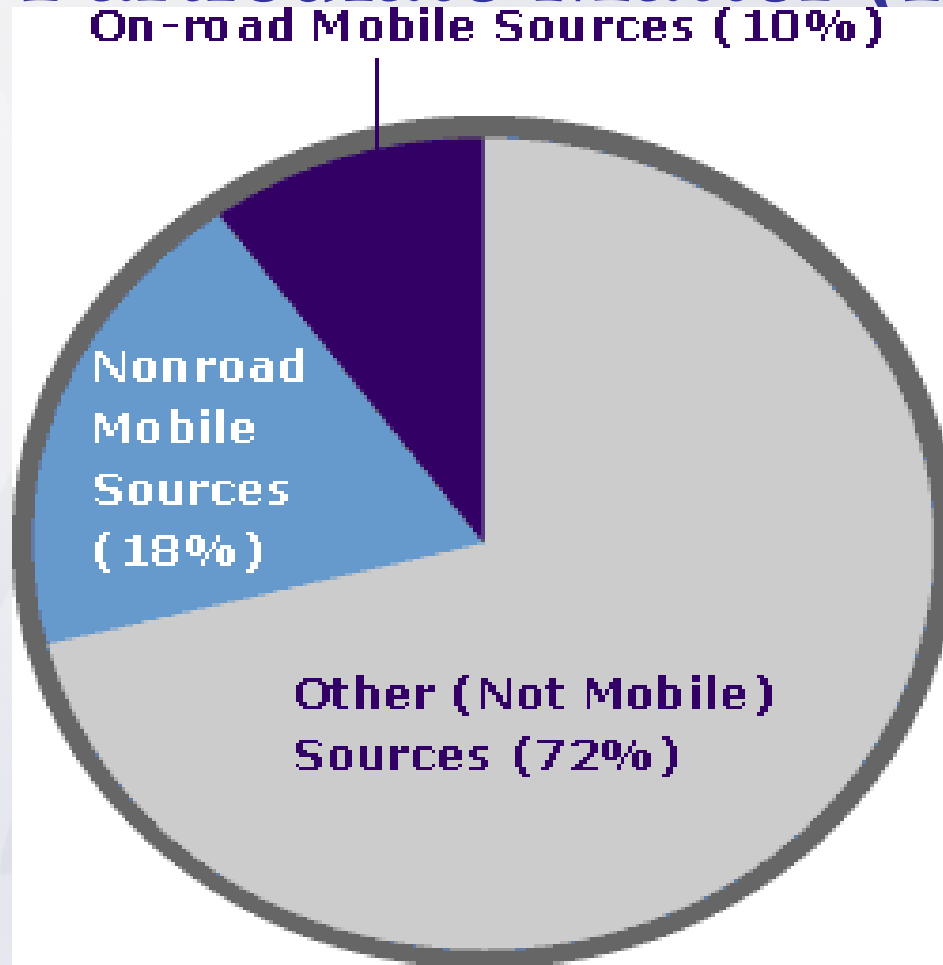


Federal Exhaust Emission and Fuel Standards

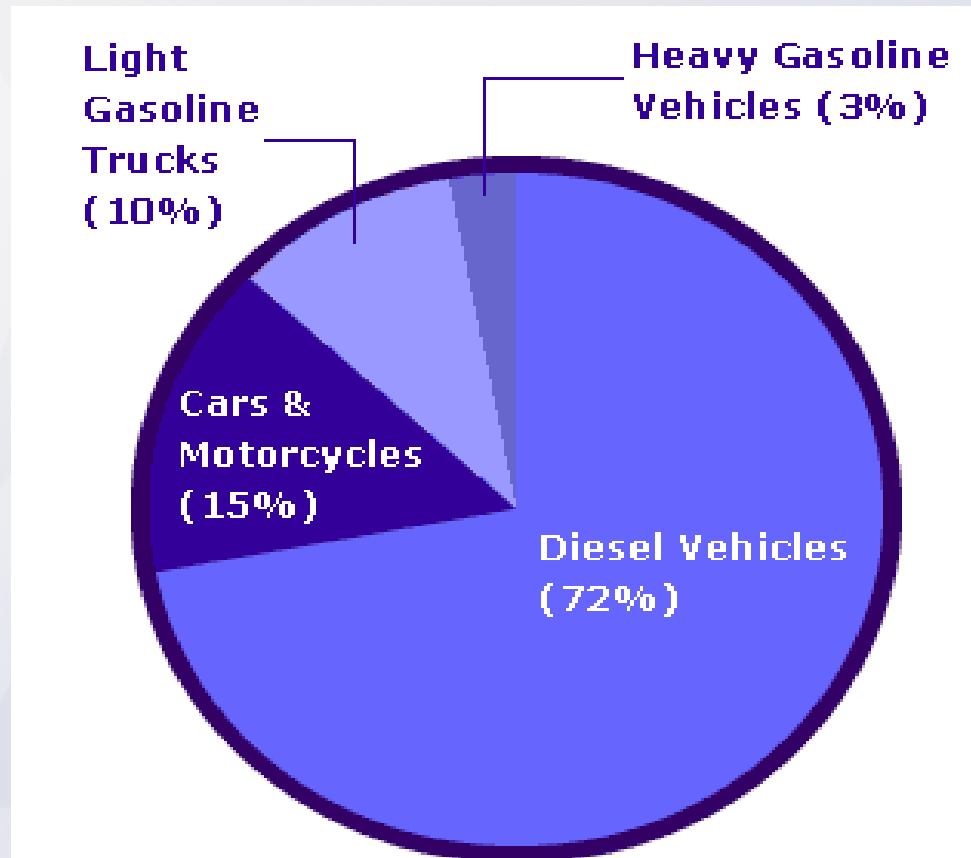
1999 National Emissions by Source: Fine Particulate Matter (PM_{2.5})



<http://www.epa.gov/otaq/inventory/overview/pollutants/pm.htm#>

*Some percentage totals do not equal 100 due to rounding

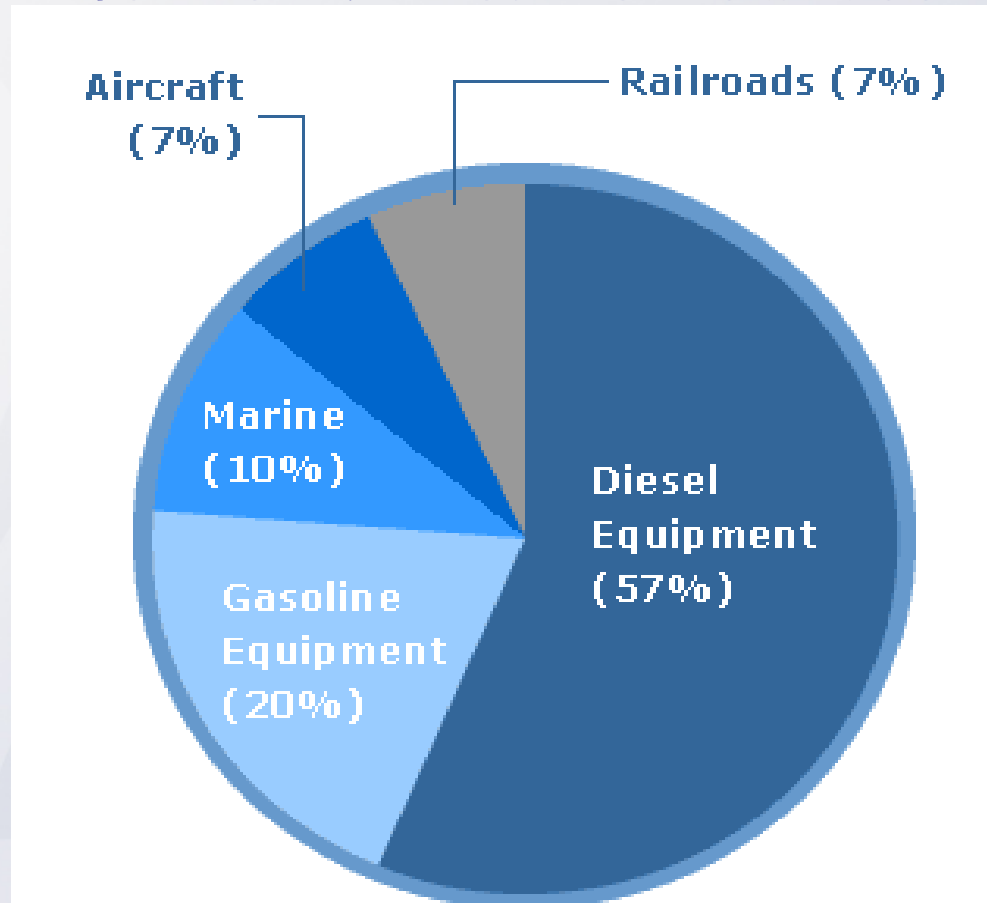
1999 National Emissions by Source: Particulate Matter (PM_{2.5}) On-Road Mobile Sources



<http://www.epa.gov/otaq/inventory/overview/pollutants/pm.htm#>

*Some percentage totals do not equal 100 due to rounding

1999 National Emissions by Source: Particulate Matter (PM2.5) Nonroad Mobile Sources



<http://www.epa.gov/otaq/inventory/overview/pollutants/pm.htm#>

*Some percentage totals do not equal 100 due to rounding.

Tier 2 Vehicle and Gasoline Sulfur Program

- Vehicles and the fuels they use are treated as a system, so the cleaner vehicles will have the low-sulfur gasoline they need for even greater emission reductions.
- Compared to Model Year 2003 and earlier, vehicles meeting the Tier 2 emission standards are much cleaner -- 77% to 95% cleaner, depending on the size of the vehicle.
- SUVs, pickups, vans, and even the largest passenger vehicles are subject to the same national emission standards as cars.
- New emission standards apply to all passenger vehicles, regardless of whether they run on gasoline, diesel fuel or alternative fuels.

2007 Highway Rule

- Sulfur in diesel fuel had to be lowered to enable modern pollution-control technology to be effective.
 - EPA required a 97 percent reduction in the sulfur content of highway diesel fuel from its prior level of 500 parts per million (low sulfur diesel, or LSD) to 15 parts per million (ultra-low sulfur diesel, or ULSD).
- Technologies like particulate traps, capable of emission reductions of 90% and more, will be required under new standards set to begin phasing into the highway sector in 2007.

Once the 2007 Highway Rule is fully implemented the national impact will be:

- Soot or particulate matter will be reduced by 110,000 tons a year.
- 2.6 million tons of smog-causing nitrogen oxide emissions will be reduced each year.
- An estimated 8,300 premature deaths, 5,500 cases of chronic bronchitis and 17,600 cases of acute bronchitis in children will be prevented annually.
- An estimated 360,000 asthma attacks and 386,000 cases of respiratory symptoms in asthmatic children will also be avoided every year.
- 1.5 million lost work days, 7,100 hospital visits and 2,400 emergency room visits for asthma will be prevented.

Nonroad Diesel Rule

- Reduces the amount of sulfur in nonroad fuel in 2 steps:
 - 2007 - Sulfur content is reduced from 3,000 ppm to 500 ppm
 - 2010 - Sulfur content reduced to 15 ppm
- Exhaust emission standards phased in between 2008 and 2015, depending on engine size.

Once the Nonroad Rule is fully implemented the national impact will be:

- Soot or particulate matter will be reduced by 129,000 tons a year.
- 738,000 tons of smog-causing nitrogen oxide emissions will be reduced each year.
- An estimated 12,000 premature deaths will be prevented annually.
- An estimated 280,000 cases of respiratory symptoms in children will also be avoided every year.
- 1 million lost work days and 15,000 heart attacks will be prevented.

It All Adds Up...

- By 2030, when the nation's Highway and Nonroad engine fleet has been fully turned over
 - PM will be reduced by 250,000 tons/year
 - NOx will be reduced by 4 million tons/year
- Similar initiatives for Marine and Locomotive Diesels have been proposed