



Regulatory Announcement

Final Emission Standards for 2004 and Later Model Year Highway Heavy-Duty Vehicles and Engines

The U.S. Environmental Protection Agency (EPA) is issuing a final rule for the first heavy-duty trucks and buses. In the first phase, EPA is finalizing new diesel engine standards beginning in 2004 for all diesel vehicles over 8,500 pounds. Additional diesel standards and test procedures in this final rule will begin in 2007. Heavy-duty gasoline engines will be required to meet new, more stringent standards starting no later than the 2005 model year. The new standards require gasoline trucks to be 78 percent cleaner and diesel trucks to be more than 40 percent cleaner than today's models.

The second phase of the program will require cleaner diesel fuels and even cleaner engines, and will reduce air pollution from trucks and buses by another 90 percent. EPA expects to issue the final rule, to take effect in 2006-2007, for the second phase of the program by the end of this year.

Highlights of the Final Rule

Heavy-Duty Diesel Engines

- EPA is reaffirming a combined standard for smog-causing oxides of nitrogen (NO_x) and hydrocarbons (HC) of 2.4 grams per brake horsepower-hour (g/bhp-hr). The current standard for NO_x is 4 g/bhp-hr and the HC standard is 1.3 g/bhp-hr. This standard represents a more than 40 percent reduction in emissions of NO_x, as well as reductions in HC, from diesel trucks and buses.

- The rule adds new test procedures and compliance requirements to ensure that emission standards are met in actual use across a wide range of operating conditions. These requirements begin in the 2007 model year.
- The rule requires on-board diagnostic (OBD) systems for engines between 8,500 and 14,000 pounds to be phased-in, beginning in 2005. These systems will identify the failure of emissions control system components.

Heavy-Duty Gasoline Engines & Vehicles

- Vehicles less than 14,000 pounds gross vehicle weight rating are subject to emission standards and testing similar to the current program for light-duty vehicles and light-duty trucks.
- The rule adds new, more stringent emission standards for vehicles with a gross vehicle weight rating below 14,000 pounds (see table below). The current NOx and HC standards are 4.0 and 1.1 g/bhp-hr, respectively.

Gross Vehicle Weight Rating	HC	NOx
8,500 - 10,000 lbs	0.28 g/mile	0.9 g/mile
10,001 - 14,000 lbs	0.33 g/mile	1.0 g/mile

- New gasoline heavy-duty engines used in a vehicle with a gross vehicle weight rating above 14,000 pounds must meet a combined HC and NOx standard of 1.0 g/bhp-hr. The current NOx and HC standards are 4.0 and 1.9 g/bhp-hr, respectively.
- OBD systems for engines between 8,500 and 14,000 pounds gross vehicle weight will be phased-in.
- The rule incorporates flexibility and incentive mechanisms that will encourage manufactures of gasoline trucks to meet these standards as early as 2003 or 2004. Due to the requirements of the Clean Air Act, the earliest implementation of new emission standards is the 2005 model year.

Health and Environmental Benefits

This rule will reduce emissions of smog-causing NO_x by 2.4 million tons each year when the program is fully implemented in 2030. Ozone causes a range of health problems related to breathing, including chest pain, coughing, and shortness of breath. Particulate matter (PM) is deposited deep in the lungs and causes premature death, increased emergency room visits, and increased respiratory symptoms and disease. With both ozone and PM, children and the elderly are most at risk. In addition, ozone, NO_x, and PM adversely affect the environment in various ways, including crop damage, acid rain, and visibility impairment.

In addition, there is great concern about the adverse health effects associated with exposure to diesel exhaust. Exposure is widespread, particularly in urban areas, and according to several national and international agencies, there is increasing evidence that diesel exhaust or diesel particulate matter (soot) may cause lung cancer in humans. Non-cancerous effects such as lung damage and respiratory problems are also associated with exposure to diesel exhaust.

Costs of the Program

The significant benefits of this program will come at an average projected long-term cost increase of less than \$400 per vehicle for heavy-duty diesel engines and less than \$300 per vehicle for heavy-duty gasoline vehicles and engines.

Background

In 1997, EPA issued a new NMHC+NO_x standard for heavy-duty diesel engines, starting with the 2004 model year, and committed to review the appropriateness of this standard in 1999. This final rule reaffirms those standards for diesel engines and finalizes new standards for heavy-duty gasoline engines.

In 1998, the Agency signed consent decrees with several of the largest heavy-duty diesel engine manufacturers to address several in-use emission problems. The final rule contains several new provisions for the heavy-duty diesel engine manufacturers not contained in the 1997 final rulemaking that arose because of the issues highlighted by these consent decrees. These provisions include new emission tests and compliance requirements that are designed to ensure that heavy-duty diesel engines

meet emission standards in actual use and over a broad range of operating conditions. In the consent decrees, the manufacturers agreed to introduce cleaner new engines and rebuild older engines to cleaner levels. Under the agreements, the companies will meet emission levels for heavy-duty diesel engines beyond what the law requires by October 2002.

On May 17, 2000, EPA proposed more stringent emission standards for heavy-duty vehicles that would reduce smog-causing emissions from trucks and buses by 95 percent beyond current levels. Soot emissions also would be reduced by 90 percent beyond current levels. In order to meet these more stringent standards for diesel engines, the proposal requires the sulfur content of diesel fuel to be capped at 15 parts per million – a 97 percent reduction. EPA plans to finalize these standards by the end of the year, and the standards will take effect in 2006 - 2007.

For More Information

You can access this final rule and related documents electronically on the Office of Transportation and Air Quality (OTAQ) Web site at:

<http://www.epa.gov/otaq/hd-hwy.htm>

You can also contact the OTAQ library for document information at:

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