

US EPA ARCHIVE DOCUMENT

WHAT YOU SHOULD KNOW ABOUT IDLING REDUCTION

LONG-DURATION TRUCK ENGINE IDLING

The Environmental Protection Agency is working with the trucking industry, manufacturers of idle control technologies, various states, and other partners to help save fuel and reduce air pollution from idling trucks. EPA is conducting emissions testing on idling trucks under various conditions, surveying trucking fleets to learn more about idling times, implementing demonstration projects to test idle control technologies, and holding workshops to educate affected communities.



Truck drivers idle their engines during their rest periods to provide heat or air conditioning for the sleeper compartment, keep the engine warm during cold weather, and provide electrical power for their appliances. Approximately one-half million trucks travel more than 500 or more miles as their primary range of operation. Based on this travel distance, truck drivers will likely require an extended rest period and may idle their engines during this time. Some studies indicate that the typical long duration rest period lasts from 6-8 hours per day, over 300 days per year.

Truck idling affects our environment and our energy supply in several ways. Trucks consume up to one gallon of diesel fuel for each hour at idle, using as much as 2,400 gallons of fuel every year per truck. This totals 1.2 billion gallons of diesel fuel consumed every year from idling, costing \$1.8 billion (at \$1.50 gallon/diesel). On average, each idling truck produces about 21 tons of carbon dioxide (CO₂) and 0.3 tons of nitrogen oxides (NO_x) annually totaling over 11 million tons and 150,000 tons, respectively. Diesel exhaust also contains particulates, sulfur dioxide, carbon monoxide, hydrocarbons, and various air toxics. Idling emissions can contribute to premature mortality, bronchitis (chronic and acute), hospital admissions, respiratory symptoms (upper and lower), asthma attacks, work loss days, and minor restricted activity days. In addition to fuel costs and emissions, engine idling results in increased maintenance costs associated with substantial wear to the engine. Studies indicate that idling can cost over \$300 annually in maintenance costs alone.

The vast majority of fuel consumed during long-duration idling can be saved and air emissions reduced by installing one of several idle control technologies that provide heat, air conditioning, and electrical power. These technologies include auxiliary units and truck stop electrification. The technologies to address engine idling are evolving, and EPA plans to test new technologies as they come to the market. You can find a list of the currently available idle technologies at <http://www.epa.gov/otaq/retrofit/idlingtech.htm>.

Auxiliary units: These are small, diesel-powered engines (5 to 10 horsepower) that are installed on the truck. They range in cost from \$1,500 for direct-fired heaters (providing heat only) to \$7,000 for auxiliary power units (combined cab heat/AC, electric power, and heat to engine and fuel).

Truck stop electrification: This technology involves modifications to the truck and to the truck stop parking space to provide electrical power, heat and air conditioning. An advanced truck stop electrification product is also available as a rental without modification to the truck. Costs to implement truck stop electrification vary depending on the company modifying the truck and installing the electrification technology used.



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