

US EPA ARCHIVE DOCUMENT

(State work plan for EPA Allocation Funding, non-competitive grant submitted on June 23, 2008)

ILLINOIS CLEAN DIESEL GRANT PROGRAM



Students from Glenwood Intermediate School in Chatham, Illinois assist the Illinois EPA in launching the Illinois Clean School Bus Program, the first state program to implement diesel retrofits and clean diesel technologies.

**A Clean Diesel Work Plan submitted to the U.S. Environmental Protection Agency
by the Illinois Environmental Protection Agency for the
Fiscal Year 2008 State Clean Diesel Grant Program and the
National Clean Diesel Campaign**

June 23, 2008

PROJECT INFORMATION

Project Title: The Illinois Clean Diesel Grant Program

Project Contact: Illinois Environmental Protection Agency
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Project Budget

	<u>2009</u>	<u>2010</u>
U.S. EPA Base Allocation	\$196,880	\$196,880
State Match (SEPs)	\$200,000	\$200,000
U.S. EPA Match Incentive	\$98,440	\$98,440
Administrative Costs	\$0	\$0
TOTAL Project Cost (estimated)	\$495,320	\$495,320

Project Period: October 2008 – September 2010

Summary Statement:

The Illinois EPA, in coordination with its partners in the Illinois Clean Diesel Workgroup, will administer a grant program entitled the “Illinois Clean Diesel Grant Program,” which will be part of our Illinois Green Fleets initiative. The projects that will be part of this grant program include the installation of diesel oxidation catalysts, closed crankcase ventilation systems, particulate filters, and equipment to reduce or eliminate idling, such as direct-fired heaters and auxiliary power units, where appropriate. The purchase of diesel-electric hybrid vehicles will also be included. There will be a focus on school districts, local governments, businesses, and truck owners/operators to assist them in reducing diesel emissions. The target vehicles include school buses, shuttle buses, diesel vehicles that operate in residential areas, and over-the-road trucks that are located and have significant driving routes in Illinois. We will also focus on projects located in the Chicago and Metro-East nonattainment areas, in reducing ozone precursor emissions and particulate matter.

Members of the Illinois Clean Diesel Workgroup

- | | |
|----------------------------|--|
| Illinois EPA | American Lung Association of Illinois |
| Patten Industries | City of Chicago |
| Donaldson Corporation | Inland Power Group |
| Autotherm U.S.A. | Caterpillar |
| Cummins | International/Navistar |
| Metropolitan Mayors Caucus | Respiratory Health Association |
| Cook County | Chicago Metropolitan Agency for Planning |

Funding Sources and Project Budget

The Illinois EPA is submitting this work plan for the FY 08 State Clean Diesel Grant Program as part of U.S. EPA's National Clean Diesel Campaign and the Midwest Clean Diesel Initiative in Region 5. The Illinois EPA submitted its "Notice of Intent to Apply" for this funding on April 7, 2008, along with a summary of a work plan. In a letter dated May 8, 2008, Cheryl Newton, Acting Director of the Air and Radiation Division at U.S.EPA Region 5, informed the Illinois EPA that our state allocation will be \$196,880. The Illinois EPA will provide a match of \$200,000 towards this project from two Supplemental Environmental Project (SEP) cases in which U.S. EPA will further contribute \$98,440 based on this state match. There will be no administrative costs charged to the grant.

Project Description

The Illinois Clean Diesel Grant Program will further our clean diesel retrofit efforts, alongside the Clean School Bus Program and Illinois Green Fleets initiative. It will provide significant momentum for the Midwest Clean Diesel Initiative (MCDI) in achieving one million diesel engines impacted in the Midwestern states by 2010. During the past four months, the Illinois Clean Diesel Workgroup sought and identified fleets with diesel vehicles to participate in the Illinois Clean Diesel Grant Program. We heard from 34 businesses, local governments, and school districts stating they would like to be considered for project funding. In addition, we were contacted by a tug boat company that would like to participate as well, providing us the potential for a "clean marine" project. Our goal is to include diverse types of fleet applicants and organizations, diesel vehicles, geographic distribution (with an emphasis in the two air quality nonattainment areas), and utilizing various types of verified clean diesel technologies.

The projects that will be part of this grant program include the installation of diesel oxidation catalysts, closed crankcase ventilation systems, diesel particulate filters, and equipment to reduce or eliminate idling, such as direct-fired heaters and auxiliary power units, where appropriate. We will also include diesel-electric hybrid trucks and buses for certain types of applications. There will be a focus on school districts, local governments, and truck owners/operators to assist them in reducing diesel emissions. Targeted vehicles include school buses, public works trucks, diesel vehicles that operate in residential areas, shuttle buses, delivery trucks, and over-the-road trucks that are located and have significant driving routes in Illinois and idle at truck stops or rest areas. To the greatest extent possible, we will seek projects located in the Chicago and Metro-East nonattainment areas in reducing ozone precursor emissions and particulate matter.

The project budget outlined in the table below will help "clean up" about 111 diesel vehicles in project year 2009. It is assumed that the same project budget will be utilized for the second year of the work plan in 2010. In each year, the budget emphasizes the implementation of diesel oxidation catalysts (DOC), including the combination of DOCs and closed crankcase ventilation (CCV) systems. The budget has provided an estimated \$106,400 for DOCs only and DOC & CCV combinations for about 62 diesel vehicles. Direct fired heaters (DFH) are also popular choices for many fleet managers, especially school district transportation directors. These units significantly reduce idling and help to conserve diesel fuel, especially during the cold weather months. We are allocating \$84,000 for the implementation of 20 direct fired heaters. Nine vehicles have been budgeted for diesel particulate filters (DPF) and the combination of DPFs and CCV systems at an overall budgeted cost of \$74,000. Diesel multi-stage filters (DMF), or flow

through filters in combination with a CCV, have also been requested by fleet managers. We are budgeting \$32,500 for five diesel vehicles to be equipped with this technology. Diesel-electric hybrid trucks and buses equipped with diesel particulate filters are an effective technology to reduce emissions, especially while the vehicles are idling. We are including five diesel-electric hybrids equipped with diesel particulate filters in this grant allocation. We will look for fleets representing appropriate applications for diesel-electric hybrid vehicles that will be used in stop-and-go traffic, are frequently loading and unloading products and passengers, and operate in the Chicago metropolitan area. Diesel hybrids improve fuel efficiency by 60-70 percent versus regular diesel vehicles. Shuttle buses and delivery trucks are two types of vehicles where this technology would provide the best emissions reduction potential. The hybrids in this project will replace existing vehicles in these fleets, which will be scrapped and/or disassembled for parts and thus rendered inoperable. For these five new diesel-electric hybrids, we will be following U.S. EPA's guidelines concerning new vehicle and engine replacements and fund 25 percent of the project. For the five hybrid vehicles, we are budgeting \$137,500 to be charged to the grant, with the remaining \$412,500 being provided as the match from the applicants.

Technology	Estimated Number/Year	Estimated Cost/Unit	Amt. Charged to Grant 2009	Amt. Charged to Grant 2010
DOC	38	\$1,600	\$60,800	\$60,800
DOC & CCV	24	\$1,900	\$45,600	\$45,600
DPF	5	\$8,000	\$40,000	\$40,000
DPF & CCV	4	\$8,500	\$34,000	\$34,000
DMF & CCV	5	\$6,500	\$32,500	\$32,500
DFH	20	\$4,200	\$84,000	\$84,000
APU	10	\$8,700	\$60,900	\$60,900
Diesel Hybrid	5	\$110,000	\$137,500	\$137,500
Totals	111 each year		\$495,300	\$495,300

DMF = Diesel Multi-Stage Filter (flow through filter)

CCV = Closed Crankcase Ventilation

DOC = Diesel Oxidation Catalyst

DPF = Diesel Particulate Filter

DFH = Direct Fired Heater

APU = Auxiliary Power Unit

Hybrid vehicles are Diesel-Electric Replacement Vehicles with Diesel Particulate Filters

(Competitive grant submitted on June 12, 2008)

ILLINOIS GREEN FLEETS AND THE ILLINOIS CLEAN DIESEL GRANT PROGRAM



**A Grant Application submitted to the U.S. Environmental Protection Agency-
Region 5
by the Illinois Environmental Protection Agency and the American Lung
Association of Illinois on behalf of the Illinois Clean Diesel Workgroup for the
Request for Proposals for
EPA-R5-MCDI-2008 issued as part of the Midwest Clean Diesel Initiative**

June 12, 2008

Project Title **Illinois Green Fleets and the Illinois Clean Diesel Grant Program**

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Total EPA Funding Request **\$678,604**

Clean Diesel Equipment **\$590,604 (EPA grant funding)**
Administrative Funding **\$88,000 (EPA grant funding)**
Cash Matches **\$654,699 (applicant matches)**
Percent Match **96.5%**
Total Project Cost **\$1,333,303**

Project Period January 1, 2009 to December 31, 2010, with most projects expected to be completed in 2009

Our Partners The Illinois Environmental Protection Agency (Illinois EPA) and the American Lung Association of Illinois (ALAI) are providing this grant application on behalf of the Illinois Clean Diesel Workgroup for consideration by the U.S. EPA. Members of the workgroup have identified diverse types of projects and technologies for this grant application to kick-off the Illinois Clean Diesel Grant Program as part of the Illinois Green Fleets initiative. Our workgroup members include representatives from:

Patten Industries
 Donaldson Corporation
 Autotherm U.S.A.
 Cummins
 Metropolitan Mayors Caucus
 Cook County

City of Chicago
 Inland Power Group
 Caterpillar
 International/Navistar
 Respiratory Health Association
 Chicago Metropolitan Agency for Planning

Summary

The Illinois EPA, ALAI and its partners in the Illinois Clean Diesel Workgroup will provide grants to 14 entities for various types of clean diesel projects. The types of vehicles include school buses, transit or passenger buses, delivery trucks, work trucks, and over-the-road semi-trucks. These projects will include the installation of diesel oxidation catalysts, particulate filters, diesel multi-stage filters or flow-through filters, closed crankcase ventilation systems, auxiliary power units, and the purchase of diesel-electric hybrid buses and work trucks. The grant program will affect 106 diesel vehicles. The Illinois Clean Diesel Workgroup is requesting \$678,604 for this project, of which \$590,604 will be for the clean diesel retrofit equipment and hybrid vehicles and \$88,000 for the administrative costs for the Illinois EPA and ALAI. The applicants will provide a cash match of \$654,699 representing a 96.5 percent match. The total project cost is \$1,333,303.

Background and Programmatic Priorities

The Illinois Clean Diesel Grant Program will join the Illinois Clean School Bus Program and the Alternate Fuels Rebate Program as part of the Illinois Green Fleets initiative to help clean up diesel emissions. Information on our green fleet programs, the participating fleets, and related conferences and seminars can be found on our website at www.illinoisgreenfleets.org.

The Illinois Clean School Bus Program is a statewide program that began in 2003 to retrofit school buses to reduce diesel emissions, especially particulate matter. The program began with an initial fund of \$2.3 million coming from a Supplemental Environmental Project (SEP). However, due to the geographic restrictions placed on the fund, it could only be spent on school bus projects for school districts located in a 24-county area in central, west-central, and northwest Illinois. The Illinois EPA also applied for and was granted federal funding through U.S. EPA's Clean School Bus USA program to fund a handful of school bus projects in the Chicago area. To date, the Illinois Clean School Bus Program has provided nearly \$3.6 million for 77 school districts in 34 counties in Illinois, with most of these being downstate. The program has "cleaned up" 2,975 school buses by utilizing diesel oxidation catalysts, particulate filters, non-idling equipment, closed crankcase ventilation systems, the early adoption of ultra-low sulfur diesel fuel, and use of biodiesel (20% blend or B20) fuel. During the past four years, 972 buses have been equipped with diesel oxidation catalysts, 422 with non-idling equipment (e.g., direct fired heaters), 87 with particulate filters, and 48 with the combination of diesel oxidation catalysts and closed crankcase ventilation filters. The school districts participating in the program are designated as "Illinois Green Fleets."

The Illinois EPA and ALAI will also promote the Illinois Alternate Fuels Rebate Program while working with our project partners on the Clean Diesel Grant Program. The Illinois EPA offers rebates for the use of 20 percent and higher biodiesel blends (B20+). Many fleets, especially school districts, have taken advantage of the rebate program to use B20 in diesel trucks and buses. To date, there are over 6,000 diesel vehicles throughout the state using B20 and these fleets have also been designated as "Illinois Green Fleets." In addition, the Illinois EPA designates fleets that have done diesel retrofits or incorporated other clean diesel technologies. The organizations in this proposal for the Illinois Clean Diesel Grant Program will also be listed on our www.illinoisgreenfleets.org website.

The U.S. EPA launched the Midwest Clean Diesel Initiative (MCDI) in January 2007. The Illinois EPA and the American Lung Association of Illinois serve as Co-Chairs in the MCDI. This initiative is a multi-state collaborative that includes Illinois, Michigan, Wisconsin, Indiana,

Ohio, and Minnesota. Of these states, Illinois has the greatest number of diesel trucks, buses, and other types of diesel vehicles, with about 700,000 diesel units. The goal of the MCDI is to have one million diesel-powered vehicles throughout the Midwest “cleaned up” by 2010. Diesel retrofit equipment, including diesel oxidation catalysts, particulate filters, closed crankcase ventilation systems, and non-idling units for on-road diesel vehicles, is a major part of the “clean up strategy” in the Midwest. In Illinois, there have been close to 187,000 diesel engines affected by various programs and initiatives through retrofits, the use of cleaner fuels, or by the implementation of idling policies attributed towards the MCDI.

Along with the National Clean Diesel Campaign funding through the U.S. EPA, the Illinois EPA has applied for \$1 million in Congestion Mitigation and Air Quality (CMAQ) funding in FY 2009 to incorporate into the Illinois Clean Diesel Grant Program in the Chicago nonattainment area for on-road diesel vehicles. If our CMAQ application is approved, we will have well over \$1 million to supplement funding from the Midwest Clean Diesel Initiative and the National Clean Diesel Campaign. However, at this time, our CMAQ application is still in the review and scoring process.

Project Description

This grant application to launch the Illinois Clean Diesel Grant Program, and to further our efforts in the Clean School Bus Program and Illinois Green Fleets initiative, will provide significant momentum for the MCDI in achieving one million diesel engines impacted in the Midwestern states by 2010. During the past four months, the Illinois Clean Diesel Workgroup sought and identified 34 fleets with diesel vehicles. Of these, 14 were selected for inclusion in this grant application, representing diverse types of organizations, on-road diesel vehicles, geographic distribution (with an emphasis in the two air quality nonattainment areas), and verified clean diesel technologies. The Illinois EPA and ALAI have confirmed that the retrofit technologies and equipment being utilized in this proposal are listed as “EPA Verified Technologies,” are certified by CARB or, in the case of APUs or diesel-electric hybrids, are approved by U.S. EPA on its website and associated links at www.epa.gov/otaq/retrofit/verif-list. In addition to the 20 fleets that are “on file” waiting for future project funding, we have received several other inquiries that we will follow up with as other funding becomes available.

The Illinois EPA, ALAI and the other partners in the Illinois Clean Diesel Workgroup will provide grants to 14 diesel applicants for various types of clean diesel projects. The applicants include five school districts, four over-the-road truck owners/operators, two small businesses, two larger businesses, and one local government. These projects will include the installation of diesel oxidation catalysts, particulate filters, diesel multi-stage filters (flow-through filters), closed crankcase ventilation systems, auxiliary power units, and the purchase of diesel-hybrid buses and work trucks. All of the vehicles will be using ultra-low sulfur diesel (ULSD) with a maximum sulfur content of 15 ppm. The table below summarizes the 14 applicants, the number of diesel vehicles affected, the types of technologies, the amount of requested funding, the amount of cash matches, and total project costs.

Fleet	County	Vehicles	Tech.	\$ Request	\$ Match	Proj. Cost
Kaneland S.D.	Kane	15 Buses	DPF & CCV	\$110,740	0	\$110,740
Parmenter Transport	Effingham	1 Truck	APU	\$5,880	\$2,520	\$8,400
Twin Lakes Trucking	St. Clair	5 Trucks	APU	\$29,840	\$12,789	\$42,629
RonX Corp.	Sangamon	1 Truck	APU	\$6,475	\$2,775	\$9,250
McCubbin Trucking	Logan	1 Truck	APU	\$6,685	\$2,865	\$9,550
W. Aurora S.D.	Kane	24 Buses	DMF & CCV, DFH	\$118,800	0	\$118,800
Ohio S.D.	Bureau	3 Buses	DFH	\$10,434	0	\$10,434
Knoxville S.D.	Knox	15 Buses	DOC	\$19,500	0	\$19,500
Cook County	Cook	35 Buses and Dump Trucks	DOC & CCV, DPF	\$91,000	0	\$91,000
Elgin S.D.	Kane	1 Bus	Plug-In Hybrid	\$48,750	\$146,250	\$195,000
Kellogg Co.	Cook	1 Truck	Hybrid	\$27,500	\$82,500	\$110,000
Reyes Dist.	Cook	1 Truck	Hybrid	\$27,500	\$82,500	\$110,000
C. Weber Landscaping	Cook	1 Truck	Hybrid	\$27,500	\$82,500	\$110,000
Hyatt O'Hare	Cook	2 Shuttle Buses	Hybrid	\$60,000	\$240,000	\$300,000
TOTALS		106		\$590,604	\$654,699	\$1,245,303

DMF = Diesel Multi-Stage Filter (flow through filter) Counties in "bold" are in an air quality nonattainment area

CCV = Closed Crankcase Ventilation

DOC = Diesel Oxidation Catalyst

DPF = Diesel Particulate Filter

DFH = Direct Fired Heater

APU = Auxiliary Power Unit

Hybrid vehicles are Diesel-Electric Replacement Vehicles with Diesel Particulate Filters

