

ATTACHMENT A

Questions and Answers About DEP's Diesel Vehicle Retrofit Grant and Diesel Idling Reduction Project

Q. Why should diesel fleet operators or truck stop owners be interested in this program?

A. Elevated levels of outdoor air pollutants such as ozone, sulfur dioxide, and particulate matter (PM) can exacerbate or increase symptoms in asthma and other respiratory problems. Fine particles, typical of diesel emissions, are most closely associated with increased hospital admissions and emergency room visits for heart and lung disease, increased respiratory symptoms and disease, decreased lung function and even premature death. EPA recently classified diesel PM as a likely human carcinogen.

Mobile sources, including school buses, are large contributors to elevated levels of PM and toxic emissions. Most over-the-road trucks and construction equipment are diesel. Almost 60 percent of the nation's school buses are diesel. PM emissions from diesel-powered school buses could be produced in greater amounts than long-haul diesel-powered trucks due to their operation under "stop and go" conditions. This results in higher PM emissions on a gram per mile basis than highway driving.

Q. Why should a diesel vehicle operator or truck stop owner be interested in idling reduction technology?

A. Citizens living next to places where diesel vehicles idle are becoming more concerned about excessive diesel exhaust due to idling diesel trucks. Excessive diesel emissions lingering in the air is proven to be an unhealthy and unsafe environment to nearby neighbors and to the vehicles operators themselves. In the case of long-haul trucks, engine idling generates noise, vibration, and pollution that disturb truck drivers sleeping patterns. Most truck driving accidents occur in the first couple of hours of the driver's shift. By providing power hookups for trucks, truck drivers can turn off their engines, clean up the neighborhood, and improve their safety and health. In addition, certain idling reduction technologies pay for themselves in just three years.

Q. What can diesel fleet operators do?

A. Aftertreatment devices such as particulate traps and catalytic converters offer ways to prevent dangerous emissions from entering the air we breathe. Particulate traps collect and burn away particulate emissions. Catalysts convert damaging pollutants to less-harmful products. Fuel changes, such as using ultra-low sulfur fuel, biodiesel, or diesel fuel emulsification could also be considered a "retrofit."

Bus drivers should turn off their buses as soon as possible to eliminate idling time and reduce harmful emissions, when they arrive at loading or unloading areas to drop off or pick up passengers. The bus should not be restarted until it is ready to depart. If school buses need the engine to run the flashing lights, consider changing the circuit configurations so that the battery can power the flashing lights without the engine running. Through fuel savings, idling reduction is a big money saver for fleets.

Q. What can a truck stop owner do?

A. Perform an informal survey of the trucks that use your facility to see if enough are equipped to accept power. Contact a vendor of idle reduction technology to see if a truck stop electrification system can be designed for a percentage of your parking spaces. Some systems have a three-year payback.

Q. How much funding is available?

A. The U.S. Environmental Protection Agency and several companies satisfying enforcement agreements with EPA are expected to make millions of dollars for diesel retrofit projects in the next 18 months. Any grant would fund the purchase and proper installation of retrofit devices for eligible buses and/or incremental fuel cost increases.

Q: What would I be required to do for this program?

A: If you were selected as the grantee, DEP would require you to sign a grant. You would be reimbursed for costs associated with purchasing, installing, and for a limited time maintaining the retrofit equipment. The terms of the grant, such as grant period and specific activities would be very similar to the terms that you proposed in the grant application. The agreement would require you to maintain the retrofit equipment, keep good maintenance records, and report achievements and disappointments. You would supply yearly odometer readings and fuel usage data by vehicle so that DEP can estimate the amount of emission reductions. Also, copies of invoices will need to be supplied to DEP to verify that the appropriate equipment was installed.

For installing anti-idling technology, an applicant would have similar responsibilities, but the applicant would report the amount of equipment use, energy and money saved, and achievements and disappointments.

Q: What changes would be made to my vehicles or property?

A: The project would fund the purchase and installation of new retrofit technology, and any needed equipment such as brackets, mountings, or even engine blankets. When installing anti-idling technology, the grant would pay for the purchase and installation of shore power systems or some other power source. Identification of the technology would be done jointly by the grantee and DEP in consultation with experts at EPA. The grantee could choose the vendor(s) through normal procurement processes, or if your procurement process allows, pre-select the vendor before you submit your application.

Emission reductions of up to 90% could, depending on the vehicle, increase exhaust backpressure slightly, lowering fuel economy by 1 to 3 percent. The backpressure is not harmful to vehicles.

Q: Would any fuel changes be necessary for aftertreatment retrofit?

A: The diesel fuel available today contains as much as 500 ppm sulfur. Fuel containing less sulfur (less than 30 ppm) is available through special arrangements with some distributors. Some retrofit devices require lower sulfur fuel. In some cases, a fuel change to biodiesel could be considered the only "retrofit." Should more expensive fuel be required in conjunction with a technology, the project could reimburse the difference in

direct fuel costs for the grant period but no later than September 2006, when ultra-low sulfur fuel becomes widely available.

Q: What technology is best for my project?

A: That will be determined in large part by the model engine of your vehicles and the other characteristics of your fleet or the market available for idling reduction technology.

EPA's website (www.epa.gov/otaq/retrofit) has a list of all the verified technologies in use. Fleet managers should consult with retrofit vendors. DEP, if asked, will work with the operator and vendors in choosing the best-proven technology in order to achieve the best goals.

Q: Will I be required to get my buses tested for emissions?

A. Average emission reduction information is probably already available, since retrofit technology manufacturers are required to test their product to ensure that it is working as claimed. The amount of reductions achieved will be known.

Q. How many vehicles in my fleet could be retrofitted?

A. The following information pertains to physical retrofit devices, not necessarily to fuel changes only. Not all vehicles are appropriate for retrofits because the technology is specific to the model year, engine type and manufacturer. In general, retrofits will be available for most **engines** originally manufactured in the 1990s. Emission reductions will be achieved from even brand-new vehicles.

We are not suggesting that an entire fleet be retrofitted through this project. Vehicles owners and operators need to be comfortable with the operational characteristics of their retrofitted buses.

Based on the approximate cost of retrofit technology, here are the number of retrofits for highway vehicles that are possible based on a \$200,000 project.

Commercially available technologies:

- Approx. 70 to 280 retrofits if oxidation catalysts are used (based as much as \$2,900 and as little as \$700 for both muffler and catalyst installed in each retrofit).
- Approx. 20 to 60 retrofits if diesel particulate filters are used (based as much as \$9,500 and as little as \$4,700 for both muffler and catalyst installed in each retrofit). This does not include the cost of reimbursing incremental fuel costs.

Technologies yet to be verified by EPA:

- Approx. 4 to 20 retrofits if SCR (selective catalytic reducers) are used (based as much as \$50,000 and as little as \$10,000 for each SCR installed). Ultra-low sulfur diesel required. Also, SCRs require a small amount of urea to operate. Urea is cheap and plentiful, but the fleet would probably require an onsite urea-refueling infrastructure.

- Approx. 20 to 40 retrofits if lean NOx converter/diesel particulate filter systems are used (based as much as \$10,000 and as little as \$5,000 for each system installed). Requires ultra-low sulfur fuel.

Exact costs will depend on the characteristics of each vehicle in the participating fleet.

Q. How much will those retrofits reduce pollution?

A. Percentages of emission reductions for various pollutants and retrofit technologies can be found at EPA's retrofit website at <http://www.epa.gov/OMS/retrofit/retrofittech.htm>.