

## DIESEL EXHAUST & YOUR HEALTH



- Diesel exhaust contains significant levels of small particles known as fine particulate matter. Fine particles are so small that several thousand of them could fit in the period at the end of this sentence.

In New England, diesel engines are the third largest human-made source of fine particles, contributing more than 20 percent of fine particle emissions.

- Fine particles in the air are a serious public health problem. They pose a significant health risk because they can pass through the nose and throat and lodge themselves in the lungs. These fine particles can cause lung damage and premature death. They can also aggravate respiratory conditions such as asthma and bronchitis.
- Nationwide, particulate matter, especially fine particles, is responsible for 15,000 premature deaths every year.
- Also, diesel exhaust is likely to cause cancer in humans.

### Who is most at Risk?

- People with existing heart or lung disease, asthma or other respiratory problems are most sensitive to the health effects of fine particles. The elderly and children are also at risk.
- In general, children are more sensitive to air pollution because they breathe at a faster rate than adults.

## Other Health and Environmental Effects

- Fine particles from diesel engines contribute to haze which restricts our ability to see long distances.
- Diesel exhaust also contributes to ozone formation (or smog), acid rain, and global climate change.

## REDUCING EMISSIONS Idling

- A typical heavy-duty truck or bus can burn approximately one gallon of diesel fuel for each hour it idles, generating significant amounts of pollution, wasting fuel, and causing excessive engine wear.
- Instead of idling, vehicle owners can purchase small generators or auxiliary power units that provide heat, air conditioning, and/or power while a vehicle is not in motion. These devices substantially reduce the fuel consumed and emissions generated during long-duration idling.
- Also, vehicle owners can purchase electric starting aids such as block heaters which help warm the engine to avoid starting difficulties and reduce idling time during engine warm-up.

## Retrofits and Cleaner Fuels

- In October 2006, ultra-low sulfur diesel fuel was made available nationwide for on-road vehicles. This cleaner burning fuel, in combination with advanced pollution control equipment such as particulate matter filters, can reduce particulate matter emissions from existing trucks and buses by more than 90 percent.
- Biodiesel, a renewable fuel produced from agricultural resources such as vegetable oils, can be blended with ultra-low sulfur diesel fuel to provide a renewable alternative fuel option to conventional diesel fuel.

## New Vehicle Purchases - what to consider

- Vehicles manufactured in 2007 and beyond.
- Vehicles equipped with devices that minimize idling and warm-up time automatically.
- Vehicles that run on cleaner fuels like compressed natural gas.



## WHAT CAN OWNERS/ OPERATORS DO?

1 Turn off engines when vehicles are not in motion.

2 Retrofit engines with pollution control devices and use cleaner burning fuel.

3 When purchasing new vehicles, buy the lowest emitting vehicles available.

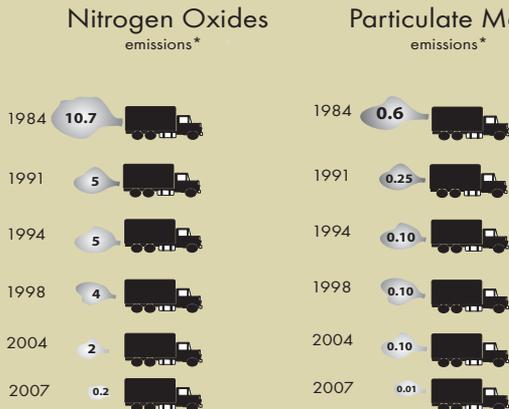
4 Keep engines well tuned and maintained.

5 For more details about how to take these steps, visit: [www.epa.gov/ne/eco/diesel/](http://www.epa.gov/ne/eco/diesel/), or call 1-800-821-1237.

# WHAT IS GOVERNMENT DOING?

- Diesel engines are a durable and economical source of power. EPA and the New England States are taking important steps to advance cleaner diesel engines.
- EPA set strict emissions standards for new heavy-duty diesel trucks and buses. The introduction of ultra-low sulfur diesel fuel in October 2006 reduced sulfur content in diesel fuel by 97 percent. This cleaner burning fuel in combination with advanced pollution control technology means that model year 2007 and newer trucks and buses are as much as 95 percent cleaner than older trucks and buses.
- EPA has issued emission standards for new, non-road diesel engines, such as construction and farm equipment, and is working to strengthen these standards in the future.
- Because emission reductions from cleaner vehicles take time to have an influence, EPA and the New England states are working to:
  - 1 Retrofit existing diesel vehicles with pollution controls.
  - 2 Implement emission testing programs for diesel vehicles.
  - 3 Create and implement anti-idling programs.
  - 4 Promote cleaner fuels like compressed natural gas.

## EPA Standards for New Trucks and Buses



\* EPA's emission standards for trucks and buses are based on the amount of pollution emitted per unit of energy (expressed in grams per brake horsepower hour).



#EPA 901-F-07-002  
April 2007

Visit our website at  
[www.epa.gov/ne/topics/air/dieslexhaust.html](http://www.epa.gov/ne/topics/air/dieslexhaust.html)

† printed on 100% recycled paper, with a minimum of 50% post consumer waste, using vegetable-based inks

# DIESEL EXHAUST IN NEW ENGLAND



WHAT ARE THE HEALTH EFFECTS?

WHO IS AT RISK?

WHAT CAN YOU DO?

