

## Oregon Clean Diesel Initiative Burn Cleaner Fuel – Burn Fuel Cleaner

### Diesel Engines and Air Quality

Over 80 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.

Diesels are also known for 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 elevate risk for cardiovascular disease and 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.

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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

DEQ 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://epa.gov/cleandiesel/projects/>.

### Burn Less Fuel

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.

Starting January 2012, medium and heavy duty trucks face a five minute idling limit except under certain circumstances necessary for driver comfort or operational needs and 30 minutes when waiting to load or unload. See [http://www.atrionline.org/research/idling/ATRI\\_Idling\\_Compendium.pdf](http://www.atrionline.org/research/idling/ATRI_Idling_Compendium.pdf) (page 8).



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°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



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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?**

Federal grants are periodically available and information about these opportunities can be found at the West Coast Collaborative, a public-private partnership effort to promote clean diesel: <http://www.westcoastdiesel.org/>.

These grants can be very competitive and the odds of securing a grant can be long. Nonetheless, DEQ is committed to assisting every Oregon grant applicant in preparing the strongest application possible for their project. We can provide strategy review, project design, partner recruitment assistance, data analysis, grant writing and even in some cases apply for and manage the grant on your behalf.

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