



Clean & Green – Calculate Environmental Performance,
Cost Savings, And Implement Strategies to
Save Up to \$4,000 Per Year Per Vehicle





Much has been said about the “greening” of America’s trucking fleets. But what concerns most operators is how much of that other kind of green it will cost them to be more environmentally conscious than already mandated by federal, state and local regulatory measures.

In the past decade the trucking industry has had to cope with increasingly strict engine emissions standards, each substantially upping the price of equipment while at the same time reducing fuel economy.

On top of that, more state and local governments are instituting anti-idling regulations, forcing fleets to take a hard look at adding auxiliary power units (APUs) or find other alternatives for heating and cooling cabs when trucks are parked.

All this as the trucking industry faced two of the worst economic downturns in history.

The good news about the most recent 2010 lower-emission diesels: They promise improved fuel economy for the first time since stricter emission standards have been mandated. The bad news: The new engines also require DEF to operate, requiring planning to ensure availability of the engine additive and training of drivers and mechanics on the proper service and use of the new trucks.

As with other stricter engine emission standards, most fleets have been reluctant or unable to purchase new vehicles with the cleaner 2010 engines. A pre-buy of “less green” trucks preceded every new emissions mandate – 2010 was no exception. In the past, many fleets took a wait-and-see attitude about purchasing the new engines, hoping possible bugs would be worked out by more technologically advanced carriers. With 2010, avoidance was more necessity than strategy due to the dire economic situation.

Does this mean truckers don’t care about the environment? Absolutely not. The trucking industry is probably the most “green” industry in the country under the circumstances. And many fleets have gone above and beyond governmental regulations to improve their business and at the same time make them greener.

With the ever-rising price of fuel, the increasing weight of equipment due to emissions add-ons and the subsequent reduced payload, carriers are constantly looking for ways to lighten the load, improve equipment utilization and at the same time reduce their carbon footprint.

Many progressive carriers have embraced the SmartWay Transport Partnership, which brings fleets, shippers and suppliers together to advance environment-friendly practices.

SmartWay helps fleets calculate their environmental performance, set improvement goals, and calculate cost savings. Areas they address:

- Reduced cost of fuel use.
- Payback on investment within just 1 to 3 years on most technologies.
- Up to \$9,000 in cost savings per truck per year after payback period (based on a diesel fuel price of \$4 per gallon).
- Reduced maintenance costs.
- Improved driver retention due to incentive and training programs.

Carriers can save, on average, up to \$4,000 per truck per year by implementing the following carrier strategies, SmartWay officials say, through:

Idle Reduction

Reducing or eliminating prolonged idling of long-haul trucks can save up to 1,000 gallons of fuel per truck each year, reduce pollution emissions, and lower engine maintenance costs. The use of several idle-control technologies such as auxiliary power units (APU) and truck stop electrification (TSE) to provide heat, air conditioning, and electrical power can minimize fuel consumption.

Improved Aerodynamics

Using a streamlined tractor with aerodynamic devices (roof fairing, cab extenders, and side fairings) can reduce fuel consumption up to 600 gallons and eliminate over five metric tons of greenhouse gas emissions per year compared to a typical classic profile tractor. Trailers can be improved through aerodynamics simply by reducing the tractor-trailer gap, securing loose tarpaulins, and on flatbed trailers, arranging cargo to keep the outline of the total load as low and smooth as possible.

Improved Freight Logistics

Better load matching, which ensures full trucks, improves the efficiency of trucking operations, allowing carriers to carry the same amount of freight with fewer vehicle miles of travel. Trucking companies can make use of routing and scheduling software to structure more efficient truck routes. Changes to loading dock and receiving policies, such as allowing for early truck arrivals, lets trucking companies more productively utilize their vehicles. For a long-haul carrier that operates 15 percent of miles without a load, reducing empty mileage by just one percent can save over

one metric ton of greenhouse gas emissions per truck each year.

Automatic Tire Inflation Systems

Automatic tire inflation systems can extend tire life by 8 percent. Installing an automatic tire inflation system on the truck drive and trailer axles can save over \$200 per year in tire replacement costs and tire pressure inspection time. Automatic tire inflation systems can reduce fuel consumption by over 100 gallons per year for a typical combination truck, resulting in an additional annual cost savings of about \$170 and the elimination of over one metric ton of greenhouse gas emissions.

Wide-base Tires

Wide-base tires can improve fuel economy by 2 percent or more compared to equivalent dual tires. By using wide-base tires, a typical long-haul truck could save over 400 gallons of fuel per year, resulting in cost savings of over \$600, and reduce greenhouse gas emissions by four or more metric tons annually. A single wide-base tire costs about the same as two equivalent dual tires and a single wide-rim wheel costs less than two standard wheels. If wide-base tires and wheels are installed on a new truck, the initial cost savings can reach \$1,000.

Driver Training

Even highly experienced drivers can enhance fuel economy using simple techniques like turning on cruise control, coasting whenever possible, limiting use of cab accessories, smooth and gradual acceleration, progressive shifting (up shifting at the lowest rpm possible), reducing maximum freeway speeds, and limiting truck idling and stops.

Driver training can reduce fuel consumption by 5 percent or more, saving more than \$1,200 in fuel costs and eliminating about 8 metric tons of greenhouse gas emissions per truck each year. For a typical long-haul truck, the annual fuel cost savings could recover the initial cost of driver training within two years.

Low-Viscosity Lubricants

Synthetic transmission and axle lubricants can improve fuel economy by at least 0.5 percent in the summer and 2 percent in the winter. Replacing all conventional transmission lubricants with low-viscosity products saves fuel with little or no additional cost. The combined effect of low-viscosity synthetic engine oils and drive train lubricants can improve fuel economy by about 3 percent, saving nearly 500 gallons of fuel and eliminating five metric tons of greenhouse gas emissions per year for a typical freight truck.

Reducing Highway Speed

By limiting top highway speeds, trucks can save fuel, reduce emissions, and prolong engine life. For a typical long-haul truck, reducing highway speed from 70 mph to 65 mph could save nearly \$1,500 in fuel costs and eliminate nearly 10 metric tons of greenhouse gas emissions each year. Because engine life is directly related to the amount of fuel burned, reducing driving speed can save on engine repair costs. Maximum truck driving speeds can be limited through electronic engine controls, driver-training programs, or incentive programs that reward drivers for staying within set limits.

Weight Reduction

Truck tractors can reduce weight by using components such as cast aluminum alloy wheels and aluminum axle hubs. The potential for weight savings is even greater in the truck trailer, using lightweight components such as aluminum roof posts, upright posts, and floor joists. Lightweight components can reduce truck weight by as much as 3,000 pounds. This weight reduction could save 200 to 500 gallons of fuel and reduces greenhouse gas emissions by 2 to 5 metric tons per truck annually.

Intermodal Shipping

Using innovative intermodal options like trailer on flatcar (TOFC) and container-on-flatcar (COFC) can improve efficiency and save money. For shipments over 1,000 miles, using intermodal transport can cut fuel use and greenhouse gas emissions by about 65 percent, compared to a truck-only move.

Hybrid Powertrain Technology

Hybrid vehicles have two propulsion power sources, making it possible to capture energy otherwise lost during braking and provide boost to the main engine. Hybrid vehicles can provide roughly \$2,000 in annual fuel savings when used in stop-and-go operations like parcel delivery service.



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