

FACT SHEET: Natural Gas Fuels (CNG & LNG)



Australia is an energy rich nation with an abundant supply of cleaner, cheaper natural gas.

We have 43 trillion cubic feet of natural gas reserves, or 200 years supply, making it our home-grown advantage.

We are also the second biggest exporter of LNG (*source: <https://www.appea.com.au/oil-gas-explained/benefits/benefits-of-lng/export-revenue/>*). At the same time, ships full of dirty foreign diesel arrive at our ports.

Australian natural gas fuels are not only cleaner, cheaper and healthier than diesel – they are the only feasible alternative for heavy transport.

Natural gas vehicle technology is mature, proven in real world applications and is the only other technology that has a commercially available product for cars, heavy-duty trucks, buses, forklifts, trains, marine vessels and stationary energy.

NATURAL GAS IS CHEAPER AND CAN LOWER THE COST OF LIVING

It costs less at the bowser and is the only viable alternative to imported and expensive diesel for heavy freight.

The average 'food basket' for a person buying in Melbourne has travelled more than 21,000 kilometres by road and 70,803 kilometres across all forms of transport (*source: <http://www.industry.gov.au/industry/Office-of-the-Chief-Economist/Publications/Documents/aes/2014-australian-energy-statistics.pdf>*).

Cost savings from using natural gas fuels to transport our food across the country, flow through the economy and result in savings at the supermarket.

NATURAL GAS IS AN AUSTRALIAN FUEL THAT SUPPORTS LOCAL JOBS AND A STRONGER AUSTRALIAN ECONOMY

The skills, expertise, design and manufacturing that occurs and are developed along the natural gas supply chain is a niche that should be Australia's natural advantage and can be by adopting natural gas fuels for use in transport and electricity generation.

Whether it's world-class catamaran and ferry building in Hobart, truck conversions in Perth, machining funnels for natural gas generators in Western Sydney or driving the burners at a food producer at Gympie - Australian natural gas drives Australian jobs and new career opportunities.



NATURAL GAS IS CLEANER AND A DIRECT-ACTION FUEL

High emissions of particulate matter from diesel including carcinogen, is almost eliminated with natural gas use. Natural gas-powered heavy trucks emit up to 23% less greenhouse gas emissions than diesel-powered trucks. In one study, converting one diesel truck to a natural gas-powered truck reduced emissions by almost 35 tonnes of CO₂ per annum – equivalent to removing around 12 cars from the road.

ABOUT GASEOUS FUELS

Australian gaseous fuels - Liquefied Petroleum Gas (LPG), Liquefied Natural Gas (LNG) and Compressed Natural Gas (CNG) - are Australia's natural advantage. They are cleaner and cheaper, supporting cleaner air and deliver more control over Australia's energy security and economic future.

Gaseous fuels are lower emitting, lower polluting Australian made fuels - that secure local jobs and reduce Australia's reliance on foreign oil imports.





AUSTRALIAN NATURAL GAS FUELS ARE GREAT BARRIER REEF FRIENDLY

Australian natural gas is Great Barrier Reef friendly because it dissipates on contact with water and we know that the Australian public strongly supports the adopting of cleaner energy sources and lower-emitting technologies to protect our clean air and our natural environment.

NATURAL GAS FUELS ARE CLEANER AND HEALTHIER

	DIESEL	NATURAL GAS
Carbon Dioxide (CO ₂)	✗	30% lower ↓
Nitrogen Dioxide (NO _x)	✗	75% lower ↓
Particulate Emissions	✗	90% lower ↓
Sulfur Oxide (SO _x)	✗	99% lower ↓

Source: www.ferus.com/products-services/products/lng-cng

AUSTRALIAN NATURAL GAS IS A 'NOW FUEL'

Natural gas technology is well developed with countries all over the world already adopting natural gas fuels. In Australia, almost 4000 vehicles currently run on natural gas fuels (Source: ABS Motor Vehicle Census).

In North America and Europe many more trucks run on natural gas and numbers are growing. In Norway, the Government approved the construction and operation of natural gas passenger vessels, in Canada three new natural gas ferries have been contracted and in the USA, BC and Staten Island Ferries are studying options to retrofit their diesel vessels to run on natural gas.

Not only are natural gas fuels available now, but a recent report by the Bureau of Resource and Energy Economics noted that natural gas fuels are likely to have one of the lowest costs of production of any fuels in Australia to 2050.

WHAT ARE NATURAL GAS FUELS?

Natural gas fuels – LNG and CNG – are clean, cheap and produced locally from Australian natural gas, which is abundantly available in Australia and is found underground in many different types of rock formations. While less common in Australia, but growing rapidly overseas, they can also be produced from biomethane recovered from renewable sources including wastewater, landfill, agricultural or forestry waste.

Natural gas and biomethane are both methane which is colourless, odourless, non-corrosive and is one of the safest fuels available.

The natural gas we use at home to heat water or cook meals can be liquefied to form LNG or compressed to form CNG.

Depending on the application, natural gas fuels come in a number of different forms including, liquefied, compressed and high density, all with their own benefits and characteristics.

- CNG is made by sending the natural gas through a gas dryer and compressor, where it compressed to less than 1% of the volume it occupies at standard atmospheric pressure.
- High Density Compressed Natural Gas (HDCNG) is a new technology for storing natural gas which means vehicles can drive longer and need to refuel less often than current CNG.
- LNG is created by cooling natural gas and reducing its volume by more than 600 times, making it easier to transport.

These processes increase the energy density of natural gas which makes it manageable to store the gas in tanks which can be used to fuel vehicles or transport gas without the need for pipelines. But no matter what form it is stored, it is still natural gas.

Natural gas can be used as a transport fuel for cars, vans, light-duty and heavy-duty trucks, buses, forklifts, trains, mine vehicles and marine vessels. It can also be used for what is called stationary energy such as electricity generation, cooking, resource processing and manufacturing.

