

Idle Regulations Loom on Horizon

Heightened sensitivity to environmental considerations and uncontrollable fuel costs has stoked regulatory initiatives—some offering carrots, others brandishing sticks. All are aimed at limiting truck idling, long considered the leading culprit of wasted fuel and destructive exhaust gas emissions.

Truck officials, while not enamored with any regulatory approach, are busy trying to manage idling before the government mandates controls.

The Problem Defined

The worst mileage a vehicle can get is 0 miles per gallon—idling MPG. Idling for long periods of time—at a job site, railroad crossing, or off the road during a cell phone call—uses gas that can be saved by simply turning off the engine. Restarting an engine uses about the same amount of gas as an engine idling for 30 seconds. Therefore, engines idling longer than 30 seconds should be turned off. Prolonged idling creates excess emissions and wastes fuel. However, be aware that turning off the engine may also disable safety features such as airbags. Drivers should be certain to utilize this strategy only in situations where there is no possibility of a collision.

International Truck & Engine Corp. estimates a typical truck fleet burns a half-gallon of fuel for every hour a truck idles — in the process, adding the equivalent of 40 miles of engine wear-and-tear. The amount of unnecessary idling varies by fleet, but some fleets have recorded idling as much as 35 percent of the time. An engine wears out twice as fast idling as it does under normal operation. One hour of unnecessary idling a day over the course of a year adds the equivalent of 26,000 road miles to an engine's wear. Eliminating an hour of idling per day will result in a significant savings across the entire fleet.

An American Transportation Research Institute study reported that sleeper cabs idle an average of 28 hours per week or 1,456 a year. Day cabs average six hours of idling weekly or 312 hours a year. Based on the retail price of fuel at the time of the study (\$2.40 a gallon), sleeper cabs cost \$3,494 for idling time in a year. The price for day cabs was \$749 annually. A typical goal is to reduce engine idling time to less than 5 percent.

Elevated levels of emissions threaten public health. The Environmental Protection Agency (EPA) says that idling for other than brief intervals burns almost two billion gallons of fuel a year and releases tons of emissions into the air. Those emissions are highly localized and concentrated in and around truck stops, rest areas and

distribution centers and ports, infiltrating the lungs and bloodstream of people and the chomping away at the ozone.

Reasons for Idling

Truckers cite numerous reasons why they opt to let their rigs run. Perhaps the leading reasons are driver comfort and convenience. Keeping the motor running allows drivers to heat or cool their cabs and sleeper compartments. In addition, idling provides the juice to power personal appliances such as refrigerators, microwaves and computers. Many drivers simply idle out of habit or to cover up outside noises for better rest and relaxation.

In colder weather, keeping the engine idling enables easier, faster startups. Until recently, there has not been a useful way to arrive at concrete numbers regarding how much the engine was idling or how much that was costing the fleet. Drivers traditionally have seen any attempt to control idling threatening to their independence, so most trucking executives accepted it as a necessary cost of doing business.

Options to Reduce Idling

Modifying Driver Behavior

Many fleets implement anti-idling programs using the "big stick" approach. However, the best (and most effective) way to achieve sustainable long-term results is through driver education. Some drivers mistakenly believe that frequently starting and stopping an engine uses more gas and/or causes additional wear and tear on the vehicle. This may have been a concern in the past, but with today's fuel injection engines, starting systems are more efficient and don't require as much fuel to start an engine.

Another common reason for excess idling is to operate an air conditioning system so a driver can stay cool in the summer or to operate a heater to stay warm in the winter. Fleet managers struggle with this form of idling because they don't want to reduce fuel costs at the expense of driver morale. The reality is that for many drivers, their vehicles are also their offices.

In addition to driver training, in-truck displays, and telematics can be used to modify driver behaviors. Fleet productivity increases when drivers adopt more efficient driving techniques, including unnecessary idling. Drivers should avoid idling whenever possible. When leaving a truck, the driver should be instructed to turn off the engine.

Technology aids

The sudden spike in the cost of fuel prices and the advent of idle-reduction technologies—mobile and stationary—present additional ways to ensure that drivers adopt more conscientious idling behaviors:

- Idle-limiting devices are available in all electronic engines today. Such preprogrammed engine shutdown devices offer a so-called shutdown timer that turns off the engine after a certain period of time has elapsed. Trucks with an SAE standard J1939 engine protocol/electrical BUS (typically Class 6 and up) can be computer-programmed to shut off automatically after a pre-set idling time. The computer senses when the truck engine is idling with its parking brake on and intervenes to shut it down. Preprogrammed shutdowns don't work with light-duty models, which lack this engine protocol. For light-duty fleets, companies use GPS or field supervisors for policy enforcement. The J1939 protocol has an override that is easy for drivers to use. A driver who wants to run the engine to maintain cab comfort just kicks up the engine RPMs to a certain level, which resets the idling shutdown clock and defeats the automatic control. Of course, this is a necessary measure in an off-road or in an emergency situation when a beacon light is required.
- Devices that automatically stop and restart the engine based on battery voltage and engine and/or cab/sleeper thermostat settings. This technology is available as a factory option from most engine manufacturers. The only problem is that the constant on-off operation could disrupt the occupant's sleep.
- Direct-fired heaters that provide warmth to the cab or the engine, or both. While these units offer highly efficient heat and are powered by using onboard fuel and batteries, they have drawbacks. They offer no cooling to the occupants and can be a power drain.
- Auxiliary power units, which use a small off-road diesel engine rated at 10-15 hp to provide electrical power, heating, cooling and engine warming. The problem is they cost \$5,000-\$8,000, so they're not an attractive alternative for financially strapped fleets. Plus, they increase the maintenance burden.

Stationary technologies include electrifying truck parking spaces to provide energy for operating onboard electric components. Increasingly, truck stops are offering electrical power for truckers to "plug and play."

The 110-volt AC current is sufficient for heating, cooling, battery charging and running onboard appliances. Trucks equipped with an inverter/charger (available from truck manufacturers for up to \$1,400) simply pull up to an outlet at a parking space and plug in. Electrification has yet to enjoy widespread penetration among truck stops because

of its high infrastructure costs (up to \$2,400 per space). In fact, only about one in four of California's truck stops offer electrification.

However, some truck stops are taking electrification to the next level by providing connections that require no truck-side modifications. They offer independent heat, ventilation and air conditioning for each truck, and are installed above each parking space to power onboard appliances and communication tools.

Regulations

With all the available idle reduction technologies, federal, state, and local governments are increasing legislation more aggressively to reduce wasteful fuel consumption and air pollution. In 2008 the U.S. Congress granted an exemption from the 12-percent federal excise tax for truck idle reduction systems. Recently, the EPA released a list of approved idle reduction systems eligible for the federal excise tax exemption. The exemption applies to sales and installation of these systems since Oct. 4, 2008.

Thirteen states now restrict idling time allowed for trucks. Among those states are California, New York and Virginia. Idling restrictions are also imposed at the local level in 16 counties and 20 cities. New laws keep popping up. Currently, fines range from \$100 to a possible \$25,000 (in Sacramento, CA) and possible jail time (in New York City).

In Utah's Salt Lake County, trucks are limited to 15 minutes of idling time. In the state of Virginia, it's 10 minutes, in New Hampshire, 5 minutes and in New York City, 3 minutes. Philadelphia allows only 2 minutes of idling time unless the temperature is less than 32 degrees Fahrenheit.

The American Transportation Research Institute (ATRI) has updated the listing of state and local idling regulations found on its website, www.atri-online.org. The current update includes changes to idling laws in Missouri, enactment of limits in several Texas cities and counties, and a more stringent limit adjacent to public schools in New York City. The specific updates are:

- Reducing the idling limit in the City of St. Louis, Missouri from 10 minutes to 5 minutes and adding several operational exemptions.
- Establishing a 5-minute idling limit in the Missouri counties of Clay, Franklin, Jackson, Jefferson, Platte, St. Charles and St. Louis.
- Adopting the state's 5-minute idling limit from April through October in several areas of Texas, including the cities of Arlington, Benbrook, Celina, Colleyville, Dallas, Euless, Georgetown, Hurst, Hutto, Keene, Lake Worth, Lancaster, Little Elm, Luling, Mabank, McKinney, Mesquite, North Richland Hills, Pecan Hill, University Park, Westlake and the counties of Collin, Kaufman and Tarrant.
- Enacting a 1-minute idling limit adjacent to public schools in New York City.



- City of Minneapolis recently passed a law limiting fleet vehicle idling to three minutes, except in traffic.
- Polk County, Florida uses a GPS system, tracking the users of the county's 2,000 vehicles and pieces of equipment.
- State of South Carolina is spending approximately \$4 million for GPS units to track every move made by the state's Department of Transportation road construction vehicles—from backhoes to roadside safety trucks. It is also installing GPS units on all state-operated school buses. Beyond tracking vehicles, the GPS units will transmit data when drivers speed, idle excessively, and accelerate rapidly. Due to the size of the South Carolina fleet, if the GPS devices can successfully reduce fuel use by just a few gallons of gas per vehicle per day, they'll pay for themselves within a year.

The Voluntary Path

EOBRs and GPS

A growing number of fleets are turning to electronic onboard recorders (EOBRs) with GPS tracking as the most cost-effective tool for curbing excessive idling and other "fuelish" driver behavior. The savings in fuel costs alone justify the investment in anti-idling technology.

PeopleNet's system offers a performance-enhancing tool known as PerformX[®] that gives fleets the ability to improve vehicle fuel efficiency by monitoring and reducing idle times, increasing miles per gallon and decreasing over-RPM and speeding.

The advantage of the PeopleNet system is fleet managers can see engine performance data as it occurs. They don't have to wait until the vehicle returns to the facility to retrieve its diagnostic data. They have the information they want precisely when they need it. In addition, PerformX does not require costly software, and is compatible with all heavy-duty truck engines.

The ability to capture more current and accurate information provides fleet managers with the tools they need to better manage their operations. That means the marketplace – not a government regulator – will provide the impetus to make idling controls effective.

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