



Go 60 mpg: Increasing Fuel Efficiency and Cutting Carbon Pollution from America's Cars and Trucks

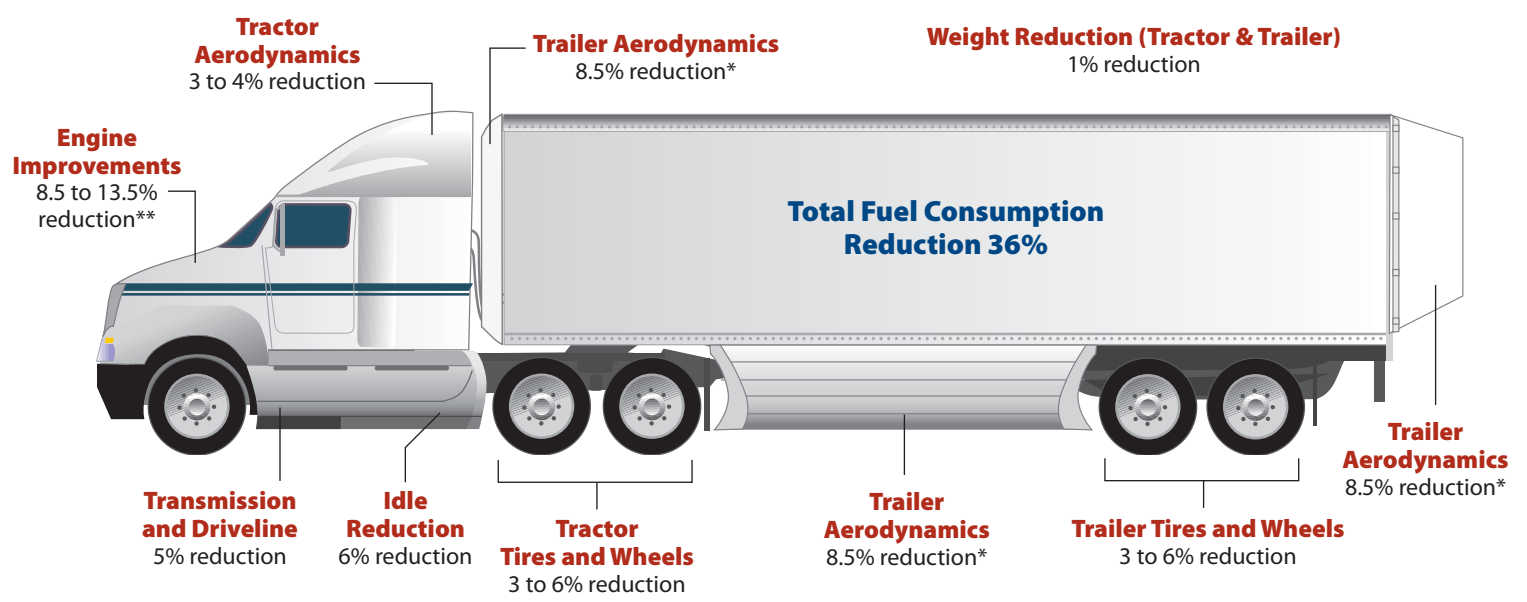
Delivering the Goods

Saving Oil and Cutting Pollution from Heavy-Duty Trucks

America relies on large trucks and buses to transport goods and people across the country. These medium- and heavy-duty vehicles—including long-haul freight trucks, city buses, delivery vehicles, and work trucks—are constantly in motion, in some cases driving over one hundred thousand miles each year. As a result, they consume about 20 percent of all the on-road transportation fuel used each year, despite representing just 4 percent of all vehicles on the road.

Unlike passenger vehicles, medium- and heavy-duty vehicles have never been subject to federal fuel efficiency or global warming tailpipe pollution standards. While these vehicles have seen improvements in fuel efficiency over the past 30 years, the opportunity for major gains remains. Setting strong fuel efficiency and global warming pollution standards for these vehicles will help cut America's oil dependence, reduce pollution, and save truckers money at the pump.

Fuel Saving Improvements for Long-Haul Tractors Pulling Van Trailers Available by 2017
(Fuel Consumption Reduction by Technology Area)



Source: Adapted from *Technologies and Approaches to Reducing Fuel Consumption of Medium- and Heavy-Duty Vehicles*, National Research Council, 2010
Note: Fuel consumption reductions are multiplicative.

* Percentage reflects cumulative reductions from all trailer aerodynamic improvements
** Adjustments made to reflect a 2010 engine as baseline



Cutting fuel use from new long-haul tractors pulling van trailers 35% by 2017 and other trucks by 20 percent would result in 5.6 billion gallons of oil saved annually by 2030.¹

Increasing Truck Fuel Efficiency Will Save Oil, Cut Pollution & Create Jobs

The technology exists today to dramatically cut fuel consumption of medium- and heavy-duty vehicles. Based on technologies identified in a recent National Academy of Sciences study, cost-effective technology could reduce the fuel consumption of long-haul tractors pulling van trailers at least 35 percent by 2017. Several of these technologies apply to other medium and heavy-duty vehicles as well, such as delivery vans, buses, and heavy-duty pickup trucks.

TABLE 1 Truck Owner Savings from New Efficiency Standards for Tractors Pulling Van Trailers

| | |
|--|----------|
| 2017 New Tractor-Trailer Fuel Economy (2010 New Tractor-Trailer Fuel Economy = 6.5mpg) | 10 mpg |
| Cost of Technology Improvements (35% reduction in fuel consumption) | \$44,000 |
| Annual Fuel Cost Savings (@ \$3.50 per gallon of diesel) | \$23,450 |
| Time to Recoup Initial Investment | 2 years |
| New Savings After 5 Years (Discounted) | \$56,000 |

Note: Additional Assumptions—Annual mileage of 120,000 miles per year, 7% discount rate applied to future year fuel savings.

Long-haul tractors pulling van trailers, the single largest consumers of diesel fuel, offer the biggest fuel efficiency gains and savings to truck owners. For example, adding fuel-saving technology to achieve a 35 percent reduction in fuel consumption by 2017 is estimated to cost \$44,000. While these costs are significant, the savings are even greater since these trucks travel over 100,000 miles per year and consume about 30 times more fuel than the average passenger vehicle. As a result, a typical long-haul truck owner can recoup the initial technology investment in 2 years and accumulate net savings of more than \$50,000 over the first five years of operation (Table 1).

Raising the fuel efficiency of the nation’s trucking fleet will not only save truck owners money at the pump, but will cut America’s oil dependence and global warming pollution. For example, cutting fuel use from new long-haul tractors pulling van trailers 35% by 2017 and other trucks by 20 percent would result in 5.6 billion gallons of oil saved annually by 2030. Those fuel savings would reduce heat-trapping global warming emissions by a total of 70 million metric tons—the equivalent of removing more than 10 million of today’s cars and light trucks from the road.

Investing in fuel-saving technology will also create jobs. A recent study by the Union of Concerned Scientists and CALSTART looked at even greater fuel efficiency improvements, a 38% percent reduction from all new medium and heavy-duty vehicles over the next 20 years, finding that 124,000 new jobs could be created by 2030. These new jobs would be created throughout the country from direct investments in fuel-saving technologies as well as the resulting



A Blueprint for Setting Strong Fuel Efficiency and Greenhouse Gas Standards for Medium- and Heavy-Duty Vehicles

The Obama administration has directed the Department of Transportation (DOT) and the Environmental Protection Agency (EPA) to begin developing the first-ever fuel efficiency and global warming pollution standards for medium- and heavy-duty vehicles. The standards would apply to new trucks sold beginning in model year 2014. This will cover vehicles ranging from large pickup trucks to tractor-trailers, which together consume 38 billion gallons of oil per year.

In order to realize the full benefits of increasing the fuel efficiency of medium- and heavy-duty vehicles, it is critical that EPA and DOT set standards based on the following principles:

► **Every Truck Should Meet Fuel Efficiency Standards Beginning in 2014**

All classes of trucks (2B-8) should be required to meet fuel efficiency and global warming pollution standards beginning in model year 2014. The technology exists today to dramatically improve the fuel efficiency of all of these vehicles, which will result in the highest level of oil savings, pollution reductions, and economic benefits.

► **Standards Should Dramatically Improve the Fuel Efficiency of Medium- and Heavy-Duty Trucks**

The standards should be set at the maximum technically feasible, cost-effective level for all classes of medium- and heavy-duty vehicles (Class 2B-8). In particular, the standards should reduce fuel consumption from long-haul Class 8 tractor-trailers, the greatest fuel users, by at least 35% by 2017.

► **Standards Should Require Improvements to Long-Haul Trailers**

Trailer improvements alone could reduce tractor-trailer fuel consumption by 10 percent using low-cost, off-the-shelf technology. Failing to include trailers as part of the standards gives up huge potential savings.

► **Compliance Must Be Based on Accurate Fuel Efficiency Tests**

The vehicle that is tested should be the actual configuration sold and laboratory or simulation test results should provide an accurate basis for estimating on-road fuel efficiency with reasonable accuracy. This is essential to ensuring that the standards will actually result in savings to truck owners and to measuring the fuel savings and global warming pollution reductions from the program as a whole.

► **Separate Engine Standards Should Be Established to Promote New Technology**

Improving engine efficiency is a key strategy to improving the overall fuel efficiency of trucks. Setting separate engine standards and establishing a trajectory for efficiency improvements out to 2020 will help promote investment and commercialization of new engine technologies by providing certainty and adequate lead time to engine manufacturers.

► **The Standards Should Support Advanced Vehicle Technologies**

Advanced vehicle technology, such as hybrid-electric drivetrains, can deliver significant improvements in fuel efficiency – particularly for vocational trucks that drive primarily in cities. It is important that the new standards support the continued development and deployment of advanced technology in order to maintain the United States' current leadership in the industry.



New truck standards would reduce heat-trapping global warming emissions by a total of 70 million metric tons—the equivalent of removing more than 10 million of today's cars and light trucks from the road.¹

fuel savings. These investments would add \$10 billion in economic activity to the United States economy (Table 2).

The Need for Strong Fuel Efficiency and Pollution Standards

Fuel costs are a major expense for fleet operators and truck owners. As a result, truckers value the savings at the pump that come from higher fuel efficiency. However, in the absence of fuel efficiency standards, barriers in the marketplace have prevented fuel-saving technologies from being fully utilized. Short duration of truck ownership, volatile fuel prices, lack of standardized information on fuel efficiency, and other barriers have hindered technology development and adoption of cost-effective efficiency technologies. Setting fuel efficiency standards would provide certainty to

manufacturers to invest in fuel-saving technology that can lower fuel costs, cut oil consumption, and reduce global warming pollution.

Moving Forward with Fuel Efficiency Standards for New Trucks

Addressing energy security and global climate change will require major reductions in oil consumption and global warming pollution from the U.S. transportation sector. Establishing the first-ever standards for heavy-duty vehicles is a critical step to meeting these goals and must set a strong precedent for future reductions from these vehicles. Well-designed fuel efficiency and global warming pollution standards for all trucks can help achieve our climate and energy goals while creating jobs and lowering fuel costs.

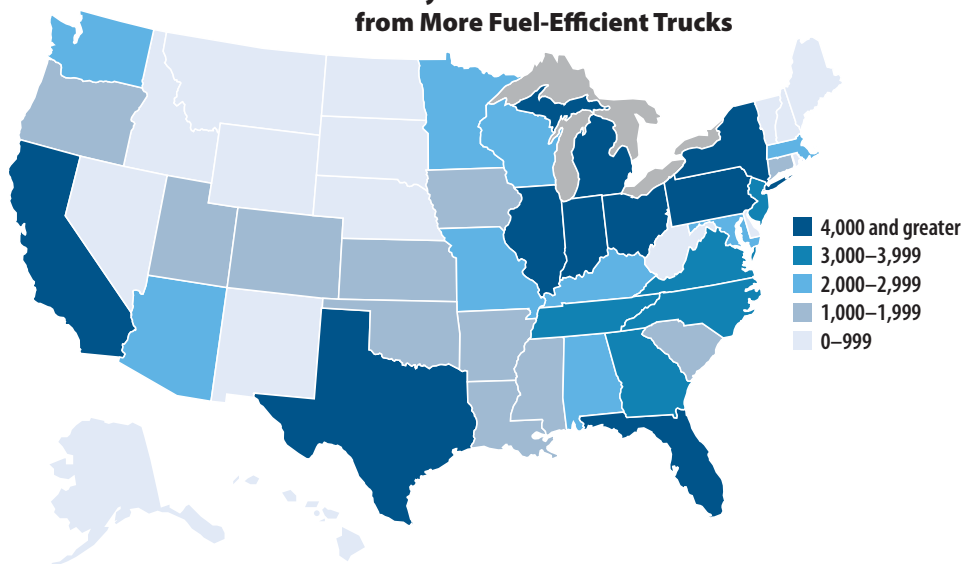
TABLE 2 Employment and Economic Benefits in 2030 From Reducing Heavy-Duty Truck Fuel Consumption

| | |
|--|--------------|
| Net Increase in Jobs Across the U.S. | 124,000 |
| Increase in Economic Activity (Gross Domestic Product) | \$10 billion |

Source: *Delivering Jobs: The Economic Costs and Benefits of Improving the Fuel Economy of Heavy-Duty Vehicles*, UCS and CALSTART, 2010.

Note: Benefit calculations based on reducing fuel consumption from new Class 3 through Class 8 trucks 38% between 2010 and 2030.

State by State Job Growth in 2030 from More Fuel-Efficient Trucks



¹ Calculations based on a 35% reduction in fuel consumption of long-haul tractors pulling van trailers and 20% reduction from other Class 3 through Class 8 vehicles. Modeling performed using Argonne National Labs VISION model and compared to the Department of Energy's Annual Energy Outlook 2009.



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