Fact Sheet

Oregon Clean Diesel Initiative

Burn Cleaner Fuel – Burn Fuel Cleaner

Diesel Engines And Air Quality

Over 94 percent of all freight moved in the United States is transported in a diesel powered vehicle. Diesel engines are used extensively throughout the United States because of their well-founded reputation for reliability, durability, power and fuel efficiency.

In some cases, diesels have also been recognized by their smoky and odorous exhaust. Increasing scientific evidence indicates that diesel exhaust is more than just a nuisance concern; health assessments have listed it as a probable human carcinogen. In addition, diesel exhaust is known to contribute to chronic respiratory problems such as asthma. Scientists have also identified the soot in diesel exhaust as a significant factor in global warming and regional haze.

In Oregon, a preliminary assessment of risk from air toxics in the outdoor air indicates diesel exhaust to be number one, with a health risk almost 30 times greater than the next nearest air pollutant.

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Diesel engines have gotten cleaner since the late 1980s. In fact, with new federal emissions standards taking effect in 2007, diesel engines in this country, starting with this model year, will be the cleanest in the world. Relying solely on fleet turnover to achieve the benefits of the rigorous EPA standards would take over 20 years because diesel engine durability means that many of these vehicles will continue to remain in service.

Significant air pollution reductions from the existing fleet of diesel vehicles can be obtained with currently available pollution treatment technologies and through the use of ultra low sulfur diesel fuel. Emissions tests indicate that diesel-powered vehicles fitted with these newer emission controls can run as cleanly as those powered by compressed natural gas and at a much lower cost.

Clean Diesel Initiative

The Department is leading efforts to improve air quality by offering financial and technical assistance that promotes retrofitting and other techniques to reduce the adverse emission impact of diesel. Clean diesel, using ultra low sulfur fuel and filters, is the most cost effective approach. A clean diesel solution allows fleet managers and mechanics to stay with the powertrain they are already most familiar with, retaining all of the advantages of diesel engines, and with the least amount of additional expense to the vehicle owner/operator and the customers they serve.

Retrofit of diesel engines includes the installation of pollution control equipment on diesel engines, for both highway and non-road vehicles, to improve the emissions performance. Information about retrofits and the list of verified technologies can be obtained at EPA's website, http://www.epa.gov/otaq/retrofit.

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Engine Idling

The scope of the Clean Diesel Initiative also includes other opportunities to reduce diesel pollution, for instance, by reducing unnecessary engine idling.

Truck drivers idle their engines for a variety of reasons. First, and foremost, is the need for heating or air conditioning during federally mandated rest periods. Beyond the need for a comfortable temperature, truck drivers idle the engine to operate on-board electrical appliances, such as a television or refrigerator. Another reason for idling is to ensure the engine block, fuel and oil remain warm in cold weather.

Locomotive operators also idle their engines for very long periods of time, primarily to protect the engine during cold weather. Since most locomotive engines do not have anti-freeze, temperatures below 40^{o} F can damage the engine. These locomotive engines will idle to maintain engine coolant, fuel, oil, and water warmth, as well as maintaining battery charge. In addition, they may idle to maintain comfortable temperatures inside the operator cabs. Other reasons to keep a locomotive idling include having a readily available engine (avoiding unnecessary starting and shutting-down), and the habit or custom of always keeping a diesel engine operating.

What is the extent of idling?

Nationally, an estimated 500,000 long haul trucks will idle their engines for extended periods. On average, truck drivers will idle for about 6 hours per day, over 200 days per year. Across the country, there are about 5,000 switch engines, operating in rail yards often adjacent to residential areas. Switcher idling represents about 2,500-3,000 hours per engine per year. Combined truck and locomotive idling consumes over 1 billion gallons of fuel per year, or about 3% of all diesel fuel used by trucks and trains.

In addition to pollution impacts from idling engines of nitrogen oxides and particulate matter, over 11 million metric tons of carbon dioxide, a global warming contributor, is emitted while idling every year.

What can be done?

The simplest way is behavior change. Driver incentives and education can play an important role in breaking the idling habit. The Oregon Department of Education adopted school bus idling guidelines that are reinforced by outreach efforts by DEQ and others. Many large trucking companies, including several in Oregon, offer financial incentives to drivers to reduce unnecessary idling.

There are a number of technology based approaches that fall into two broad categories: on-board and off-board.

On-board systems include engine heaters, automatic shut down/startup systems (available for both trucks and locomotives) and auxiliary power units/generator sets.

Off-board systems consist, in one form or another, of a setup that allows the trucker to connect to grid-generated electricity that is able to more efficiently power personal comfort and engine temperature maintenance systems.

Many of these technologies, off-board and on-board, can qualify for state of Oregon tax credits intended to facilitate the introduction of energy saving technologies.
http://www.energy.state.or.us/bus/tax/taxcdt.htm

For more information on the Oregon Clean Diesel Initiative, contact Kevin Downing at 503-229-6549.

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