OHIO DIESEL EMISSIONS REDUCTION GRANT PROGRAM

# Additional Guidance for Applicants

*The following questions and answers are offered as general guidance to assist prospective grant applicants. All grant awards must comply with the federal CMAQ program requirements, so applicants should carefully follow the federal CMAQ policy and guidance posted at* http://www.fhwa.dot.gov/environment/air_quality/cmaq/policy_and_guidance/cmaq08gd.pdf

*Ohio EPA also* ***strongly*** *encourages applicants to follow the guidance issued by US EPA for the federal* Diesel Emissions Reduction Program (DERA): Technologies, Fleets and Projects Information*, posted at* http://www.epa.gov/cleandiesel/documents/420p11001.pdf . *This guidance lays out the kinds of things Ohio EPA will be looking for in various types of diesel projects, and the specific kinds of documentation that DERG grant recipients will be expected to provide and maintain.*

*Another very helpful tool is US EPA's Tips for a Successful Diesel Retrofit Project posted at* http://www.epa.gov/cleandiesel/tools/tips-for-success.htm#project.

*For more detailed information on the cost-effectiveness of various diesel retrofit technologies, see US EPA's study,* "The Cost-Effectiveness of Heavy-Duty Diesel Retrofits and Other Mobile Source Emission Reduction Projects and Programs" *posted at:* http://www.epa.gov/cleandiesel/publications.htm

## Introduction – Why Clean Diesel?

According to US EPA, emissions from diesel exhaust can lead to serious health conditions like asthma and allergies, and can worsen heart and lung disease, especially in vulnerable populations such as children and the elderly. Diesel engines emit particulate matter (soot), nitrogen oxides which contribute to the production of ground-level ozone (smog) and acid rain; hydrocarbons; air toxics; and black carbon. These emissions can damage plants, animals, crops and water resources. For more information on the impacts of diesel emissions, see US EPA's National Clean Diesel Campaign Website at http://www.epa.gov/cleandiesel/basicinfo.htm . For additional information about recent research into health effects, consult US EPA's Health Assessment Document for Diesel Engine Exhaust, at http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=29060

Ohio's state budget for state fiscal years 2012 and 2013 includes the allocation of $20 million to fund the Diesel Emission Reduction Grant (DERG) program, offering $10 million in funding for each round. Grants will be supported from the Federal Highway Administration's Congestion Mitigation and Air Quality (CMAQ) funding provided to the Ohio Dept. of Transportation (ODOT) and administered through a partnership between ODOT and Ohio EPA.

**The primary goal of the DERG grant program is to reduce harmful emissions from older diesel-powered vehicles operating on or along highways, or off-road construction equipment used in federally-funded Title 23 highway projects, to protect human health and improve air quality in the targeted Ohio counties and townships.** The DERG program is designed to assist in funding vehicle or engine replacements or repowers with new cleaner diesel technology, retrofits with emission controls, and/or the installation of anti-idling technologies.

**What areas of Ohio are eligible for funding?**

Eligible applicants for the DERG program include public diesel fleets and private diesel fleets (with a public sponsor) who operate diesel vehicles and equipment **at least 65% of the time** on highways or on highway projects within the 38 Ohio counties or portions of counties that have been designated non-attainment or maintenance with respect to federal air quality standards for fine particulates (soot particles, $PM_{2.5}$) or ozone. A map of eligible counties and townships is included in the DERG RFP and posted at http://www.epa.ohio.gov/portals/42/documents/dergeligible2011.pdf

Grant recipients will be required to provide written records documenting that the vehicle or equipment was operated at least 65% of the time in the designated ozone or $PM_{2.5}$ nonattainment or maintenance areas in Ohio. Written records must be maintained with the owner/operator of the approved project for a minimum 5 years.

**Is there a match required?**

Yes. In general, these grants will **reimburse** up to 80% of the allowable project costs, and only for allowable equipment purchases or work conducted ***after*** the project has been approved and invoices for work completed have been submitted by the grant recipient and approved by Ohio EPA or ODOT. No federal funds of any kind can be used to meet the remaining 20% of the project cost. Grant applicants must explain the funding source that will be used to meet the 20% match, and demonstrate that they can cover the full cost of the project prior to approval of the reimbursement.

**What kinds of diesel fleets are eligible for funding?**

The DERG eligibility chart included in the RFP and posted at http://www.epa.ohio.gov/LinkClick.aspx?fileticket=Aaqc9CNtcTQ%3d&tabid=5227 summarizes grant funding eligibility actions for on-road and off-road vehicles operated by public sector and private sector (or non-profit) entities. Private sector and nonprofit sector applicants must apply through a public sector partner such as a local

government, regional council of governments, or state agency such as the Ohio Air Quality Development Authority, Ohio Rail Development Commission, or Ohio EPA.

**What should be included when applying for replacement vehicles?**

Vehicle or equipment replacements are designed to obtain emission reductions by removing high-emitting vehicles or equipment from service, and replacing them with newer, cleaner vehicles or equipment.
For replacement vehicle projects, the project description section of the DERG application should discuss the specific points in section 6 of US EPA's *Diesel Emissions Reduction Program (DERA): Technologies, Fleets and Project Information* document, posted at http://www.epa.gov/cleandiesel/documents/420p11001.pdf including:

- Early replacement: showing that the vehicle is not being replaced as part of normal fleet turnover
- Replacement requirements: show that the replacement vehicle is serving the same function and has the same gross vehicle weight and similar horsepower as the original, and is being maintained in accordance with manufacturer specifications
- Show that the original vehicle or equipment is working properly and performing its intended function in normal duty service
- Explain how the applicant will ensure that the original vehicle or equipment is scrapped or remanufactured
- Grant recipients should have US EPA certificates of conformity for existing and new engines from the engine manufacturers before replacing the vehicle, to confirm the applicable emission standard or tier level.

Grant recipients funded under the DERG program will be expected to keep on file the kinds of documentation described in the file checklists in section 6 of the DERA information, and to produce this documentation upon request.

Applicants should pay careful attention to the different types of vehicles eligible for replacement in the DERG eligibility chart included in the RFP and posted at http://www.epa.ohio.gov/LinkClick.aspx?fileticket=Aaqc9CNtcTQ%3d&tabid=5227 . In the DERG program, "full replacement" means that DERG funds can be used to reimburse 80% of the full vehicle replacement costs. "Partial replacement" means that DERG funds can only be used to reimburse 80% of the costs associated with the components of the replacement vehicle that reduce emissions. This typically includes the engine and engine management software.

Under the DERG program, grant recipients for replacement projects will be reimbursed up to 80% of the total project cost subject to CMAQ restrictions and the DERG RFP, less the core value or scrap value and other governmental financial purchase contributions.

The Federal Transit Administration has published guidance on the Useful Life of Transit Buses and Vans, Report No. FTA VA-26-7229-07.1, posted at http://www.fta.dot.gov/documents/Useful_Life_of_Buses_Final_Report_4-26-07_rv1.pdf

**What should be included when applying for engine repowers and upgrades?**

In an engine repower, the existing engine is removed and replaced with a newer, cleaner engine configuration that meets a more stringent set of engine emissions standards. Engine repowers may use new engine configurations certified to emission standards, or remanufactured engines representative of a previously certified engine configuration. Engine Certification data and information can be found at http://www.epa.gov/otaq/certdata.htm .

Generally, an engine upgrade involves the removal of parts on a certified engine configuration and replacement with parts that cause the engine to represent an engine configuration which is certified to meet more stringent federal emission standards.

Only equipment that has been verified by either US EPA or the California Air Resources Board will be eligible for reimbursement with DERG funds. US EPA's Verified Technology List is posted http://epa.gov/cleandiesel/verification/verif-list.htm. The California Air Resources Board Verified Technology List is posted at http://www.arb.ca.gov/diesel/cv.htm

For engine repower or upgrade projects, the project description section of the DERG application should discuss the specific points in sections 5 and 7 of US EPA's *Diesel Emissions Reduction Program (DERA): Technologies, Fleets and Project Information,* posted at http://www.epa.gov/cleandiesel/documents/420p11001.pdf including:

- Replacement engine selection
- Pre- and post-emission standard levels for PM and NOx
- Certificates of Conformity
- How the applicant will ensure the old engine is scrapped or appropriately remanufactured
- How the applicant will insure that invoices will include all parts of the certified engine configuration
- Early repower: showing that the engine is not being repowered as part of normal fleet turnover
- Show that the original engine is working properly and performing its intended function in normal duty service
- To be considered cost effective, show that the engine has a high annual use (>1000 hours or 50,000 miles)
- Note the considerations listed in the DERA information for older trucks, non-road repowers, locomotive and marine repowers and upgrades, and alternative fuel repowers including hybrid, plug-in and electric vehicles.

Grant recipients funded under the DERG program will be expected to keep on file the kinds of documentation described in the file checklists in sections 5 and 7 of the DERA information, and to produce this documentation upon request.

Under the DERG program, grant recipients will be reimbursed up to 80% of the equipment invoiced cost, less the core value or scrap value, and up to 80% of the installation invoiced cost performed by an authorized outside vendor. A vendor authorized by the Original Equipment Manufacturer (OEM ) should be used for engine repowers. Work performed by a vendor or other party not authorized by the OEM is not eligible for reimbursement under CMAQ or the DERG program.

Note that locomotive and maritime projects will be considered based on their potential to reduce emissions along Ohio's highways.

**What should be included when applying for retrofit projects?**

Eligible retrofit projects include exhaust emission controls and crankcase emission controls.

Exhaust emission controls (often called aftertreatment technologies or aftermarket technologies) include pollution control devices installed in the exhaust system. Common types of exhaust controls include diesel oxidation catalysts (DOCs), diesel particulate filters (DPFs), partial flow filters (PFFs) and selective catalytic reduction (SCR) systems.

Crankcase emission controls are technologies that filter gasses, particles and oil from the original crankcase vent tube so they are not released into the atmosphere.

Only retrofit equipment that has been verified by either US EPA or the California Air Resources Board will be eligible for reimbursement with DERG funds.
US EPA's Verified Technology List is posted http://epa.gov/cleandiesel/verification/verif-list.htm. The California Air Resources Board Verified Technology List is posted at http://www.arb.ca.gov/diesel/cv.htm

For engine retrofit projects, the project description section of the DERG application should discuss the specific points in sections 2 and 3 of US EPA's *Diesel Emissions Reduction Program (DERA): Technologies, Fleets and Project Information,* posted at http://www.epa.gov/cleandiesel/documents/420p11001.pdf including:

- Ensuring the technology is verified for the specific engine type, model and year
- Ensuring that contract bid requests are written correctly to that an appropriate technology is purchased and installed,
- Ensuring that the retrofitted equipment will be properly maintained in accordance with manufacturer requirements
- Ensuring that the original vehicle is in proper condition prior to installation

Grant recipients funded under the DERG program will be expected to keep on file the kinds of documentation described in the file checklists in sections 2 and 3 of the DERA information, and to produce this documentation upon request.

Under the DERG program, grant recipients will be reimbursed up to 80% of the retrofit equipment invoiced purchase cost including delivery charges, and up to 80% of invoiced installation cost if performed by an authorized outside vendor. This may include re-engineering costs by an authorized outside vendor, if the vehicle or equipment must be modified for retrofit, less any scrap or resale value. Applicants with retrofit projects that may include re-engineering costs are encouraged to discuss the specifics with Ohio EPA before applying. A vendor authorized by the Original Equipment Manufacturer (OEM) should be used for retrofit projects. Work performed by a vendor or other party not authorized by the OEM is not eligible for reimbursement under CMAQ or the DERG program.

**What should be included when applying for anti-idle projects?**

Idle reduction technologies reduce unnecessary idling of the main drive engine of diesel vehicles or equipment and/or are 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. Common types of idle reduction technologies that would be eligible under the DERG program include:

- Auxiliary Power Units (APUs) and Generator Sets
- Fuel Operated Heaters
- Shore connection systems and alternative maritime power
- Shore connection systems for Locomotives
- Electrified parking spaces

Only anti idle technologies that have been verified by US EPA will be eligible for reimbursement with DERG funds. US EPA's Verified Idle Reduction Technology List is posted at http://www.epa.gov/smartway/technology/idling.htm

For anti-idle projects, the project description section of the DERG application should discuss the specific points in section 4 of US EPA's *Diesel Emissions Reduction Program (DERA): Technologies, Fleets and Project Information,* posted at http://www.epa.gov/cleandiesel/documents/420p11001.pdf including:

- Ensuring the technology is verified for the specific application
- APU restrictions
- Ensuring that contract bid requests are written correctly so that an appropriate technology is purchased and installed

Grant recipients funded under the DERG program will be expected to keep on file the kinds of documentation described in the file checklists in section 4 of the DERA information, and to produce this documentation upon request.

Under the DERG program, grant recipients will be reimbursed up to 80% of the idle reduction equipment invoiced purchase cost including delivery charges, and up to 80% of invoiced installation cost if performed by an authorized outside vendor. This may include re-engineering costs by an authorized outside vendor, if the vehicle or equipment must be modified for the anti-idle technology, less any scrap or resale value. Applicants with anti-idle projects that may include re-engineering costs are encouraged to discuss the specifics with Ohio EPA before applying.

Note that locomotive and maritime projects will be considered based on their potential to reduce emissions along Ohio's highways.

## Additional Questions

For additional information, prospective applicants for Ohio Diesel Emission Reduction Grants are encouraged to consult the program Website at http://epa.ohio.gov/oeef/derg.aspx , and contact Alan.Harness@epa.state.oh.us or 614-644-4838 with technology questions, or Carolyn.Watkins@epa.state.oh.us or 614-644-3768 with financial questions.