



## Heavy Natural Gas Vehicles Backgrounder

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Heavy diesel vehicles are one of the fastest growing areas of energy use in Canada with demand increasing 4.6% per year since 1990 compared to 1.6% annual growth for total energy use in Canada.

Defined as trucks and buses weighing more than 4.5 tonnes, heavy diesel vehicles make up only 4% of onroad vehicles, but contribute 29% of greenhouse gas and 51% of nitrogen oxide (NOx) emissions from onroad sources in Canada according to data published by the Government of Canada.

There are few options to reduce carbon emissions from heavy diesel vehicles. Increasingly stringent diesel emission standards have no impact on carbon emissions. Proposed Canadian vehicle regulations apply to light duty passenger vehicles only.

Natural gas is less carbon intensive than diesel fuel. Heavy vehicles operating on natural gas reduce carbon emissions by up to 25% on a lifecycle basis. Natural gas exceeds proposed low carbon fuel standard objectives of a 10% reduction in carbon intensity by 2020. The use of renewable natural gas produced from waste biomass can increase the carbon benefit more than threefold compared to fossil natural gas.

Heavy vehicle fleets can reduce their fuel costs by using natural gas. Natural gas is typically 20-30% less expensive than diesel fuel. Improvements in natural gas engine technologies mean that power, performance, and energy efficiency characteristics are now similar to those of diesel-powered vehicles. An increasing number of original equipment manufacturers offer factory-direct natural gas trucks, buses, and specialty heavy vehicles.

A transit bus operating on natural gas will have lower fuel costs with savings of more than \$10,000/year resulting in a lower operating cost per kilometer. Refuse collection trucks are another good application for natural gas as are highway tractors that operate in regional corridors or return-to-base mode.

Canadian companies are world leaders in the development and manufacture of heavy natural gas engines, vehicle components, and refuelling stations. Leading companies include Calgary-based Dynetek Industries, Vancouver-based Cummins Westport and Westport Innovations, Chilliwack-based IMW Industries, and Winnipeg-based Kraus Global.

### **About**

The Canadian Natural Gas Vehicle Alliance is a national trade not-for-profit trade association that advocates for the sustainable growth of natural gas vehicles, refuelling infrastructure, and renewable gaseous fuels for the benefit of Canada's economy and environment.

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