

# Clean Construction USA

*Building a Cleaner Future Together*



**National Clean Diesel Campaign**





**T**here are approximately two million pieces of construction equipment in the United States.

These pieces of equipment contribute significantly to local air pollution. For example, a 175-horsepower bulldozer, which can be found on countless construction sites across the country, emits as much particulate matter (PM) as 500 new cars. By reducing emissions from construction equipment, fleet owners can save fuel and money and reduce pollution, while providing a healthier environment for their employees and the public.



“Working together, the construction industry can help build a better future by reducing our diesel emissions. Through **Clean Construction USA**, we can achieve a new standard of environmental excellence, while improving efficiency and saving fuel at the same time.”

—Steve Sandherr, CEO, Associated General Contractors of America



# What is Clean Construction USA?

**C**lean Construction USA is a voluntary program that promotes the reduction of diesel emissions from construction equipment and vehicles. The initiative encourages the use of innovative emission control technologies and the replacement of older equipment by promoting retrofit incentives and providing technical assistance.

Through this program, the U.S. Environmental Protection Agency (EPA) is partnering with the Associated General Contractors of America and public and private construction industry organizations to develop incentives for public and private fleets to reduce pollution from their equipment and vehicles.

In recent years, EPA has set emission standards for the engines used most in construction equipment. The 2007 Heavy-Duty Highway Engine Rule and the Clean Air Nonroad Diesel Rule will yield enormous long-term benefits for public health and the environment.

- ◆ **Almost 90 million people live in 208 counties that have violated air quality standards for the PM2.5 standard.**
- ◆ **Construction equipment can last 25 to 30 years. It can take many years before older equipment is replaced with newer, cleaner equipment.**



# Clean Construction Strategies



Clean Construction USA encourages contractors, owners, and operators of construction equipment to implement strategies that reduce emissions from diesel engines, including:

- **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 on an engine, such as particulate filters and oxidation catalysts.
- **Repairing**—repairing an existing engine to meet its original standards.
- **Repowering**—replacing an old engine with a newer, cleaner model.
- **Replacing**—replacing an old machine with a cleaner model.
- **Reducing Idling**—reducing the amount of idling time for a machine.

# Emission Reduction Technologies



**R**etrofitting diesel engines is one of the most cost-effective ways to reduce diesel emissions from construction equipment. EPA is making the retrofit process easier for the construction industry by:

- Developing a list of verified retrofit technologies that contains information on expected emission reduction benefits and provides information on numerous innovative emission control technologies that EPA has approved for use.
- Requiring extensive testing and analysis on each EPA-verified technology.
- Verifying new technologies as they come to market, in partnership with the California Air Resources Board (ARB).
- Establishing a comprehensive list of idle-control technologies.

**For a list of technologies that have been verified for nonroad equipment, visit:**

- ◆ **EPA's Verified Technology List:**  
[www.epa.gov/otaq/retrofit/retroverifiedlist.htm](http://www.epa.gov/otaq/retrofit/retroverifiedlist.htm)
- ◆ **ARB's Verified Technology List:**  
[www.arb.ca.gov/diesel/verdev/verdev.htm](http://www.arb.ca.gov/diesel/verdev/verdev.htm)

**For available idling controls, visit:**

- ◆ **EPA's Idling Control Technology List:**  
[www.epa.gov/otaq/smartway/idlingtechnologies.htm](http://www.epa.gov/otaq/smartway/idlingtechnologies.htm)





# Clean Construction Success Stories




## Central Artery/Tunnel

Also known as the Big Dig, the tunnel is located in Boston, Massachusetts, and was administered by the Massachusetts Turnpike Authority. The work focused on adding 161 lane-miles of new highway in a 7.5-mile-long corridor. More than 100 excavators, front-end loaders, dump trucks, lifts, bulldozers, generators, compressors, and cranes—ranging from 50 to 300 horsepower—were retrofit with diesel oxidation catalysts and low emission diesel fuel. For more information, visit [www.epa.gov/cleandiesel/constructcase.htm#big](http://www.epa.gov/cleandiesel/constructcase.htm#big).



## I-95 New Haven Crossing Improvement Program

Located in Southern Connecticut, the program is administered by the Connecticut Department of Transportation. The project targeted a 7.2-mile stretch of interstate improvement. All diesel-powered equipment on site for more than 30 days, or with a rating of 60 horsepower and above, were included in the project. As of 2005, 84 vehicles have been retrofit, with an estimated 200 to be included upon completion. Technology used included diesel oxidation catalysts. For more information, visit [www.epa.gov/cleandiesel/constructcase.htm#95](http://www.epa.gov/cleandiesel/constructcase.htm#95).



## Dan Ryan Expressway Road Construction Project

The project, located in Chicago, Illinois, is administered by the Illinois Environmental Protection Agency and the Illinois Department of Transportation. The project involved the addition of an express lane in both directions from 31st Street to the I-57 Interchange. There are 290 pieces of construction equipment that will be fueled with cleaner fuels. For more information, visit [www.epa.gov/cleandiesel/constructcase.htm#ryan](http://www.epa.gov/cleandiesel/constructcase.htm#ryan).

# Funding Opportunities

**M**any states offer funding opportunities to equipment operators for implementing clean diesel strategies, such as replacing older equipment or engines, purchasing cleaner burning fuel, and retrofitting vehicles with aftertreatment devices.

In particular, two programs provide funding for owners to acquire engines that are cleaner than current standards:

## ■ **Carl Moyer Program**

Provides grants to private companies and public agencies in California to clean up their heavy-duty engines through retrofitting, repowering, or replacing older engines with newer and cleaner ones. [www.arb.ca.gov/msprog/moyer/moyer.htm](http://www.arb.ca.gov/msprog/moyer/moyer.htm)

## ■ **Texas Emissions Reduction Plan**

Improves air quality in Texas through a grant program that funds the incremental costs associated with new engines, repowers, retrofit technologies, fuels, infrastructure, and the demonstration of new technologies.

[www.tceq.state.tx.us/implementation/air/terp](http://www.tceq.state.tx.us/implementation/air/terp)

Some states also offer tax incentives to promote the purchase or lease of alternative-fueled vehicles or to help offset the cost of purchasing cleaner fuels. For more information, visit:

[www.eere.energy.gov/cleancities/incen\\_laws.html](http://www.eere.energy.gov/cleancities/incen_laws.html).

Funding for diesel retrofits is also available from Congestion Mitigation and Air Quality (CMAQ) funds administered by the Metropolitan Planning Organizations throughout the nation. For more information visit: [www.fhwa.dot.gov/environment/cmaqpgs](http://www.fhwa.dot.gov/environment/cmaqpgs).

The **National Clean Diesel Campaign** also offers resources for fleet owners to demonstrate the application of verified pollution-reducing retrofit technologies in nonroad vehicles and equipment, such as those used in construction. For more information, visit:

[www.epa.gov/cleandiesel/grantfund.htm](http://www.epa.gov/cleandiesel/grantfund.htm).



# How Do I Get More Information?

**C**lean Construction USA is one component of EPA's **National Clean Diesel Campaign (NCDC)**, a voluntary initiative designed 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.



## **National Clean Diesel Campaign**

Visit [www.epa.gov/cleandiesel](http://www.epa.gov/cleandiesel) to find detailed information about the National Clean Diesel Campaign.



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