

Chapter 4: ON-ROAD HEAVY-DUTY VEHICLES

This chapter describes the minimum criteria and requirements for Carl Moyer Memorial Air Quality Standards Attainment Program (Carl Moyer Program) on-road heavy-duty vehicle projects, excluding Fleet Modernization and On-Road Voucher Incentive Program (On-Road VIP) projects (see Chapter 5 and the On-Road VIP Guidelines for more information about these programs). Local air quality management or air pollution control districts may set more stringent requirements based upon local priorities.

A. Projects Eligible for Funding

The Air Resources Board (ARB) has adopted many fleet rules that affect on-road heavy-duty diesel-fueled vehicles (see Section E of this chapter). There are limited funding opportunities for vehicles subject to these rules and regulations.

**Table 4-1
Summary of On-Road Heavy-Duty Funding Opportunities**

Vehicle Type	Subject to ARB Fleet Rule	Moyer Funding Opportunities ¹
Urban Buses	Fleet Rule for Transit Agencies ²	Very limited opportunity
Transit Fleet Vehicles		
Solid Waste Collection Vehicles, excluding transfer trucks	Solid Waste Collection Vehicle Regulation ³	Very limited opportunities for oxides of nitrogen (NOx)
Transport Refrigeration Units (TRU)	TRU Air Toxic Control Measure (ATCM) ⁴	Very limited opportunity
Auxiliary Power Units (APU)	Idling ATCM ⁵	Very limited opportunity; zero emission projects only
Municipal Vehicles and Utility Vehicles	Fleet Rule for Public Agencies and Utilities ⁶	Low-population counties - some opportunity through 2017 High-population counties – very limited opportunity
Drayage Trucks	Drayage Truck Regulation ⁷	Very limited opportunity
Most other On-Road Heavy-Duty Vehicles	Statewide Truck & Bus Regulation ⁸	Limited opportunity for fleets with ten vehicles or less

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

² Fleet Rule for Transit Agencies: <http://www.arb.ca.gov/msprog/bus/bus.htm>

³ Solid Waste Collection Vehicle Regulation: <http://www.arb.ca.gov/msprog/SWCV/SWCV.htm>

⁴ TRU Air Toxic Control Measure (ATCM): <http://www.arb.ca.gov/regact/trude03/fro1.doc>

⁵ Idling ATCM: <http://www.arb.ca.gov/regact/hdvidle/frorev.pdf>

⁶ Fleet Rule for Public Agencies and Utilities: <http://www.arb.ca.gov/msprog/publicfleets/publicfleets.htm>

⁷ Drayage Truck Regulation: <http://www.arb.ca.gov/msprog/onroad/porttruck/porttruck.htm>

⁸ Statewide Truck & Bus Regulation: <http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm>

Project Types: Taking the above table into consideration, the following categories may be eligible for funding:

1. Truck Replacement Projects (Fleet Modernization and On-Road VIP): The replacement of an older, dirtier truck with a newer, cleaner one. Most funding opportunities for on-road heavy-duty trucks are available for trucks in fleets of ten or fewer trucks through Fleet Modernization or On-Road VIP. The existing engine must be model year 2006 or older. Please see Chapter 5 for Fleet Modernization guidelines or the On-Road VIP Guidelines at www.arb.ca.gov/msprog/moyer/voucher/voucher.htm.
2. New Vehicle Purchase: The purchase of new vehicles with engines cleaner than those required by law. Funding opportunities in this source category will be limited due to the lack of availability of new vehicles with engines certified below the 0.20 grams per brake horsepower (g/bhp-hr) NOx emissions standard.
3. Repower Existing Vehicle: Repower with an engine cleaner than that currently in the vehicle. Due to technological constraints presented with newer engines fitting into older chassis, funding opportunities are limited.
4. Retrofit Purchase: The installation of a verified diesel emission control strategy. Diesel particulate filters are required for most on-road heavy-duty diesel vehicles in California, either as original equipment manufacturer (OEM) equipment in new trucks or through phased compliance schedules for older trucks complying with ARB rules and regulations. Funding is limited to retrofits that provide early or extra emission reductions to the regulations.
5. Transport Refrigeration Units (TRU): Due to the Air Toxic Control Measure (ATCM) that sets in-use performance standards for TRUs, projects available for funding are limited.
6. Idling Reduction: Idling reduction projects include electric auxiliary power units (APU), as well as truck stop electrification for both on-board and off-board infrastructure. Funding is limited to projects that provide emission reductions beyond what is required by regulation, such as zero emission technologies.
7. Electric Conversion: the replacement of a fossil-fueled engine and drivetrain with an all-electric motor and drivetrain.

Please see Section D (Project Criteria) for detailed minimum eligibility requirements.

B. Maximum Eligible Funding Amounts

Table 4-2 summarizes the maximum eligible funding for each project type. All projects are also subject to the cost-effectiveness threshold defined in Appendix G, except for

school bus projects which are subject to a unique cost-effectiveness limit as stated in Section E of this chapter.

**Table 4-2
Maximum Funding Amounts for Carl Moyer On-Road Vehicle Projects**

Project Type		Maximum
Non-School Bus Projects	New Vehicle Purchase	25 percent
	Repower	\$30,000
	Retrofit: Highest Level particulate matter (PM)+ NOx	\$20,000
	Retrofit: 2007 Engine Standard Equivalent*	\$10,000
	TRU Retrofit	100 percent
	Idling Reduction Retrofit	100 percent
School Bus Projects	New Zero Emission School Bus Purchase or Electric Conversion	\$400,000
	School Bus Repower	\$70,000
	School Bus Retrofit	\$20,000

* Including ARB verified selective catalytic reduction retrofits

C. Emission Standards

Table 4-3 lists the NOx and PM emission standards for new on-road heavy-duty engines. Urban buses have a separate set of emission standards which are now aligned with those for heavy-duty vehicles.

**Table 4-3
Emission Standards for On-Road Heavy-Duty Diesel Engines
(g/bhp-hr¹)**

Model Year	NOx	PM
2007-2009	1.20 ²	0.01
2010 and later	0.20	0.01

¹ gram per brake horsepower-hour.

² Between 2007-2009, U.S. EPA requires 50 percent of heavy-duty diesel engine family certifications to meet the 0.20 g/bhp-hr NOx standard. Averaging is allowed, and it is expected that most engines will conform to the fleet NOx average of approximately 1.20 g-bhp/hr.

D. Project Criteria

The minimum qualifications for on-road heavy-duty vehicles 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 On-Road Heavy-Duty Vehicle Project Criteria

- (A) Maximum project life for on-road projects:
- | | |
|--|---------------|
| (1) Buses > 60,001 gross combined weight or gross vehicle weight (GVW) – New | 12 years |
| (2) School buses ≥ 33,001 GVW – New | 20 years |
| (3) School buses ≤ 33,000 GVW or Other On-road – New | 10 years |
| (4) Repower Only (No Retrofit) | 7 years |
| (5) School bus Electric Conversions | 5 years |
| (6) Repowers + Retrofits | 5 years |
| (7) Retrofits | 5 years |
| (8) Fleet Modernization | See Chapter 5 |

A longer project life may be approved on a case-by-case basis if applicants provide justifying documentation.

The maximum project life does not consider regulatory requirements that may reduce actual project life below these maximum values.

- (B) On-road heavy-duty diesel vehicles with a gross vehicle weight rating (GVWR) between 8,501 and 14,000 pounds may be considered for Carl Moyer Program funding for new purchase, repower and retrofit projects on a case-by-case basis. Prior to submitting a case-by-case request, the district must review the retrofit Executive Order to confirm that the project vehicle meets all the terms and conditions.
- (C) On-road heavy-duty (HD) vehicles (with GVWR over 14,000 pounds) must be powered by an engine certified to the applicable HD intended service class as shown on the engine certification Executive Order. However, the following cases may be allowed:
- (1) Medium heavy-duty (MHD) engines may be installed in heavy heavy-duty (HHD) vehicles with GVWR up to 36,300 pounds (10 percent higher than 33,000 pounds GVWR) with written warranty verification by the engine and chassis manufacturer. A copy of the written warranty verification must be maintained in the air district project file.
 - (2) Heavy heavy-duty engines may be installed in medium heavy-duty vehicles if necessary for vocational purposes but only if the GVWR are within 10 percent of the HHD intended service class (i.e., GVWR of 29,701 pounds or greater).
- (D) Declaration of Compliance: To receive funding, a fleet owner/operator must be compliant with all federal, state, and local air quality rules and regulations including the Periodic Smoke Inspection Program (PSIP). The application must include a statement of compliance in which the applicant must certify that they are in compliance at the time of application submittal. Districts

must also include the following language with a checkbox for the fleet owner/operator to indicate compliance:

I have read and understand that I am responsible for meeting the requirements of the PSIP. I am either currently in compliance with PSIP requirements or I have paid all penalties for non-compliance and continue to meet requirements since payment.

- (E) To receive funding for a retrofit, a fleet owner/operator must have the retrofitted vehicle that is eligible for a low NOx software upgrade (reflash) reflashed within 60 days of receipt of payment. The fleet owner/operator may self-certify to the air district that the reflash has been performed by submitting receipts of reflash completed or a picture of the “Low NOx Reflash Label” from the reflashed engine to the air district. Most HHD, and some MHD engines manufactured between 1993 through 1998 are eligible for reflash. A list of engines eligible for reflash is available at: <http://www.arb.ca.gov/msprog/hdsoftware/hdsoftware.htm>.
- (F) At least 51 percent of total usage must occur in California. Only usage in California can be used for on-road calculations. If a fleet has recently reported in the Truck Regulations Upload and Compliance Reporting System (TRUCRS) to follow a limited usage compliance option (e.g., Low Mileage Work Truck Option, NOx Exempt Area Option, etc.), and the historical usage is outside of the limits of the option, the grant amount must be decreased to only include the usage limits of the option. Except as provided below, on-road calculations shall be based on projected annual mileage instead of fuel usage or engine hours, due to the fact that the mileage-based exhaust emission factors are more robust. Fuel-based calculations may be used only if documentation of previous fuel use and mileage records submitted to the air district with the application show the project to be at least 30 percent more cost-effective when using fuel-based calculations. If using the fuel-based calculations, 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. Fuel-based analyses are appropriate for projects that involve extended idling, including but not limited to street sweepers and solid waste collection vehicles.
- (G) The emission factors in Appendix D, Tables D-3 and D-4 are based on EMFAC2011 zero-mile based emission factors. Information on EMFAC2011 is available at: <http://www.arb.ca.gov/msei/modeling.htm>. All other on-road emission factors in Appendix D are converted emissions standards based on the engine certification standards. On-road cost-effectiveness calculations shall use the same quantification methodology for the baseline calculation and the reduced emission calculation.

- (1) Mileage-based calculations must use mileage-based emission factors in Appendix D, Tables D-3 and D-4, for the baseline and reduced emission calculation.
 - (2) Fuel-based calculations must use converted emissions standards for the baseline and reduced emission calculation. Converted emissions standards are found in Appendix D, Tables D-1, D-2, D-5 and D-6.
 - (3) Other calculation methods will be considered by ARB on a case-by-case basis.
- (H) Cost-effectiveness calculations for projects with power take-off (PTO) will be considered by ARB on a case-by-case basis. Hours of PTO operation must be documented through hour meter records or data from the emission control module.
- (I) The engine model year and applicable emission standard or family emission limit, not the vehicle model year, must be used to determine the appropriate emissions factors.
- (J) Although electronic monitoring units are not required by the ARB, when an EMU is required by an air district, it is an eligible expense for any category.
- (K) Refuse vehicles and street sweepers often have two engines, one for motive power and one for auxiliary operations. Since only the main engine is eligible for funding, emission benefits are calculated individually for each engine using fuel consumption rates for each unit if available. If individual engine fuel consumption information is not available, the applicant must provide and document an estimate for the typical activities of each engine based on best engineering judgment so that eligible surplus emissions reductions can be determined. The estimate must include factors such as fuel economy, typical operating loads, and hours of operation for each engine.
- (L) Surplus requirements are determined by the regulation to which a project is subject. Any vehicle with an off-road engine that is subject to an on-road regulation must comply with the on-road surplus requirements described in this chapter. For example, a yard truck with an off-road engine that is subject to the Statewide Truck & Bus Regulation must comply with all off-road eligibility and funding criteria described in Chapters 7 and/or 9, as well as all on-road surplus criteria described in Section E.(2) of this Chapter.
- (M) Glider kits are not an eligible expense for Carl Moyer Program funding.

- (N) Case-by-case projects must receive approval from ARB prior to contract execution. These projects must follow the requirements as described in Chapter 3, Section X.
- (O) All existing school buses must have a current CHP safety certification at the time funding is awarded to retrofit or repower the school bus (i.e., the school bus may not have a lapsed CHP safety certification), and must be currently registered with the Department of Motor Vehicles.

2. Compliance Check

After the district receives an application for any on-road project but before contract execution, the district must submit information regarding the project to ARB to check for outstanding violations and previous project funding. The district must also check for compliance with applicable regulations as described below and are not required to validate submitted information and will not be held liable if fleet owners falsify fleet information. All compliance check documentation must be kept in the project file.

- (A) Districts must submit the following information:
 - (1) Violations and Previous Project Funding Check: The district shall email its ARB district liaison the registered owner's name, vehicle identification number (VIN), California Highway Patrol number, Department of Transportation number or Interstate Commerce Commission number for each vehicle to be repowered or retrofitted in the project, as well as all other vehicles in the applicant's fleet. Due to the large number of vehicles that could require compliance checks, air districts are encouraged to submit this data as soon as possible after receipt of the application.
 - (2) Regulations Compliance Check:
 - a. Vehicles Subject to Statewide Truck and Bus Regulation:
 - 1. If the fleet owner reported in the Truck Regulations Upload and Compliance Reporting System (TRUCRS), districts must keep a copy of the fleet owner's summary report or certificate. The report or certificate must show that the fleet is currently compliant. Other compliance tools issued by ARB may be used to show compliance as they become available.
 - 2. If the fleet owner is not required to report in TRUCRS but is required to take action (e.g., replace or retrofit engines in the fleet), the fleet owner may document compliance by providing one of the following for all vehicles in the fleet:

- (a) Proof of purchase showing Verified Diesel Emission Control Strategy (VDECS) family name, serial number, VIN, and retrofit installer.
- (b) Photographs of VDECS labels on engine and retrofit showing family name, serial number, and VIN.
- (c) Photograph of 2007 or later engine label with VIN.

b. Vehicles Subject to Other On-Road Regulations:

1. If the fleet owner does not have documentation from ARB stating that they are currently in compliance, fleet information must be submitted to ARB to check compliance with the regulations. The fleet information needed for the compliance check may be more than that specified in section D.2.(A)(1) such as engine model year, GVWR, emission control systems, fleet compliance records, etc.
2. Applicants subject to the Public Agency and Utility Regulation must follow Section A.2. to demonstrate compliance.
3. A regulation index for statewide on-road regulations is available at <http://www.arb.ca.gov/msprog/truckstop/azregs/azregs.htm>

(B) Compliance Check Procedure:

- (1) The liaison will forward the information electronically to the responsible parties at ARB. The liaison will email the air district the results of the compliance check within 10 business days.
- (2) If the compliance check indicates that the vehicle has already received funding and is still under contract, the air district will be notified and the application must be rejected.
- (3) If the compliance check indicates there is an outstanding violation with any truck in the applicant's fleet or that the fleet is not in compliance with statewide regulations, the air district shall inform the engine owner in writing that no disbursement may be made until the owner provides proof that each violation has been corrected and each fine has been paid and the fleet has been brought into compliance.
- (4) If the outstanding violation is based on problems with the baseline engine (e.g., gross polluter), then a new engine must be installed instead of fixing the old engine. The engine owner must pay the fine for each violation and submit documentation of violation correction with, or before submitting, the invoice.

3. New Purchase or Electric Conversion

New purchase projects must be 30 percent cleaner than the current NOx emissions standard. Based on the 2010 NOx standard of 0.20 g/bhp-hr, engines that are certified to a NOx standard of 0.14 g/bhp-hr or lower and a PM standard of 0.01 g/bhp-hr or lower are eligible for new purchase funding. Vehicles with engines certified to a family emissions limit (FEL) are not eligible for new purchase funding. A school bus for an electric conversion project must be ten years old or newer. In the case of conversion of a school bus the CHP requires engineering plans, certified by a California licensed engineer, to be able to safety certify the school bus. All-electric school bus conversions using technologies that have already been demonstrated on school buses and that have engineering plans are eligible for funding. The maximum grant amount is 25 percent of the new purchase cost, with the exception of electric school bus purchase projects. The maximum grant amount for new electric school bus purchase or electric conversion projects shall not exceed the lesser of the following:

(A) A cost cap of \$400,000 established pursuant to the Lower-Emission School Bus Program (LESBP) (Health & Safety Code § 44299.90);

- or -

(B) The total cost of the vehicle or the electric conversion;

4. Repower

A replacement engine for a repower project must be an ARB certified engine meeting emissions levels of 0.20 g/bhp-hr NOx and 0.01 g/bhp-hr PM or lower for school bus repower projects, or 0.50 g/bhp-hr NOx and 0.01 g/bhp-hr PM or lower for other repower projects. The maximum grant amount for school bus repower projects shall not exceed the cost cap of \$70,000 established pursuant to the LESBP (Health & Safety Code § 44299.90). The maximum grant amount for other repower projects is \$30,000.

However, due to technological constraints presented with the limited feasibility of newer engines with advanced emissions control equipment fitting into older chassis and maintaining durability, single vehicle repower, and electric conversion projects are not eligible for Moyer funding, except as described below.

There are a limited number of cases where the technical repower constraints described above do not apply. The economics of repower projects involving a large quantity of the same chassis and engine combination may allow compliance with the engine manufacturer quality assurance process that is equivalent to an OEM package. In these cases, a prototype vehicle (or vehicles) is thoroughly reviewed and tested to ensure that the installation meets OEM requirements, and the successful prototype installation is then replicated in other vehicles with the same

chassis and engine combination. Air districts may approve repower projects that meet the above described OEM quality assurance process, subject to the following:

- (A) Carl Moyer Program funding may not be used for any costs associated with the prototype vehicle or vehicles.
- (B) Repower contracts may not be executed until the prototype testing specified by the engine manufacturer is successfully completed.
- (C) Written documentation from the engine manufacturer confirming that the prototype was successful must be maintained in the project file.

5. Retrofits

A list of currently verified retrofits may be found at <http://www.arb.ca.gov/diesel/verdev/verdev.htm>. A searchable database of verified retrofits is available at <http://arb.ca.gov/diesel/verdev/vdb/vdb.php>. Please refer to Appendix E for more details on retrofit verification.

- (A) The maximum retrofit grant amount is:
 - (1) \$10,000 or the total retrofit cost, whichever is less, for the highest level retrofit verified to achieve Level 3 PM reductions of 85 percent, and NOx reductions if available for the specific engine.
 - (2) \$20,000 or the total retrofit cost, whichever is less, for retrofit devices verified to reduce NOx and PM emissions equivalent to 2007 engine standards of 1.20 g/bhp-hr NOx and 0.01 g/bhp-hr PM.
 - (3) \$20,000 or the total retrofit cost, whichever is less, for retrofit devices installed on school buses.
- (B) Only ARB-verified retrofits are eligible for funding.
- (C) Retrofit projects that reduce NOx emissions must be verified by ARB to a NOx reduction level of at least 15 percent from the baseline engine to claim NOx reductions from the project.
- (D) Retrofit projects must use the highest level technically feasible technology verified for the engine 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.
- (E) Fleets/agencies affected by fleet regulations may be able to use Carl Moyer Program funding for retrofit projects if the project life expires prior to the final

compliance date or achieves reductions beyond the regulatory requirements. See applicable criteria below for each fleet regulation.

- (F) If the retrofit device reduces both NO_x and PM emissions and is being installed to comply with a PM requirement, only the costs of the NO_x reductions are eligible for Carl Moyer Program funding.
- (G) The full cost of a retrofit kit, up to the maximum incentive amount described above, and maintenance of the retrofit during the project life may be funded subject to the weighted cost-effectiveness limit.
- (H) Only the minimum ARB verified levels of NO_x and PM emission reductions will be used to calculate cost-effectiveness for retrofit projects.

E. Funding Eligibility for Projects Subject to In-Use Regulations

Most on-road vehicles are subject to an in-use regulation. Funding is available for emissions reductions that are early or extra to regulatory requirements. In addition, fleets that have achieved compliance with the final regulatory deadline may be eligible for funding. Unless otherwise noted, retrofit, repower, TRU, and idling reduction funding is only available to fleets with ten or less on-road vehicles with GVWRs over 14,000 pounds. New purchase projects have no fleet size limitation. For detailed information on eligible emissions reductions and calculation methodology, please see the 2011 on-road supplemental guidance located at:

<http://www.arb.ca.gov/msprog/moyer/guidelines/current.htm>.

1. Drayage Trucks

- (A) **Current Drayage Trucks:** Limited Carl Moyer Program funding is available for all drayage trucks, as defined in California Code of Regulations, title 13, section 2027(c)(15) up to one year before the applicable compliance deadline. For repowers, funding is available for the NO_x and reactive organic gases (ROG) emission reductions between engines certified to a NO_x emissions standard of 1.20 grams per brake horsepower-hour (g/bhp-hr) and 0.20 g/bhp-hr or cleaner. For new purchases, funding is available for the NO_x and ROG emission reductions between engines certified to a NO_x emissions standard of 0.20 g/bhp-hr and a NO_x standard that is at least 30 percent cleaner. There is no final funding date for new purchases. There are no surplus funding opportunities for retrofits. Beginning on January 1, 2023, drayage trucks will be subject to, and must be surplus to, the Statewide Truck and Bus Regulation.
- (B) **Former Drayage Trucks:** The following requirements apply for vehicles that previously operated as a drayage truck, as defined in California Code of Regulations, title 13, section 2027(c)(15):

- (1) Vehicles that operated one or more times as drayage trucks in the previous two years, but no longer operate as drayage trucks, are not prohibited from receiving Moyer funding.
- (2) Vehicles that previously operated as drayage trucks must be contractually prohibited from drayage operations that are regulated by California Code of Regulations, title 13, section 2027 throughout the contract term.
- (3) To help ensure that the replacement vehicle does not operate as a drayage truck during the contract term, the replacement vehicle will be added to the Drayage Truck Registry as non-compliant until the contract end date.

2. Private Fleets (Statewide Truck & Bus Regulation)

For vehicles that are subject to the Statewide Truck & Bus Regulation (Regulation), the following final funding dates apply. Please note that the final funding dates listed may not apply to each project and are provided to give a general timeframe of funding eligibility based on certain compliance dates of the regulation. The actual final funding date for specific projects will vary depending on fleet size, regulatory compliance option, GVWR, engine model year, pollutant type, and other factors.

- (A) Fleet size of 1-10 trucks: Funding must be provided no later than one year before the applicable compliance deadline for each pollutant. Depending on the compliance option used, the final funding date for PM, NOx, and ROG is December 31, 2021.

**Table 4-4
Final Funding Dates for Fleets of 1-10 Vehicles**

Fleet Type	PM	NOx
1-10 vehicles	12/31/2021	12/31/2021

- (B) Agricultural Vehicles: Eligibility for agricultural vehicles as defined in California Code of Regulations, title 13, section 2025(d)(6) depends on annual mileage accrual and engine model year. Funding for agricultural vehicle projects must be provided no later than one year before the applicable compliance deadline. The final funding date for PM, NOx, and ROG is December 31, 2021.

**Table 4-5
Final Funding Dates for Agricultural Vehicles**

Fleet Type	PM	NOx
Agricultural Fleets	12/31/2021	12/31/2021

- (C) Low-Mileage Work Trucks & Vehicles That Operate Exclusively in NOx Exempt Areas: Trucks following the Low Mileage Work Truck Phase-in Option, as defined in California Code of Regulations, title 13, section 2025(p)(2), are eligible for PM funding through December 31, 2016 and NOx and ROG funding through December 31, 2021. Vehicles that operate exclusively in NOx Exempt areas of the state that are following the compliance option specified in California Code of Regulations, title 13, section 2025(p)(1) are eligible for PM funding through December 31, 2017 and are eligible for NOx and ROG funding indefinitely. Funding must be provided no later than one year before the applicable compliance deadline. Participant contracts for NOx exempt vehicles must include a provision that requires the vehicle to operate exclusively in NOx exempt areas of the state as defined in California Code of Regulations, title 13, section 2025(d)(45).

**Table 4-6
Final Funding Dates for Low-Mileage Work Trucks
and Vehicles in NOx Exempt Areas**

Fleet Type	PM	NOx (& ROG)
Low-Mileage Work Trucks	12/31/2016	12/31/2021
NOx Exempt Vehicles	12/31/2017	No Final Date

- (D) Log Trucks: Log trucks as defined in California Code of Regulations, title 13, section 2025(d)(39), are eligible for funding through December 31, 2021. Funding for retrofits and repowers for log trucks must be provided no later than one year before the applicable compliance deadline. Funding for new purchases has no final funding date. Eligibility requirements for the replacement of log trucks following the Log Truck Phase-in Option specified in California Code of Regulations, title 13, section 2025(m)(12) are available in the Truck Improvement/Modernization Benefitting Emission Reductions (TIMBER) document at <http://www.arb.ca.gov/msprog/moyer/guidelines/supplemental-docs.htm> or in Chapter 5. Log truck fleets do not have a fleet size eligibility limit for funding. No more than 10 log trucks under common ownership may be funded per year.

3. Public Agency and Utility Fleets

Due to low mileage, public agency and utility vehicle projects are generally eligible only for minimal grant amounts.

- (A) All public agency and utility vehicle projects must submit total fleet compliance records as described in the Fleet Rule for Public Agencies and Utilities showing that the funds will not be used to meet rule requirements.
- (B) Fleets that have achieved all applicable final PM BACT compliance requirements are eligible for NOx funding for retrofit projects and NOx and

ROG funding for repower projects. New purchase projects have no final funding date. Starting January 1, 2021, private utility vehicles, as defined in California Code of Regulations, title 13, section 2025(d)(48), will be subject to the Truck and Bus Regulation. Funding must be provided no later than one year before the applicable compliance deadline.

- (C) Low-Population County fleets must declare with submittal of their application which compliance schedule they will follow. Fleets that follow the compliance path for low population counties have limited PM funding opportunities through December 30, 2016 with a one year surplus period. Fleets that follow the accelerated turn-over compliance path have limited PM funding opportunities through December 30, 2024.

4. School Buses

- (A) School buses are eligible for Carl Moyer Program funding if they meet the general program criteria above. School bus projects do not have a fleet size limit, and can be funded up to the maximum grant amounts shown in Table 4-2. Internal combustion engine school buses are eligible only for NOx and ROG reductions. Zero emission school bus projects including new purchases, replacements, repowers, and electric conversions are eligible for NOx, ROG, and PM reductions.
- (B) The cost-effectiveness limit for school bus projects is \$276,230/ton. This cost-effectiveness limit allows consistency with the LESBP cost cap for typical zero-emission school bus replacement projects. This cost-effectiveness value is based on average school bus operating usage from a limited number of previously-funded Carl Moyer school bus projects and the LESBP cost caps. This cost-effectiveness limit may reduce some school bus project grants to be lower than the LESBP cost caps.

5. Solid Waste Collection Vehicles (SWCV)

Solid waste collection vehicles are eligible for limited funding opportunities, but emission benefits are generally low because older vehicles have already been replaced or retrofitted to comply with regulatory requirements.

- (A) SWCV fleets that have achieved compliance with the final regulatory deadline are eligible for NOx and ROG funding.
- (B) Solid waste transfer trucks are subject to the Statewide Truck & Bus Regulation, and must meet applicable eligibility criteria identified above.

6. Transit Vehicles (Urban Buses and Transit Fleet Vehicles)

Transit vehicles are eligible for limited funding opportunities, but emission benefits are generally low because most older vehicles have already been replaced or retrofitted to comply with regulatory requirements. Transit Vehicle projects do not have a fleet size limit.

- (A) Transit Fleet Vehicles: Transit Fleet vehicles that have achieved compliance with the final regulatory deadline are eligible for funding.
- (B) Urban Buses: Urban Bus fleets that have achieved compliance with the final regulatory deadline are eligible for funding.
- (C) The Federal Transit Administration (FTA) provides up to an 80 percent grant for new urban bus purchases and repowers. For projects receiving FTA or other public funding, the incremental cost must be reduced by the publicly funded grant amount. See Chapter 2: General Criteria for more information.

7. Idling Reduction

Idling reduction projects are eligible for limited funding opportunities, but emission benefits are generally low because heavy-duty trucks are already required by regulation to limit idling emissions.

- (A) Heavy-duty trucks are eligible for zero-emission technologies for APUs. The baseline for these projects would be an ARB certified Tier 4 engine with a level 3 diesel emission control strategy.
- (B) An hour meter or other means to measure usage must be installed with an idling reducing project to track operation. The participant shall provide this information to ARB or the air district upon request during the life of the project.
- (C) The installation of electric power infrastructure at truck stops and distribution centers is eligible for funding through an air district's Carl Moyer Program match funds.
- (D) Advanced truck stop electrification - Carl Moyer Program funds may be used for installing advanced truck stop electrification, such as external systems that provide heating, cooling, and other energy needs. In these cases, a partial payment would be made upfront to help offset the initial capital investment. The remainder of the grant amount would be paid out in installments based on system utilization. The amount of the initial payment and subsequent installments will be determined on a case-by-case basis.
- (E) Other idling reducing projects may be considered on a case-by-case basis.

8. Transport Refrigeration Units (TRU)

Transport refrigeration units projects are eligible for limited funding opportunities, but emission benefits are generally low because many older TRUs have already been replaced to meet regulatory requirements.

- (A) Funding opportunities may exist for a zero emission new purchases or repowers on a case-by-case basis.
- (B) Alternative technologies such as electric standby and pure cryogenic systems are not required to be verified, but ARB must review and approve such systems in writing on a case-by-case basis.
- (C) The participant shall install an hour-meter or other means to measure usage on the TRU to track operating hours, and shall provide this information to ARB or the air district upon request.