



# NATURAL GAS



More than 175,000 vehicles in the United States run on natural gas.

## TYPES OF NATURAL GAS:

**Liquefied Natural Gas (LNG)** has a greater energy density than CNG making them well suited for class 7 and 8 vehicles which may require more fuel to be stored aboard the vehicle to travel longer distances. The structure of LNG fueling stations is like gasoline and diesel stations because they provide liquid fuel but LNG requires more safety precautions for fueling stations.

**Compressed Natural Gas (CNG)** requires more equipment configuration for fueling stations. Fueling for CNG stations can be fast-fill or time-fill, both through the local utility line. Fast-fill stations work compressing the fuel to a higher pressure, and these stations usually take a comparable time to gasoline stations. Time-fill stations fill overnight and fuel comes to the refueling station at lower pressures. Usually, retail stations use fast-fill while fleets with central refueling use time-fill.

**Renewable Natural Gas (RNG)** is the product of decomposition of organic matter and can be captured from livestock operations, wastewater treatment, and landfills. RNG is a reliable, renewable fuel that can be used to power vehicles in the form of CNG or LNG.

## TYPES OF NATURAL GAS VEHICLES:

**Dedicated:** These vehicles are designed to run only on natural gas. This can be used for light or heavy-duty vehicles.

**Bi-fuel:** These vehicles have two separate fueling systems that enable them to run on either natural gas or gasoline. This is typically used for light-duty vehicles.

**Dual-fuel:** These vehicles have fuel systems that run on natural gas but use diesel fuel for ignition assistance. This configuration is traditionally limited to heavy-duty vehicles.



## APPLICATIONS:

**UPS:** Began adding natural gas vehicles to their fleets in 2009. Between the years 2020 and 2022, UPS plans to purchase over 6,000 compressed natural gas trucks. Today, over half their fleet is natural gas vehicles, at a total of over 5,200. Their vehicles can interchangeably use CNG or RNG in compressed form. UPS operates 57 natural gas fueling stations across the U.S.

For more information, visit [cleanfuelsmi.org](https://cleanfuelsmi.org) or reach out to us at [info@cleanfuelsmi.org](mailto:info@cleanfuelsmi.org).

## BENEFITS:

**Fuel Diversity:** In 2018, over 90% of the natural gas used in the United States was produced domestically.

**Environmental Benefits:** Natural gas vehicles can reduce the emission of harmful nitrous oxides by as much as 95% in comparison to gasoline and diesel vehicles. Natural gas vehicles also reduce emissions of carbon dioxide by 30%, carbon monoxide by 85%, and particulate emissions by 99%.

**Availability:** There are many suppliers for new and used medium or heavy-duty natural gas vehicles. Vehicles can also be retrofitted to run on natural gas. Natural gas is easily accessible through existing utility gas lines.

**Cost Savings:** The cost of fueling infrastructure varies based on size, storage capacity, and type of natural gas. A typical delivery vehicle that achieves 8-10 miles per gallon can typically expect to save \$4,000 to \$5,000 per year in costs of fuel and maintenance.

**Fast Fueling:** Natural gas is great for centrally fueled fleets. The fueling process is not much different than fueling a gasoline or diesel vehicle.

Sources:  
[U.S. Energy Information Administration](#)  
[U.S. Department of Energy: Alternative Fuels Data Center](#)  
[SoCalGas](#)  
[Natural Gas Vehicle Institute](#)  
[Dome Energy](#)

