

Summary of the Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium- and Heavy-Duty Vehicles and Engines

The U.S. Environmental Protection Agency (EPA) and the National Highway Traffic Safety Administration (NHTSA) in August 2011 adopted the first U.S. standards to reduce the greenhouse gas (GHG) emissions and improve the fuel efficiency of medium- and heavy-duty vehicles. The rule covers three major categories of vehicles: tractor-trailers with gross vehicle weight rating over 26,000 pounds (Class 7 & 8); vocational vehicles (Class 2b-8), such as delivery trucks, transit buses, dump trucks, refuse trucks, and utility trucks; and heavy-duty pickup trucks and vans with gross vehicle weight ranging from 8,500 lbs. to 14,000 lbs. (Class 2b and 3). The EPA's program to reduce GHG emissions begins with model year 2014 vehicles and does not have an end date, while the NHTSA's mandatory program to improve fuel efficiency starts with 2016 model year vehicles and ends with 2019 model year vehicles.

The proposed rule requires the greatest fuel consumption reduction from tractor trucks, ranging from 7-22% in 2014-2016 and from 10-24% in 2017, compared to the 2010 level. The range of improvements depends on the physical specifications of tractor trucks, including roof height and cab type, which affect the efficacy of aerodynamic improvements and anti-idle devices. Vocational vehicles will reduce fuel consumption by 4-5% in 2014-2016 and by 6-9% in 2017 from the 2010 level. These reductions include the required improvements in engine fuel efficiency. Heavy-duty pickups and vans will reduce fuel consumption by 11% for gasoline-fueled trucks and by 16% for diesel-fueled trucks by 2018 from the 2010 level. Manufacturers must meet the standards not on a vehicle-by-vehicle basis but on average over vehicles sold in each class. These reductions can be achieved using readily available and off-the-shelf technologies. Reduction in fuel consumption from selected vehicle classes is shown in Figure 1.

FIGURE 1: REDUCTION IN FUEL CONSUMPTION FROM 2010 TO 2017/18

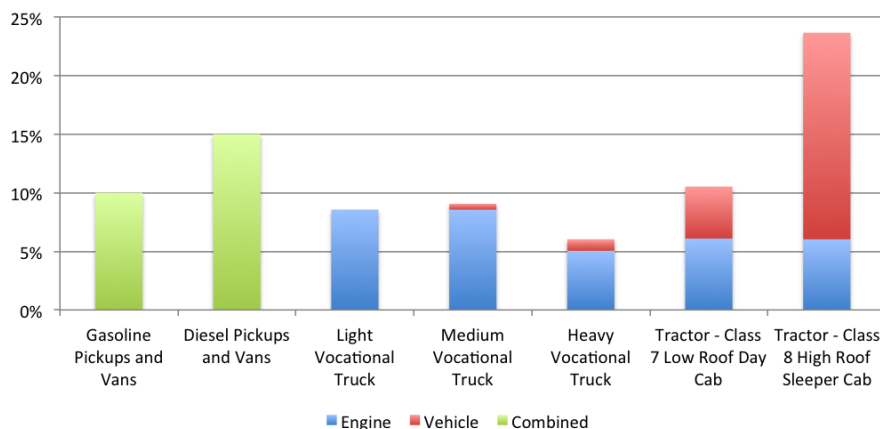
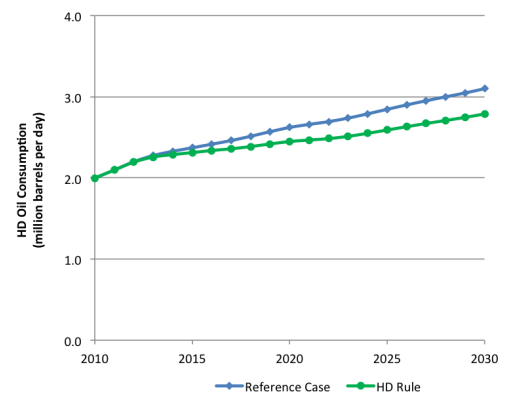


FIGURE 2: PROJECTED SAVINGS FROM THE RULE (EXCLUDES SAVINGS FROM HEAVY-DUTY PICKUPS AND TRANSIT BUSES)



EPA and NHTSA estimate that the combined standards will reduce carbon dioxide emissions by about 270 million metric tons and save about 530 million barrels of oil over the life of model year 2014 to 2018 vehicles. An ACEEE calculation, using Argonne National Laboratory's 2010 VISION Model, shows that the standards will save almost 370,000 barrels of oil per day in 2030. Figure 2 illustrates projected fuel savings from the rule. The agencies estimate that the majority of the heavy-duty vehicle owners will recover their upfront investment through fuel savings in less than two years. An operator of a tractor truck will be able to pay for the technology upgrades in under a year and have net savings up to \$81,000 over the truck's first ten years of service.

The rule represents a major step toward saving fuel and reducing GHG emissions from heavy-duty vehicles. Greater savings could be realized for all classes of heavy-duty vehicles through a comprehensive program that takes advantage of all cost-effective vehicle, engine, and transmissions technologies and their integration. Moving toward a full-vehicle testing program will help the program achieve maximum economic and environmental benefits.