

RFP DOCUMENT**Summary:**

The Missouri Department of Natural Resources has received a grant from the Environmental Protection Agency (EPA). The EPA grant will fund a Clean Diesel Program in Missouri. The department will award a subgrant to the metropolitan area of Kansas City to fund a Request for Proposals cost share project within this area. This cost share project is for diesel vehicle and diesel equipment owner or operators stationed in the metropolitan area and may be used to purchase diesel emission control equipment, idle reduction equipment and Smartway technology. Owners and operators of diesel vehicles and equipment stationed in the following counties will be eligible to apply for the project: Clay, Platte, and Jackson Counties.

Under this RFP, an applicant may apply for funding to cover up to 40% of the costs of any project that deals with reducing diesel emissions through emission control technology, idle reduction technology, and Smartway technology. Any funding awarded will be for a minimum of \$5,000 and a maximum of \$45,000. Emission control equipment that is eligible for funding under this cost share project includes Diesel Oxidation Catalysts (DOCs), Partial Flow-through Filters (PFFs), Diesel Particulate Filters (DPFs) and Closed Crankcase Ventilation Systems (CCVs). Idle reduction technology that is eligible for partial funding through this grant includes Auxiliary Power Units (APUs), thermal storage units, battery operated air conditioners, generator sets, fuel operated heaters, and automatic shutdown/startup devices. Smartway technology that is eligible for funding includes side skirts, low rolling resistance tires and automatic tire inflation systems.

This is a reimbursement program. Once an applicant is chosen for an award the applicant must fund the entire project. Once completion of the project has been verified, the applicant will receive a reimbursement for up to 40% of the incurred cost, not to exceed the requested amount.

Eligible Entities:

Any owner or operator of an on road or off road diesel vehicle, whose headquarters and vehicles are stationed in Clay, Platte, and Jackson, may apply for this grant. The applicant will reply to Mid-America Regional Council (MARC). Private for-profit companies are allowed to submit applications as well as any non-profit organization as long as their vehicles are located in one of the eligible counties in Missouri.

Partnering:

Multiple eligible entities are allowed to partner through one application in order to fall within the eligible range of requested funds. However, all vehicles included in the application must be stationed in the eligible counties of the Kansas City area. If entities

decide to partner together then one entity will be the leader, which will submit all of the required information. The leader will be responsible for submitting all documentation from each entity as necessary for the award. Only one reimbursement will be made to the leading entity and the leading entity will be responsible for distributing the funds to the other partners in the project.

*Note: No entity may submit multiple applications. This includes partnering. An entity may only partner on one application. If an entity applies on more than one application then neither application will be considered eligible for an award.

Eligible Equipment:

There are three different categories of equipment that will be eligible for partial funding through this grant. They include emission control technology, idle reduction technology and Smartway technology. Emission control technology reduces harmful pollutant emissions from diesel vehicles while the engines are running. They can be installed as replacement mufflers, or they can filter the crankcase emissions. The types of emission control equipment that will be eligible for partial funding through this grant will include DOCs, PFFs, DPFs, and CCVs. Only EPA approved or California Air Resources Board (CARB) verified technologies will be eligible for partial funding. A link to a website which lists all EPA verified emission control equipment is <http://www.epa.gov/otaq/retrofit/verif-list.htm>. A link to a website which lists all CARB verified emission control equipment is <http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm>.

DOCs are generally replacement mufflers with a precious metal catalyst inside the muffler which oxidizes a portion of the harmful pollutants in diesel emissions, so that the exhaust gas is more environmentally friendly. DOCs usually fall in a price range of roughly \$1,000 to \$2,000 installed, depending on the model that is chosen.

PFFs are also generally replacement mufflers. They are called partial flow through filters, because the filters allow for air to pass through while still trapping some of the particles, however, the trapping of the particles will not clog the muffler because once the exhaust temperature reaches a certain level it will let the ash pass through. PFFs do not require maintenance, but exhaust flows and temperatures must be checked before this technology should be installed. PFFs generally reduce emissions by nearly double the amount of a DOC. PFFs usually fall in a price range of \$6,000 to \$8,000 installed, depending on the model that is chosen.

DPFs are filters which can replace mufflers or be placed behind mufflers. They trap particles in a filter and reduce emissions by nearly 90%. DPFs require exhaust flow and temperature tests to run before the technology should be installed, and also require maintenance roughly every 100,000 miles depending on the model chosen. DPFs can range in price from \$9,000 to \$11,000 installed, depending on the model that is chosen.

CCVs are filters for the crankcases of diesel engines. They take the crankcase emissions and run them through a filter and direct them back into the intake of the engine. They

remove nearly 100% of crankcase emissions. However, they do not offer any treatment to the tailpipe emissions. Crankcase emissions are the main contributors to air quality issues inside the cabin of vehicles, so they generally clean the air that the operators and passengers of diesel vehicles are exposed to. CCVs require maintenance roughly every 500 hours of use with a replace filter. They generally fall within a price range of \$500 to \$1,200 installed, depending on the model that is chosen.

Idle reduction technology does not reduce the pollutants from emissions while the diesel engines are running. However, they do allow for cabin comfort to drivers and passengers while the vehicle is parked without operating the main engine. By not operating the engine, pollutants are not emitted into the air, and fuel is saved. There are several different types of idle reduction technology including APUs, thermal storage units, battery operated air conditioners, generator sets, fuel operated heaters, and automatic shutdown/startup devices. Idle Reduction technology that is eligible for partial funding through this grant must be EPA approved or CARB verified. A list of these verified technologies can be found at the following link:

<http://epa.gov/smartway/transport/what-smartway/idling-reduction-available-tech.htm>.

Auxiliary Power Units or Generator Sets are small horsepower, non-road diesel engines placed on the truck that provide air conditioning, heat, and electrical power for hotel loads such as refrigerators and TVs. They can power a block heater for engine and fuel warmth. These units consume some fuel (approx. 2/10th of a gallon per hour), emit noise and emissions, and are heavy (300-500 lbs.). APUs can operate air conditioners and other accessories mechanically. They have their own alternators and air conditioning compressors. Generators use a small engine that converts mechanical energy to electricity which is then used to operate resistance heaters or heat pumps, air conditioners, battery chargers, and other loads.

Thermal storage systems store energy as the truck is driven in cold storage, and then provides air conditioning during the drivers' rest period. A Fuel Operated Heater can be combined with this technology to provide heat. This system does not consume any direct fuel, emits no noise, and weighs about 330 lbs. Thermal storage systems generally fall in a price range of \$3,500 to \$6,000 installed depending on the model that is chosen.

Fuel operated heaters provide heat only. The devices are lightweight, consume a small amount of fuel, emit some emissions, and are relatively inexpensive. They draw diesel from the vehicle's tanks, finely atomize it, and burn it with a continuous flame in a furnace-like combustion chamber. The chamber is surrounded by air blown through the furnace or by engine coolant pumped by the heater's integral cooling pump. Because the burn is continuous, emissions are extremely low. Fuel-fired heaters warm the engine and use heat exchangers and cab fans for winter comfort. They are often combined with battery air conditioning systems to provide the heat. Fuel operated heaters generally fall within a price range of \$1,500 to \$3,000 installed depending on the model that is chosen.

Battery operated air conditioning systems use absorbed glass mat designs or gel type electrolytes to power electrical driven air conditioning systems. Heat is usually provided

by a separate fuel operated heater. These units do not consume any fuel directly, do not emit noise or emissions, and are heavy (300-500 lbs.). Some units allow for shore-power hook ups. When batteries are the sole power source, inverters change the 12-volt direct current to 110-volt or 120-volt alternating current. Battery operated air conditioners generally fall within the price range of \$4,000 to \$5,000 installed, depending on the model that is chosen.

Automatic shutdown/startup devices can be installed on vehicles which want to reduce their idle times. There are two different types, of technology that fall within this category. One type will only shut off the engine. This type of technology is called an automatic shutdown device. They can be programmed to shut off engines after a set amount of time that the engine has set at idle. The other type has a startup option, which can be used to restart the engine if the battery is running low or if the cab temperature reaches a certain level. This is called an automatic shutdown/startup device. The price range for the automatic shutdown devices is generally about \$400 to \$600 installed, depending on the model that is chosen. The price range for the automatic shutdown/startup device is generally about \$2,000 to \$3,500 installed, depending on the model that is chosen.

Smartway technology is typically used for on highway trucks. The technology reduces resistance and improves fuel economy thus reducing the amount of emissions produced. Smartway technology also conserves diesel fuel. There are various types of technology that can reduce resistance to over the road trucks. Side skirts, low rolling resistance tires and automatic tire inflation can reduce the amount of energy required to move large tractor trailers.

Side skirts or fairings make trucks more aerodynamic reducing turbulence. Fairings can also be placed between the tractor and the trailer which can reduce turbulence. These types of devices improve fuel economy resulting in fuel savings and fewer emissions. A website with more detail about trailer aerodynamics and some Smartway approved technology is <https://www.credentrust.com/pbo/smartwayfinance/technology.cfm?productTypeID=3&productTypeCategoryID=6>.

Low rolling resistance tires reduce resistance to truck movement. They typically show an improvement in fuel economy around 3%. The improved fuel economy conserves fuel and reduces diesel emissions. A website with more detail about low rolling resistance tires and some Smartway approved tires is <https://www.credentrust.com/pbo/smartwayfinance/technology.cfm?productTypeID=4&productTypeCategoryID=9>.

Automatic tire inflation systems can save tire maintenance costs and improve fuel economy by nearly 1%. When not properly inflated, tires flex more under load, producing heat and increasing rolling resistance, which wastes fuel. Properly inflated tires also wear longer and have fewer punctures. Automatic tire inflation systems continually monitor the air pressure in tires and can maintain proper air pressure in tires

even while the truck is moving. A website with more detail about automatic tire inflation and a Smartway approved system is

<https://www.credentrust.com/pbo/smartwayfinance/technology.cfm?productTypeID=4&productTypeCategoryID=8>.

RFP Amounts

The minimum amount that may be applied for is \$5,000, and the maximum that may be applied for by an eligible entity is \$45,000. Applications requesting less than \$5,000 or more than \$45,000 will not be eligible for funding. Only one application per entity will be allowed. MARC reserves the right to fund a portion of the asking price if deemed necessary.

Restrictions

This grant may not be used to fund any portion of the following costs:

- The cost of shipping emission control equipment or an idling reduction unit from the manufacturer to the facility where the emission control equipment or idling reduction unit will be installed on the vehicle
- The cost of operating emission control equipment or an idle reduction unit
- The cost of maintaining emission control equipment or an idle reduction unit
- Any luxury options for emission control equipment or an idle reduction unit including but not limited to chrome plating

Application Process:

The deadline for application to be submitted will be December 1, 2008. Clarification may be requested by the MARC. No applications or clarification requests received after their respective deadlines will be reviewed. The deadline for clarification requests is December 31, 2008. All applications deemed to meet the requirements of this RFP will then be assigned a lottery number. On January 12, 2009, the lottery will be held. Applications drawn first will be funded. Additional applications will be drawn until the funding has been depleted.

Application Information:

Applications may be sent to the following address:

Mid-America Regional Council
600 Broadway, Suite 200
Kansas City, MO 64105-1659

Applications will be restricted to no more than 6 pages. Pages in excess of 6 pages will not be reviewed. All applications will need to include two documents including a narrative proposal and a budget/vehicle identification page.

Narrative Proposal:

The narrative proposal should contain the following sections: summary page, summary/approach, and methods of verifying compliance.

The summary page should include the following:

- Project title
- Company/entity that is applying
- Contact person, including name and job title
- Contact information:
 - Office phone number
 - Cell phone number
 - Mailing address
 - Email address
- Requested funding
- Brief paragraph describing the project

The summary/approach section should include all of the following information:

- A description of the company/entity that is applying for the grant.
- The area in which the project vehicle(s) is headquartered.
 - The headquarters for the vehicle must fall within one of the following areas: Clay County, Platte County, Jackson County
- The type of equipment that will be installed on the vehicles.
- The vendor or mechanic that will be used for the equipment and installation.
 - Goods and services funded through this grant must be competed, and the method of choosing must be in accordance with OMB 40 CFR Part 30 or 31. A link to CFR documents is <http://www.epa.gov/lawsregs/search/40cfr.html>
- The expected remaining life of the project vehicle(s).
 - The expected remaining life of project vehicles must be at least 5 years in order to maximize the useful life of the equipment that will be installed.
- The method of installation
 - Will it be done by an internal mechanic or a hired mechanic?
- An approximate schedule for the purchase and installation of the equipment.
 - The deadline for the equipment to be installed will be 120 days after the award approval notice was sent. If proper paid receivers and photographic evidence of the installed equipment is not received by this time your award will be terminated.

The respective agency will reimburse the partner up to the agreed amount through the grant when a paid receiver and a photograph of the installed equipment are received and verified by the respective agency. The methods of verifying compliance section should include the following information:

- Clearly state that you understand that you must provide invoice documentation for any labor and equipment purchased for the project.

- If an internal mechanic is intended to perform the installation state your methods of documenting their time spent on the installation. Include the total cost for the installation and number of hours to install with the total project cost for reimbursement.
- State your method of verifying that the equipment has been installed.
 - This could be pictures with license plates and the equipment installed.
 - Other methods can be considered.
- Indicate that you will not purchase any goods or services with the award money unless it has been competed in compliance with EPA regulations.

Budget/Vehicle Identification Page:

This portion of the application must be filled out with all of the information included in the attached example.

BUDGET EXAMPLE FOR REQUEST FOR PROPOSAL COST SHARE PROJECT							
COMPANY OR ENTITY NAME							
STATE VENDOR IDENTIFICATION NUMBER							
DETAIL BUDGET BREAKDOWN							
CATEGORY	VEHICLE INFORMATION (Year of vehicle, on-road/off-road, horsepower, engine make, engine model #)	VEHICLE IDENTIFICATION NUMBER	INSTALLATION DETAILS *	VEHICLE ANNUAL MILEAGE	VEHICLE ANNUAL IDLING HOURS	TOTAL PURCHASE OR INSTALLATION COST *	AMOUNT TO BE REIMBURSED (UP TO 40%)
TYPE OF EQUIPMENT & MANUFACTURE'S NAME							
Diesel Oxidation Catalysts - Donaldson	1996, on-road, 300HP, International, 360 engine	FLEK123456789		40,000	100	\$1,300	\$520
Auxiliary Power Unit - Auxiliary Power Dynamics	1998, on-road, 300HP, Peterbilt, 360 engine	LXDE123456789		50,000	150	\$7,500	\$3,000
Closed Crankcase Ventilation System - Donaldson	1996, off-road, 300HP, Caterpillar, 360 engine	KOPR123456789		30,000	400	\$1,000	\$400
Total Equipment Cost							
INSTALLATION							
Company's mechanic	1996, on-road, 300HP, International, 360 engine	FLEK123456789	2 HRS @ \$100.00			\$200	\$0
Installation contracted out to Green's Auto Shop	1998, on-road, 300HP, Peterbilt, 360 engine	LXDE123456789	20 HRS @ \$120.00			\$2,400	\$960
Company's mechanic	1996, off-road, 300HP, Caterpillar, 360 engine	KOPR123456789	4 HRS @ \$120.			\$480	\$192
Total Installation Cost							
TOTAL PROJECT COST						\$12,880	\$5,072
* NOTE - Do not include shipping, operation or maintenance cost							