SmartWay®
U.S. Environmental Protection Agency

Reducing Highway Speed

A Glance at Clean Freight Strategies

ENERGY & FUEL SAVINGS

Gallons Saved:
1,292 gallons

CO_2 Savings:
13 metric tons

Fuel Economy Increase:
9%

MPG (original 6 mpg):
7.12 mpg

Reduction in Fuel Consumption:
9%

Fuel Cost Savings:
$4,912

Reducing highway speed by 5 miles per hour can cut fuel use and greenhouse gas emissions by about 7 percent while extending the life of a truck's engine, tires and brakes. An example is a long-haul truck that reduces its top speed from 65 to 60 miles per hour saves over 1,200 gallons of fuel, cutting its annual fuel bill by $4,900 while eliminating nearly 13 metric tons of greenhouse gas reductions.

What is the challenge?

A typical combination truck spends 65 percent or more of its operating time at highway speeds. Line-haul trucks spend even more time on highways. The impact of speed on fuel economy depends upon many factors including vehicle aerodynamics, engine speed and operating conditions. As a general rule of thumb, increasing speed by one mile per hour reduces fuel economy by about 0.1 miles per gallon. Excessive speed also leads to higher maintenance costs of by increasing wear on the engine, tires and brakes.

What is the solution?

Speed management is an easy and effective way to save fuel, reduce emissions, and prevent excess wear. A trucking firm or driver can adopt a speed policy at little or no cost. The most successful speed management policies combine technology (e.g., speed settings on electronic engine controls) with driver training and incentive programs to encourage drivers to maintain speed limits. Most new truck engines are electronically controlled so the cost of changing maximum speed settings on these engines is negligible.

Savings and benefits

Although fuel savings may vary by vehicle and speed range, a combination truck driving 55 miles per hour uses up to 7 percent less fuel than a similar truck driving 65 miles per hour. Other analyses indicate that reducing the maximum speed of a typical long-haul truck from 65 miles per hour to 60 miles per hour could save about $4,900 in annual fuel costs.

Reducing speed can cut truck maintenance costs and reduce the frequency of maintenance work. The time between engine overhauls, for example, is directly related to fuel use. Holding maximum speeds at 60 rather than 70 miles per hour reduces engine wear and extends time between engine rebuilds, saving hundreds of dollars per truck each year while keeping revenue-earning equipment on the road. Fleets that adopt speed policies report additional savings due to fewer brake jobs and other service work.

Reducing highway speed does increase travel time. Assuming ideal conditions, a trucker driving 60 miles per hour instead of 65 miles per hour could spend about eight percent longer on the road. Of course, the time difference may be less, depending upon road conditions, weather, and traffic congestion and road construction. If a trucking company pays its drivers by the mile or by the load rather than by the hour, reducing speed should not increase labor costs. It could reduce the productivity of trucking operations since slower trucks may carry fewer loads. However, the benefits of lower fuel and maintenance costs combined with less frequent out-of-service work and driver safety considerations may well outweigh any costs associated with an increase in delivery time.

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NEXT STEPS

1 A trucking company interested in saving fuel and lowering the cost and frequency of its equipment maintenance should consider adopting a speed management policy, particularly if its trucks spend considerable time on highways.

2 A number of well-managed truck fleets have programs in place to reduce highway speed and promote safe driving by using driver training, incentive programs, and electronic engine controls. A trucking fleet interested in following these examples may learn more by reading articles and fleet profiles in truck industry publications.

3 When purchasing new vehicles, a trucking company may also consider specifying equipment designed to optimize truck performance at lower maximum speeds. Trucking companies and drivers interested in learning more about the effects of speed on fuel economy may contact truck and equipment manufacturers or their state and national trucking associations