

Eligible Diesel Emissions Reduction Solutions: Projects must include one or more of the following diesel emissions reduction solutions:

a. Verified Retrofit Technologies: A “retrofit” project is defined broadly to include any technology, device, fuel or system that when applied to an existing diesel engine achieves emission reductions beyond what is currently required by EPA regulations at the time of the engine’s certification. A list of EPA verified technologies is available at <http://www.epa.gov/otaq/retrofit/verif-list.htm>. A list of CARB verified technologies is available at <http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm>. Note: technologies on the “Previously Verified” lists are not eligible for funding.

- i. Exhaust Controls:** Exhaust Controls include pollution control devices installed in the exhaust system (such as oxidation catalysts and particulate matter filters), or systems that include crankcase emission control (like a closed crankcase filtration system). This funding can cover up to 100% of the cost (labor and equipment) for an exhaust control that is verified by EPA or the California Air Resources Board (CARB). A list of EPA verified technologies is available at <http://www.epa.gov/otaq/retrofit/verif-list.htm>. A list of CARB verified technologies is available at <http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm>
- ii. Engine Upgrades:** An engine upgrade is defined as an engine that is rebuilt or remanufactured to meet higher federal emission standards. Some engines are able to be upgraded to reduce their emissions by applying manufacturer recommended upgrades (or kits) to certified or verified configurations. This funding can cover up to 100% of the cost (labor and equipment) for an engine upgrade with a manufacturer’s kit listed in CARB or EPA’s verified lists, or engine upgrade to an EPA certified configuration. Note: this funding cannot be applied to the entire cost of an engine rebuild, but only the emissions-reducing upgrade kit and associated labor costs for installation. A list of EPA verified technologies is available at <http://www.epa.gov/otaq/retrofit/verif-list.htm>. A list of CARB verified technologies is available at <http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm>
- iii. Cleaner Fuels Use:** Cleaner fuels include, but are not limited to, ultra-low sulfur diesel fuel (for non-road vehicles, engines and equipment prior to EPA’s mandate), biodiesel, diesel emulsions or additives verified by EPA or CARB, compressed natural gas, propane and other certified alternative fuels. Funding available under this program can be used to cover the cost differential between the cleaner fuel and conventional diesel fuel. Note: This funding cannot be used for fueling infrastructure, such as that used for the production and/or distribution of fuel such as biodiesel, or compressed natural gas fueling stations. A list of EPA verified technologies is available at <http://www.epa.gov/otaq/retrofit/verif-list.htm>. A list of CARB verified technologies is available at <http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm>

b. Verified Idle Reduction Technologies: An idle reduction project is generally defined as the installation of a technology or device that (1) is installed in one or more of the following vehicle(s) or equipment: a bus, medium-duty or heavy-duty truck, marine engine, locomotive, nonroad engine or vehicle used in construction, handling of freight (including at a port or airport), agriculture, mining, or energy production, or is installed in the ground; (2) reduces unnecessary idling of the main drive engine of such vehicles or equipment; and/or (3) is designed to provide services (such as heat, air conditioning, and/or electricity) to vehicles and equipment that would otherwise require the operation of the main drive engine while the vehicle is temporarily parked or remains stationary. The reduction in idling must also lower emissions. EPA has verified a number of categories of idle reduction technologies: (1) auxiliary power units and generator sets; (2) battery air conditioning systems; (3) thermal storage systems; (4) electrified parking spaces (truck stop electrification); (5) fuel operated heaters; (6) shore connection systems and alternative maritime power, (7) shore connection systems for locomotives, (8) automatic shutdown/start-up system.

EPA is particularly interested in projects that combine idle reduction technologies with verified retrofit technologies which will further reduce emissions, e.g., through the addition of exhaust controls such as a diesel particulate filter, diesel oxidation catalyst or crankcase emission control. This funding can cover up to 100% of the cost (labor and equipment) for an idle reduction technology. A list of EPA verified idle reduction technologies is available at <http://www.epa.gov/smartway/transport/what-smartway/verified-technologies.htm>.

c. Verified Aerodynamic Technologies: Trailer aerodynamic devices include gap fairings that reduce the gap between the tractor and the trailer to reduce turbulence, trailer side skirts that minimize wind under the trailer, and trailer rear fairings that reduce turbulence and pressure drop at the rear of the trailer. To improve fuel efficiency, legacy fleets can be retrofitted with aerodynamic trailer fairings or the fairings can be provided as new equipment options. EPA is particularly interested in projects that combine aerodynamic technologies with verified retrofit technologies which will further reduce emissions, e.g., through the addition of exhaust controls such as a diesel particulate filter, diesel oxidation catalyst or crankcase emission control. This funding can cover up to 100% of the cost (labor and equipment) for aerodynamic trailer fairings - either individually or in combination with one another (e.g., skirt & either gap reducer or rear fairings). A list of EPA verified aerodynamic technologies is available at <http://www.epa.gov/smartway/transport/what-smartway/verified-technologies.htm>. Advanced aerodynamic technologies are not eligible for funding if installed on trucks that have NOx aftertreatment.

d. Verified Low Rolling Resistance Tires: Certain tire models can provide a reduction in NOx emissions and fuel savings, relative to the "best selling" new tires for line haul trucks, when used on all three axles. The options offered include both dual tires and single wide tires (single wide tires replace the double tire on each end of a drive or trailer axle, in effect turning an "18" wheeler into a "10" wheeler). Low rolling resistance tires can be used with lower-weight aluminum wheels to further improve fuel savings. EPA is particularly interested in projects that combine these tires with verified retrofit technologies which will further reduce emissions, e.g., through the addition of exhaust controls such as a diesel particulate filter, diesel oxidation catalyst or crankcase emission control. This funding can cover up to 100% of the costs (labor and equipment) for low rolling resistance tires. A list of EPA verified low rolling resistance tires is available at <http://www.epa.gov/smartway/transport/what-smartway/verified-technologies.htm>. Low rolling resistance tires are not eligible for funding if installed on trucks that have NOx aftertreatment or in the case where low rolling resistance tires have already been installed on the truck.

e. Certified Engine Repowers: Repower refers to the removal of an existing engine and its replacement with a newer or cleaner engine that is certified to a more stringent set of engine emissions standards. Repower includes, but is not limited to, diesel engine replacement with an engine certified for use with a cleaner fuel and/or the replacement of a nonroad engine with a highway engine. In order for a repower to be eligible, the repowered vehicle, engine or equipment must continue to perform the same function as before the repower. EPA is particularly interested in projects that combine engine repower with verified technologies which will further reduce emissions, e.g., through the addition exhaust controls such as a diesel particulate filter, diesel oxidation catalyst or crankcase emission control. This funding can cover up to 75% of the cost of an engine repower, which includes labor and equipment. Please see Section III.B for additional information on cost-share requirements.

i. Repower Criteria: Repower projects are eligible for funding on the condition that the following criteria are satisfied:

1. The engine being replaced will be scrapped or rendered permanently disabled or returned to the original engine manufacturer for remanufacturing to a certified cleaner emission standard. Drilling a hole in the engine block and manifold while retaining possession of the engine is an acceptable scrapping method. Other methods may be considered and will require prior EPA approval. If scrapped or salvaged engines are to be sold, program income requirements apply.

2. Evidence of appropriate disposal, including the engine serial number, is required in a final assistance agreement report submitted to EPA.

f. *Certified Vehicle and Equipment Replacements:* Non-road and highway diesel vehicles and equipment can be replaced under this program with newer, cleaner vehicles and equipment that operate on diesel or alternative fuels and meet a more stringent set of engine emissions standards. Replacement projects can include the replacement of diesel vehicles/equipment with newer, cleaner diesel or hybrid or alternative fuel vehicles/equipment. The replacement vehicle/equipment must be of the same type and similar gross vehicle weight rating or horsepower as the vehicle/equipment being replaced (e.g., a 300 horsepower bulldozer is replaced by a bulldozer of similar horsepower). The replacement vehicle/equipment must perform the same function as the vehicle/equipment that is being replaced (e.g., an excavator used to dig pipelines would be replaced by an excavator that continues to dig pipelines). These projects can also include the replacement of non-road vehicles/equipment with highway models if the highway models are capable of performing the same functions as the nonroad models. EPA encourages the replacement of older vehicles/equipment containing engines that were manufactured prior to the implementation of emissions standards. This funding covers the incremental costs of new vehicles and equipment. Incremental costs are defined as up to 25% of the cost of the new vehicle or equipment (except for school buses—see provision below). Please see Section III.B for additional information on cost-share requirements.

i. *Replacements for School Buses:* Funding levels will cover up to 25% or 50% of the cost of a replacement school bus, depending on the engine emission certification levels of the replacement bus.

1. **Twenty-five percent level:** This funding will cover up to 25% for school buses with engines manufactured in model years 2007, 2008 or 2009 that are particulate filter equipped in the case of diesel engines or catalyst equipped in the case of CNG engines and satisfy regulatory requirements for school bus engines manufactured in that model year and do not exceed the limits of particulate matter (PM) at 0.01, nitrogen oxides (NO_x) at 2.0, and nonmethane hydrocarbons (NMHC) at 0.40 (expressed in grams per brake horsepower hour, g/BHP-hr).
2. **Fifty percent Level:** This funding will cover up to 50% of the cost of a replacement school bus with engines manufactured in model year 2007, 2008, or 2009 that satisfy 2010 model year regulatory limits for emissions of PM, NO_x and NMHC. The model year 2010 regulatory requirements are: PM at 0.01 grams per brake horsepower hour, NO_x at 0.20 and NMHC at 0.14.

ii. *Replacement Criteria:* Replacement projects are eligible for funding on the condition that the following criteria are satisfied:

1. The vehicle/equipment being replaced will be scrapped or rendered permanently disabled or returned to the original engine manufacturer for remanufacturing to a certified cleaner emission standard. Drilling a hole in the engine block and manifold and disabling the chassis while retaining possession of the vehicle/equipment is an acceptable scrapping method. Other methods may be considered and will require prior EPA approval. Equipment and vehicle components that are not part of the engine or chassis may be salvaged from the unit being replaced (e.g. plow blades, shovels, seats, tires, etc.) If scrapped or salvaged vehicles/parts are to be sold, program income requirements apply.
2. Evidence of appropriate disposal, including engine serial number and vehicle identification number (VIN), is required in a final assistance agreement report submitted to EPA.

g. *Repower and Replacement Restrictions:* The following are not covered under Repowers and Replacements:

- i.** Emission reductions that would have occurred through normal attrition are considered to be the result of normal fleet turnover and are not eligible for funding under this program. Normal attrition is generally defined as a replacement or repower that is scheduled to take place between now and the end of the project period (September 30, 2010). Normal attrition is typically defined by the vehicle or fleet owner's budget plan, operating plan, standard procedures, or retirement schedule. For example, if a school bus fleet typically retires vehicles after 7 years, a bus that is currently in its 6th or 7th year of service is not eligible for replacement. A bus that is currently in its 5th year of service and has 2 years of useful life remaining is eligible for replacement.
- ii.** The purchase of new vehicles or equipment to expand a fleet is not covered by this program.