



National Clean Diesel Campaign Fact Sheet



REDUCING emissions from diesel engines is one of the most important public health challenges facing the country. Even with more stringent heavy-duty highway and nonroad 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 (NOx) and particulate matter (PM)—both of which contribute to serious public health problems.

These emissions cause thousands of premature deaths, hundreds of thousands of asthma attacks, millions of lost work days, and numerous other health impacts every year. Thankfully, there are a variety of cost-effective technologies that can dramatically reduce diesel emissions and help our nation meet its clean air goals.

Our Goal

Building on the success of its regulatory and voluntary efforts to reduce emissions from diesel engines, the U.S. Environmental Protection Agency (EPA) created the **National Clean Diesel Campaign (NCDC)**. The Campaign is working to reduce the pollution emitted from diesel engines across the country through the implementation of varied control strategies and the sustained involvement of national, state, and local partners.

To fully address the challenges of reducing diesel emissions, EPA is utilizing a multi-pronged approach through the NCDC, including:

- Successfully implementing the 2007 Heavy-Duty Highway Engine Rule and the Clean Air Nonroad Diesel Rule.
- Developing new emission requirements for trains and marine diesels, including large commercial marine engines.
- Addressing engines already in use today by promoting a variety of cost-effective and innovative emission reduction strategies, including switching to cleaner fuels; retrofitting, repairing, repowering, and replacing equipment; and reducing idling.

Exposure to diesel exhaust can:

- Cause lung damage.
- Trigger respiratory problems.
- Exacerbate asthma and existing allergies.
- Be linked to premature mortality.

Long-term exposure is thought to increase the risk of lung cancer.

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Regulations for New Diesel Engines

EPA is committed to successfully implementing stringent new standards for diesel fuel and new diesel engines. These standards are the critical foundation of the Agency's diesel emissions control program. Clean, ultra-low sulfur diesel fuel will be required for use in highway diesel engines starting in 2006. Lower sulfur diesel fuel for nonroad diesel machines will be required in 2007, followed by ultra-low sulfur fuel for these machines in 2010, and for locomotives and marine engines in 2012.

Besides reducing emissions from the existing diesel fleet, clean fuels will enable the use of advanced aftertreatment technologies on new engines. Technologies such as particulate traps, capable of emission reductions of 90 percent and more, will be required under new standards set to begin phasing into the highway sector in 2007, and into the nonroad sector in 2011.

Many areas of the country are designated as "nonattainment areas" and do not meet the National Ambient Air Quality Standards. Recently, EPA designated 474 counties as "out of compliance" with the eight-hour ozone standard and 208 counties as out of compliance with the PM2.5 standard.

As a result of these designations, almost 180 million people are living in counties that are out of compliance with the eight-hour NOx standards. Almost 90 million people now live in PM nonattainment areas.

The new standards will yield enormous long-term benefits for public health and the environment. By 2030, when the engine fleet has been fully turned over, PM will be reduced by 250,000 tons per year, and NOx will be reduced by 3.3 million tons per year. This will result in annual benefits of more than \$150 billion, at a cost of approximately \$7 billion. Similar stringent emissions standards for locomotives and marine diesels are now being developed. EPA is also working to reduce emissions from large commercial marine diesel vessels, such as cruise and container ships, through the use of cleaner fuels and engines.

Voluntary Programs for the Existing Diesel Engine Fleet

Over the last five years, EPA has launched a number of successful voluntary programs designed to reduce emissions from the diesel fleet. Each program provides technical and financial assistance to stakeholders interested in reducing their fleet's emissions effectively and efficiently. The signals are clear—stakeholders want these programs to grow. Much of this growth will come from focused partnerships and collaborative efforts at the state and local level, including regional collaborative initiatives.

In conjunction with state and local governments, public interest groups, and industry partners, EPA has established a goal of reducing emissions from the more than 11 million diesel engines in the existing fleet by 2014. Looking at these engines, EPA determined there were five sectors that provided the best opportunity to obtain significant reductions, as described on the following page.

*NCDC participants are committed to **reducing diesel emissions** and **finding innovative ways** to protect human health and the environment.*

School Bus Sector



By 2010, **Clean School Bus USA** aims to retrofit or replace the 400,000 diesel school buses in the United States and promote idling reduction policies in 14,000 school districts. The program works with communities to reduce school bus idling, retrofit current school bus fleets with new technologies, introduce cleaner fuels, and replace the oldest buses with new vehicles that meet stringent pollution control standards. Through the program, EPA is partnering with educators, industry, transportation experts, public health officials, and other community leaders to develop environmentally clean school bus programs nationwide. As of 2004, more than 2 million children were riding to school on approximately 20,000 cleaner buses due to the Clean School Bus USA program.

Ports Sector



The goal of **Clean Ports USA** is to reduce diesel emissions at maritime ports. The NCDC is partnering with the American Association of Port Authorities and numerous ports and their stakeholders to develop appropriate incentives and strategies to reduce emissions at U.S. ports. EPA is developing the program to help measure the emissions from port activity and identify cost-effective ways to improve the environmental performance of ports.

Construction Sector



The goal of **Clean Construction USA** is to reduce emissions from major construction projects in areas that do not meet national air quality standards. Through the program, EPA is partnering with the Associated General Contractors of America to develop incentives for private fleets to reduce pollution from their vehicles. Government and public interest groups are working together to develop guidance and equipment specifications for public projects and fleets.

Freight Sector



The **SmartWay Transport Partnership** is a collaborative voluntary program between EPA and the freight industry designed to increase energy efficiency and promote strategies to reduce air pollution associated with moving goods in the United States. SmartWay is partnering with trucking companies (such as FedEx and UPS) and major corporations that hire trucking services (such as Ikea and The Home Depot) to create a demand for cleaner, more efficient freight services. SmartWay is also working with states, non-governmental organizations, and the freight industry to eliminate unnecessary engine idling at truck stops, terminals, ports, and locomotive switchyards. The ultimate goal for this program is to transform the fleet into one of high fuel efficiency and low emissions.

Agriculture Sector



Clean Agriculture USA is partnering with the farming community, governmental organizations, and non-governmental organizations (NGOs) to promote clean diesel strategies, including biodiesel and renewable fuels, across the country.

Diesel Emission Reduction Technologies and Strategies

Retrofitting diesel engines is one of the most cost-effective ways to reduce diesel emissions. To help stakeholders identify viable technologies, EPA has developed a list of verified technologies that contains information on expected emission reduction benefits. This list provides information on numerous innovative emission control technologies that EPA has approved for use. Each EPA-verified technology has undergone extensive testing and analysis. EPA has also signed a Memorandum of Understanding with the California Air Resources Board (ARB) to recognize ARB's list of verified emission control options. In addition, EPA has established a comprehensive list of idle-control technologies.

Additionally, EPA has developed innovative guidance that air quality agencies can use to quantify emission reductions achieved by reducing vehicle and locomotive idling. EPA plans to release guidance for air quality agencies to quantify and use emission reductions from specific retrofit actions.

Effective Strategies

Strategies to reduce emissions from diesel engines include:

- *Switching to Cleaner Fuels — using advanced fuels, such as ultra-low sulfur diesel, biodiesel, liquid petroleum gas, and compressed natural gas.*
- *Retrofitting — installing emission-reduction technologies, such as particulate filters and oxidation catalysts.*
- *Repairing — repairing an engine to meet its original standards.*
- *Repowering — replacing an old engine with a newer, cleaner model.*
- *Replacing — replacing an old vehicle or equipment with a cleaner model.*
- *Reducing Idling — reducing a vehicle's idling time.*
- *Increasing Energy Efficiency — incorporating low-rolling resistance tires and advanced aerodynamics for tractors and trailers.*

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Verified Technologies

You can find more information on verified technologies at these Web sites:

EPA's Verified Technology List at:
www.epa.gov/otaq/retrofit/retroverifiedlist.htm

ARB's Verified Technology List at:
www.arb.ca.gov/diesel/verdev/verdev.htm

EPA's Idling Control Technology List at:
www.epa.gov/otaq/smartway/idlingtechnologies.htm



Dynamic Tools and Resources

Through the NCDC, EPA has developed a number of tools for stakeholder projects and partnerships, including:

- *Verifying technologies to ensure that the emission performance claimed by manufacturers is, in fact, achieved.*
- *Creating peer-reviewed emission models and State Implementation Plan (SIP) guidance.*
- *Sharing best practices and recognizing environmental leaders.*

Working Together for Cleaner Air

The NCDC will achieve immediate and significant environmental results by working collaboratively with businesses, government and community organizations, industry, and others. Regional initiatives provide an excellent example of how the NCDC will use a proactive, incentive-based approach to achieve environmental results. Members of these initiatives have agreed to collectively leverage additional funds and take a local approach to diesel mitigation.

Strong Stakeholder Support

- *EPA has engaged hundreds of stakeholders nationwide from the public and private sector.*
- *Grant solicitations are met by demand 10 times greater than available resources.*
- *Winning grant programs have leveraged an average of two to four times additional resources.*

Regional Collaboratives and Partnerships

Benefiting from economies of scale while protecting against competitive disadvantages, numerous regional initiatives provide an ideal structure for significant reductions across a large geographic area:

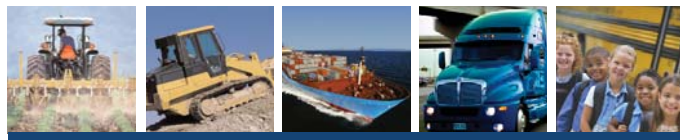
- **West Coast Diesel Emissions Reductions Collaborative.** One of the first of its kind, this joint effort includes EPA, U.S. Department of Agriculture Natural Resource Conservation Service, U.S. Department of Energy, U.S. Department of Transportation, Canada and Mexico, as well as state, local, non-profit, and private sector partners from California, Alaska, Washington, and Oregon to reduce air pollution emissions from diesel engines along the West Coast. The collaborative works across sector workgroups to identify, fund, and implement regional diesel emission reduction projects.
- **Midwest Diesel Initiative.** This new, cooperative, public-private effort is reducing diesel emissions along major transportation corridors and various sectors, including trucking, locomotive, construction, and ports, with an emphasis on urban areas.
- **Northeast Diesel Collaborative.** This program builds on a foundation of voluntary action and encourages participants to engage in projects that will reduce transportation-related air pollution to help address the high asthma rates in the Northeast.

Looking to the Future

Building on past successes, the NCDC has established several hundred projects that involve cleaner diesel, idle reduction, and other environmental control strategies across the country, achieving emission reductions now that will yield benefits for years to come. Each project serves as an innovative, cost-effective model for diesel emission reduction. In addition, many states are using ultra-low sulfur diesel fuel well ahead of EPA's requirements. In total, hundreds of partners nationwide are successfully implementing cleaner diesel projects, resulting in a foundation for the NCDC's efforts to reduce diesel pollution and protect human health and the environment.

How to Get Involved

For more detailed information and a list of contacts, please visit the National Clean Diesel Campaign Web site at www.epa.gov/cleandiesel.



National Clean Diesel Campaign

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November 2005
EPA-420-F-05-012