

# Why natural gas for transportation?

It's cheaper. It's renewable.  
It's domestically abundant.  
It's low in carbon. It's near-  
zero emissions. **It's the best  
diesel/gasoline alternative.**  
It's the bridge to hydrogen.

# Natural gas is many things.

## **Cheap as a transportation fuel**

Over the last decade and a half, natural gas on an energy-equivalent basis has been 25%-40% cheaper than crude oil, providing a clear cost savings to users.

## **Renewable**

Methane from landfills, stranded gas wells, wastewater treatment facilities, agricultural operations and coal beds can be converted into natural gas: a clean burning, less expensive alternative to petroleum.

## **Reduces greenhouse gases**

On a “well to wheels” basis, natural gas vehicles (NGVs) reduce CO<sub>2</sub> emissions by 20%-25% compared to a gasoline car — biomethane reduces CO<sub>2</sub> by 100%.

## **Domestic resource**

While oil imports made up 64% of total US consumption in 2005, only 3% of U.S. natural gas consumption comes from sources other than North America.

## **Abundant**

Less than 1% of the country’s natural gas usage powered 130,000 registered NGVs in 2005. Only 4% of current U.S. natural gas usage would be required to power 500,000 trucks (or 8% of the U.S. trucking fleet, Class 3-8). Advancements in biogas, hydrates and hybrids could extend the 77-year time horizon of proven U.S. natural gas reserves.

## **Clean**

Only natural gas vehicles can meet U.S. EPA’s stringent 2010 heavy-duty standards for nitrogen oxides and soot today.

## **Bridge to hydrogen**

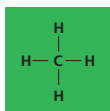
Like H<sub>2</sub>, CH<sub>4</sub> is a “lighter than air” gas that uses “like” fueling systems. Unlike other alternative fuels, H<sub>2</sub> and CH<sub>4</sub> can be blended to reduce vehicle emissions by an additional 50%.

# Facts about fuels — Natural gas has the clear advantage

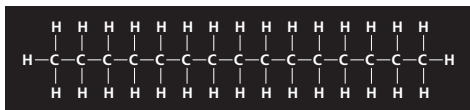
2007-09 model year engines	Diesel	Biodiesel	Ethanol	Natural Gas
Fuel price	Baseline	More expensive	More expensive	Less expensive
Renewable	No	Yes	Yes	Yes
GHG performance	Baseline	Better	Better	Better to Best
Meets US EPA 2010 truck standards	No	No	No	Yes
Abundant domestic resource	No	Land/Water/Transport constrained	Land/Water/Transport constrained	Yes
Lifecycle cost	Baseline	Worse	Worse	Best
Hydrogen bridge	No	No	No	Yes
Light-duty vehicles (taxis/shuttle)	Pending	Pending	Yes	Yes
Medium-duty vehicles (refuse trucks, school buses, delivery)	Yes	Yes	No	Yes
Heavy-duty vehicles (port trucks, transit buses)	Yes	Yes	No	Yes

# Natural gas is low in carbons

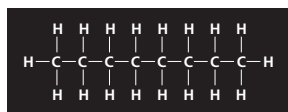
When comparing natural gas molecules with gasoline and diesel molecules, natural gas has far fewer carbon atoms with far less pollution. Generally speaking, more carbon = more emissions.



Natural Gas  
CH<sub>4</sub>



Diesel Fuel



Gasoline



## The Clean Energy solution

Clean Energy is the largest provider of vehicular natural gas (CNG and LNG) in North America with a broad customer base in the refuse, transit, shuttle, taxi, intrastate and interstate trucking, airport and municipal fleet markets with tens of thousands of vehicles fueling at strategic locations in the United States and Canada.

- Fixed, stable fuel prices
- Turnkey fuel agreements
- Financing of new (and existing) stations
- Design, construction of stations
- Grant writing and public policy support
- Equity sharing opportunities

For more information on switching to natural gas, call Clean Energy at 562-493-2804.



**Clean Energy**<sup>®</sup>

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