB-approved testing procedure, such as ARB Test Method 100, following local district requirements. Source testing shall be conducted upon installation.
  - (C) Non-certified SI engines must be emission tested using a portable analyzer every 1,000 hours of operation and at least annually, or following local district monitoring requirements, whichever is most stringent. The emission tests shall measure NOx and hydrocarbon emissions. An alternative monitoring schedule may be used upon approval by ARB staff.
  - (D) The costs associated with source testing and monitoring requirements for non-certified SI engines are not eligible for funding.
- (22) All engines replaced as part of a repower project must be destroyed and rendered useless, consistent with the requirements of Part III, Section 31(c).

**(b) New Purchase**

A new purchase is an engine or motor that is not replacing an existing engine.

- (1) Engine purchases for new 2008 or later model year non-mobile agricultural equipment can only be electric motors.
- (2) Carl Moyer Program funding may be used for up to 20 percent of the eligible costs associated with a new purchase.

**(c) Retrofit**

A retrofit is a modification to an engine and/or fuel system such that the specifications of the retrofitted engine are not the same as the original engine. More information on retrofits, including a list of currently verified retrofits, may be found at <http://www.arb.ca.gov/diesel/verdev/verdev.htm>.

- (1) A retrofit of an uncontrolled off-road diesel engine that reduces NOx must be with a retrofit kit that is verified to reduce NOx or NOx+NMHC emissions to the applicable current off-road engine Tier standard or less for a given engine size.
- (2) A retrofit of an uncontrolled SI engine that reduces NOx must be with a retrofit kit that is verified to reduce NOx or NOx+NMHC emissions to the currently applicable off-road large spark-ignited engine standard.
- (3) A retrofit of an emission-certified (1996+ model year) off-road diesel engine that reduces NOx must be with a retrofit kit that is verified to reduce NOx or NOx+NMHC emissions by at least 15 percent from the applicable NOx or NOx+NMHC emission standard.
- (4) Retrofit projects that control PM must use the highest level ARB-verified technology available for the engine being retrofitted.
- (5) The cost of the retrofit, filters, and maintenance of the retrofit device needed during the project life may be paid for with incentive funds provided it meets the cost-effectiveness limit.
- (6) Retrofits projects are eligible for up to 100 percent funding.

**Non-Engine Agricultural Use Projects** require a case-by-case approval by ARB prior to receiving Moyer funds.