

Green Management

A guide for improving energy- efficiency, competitiveness and reducing emissions for the trucking industry.



Contents:

- Page 2: Energy Efficiency Factors
- Page 3: 7 Steps to Energy Efficiency
- Page 4: Resources for Industry
- Page 5: A Broader Scope
- Page 6: Making the Case
- Page 7: Conclusion and Glossary

Greening your Fleet

In Canada, 19% of total emissions resulting from the transport of goods are produced by the commercial road transportation sector.¹ The trucking industry has an opportunity and a responsibility to make a significant contribution to the reduction of greenhouse gas emissions and has already begun to do so.

This guide will provide information and resources to help your organization have the greatest effect on the environment and your bottom line.



Did you know?

Integrated cab-roof fairings and closed sides can result in fuel saving of up to 15% per truck.



Energy Efficiency Factors

The following are examples of controllable factors in improving efficiency in your fleet.²

Driver Behaviour

Driver behaviours such as hard braking, gear changing, pedal movements, vehicle idling and maintaining a steady speed all have an effect on efficiency. Heavy stop and go traffic leads to sharp increases or decreases in speed as well as idling. This results in inefficient fuel use and increased emissions.

Truck Aerodynamics

Truck aerodynamics can have a significant effect on fuel usage, especially when travelling long distances at higher speeds. Improving truck aerodynamics not only reduces environmental effects but also improves the bottom line.

Route Choice

Planning the right route can also improve fuel efficiencies. This doesn't always mean the shortest distance. Other factors such as traffic, speeds and terrain should also be considered.

Did you know?

The average long-haul truck idles for about 1,800 hours each year.



7 Steps to Energy Efficiency



1. **Fuel Management Plan** – Developing a fuel management plan to understand fuel usage and develop strategies for cutting fleet operating costs while reducing the effect on the environment is an important first step in green management.
2. **Adaptive Driver Training** – Training drivers on energy management factors such as idling, start/stop techniques, trip planning and maintenance have been shown to help improve fuel efficiency by up to 35%.
3. **Aerodynamic Vehicle Adjustments** – Aerodynamic devices and modifications reduce the amount of drag, creating a more streamlined shape and increasing fuel efficiency. For example: trailer side-skirts can produce fuel savings of up to 18% per truck.
4. **Optimized routing** – By reducing both driving time and distance, optimized routing can reduce fuel consumption. Computerized routing and scheduling, vehicle telematics and on-board navigation systems using current traffic information can all help to select the most energy efficient routes.
5. **Fleet Maintenance** – In addition to regular general truck maintenance, upgrades such as improved lubricants, automatic tire inflation (ATI) systems, efficient tires, cab heaters, and weight reducing truck parts are also important tools in reducing emissions and decreasing fuel costs.
6. **Alternative Fuels** – Fuels such as biodiesel can be used in the majority of diesel engines where approved by engine manufacturers. Being a renewable resource, biodiesel can benefit the environment when used appropriately.
7. **Green Technologies** – Some additional green technologies that can aid in an effective green management plan include:
 - Advanced electronic controls and diagnostics
 - Driver management systems
 - Satellite communications
 - Electronic computer modules (ECMs)
 - Next generation electronic engines
 - Advanced tire systems
 - Auxiliary power units
 - Engine coolant heaters and hybrid refrigeration systems

Did you know?

The most skilled drivers can produce as much as 35% better fuel mileage than less-skilled truck operators.



Resources for Industry

FleetSmart

This free federal government program offers practical tools and advice on how energy-efficient vehicles and business practices can cut fleet operating costs, reduce harmful vehicle emissions, improve productivity and increase competitiveness.

www.nrcan.gc.ca
fleetsmart@nrcan.gc.ca



SmartWay

The SmartWay Transport Partnership helps truck carriers to compare their operations with the best practices of other companies, track fuel usage and improve their performance. Truck carriers registered in the program are known as SmartWay Partners.

www.nrcan.gc.ca
smartway.canada@nrcan.gc.ca

FleetSmart Educational Opportunities

- Fuel management 101 – A one day workshop that helps fleet managers develop and use fuel management plans
- SmartDriver for Highway Trucking - Effective fleet energy management training that helps drivers improve fuel efficiency by up to 35%
- Web-based training - for busy employees, providing instant access to the course through the internet

FleetSmart E-tools and Information

- Online Fuel Consumption Calculator - calculates a fleet's fuel usage quickly and easily
- Fleet Efficiency Tool - create, use, measure and improve a fleet fuel management plan
- Intelligent Transport Systems Catalogue - tools offered by FP Innovations to make transport systems and vehicles more efficient, safe and reliable
- Publications - documents you can download and print

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SmartWay helps truck carriers to:

- Reduce operating costs by improving fuel efficiency
- Attract business from SmartWay shippers
- Stand-out among their competitors
- Reduce their carbon footprint

Transportation Links

Natural Resources Canada www.nrcan.gc.ca lists web links to non-government and government partner organizations, activities and information on transportation energy technologies, advanced fuels, technologies and fuels types.



A Broader Scope

Green Management goes beyond trucks, it includes all areas of business that produce emissions. Green management has become linked with the social responsibility reputation of a business, and is just as important as other ethical business practices.

With people choosing to live and work green, many job seekers prefer applying to work for environmentally friendly companies. To continue to attract and retain employees, trucking companies should work to create a green culture within all aspects of their business. Some examples are:

- Educate your employees by hosting a company presentation by a trained presenter from The Climate Project Canada - www.climatereality.ca.
- Choose energy efficient office equipment and appliances. Install timers on all major appliances so they shut off at the end of the day. Install programmable thermostats and change light bulbs to compact fluorescents or LEDs.
- Use video-conferencing to reduce emissions from air travel and save on airfare and accommodation costs.
- Recycle paper, plastic, metal and glass. Use 100% recycled paper in photocopiers, printers and publications. Ask your suppliers to provide minimal or recyclable packaging.
- Choose renewable power by asking your utility provider to switch your account to renewable power sources such as from wind farms if possible.
- Encourage and provide incentive for employees to green their commute - walk, cycle or take public transit. Other options are carpooling or using fuel-efficient vehicles.
- Go carbon neutral - carbon offsets are credits for reducing emissions through solar installations or energy efficiency upgrades. Trucking companies could purchase these credits and apply them to their emissions to reduce their effect on the climate.

Did you know?

Light-emitting diode (LED) light bulbs last 25 times longer and use less than 25% of the energy of traditional light bulbs.¹



Making the Case

Benefits of a green management program go beyond the environmental effects. The following are just a few of reasons that an effective green management plan can yield excellent return on investment and help fleet owners and managers make a solid business case for a green management program in their organization.

Business Area³	Opportunities	Risks of Inaction
Fuel and Energy Cost	Reduce fuel cost and emissions and improve operational efficiencies.	Continued high cost.
Reputation and Brand	Consumers, including business consumers, are increasingly demanding environmental responsibility.	Poor publicity, falling behind competition.
Human Resources	Job seekers are seeking out companies with green programs and corporate responsibility. Employees involved in innovative green management programs have a greater sense of pride and job satisfaction.	High turnover and challenges recruiting the next generation of drivers.
Investors	Attract new investors who want to invest in a progressive, well-managed company that meets its corporate social responsibility goals.	Investors concerned about climate change, risk exposure and company inaction. Shareholder resolutions demanding measure to address climate change.
Regulations	Access to benefits from government incentive programs. Flexibility to choose a course of action which is more cost-effective than being regulated. Early adoption leading to the possibility of influencing future regulation.	Carbon taxes and other measures leading to increased costs. Requirements to meet energy efficiency standards for buildings and vehicles. Limits on emissions.
Products and Services	Growing demand for climate friendly products and services.	Loss of customers due to inadequate environmental standards.
Supply Chain	Working with suppliers with low emissions reduces costs and carbon footprint of the company. Managing transportation in the supply chain can decrease fuel usage and reduce emissions.	Higher shipping costs due to higher fuel costs. High emission costs passed on to the company by suppliers.



In conclusion, Green Management not only attracts but also retains employees because:

- a) *it is a source of employee pride to work for a prestigious company admired for its sustainability*
- b) *it implies that the company cares about its employees, environment and country*
- c) *it helps them connect company values to their own personal values.*

Glossary

Combustion - the process of burning something such as fuel to create heat and light.

Greenhouse gas emissions - gases such as carbon dioxide that are released into the air due to combustion that are involved in atmospheric heating related to climate change.

Climate change - a long-term change in the earth's climate, especially a change due to an increase in the earth's temperature due greenhouse gas emissions.

Energy efficiency - is using less energy to do the same amount of work or provide the same service.

Vehicle idling - occurs when a vehicle is left running while stopped.

Aerodynamics - the study of moving air and its effect on a solid object moving through it.

Vehicle telematics and diagnostics - the computers, radios and electronic technology found in a vehicle.

On-board navigation systems - contain maps, vehicle location, traffic conditions, hazards and directions to assist the driver.

Green technologies - new technologies that reduce the effect of human activities on the environment.

Operational efficiencies - is the capacity of a company to deliver products or services to its customers in the most cost-effective manner while maintaining the high quality of its products, services and support.

Renewable - a source of energy that does not run-out with use.

Carbon footprint - the total greenhouse gas emissions caused by a company, their operations, products or employees and their effect on the environment.

Corporate Social Responsibility - how companies manage their operations to reduce the negative effects on the economy, society and the environment.

Carbon neutral - having a net carbon footprint of zero.

References

¹Natural Resources Canada

²McMaster Institute for Transportation and Logistics

³David Suzuki Foundation