



EMISSION REDUCTION INFORMATION

Clean Diesel Rebate Program

Southeast Construction Associations Coalition for Clean Diesel
Florida Refrigeration and Air Conditioning Contractors Association

GENERAL INFORMATION on CLEANER FUELS and IDLE REDUCTION with SAMPLE IDLE REDUCTION POLICY

Clean Diesel Rebate recipients are required to adopt a company-wide policy reducing unnecessary idling. Proof of rebate recipient's policy adoption and training is required for the rebate.

Switch to Cleaner Fuels

Switching to fuels that contain lower levels of sulfur reduces particulate matter (PM). Lower sulfur diesel fuel enhances the effectiveness of retrofit technologies and can have a cleansing effect on the engine that reduces maintenance costs and extends oil change intervals. Using ultra-low sulfur diesel (ULSD) does not require equipment changes or modification.

Biodiesel is a domestically produced, renewable fuel that can be manufactured from new and used vegetable oils and animal fats. Biodiesel reduces air pollutants such as PM, carbon monoxide (CO), hydrocarbons (HC), and air toxics. However, emissions of nitrogen oxides (NOx) may increase with the concentration of biodiesel in the fuel.

Alternative fuels such as natural gas and propane are another option for equipment, such as forklifts and loaders. Many states have tax incentives for using alternative fuels.

Facts about Diesel Engines and Idling

Although there are some legitimate reasons why diesel vehicles idle (e.g., to bring the engine to proper operating temperature), there are also some misconceptions.

Initial Starting/Warm-up Time

Most engine manufacturers recommend that newer engines run for roughly 3-5 minutes before driving. In colder climates, block heaters are a good alternative to excessive idling. They plug into electrical outlets and help warm the engine to avoid starting difficulties and reduce idling time during engine warm-up.

Restarting

Although engine manufacturers recommend that you let your engine idle for a few minutes after you stop, most newer diesel engines will stay warm for several hours after they have been running, retaining more than enough heat to keep the engine warm and avoid starting difficulties. Older vehicles may have more difficulty restarting, but don't assume new engines should be operated like older ones. Check the manufacturer's recommendations.

Fuel Gelling

Gelling of diesel fuel used to be a problem years ago, but refiners have worked to resolve that issue by creating winter blends that better withstand colder temperatures.

Engine Wear and Tear

Letting an engine idle actually does more damage to the engine than starting and stopping. Running an engine at low speed (idling) causes twice the wear on internal parts compared to driving at regular speeds, which can increase maintenance costs and shorten the life of the engine. Generally, fuel consumption during engine start-up is equivalent to about 30 seconds of engine idling.

What Are Some of the Problems Associated with Idling?

Idling Wastes Fuel and Money

- While fuel consumption for non-road equipment at idle varies by equipment type, a typical mid-size track-type tractor consumes approximately one gallon of diesel fuel for each hour it idles.
- If this vehicle idles for 6 hours per day and operates 300 days a year, it would consume 1,800 gallons of fuel per year, simply idling.
- At a price of \$2.99 per gallon of diesel fuel, this idling comes with a price tag of \$5,382 per vehicle.

Idling Causes Excessive Engine Wear

- Running an engine at low speed (idling) causes twice the wear on internal parts compared to driving at regular speeds. According to the American Trucking Association, such wear can increase maintenance costs by almost \$2,000 per year and shorten the life of the engine.

Unnecessary Idling Causes Pollution

- Idling vehicles can emit significant amounts of pollution including: carbon dioxide, which contributes to global climate change; nitrogen oxides and volatile organic compounds, both of which contribute to the formation of ozone smog; poisonous carbon monoxide; and particulate matter.

Idling Poses Health Risks to Drivers

- While sitting in an idling vehicle, drivers are exposed to the vehicle's pollution more so than when the vehicle is in motion since there is no air flow to vent the emissions.
- Diesel exhaust contains fine particles which can aggravate asthma and cause lung damage as well as premature death.
- EPA has classified diesel particulate matter as a likely human carcinogen.
- People with existing heart or lung disease, asthma, or other respiratory problems are most sensitive to the small particles in diesel exhaust.

Save Money and Reduce Unnecessary Idling - Steps You Can Take:

- 1) Turn off your engine when your vehicle is not in motion. (Follow manufacturers' recommendations for cool-down - usually 3-5 minutes after full load operation.)
- 2) Follow manufacturers' recommendations for minimum warm-up time - usually 3 to 5 minutes depending on the vehicle.
- 3) Use electric engine heaters (such as block heaters) to minimize idling time during warm-up, especially in cold weather.

- 4) Install a small generator or auxiliary power unit specifically designed for diesel equipment that provides heat, air conditioning, and/or electrical power while the vehicle is not in motion. These devices are a better, more efficient alternative to idling as they use substantially less fuel and emit less pollution. Depending on the amount of time spent idling each year, the payback on these devices can be one to two years.
- 5) When buying new equipment, purchase engines already equipped with devices that minimize idling and warm-up time automatically.
- 6) Follow anti-idling laws and guidelines in your state.

Reduce Pollution - Improve Worker Health Conserve Fuel & Money - Reduce Wear & Tear

How to Implement an Idle Reduction Policy

The first step in reducing unnecessary idling is to define a policy and inform employees. In truth the approach is amazingly simple: **Operators should turn off equipment when it is not in use.**

Operator training is an important part of any idle reduction plan. Operators need to understand the needs of their equipment, how they can reduce idling, and how it will serve the company's goals. An idle reduction plan should define required warm-up and cool-down periods for equipment. Check the owners' manuals or contact your equipment manufacturer to determine what's appropriate.

Some equipment has idle management systems built in, or features that allow for the automatic shutdown of vehicles after a fixed period of time. Electronic controls may include a programmable load factor that prevents an idling machine from shutting down if it is operating an attached device. Many companies program shutdown if the clutch, brake and accelerator pedal are not touched for five minutes.

You may want to track the effectiveness of your program. While there are administrative costs involved with tracking fuel consumption per equipment operator, some companies use software that can be set up to collect this information. Many companies like to post results so that operators are aware of how they compare to others.

A sample policy follows that can be adapted to any company; it is simple and can be easily enforced through normal supervision.

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Sample Idle Reduction Policy

-You can easily adapt this sample for your company.

[Company name] has partnered with the Southeast Construction Associations for Clean Diesel to improve air quality in our work place.

All [Company name] gasoline and diesel-powered vehicles and equipment, regardless of size, shall be idled only as necessary to perform the work required or support the essential function/s of the equipment.

Specifically, an operator of off-road equipment must not cause or allow the off-road equipment to idle at any location for more than five consecutive minutes.

The following circumstances are considered "necessary" and are therefore not subject to idle reduction:

- Idling to ascertain that the vehicle or equipment is in safe operating condition as part of daily inspection or as otherwise needed
- Idling for testing, servicing, repairing or diagnostic purposes
- Idling for a period not to exceed three to five minutes or as recommended by the manufacturer to cool down a turbo-charged heavy-duty engine before turning it off
- Idling to accomplish work for which the vehicle/equipment was designed
- Idling to operate a lift or other power take-off-driven piece of equipment designed for use with the vehicle
- Idling to operate defrosters, heaters, air conditioners or other equipment to prevent a safety or health emergency, but not solely for the comfort of the operator
- Idling to operate equipment that runs intermittently in normal use

All other idling is subject to this reduction policy.

The health and well-being of our employees is of vital concern. Exhaust from idling vehicles poses an unnecessary health risk to our employees, drivers, and the community at large. Reducing vehicle idling reduces air pollution and conserves fuel.

FREE Stickers that can be placed on equipment to remind operators to reduce idling are available for participants in the Southeast Coalition/FRACCA clean diesel project. **Contact the FRACCA office at 727/576-3225 or info@fracca.org for information or to request stickers.**