

ALTERNATIVE FUEL INFORMATION SHEET: NATURAL GAS

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Natural Gas Overview

Natural gas is an odorless, gaseous mixture of hydrocarbons, primarily composed of methane. Compressed natural gas (CNG) vehicles operate on natural gas stored at a volume of less than 1% of their atmospheric pressure. The use of CNG powered vehicles has become more popular in both commercial and non-commercial vehicles due to its availability and eco-friendly benefits compared to gasoline.

Economic Incentives of Natural Gas

Compressed natural gas (CNG) is sold in units of gasoline or diesel equivalent (GGE/DGE). One GGE equals roughly 5.66 pounds of CNG. CNG-powered vehicles get about the same fuel economy as a conventional gasoline vehicle, and across the nation the price of CNG is \$0.79 lower than gasoline on average. Because CNG is domestically produced, markets are much less volatile than that of oil.

Roughly 98% of Natural Gas comes from North America. Although considered a fossil fuel, Natural Gas is widely available and established distribution networks are in place. Because it is domestically produced, the prices of natural gas are also relatively stable.

Domestically Produced



Conversion

Compressed natural gas makes for a great alternative fuel in heavy-duty applications due to the requirement of larger storage tanks. Qualified service retrofitters can also reliably convert many light-, medium-, and heavy-duty vehicles for natural gas operation. The upfront costs to convert fleet vehicles to natural gas can be offset by lower operating and maintenance costs over the lifespan of the vehicles. On-site, time-fill fueling stations are also an option for large fleets, as well as conversions for bi-fuel engines/vehicles able to operate on propane, natural gas, and ethanol-gasoline blends.

Environmental Benefits

- CNG is one of the cleaner burning fuels available, and the use of CNG vehicles reduces carbon monoxide emissions by over 90%
- Natural gas is non-toxic, and reduces the risk of groundwater contamination
- CNG vehicles produce no evaporative emissions and reduce soot particles that can cause respiratory issues
- Renewable Natural Gas (RNG), aka biomethane, is produced by purifying natural gas from landfills and livestock, reducing emissions even more than conventional CNG. CNG-powered vehicles can run on RNG without any modifications, and RNG development continues to grow.
- Light duty vehicles operating on CNG can provide moderate overall greenhouse gas emission reductions and reduce life cycle GHG emissions by 15%, while heavy-duty vehicles can have an even greater impact

Infrastructure and Applications

As of 2022, more than 800 public compressed natural gas (CNG) fueling stations are available in the United States. Stations can be located using the Alternative Fuels Data Center. Additionally, over 50 Liquefied Natural Gas (LNG) stations are available. LNG is a more energy efficient form of natural gas, however is currently only suitable in the heavy-duty trucking industry due to the requirement of larger storage tanks. Additionally, many heavy-duty natural gas vehicles as well as a number of medium-duty NGVs are available from original equipment manufacturers.