About Natural Gas Vehicles

- There are more than 120,000 NGVs on U.S. roads today and more than 8.7 million worldwide.
- There are more than 1,100 NGV fueling stations in the U.S. — more than half are available for public use; the remaining stations are owned by private fleet operators.
- Natural gas, on average, is half the cost conventional gasoline at the pump.
- Currently, Honda is the only company building an NGV for the general public. Ford, GM and other companies currently build NGVs for sale in other countries, and now are looking at the U.S. market. Passenger cars (other than the Honda Civic) and some fleet vehicles running on natural gas in the U.S. were converted by after-market shops. However, more light- to medium-size truck manufacturers are producing NGVs for fleet applications. Roughly 22 percent of all new transit bus orders are for natural gas.
- Natural gas is sold in GGEs or gasoline gallon equivalents. A GGE has the same energy content (124,800 BTUs) as a gallon of gasoline.

Benefits of NGVs

Using an American-made product

Making America less dependent on foreign oil is a national priority. Ninety-seven percent of the natural gas used in the U.S. is produced in North America (85 percent from the U.S. and 12 percent from Canada). Every gallon equivalent of natural gas used in vehicles is one less gallon of petroleum that has to be imported.

A Cleaner-burning Fuel

Testing has been performed to compare the emissions of light-duty NGVs versus light-duty gasoline vehicles.

The U.S. Environmental Protection Agency calculated the potential benefits of compressed natural gas (CNG) for NGVs versus gasoline based on the inherently cleaner-burning characteristics of natural gas. Natural gas:

- Reduces carbon monoxide emissions 90%-97%
- Reduces carbon dioxide emissions 25%
- Reduces nitrogen oxide emissions 35%-60%
- Potentially reduces non-methane hydrocarbon emissions 50%-75%
- Emits fewer toxic and carcinogenic pollutants
- Emits little or no particulate matter
- Eliminates evaporative emissions

ngv™
natural gas
for vehicles

As automakers have improved the emissions performance of gasoline vehicles to keep pace with stricter emissions regulations, improvements in CNG vehicles have kept their emissions performance ahead of the pack. The U.S. Environmental Protection Agency has called the natural gas Honda Civic GX the cleanest internal-combustion vehicle on Earth.

(Source: U.S. Department of Energy -- www.afdc.energy.gov/afdc/vehicles/natural_gas_emissions.html?print)

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Greenhouse Gases

Natural gas contains less carbon than any other fossil fuel, and thus produces lower carbon dioxide (CO2) emissions per vehicle mile traveled. While NGVs do emit methane, another principle greenhouse gas, any increase in methane emissions is more than offset by a substantial reduction in CO2 emissions compared to other fuels. Tests have shown that NGVs produce up to 20 percent less greenhouse gas emissions than comparable gasoline vehicles and up to 15 percent less than comparable diesel vehicles.

Safety

CNG, unlike gasoline, dissipates into the atmosphere in the event of an accident. Gasoline pools on the ground creating a fire hazard.

The fuel storage cylinders used in NGVs are much stronger than gasoline fuel tanks. NGV cylinders are subjected to a number of federally required “severe abuse” tests, such as heat and pressure extremes, gunfire, collisions and fires.

NGV fuel systems are “sealed,” which prevents any spills or evaporative losses. Even if a leak were to occur in an NGV fuel system, the natural gas would dissipate up into the air because it is lighter than air.

Natural gas has a high ignition temperature, about 1,200-degrees Fahrenheit, compared with about 600-degrees Fahrenheit for gasoline. It also has a narrow range of flammability; that is, in concentrations in air below about five percent and above about 15 percent, natural gas will not burn. The high ignition temperature and limited flammability range make accidental ignition or combustion of natural gas unlikely.

Natural gas is not toxic or corrosive, and will not contaminate ground water.

Target Audience

NGVs are most practical for fleets. Fleets generally operate a number of vehicles that are centrally maintained and fueled. They also travel more miles daily than the average personal-use vehicle and therefore can take better advantage of the lower price per gallon of natural gas. Fleet-type vehicles taking advantage of natural gas include the following: Taxicabs, over-the-road trucks, transit buses, refuse haulers, school buses, delivery vehicles, airport shuttles and forklifts. In addition to fleets, private motorists also enjoy the benefits of driving NGVs.

State and Federal Incentives for NGVs

Many states offer incentives for driving NGVs, including tax deductions/credits, reduced license fees, reduced vehicle sale taxes and lower registration fees. Some states also permit certain alternative-fuel vehicles to operate in high occupancy vehicle (HOV) lanes during peak rush-hour periods.

The federal government also offers income-tax credits for the purchase of a new, dedicated alternative-fuel vehicle of 50 percent of the incremental cost of the vehicle, plus an additional 30 percent if the vehicle meets certain tighter emission standards. These credits would range from $2,500 to $32,000 depending on the size of the vehicle.

Source: NGVAmerica Fact Sheet Alternative Fuel Vehicles

powered by clean **natural gas**™