

CMAQ FUNDING APPLICATION FOR DIESEL RETROFITS

The Capital District Transportation Committee (CDTC) has programmed \$2,000,000 in Congestion Mitigation and Air Quality (CMAQ) funds to implement a diesel retrofit program. This program has been created to improve air quality in the Capital District by reducing emissions of nitrogen oxide (NO_x), VOC's (HC) and particulate matter (PM) from high-emitting internal combustion engines. \$500,000 in funds will be made available for retrofit projects in 2008-09.

Why a Diesel Retrofit Program?

Reducing emissions from diesel engines is one of the most important air quality challenges facing the country. Even with more stringent heavy-duty highway engine standards set to take effect over the next decade, over the next twenty years millions of diesel engines already in use will continue to emit large amounts of nitrogen oxides and particulate matter, both of which contribute to serious public health problems. These problems are manifested by thousands of instances of premature mortality, hundreds of thousands of asthma attacks, millions of lost work days, and numerous other health impacts.

SAFETEA-LU included two new provisions that could increase the number of retrofit projects funded by the CMAQ program. The first of these requires states and MPOs to give priority in distributing CMAQ funds to "diesel retrofits, particularly where necessary to facilitate contract compliance." The second expands the eligibility of projects to include non-road vehicles and engines that are used in highway construction projects. SAFETEA-LU places added emphasis on the cost-effectiveness criteria in the selection of projects for CMAQ funding. As a result, applications that include quantitative emissions reduction estimates, cost-effectiveness figures and provide more than 20% of the required matching funds are likely to be more attractive.

ELIGIBLE Projects

This solicitation is for both on-road and off road retrofit projects. Costs of eligible engine retrofit or engine repowers are eligible for submission. Both public and private sector entities in the counties of Albany, Rensselaer, Saratoga and Schenectady are encouraged to apply. Private sector entities must, however, partner with a public entity to be eligible for funding. A minimum 20% match is required for all projects. A portion or the entire match can be contributed as in-kind, such as mechanic labor.

The vehicles to be retrofit or re-powered must be registered to entities located in the Capital District (Albany, Rensselaer, Saratoga and Schenectady Counties). If off-road, the vehicles must be owned by entities located in the 4-county area, and used primarily (>80% of use) within the jurisdictional boundaries of the 4 counties.

Eligible projects include the following:

Retrofit or Add-On of Emission-Reduction Technology

This category is for the retrofit of an existing engine on an on-road heavy-duty vehicle, or adding on devices to the vehicle. To be eligible for funding, the retrofit or add-on systems must use technologies certified or verified by the EPA or CARB. The US Environmental Protection Agency has approved retrofit technologies for use in engine retrofit program. This list can be viewed on-line at <http://www.epa.gov/otaq/retrofit/verif-list.htm> for retrofit technologies applicable for on-road vehicles and at <http://www.epa.gov/otaq/retrofit/nonroad-list.htm> for retrofit technologies applicable for off-road vehicles. The California Air resource board (CARB) also maintains a list of verified technologies at <http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm>.

This funding opportunity will reimburse the incremental cost of the purchase and installation of the retrofit and/or add-on technology. If the engine is to be rebuilt to install the emission-reduction devices, the incremental cost is the difference between the cost of rebuilding the existing engine and the cost of rebuilding the engine to include the retrofit or add-on technology. If the engine does not need to be rebuilt in conjunction with installing the new technology, then the incremental cost will be the full cost of purchasing and installing the technology.

Repower of Heavy-Duty Vehicles

This category is for the replacement of an existing engine on an on-road heavy-duty vehicle with a new, rebuilt, or remanufactured engine. The replacement engine must be a certified model year 2007 or later for on-road applications and must meet 2006 Tier 3 standards for off-road applications. Certification means approved by the EPA. Eligible rebuilt or remanufactured engines must use original engine manufacturer (OEM) components only and be purchased from the OEM or its authorized dealers and distributors.

This funding opportunity will reimburse the incremental cost of the purchase and installation of the replacement engine. The incremental cost is the cost to purchase and install the replacement engine and associated equipment, minus the scrappage value, or the trade-in or sale value of the old engine.

Definitions:

Retrofit Technologies: Exhaust after-treatment retrofit technologies, such as diesel oxidation catalysts, diesel particulate filters, closed crankcase ventilation systems, selective catalytic reduction (SCR) and lean NOx catalysts (LNCs). Diesel emission control devices can be installed on a wide variety of vehicles including on-highway trucks and buses, off-road construction equipment, mining and material handling equipment, stationary engines, and many other applications. Using catalytic processes or filters, control devices reduce carbon monoxide (CO), hydrocarbons (HC) and particulate matter (PM) in diesel exhaust. Filter systems may also be added to an engines crankcase system to reduce PM emissions associated with them. CCV systems are designed to return crankcase blow-by gases to the engine intake for subsequent combustion during the engine combustion process. Devices that use a process called selective catalytic reduction (SCR) use a catalyst and a liquid reagent to reduce the oxides of nitrogen (NOx) produced by the engine. Exhaust gas recirculation (EGR) recycles a portion of the engine exhaust to reduce NOx emissions. Lean NOx catalysts use catalytic processes and a reductant to lower NOx emissions.

Repower: Refers to the removal of an existing engine and its replacement with a newer or cleaner engine. Some engines may be able to be upgraded to reduce their emissions by applying manufacturer recommended upgrades or kits to certified or verified configurations. Repowers and upgrades may include engine replacement for use with a cleaner fuel such as compressed natural gas, re-calibrations,

and/or other components and/or the addition of newer, cleaner technologies to reduce the emissions from the engines. EPA is particularly interested in engine upgrades or repowers that include combined verified improvements which will further reduce emissions (e.g., through the addition of verified retrofit technologies such as a diesel particulate filter, diesel oxidation catalyst or crankcase emission control). Replacement engines must be of the most recent model year feasible, with preference that engines be model year 2007 or newer, and must be certified under 40 CFR Parts 89 and 90.

For repowers and replacements, EPA requires that the engine being replaced must be scrapped, remanufactured by an original engine manufacturer to a cleaner emission standard or rendered permanently disabled. 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. The replacement engine or equipment will be of the same type and similar gross vehicle weight rating or horsepower as the engine, or equipment being replaced (e.g., a 300 horsepower bulldozer engine is replaced by an engine of similar horsepower).

Project Cost Issues

No Minimum or Maximum Project Costs: The Program does not have a set floor or ceiling for project costs. The aim is to achieve emission benefits. Reducing emissions from diesel engines is one of the most important air quality challenges facing the country. Even with more stringent heavy-duty highway and off road engine standards set to take effect over the next decade, millions of diesel engines already in use will continue to emit large amounts of nitrogen oxides, particulate matter and air toxics, which contribute to serious public health problems. These problems cause thousands of premature deaths; hundreds of thousands of asthma attacks, millions of lost work days, and have numerous other health impacts every year. Diesel emissions account for over 6.3 million tons of oxides of nitrogen (NOx) and 305,000 tons of particulate matter (PM) in the national mobile emissions inventory. The emissions are from a variety of on-road and off road vehicles, such as freight, ports, transit, construction and agriculture. Consequently, the emission benefit to cost ratio will be heavily weighed in the evaluation of the applications submitted.

- ◆ *Maximized Distribution of Funds:* In considering how *large* a proposal to submit, it should be kept in mind that the aim of the Program is to use the funds available in this round -- \$500,000 -- to fund a *variety of projects across the region*. While proposals will not be disqualified for being too costly, evaluations will take cost and this overall aim into consideration.

- ◆ *Fiscal Management:* Also with regard to large projects, bear in mind that this is a *reimbursement* program -- ***a successful applicant will have to complete the necessary paperwork and receive authorization from NYSDOT Region 1 and then "front" the entire cost of the project before getting the federal share back.*** In addition, the amount of federal funding a project receives will remain the same even if the cost ultimately increases. If the project ends up costing more than originally projected, you will be required to cover any additional costs needed to complete the project.

Project Evaluation

An evaluation team will use the set of questions below to guide its determination of which proposals merit funding.

- ◆ Is the project eligible?
- ◆ What are the emission benefits of the project?
- ◆ Are the applicant's cost numbers realistic (i.e., "can they do what they propose for the indicated cost")?
- ◆ Is the project cost effective?

Project Selection Process:

- ◆ All proposals for CMAQ funding should include a description of the project including size, scope, timetable, completion date, and location. The proposal should also include an emission reduction analysis of the proposed benefits of the project.
- ◆ A quantified emission benefits and disbenefits should be included in all project proposals. Benefits and disbenefits should be included for all pollutants.

SCORING CRITERIA

The following information and scoring criteria will be used to score and rate project applications for CMAQ funding.

1. Project Description (10 points): The applicant should describe the fleet that will be retrofitted. The description should include vehicle type, vehicle usage, vehicle age and condition, odometer readings; vehicle location (where it is housed and where it is typically operated), the percentage of the fleet that will be retrofitted, etc.

2. Project Emission Reductions (50 points): The applicant should identify the potential emissions reductions of the project, per vehicle and in total. Emission disbenefits should also be quantified. A comparison of existing emissions per vehicle, including vehicle miles traveled data (for on-road fleets) with the expected emissions per vehicle and expected vehicles miles traveled should be included. All proposed retrofit technologies must be EPA certified.

3. Implementation Plan (20 points): Describe implementation steps and timeline for carrying out the proposed retrofits. If mechanic labor is to be used as in-kind match, key personnel assigned and their qualifications should be identified. Otherwise, the applicant should identify the business and accompanying credentials of the business that will be used to perform the retrofit installation.

4. Project Budget (20 points): Applicants must clearly identify the cost of each retrofit unit to be installed. Capital, labor and total costs should be itemized for each of the proposed retrofit technology units to be installed. Match must be clearly identified. If match is in-kind, supporting documentation with respect to the value of the match must be submitted.

5. Off-Road (5 points): Applicants will receive an extra 5 points in the evaluation if their proposal includes off-road vehicle retrofits.

PART I – COVER INFORMATION

Applicant Data

Legal Name: _____

Contact Person: _____

Address: _____

City, State, Zip: _____

Telephone: _____

Fax: _____

E-mail: _____

Project Description

TITLE _____

BRIEF DESCRIPTION _____

PROJECT TYPE: Diesel Retrofit (On-Road Off-Road Both)
 Diesel Repower (On-Road Off-Road Both)

PART II - PROJECT BUDGET

Project Funding

Local matching funds will be required for all application submittals. The minimum required match is 20% from non-federal transportation funds

Total Project Budget \$ _____ (operating and capital only)

Capital Federal Share \$ _____ %

Local Match --Cash \$ _____ %

Local match—In-kind \$ _____ %

Local Match Funding Source _____

Note: The applicant is required to demonstrate a commitment to providing local match funds. This can be in the form of a letter and/or supporting documentation where funds will be drawn from.

Program Timetable

<i>Date</i>	<i>Milestone</i>
January 30	Solicitation mailout
March 28	Proposals due to CDTC
April 1-11	Evaluations by CDTC/Clean Communities team
May 1	Recommended list for funding sent to Planning Committee
Late May/Early June	Acceptance/Rejection Letters sent to project applicants

This solicitation is for round one of CDTC's Diesel Retrofit Program. The federal-aid highway process may be initiated shortly after Planning Committee approval, for implementation between 2008 and 2009.

For More Information

Contact Deborah Stacey of the CDTC staff at 458-2161.