FACT SHEET:
Gaseous Fuels Innovation

Australian gaseous fuels - Liquefied Petroleum Gas (LPG), Liquefied Natural Gas (LNG) and Compressed Natural Gas (CNG) - are Australia's natural advantage.

With significant existing flexible distribution networks using virtual pipelines that are very responsive to changing demand without the need for expensive fixed pipelines, gaseous fuels have an important role to play in:

- *providing improved energy security for Australians;*
- *reducing energy costs for households, business and the community;*
- *improving environmental outcomes by reducing emissions; and*
- *supporting both direct and indirect jobs in the industry and manufacturing jobs more broadly.*

GASEOUS FUELS INDUSTRY INNOVATION

It's not just emerging tech industries that are innovating. The Australian gaseous fuels industry is providing lower polluting Australian fuel options and innovative technology and practices to deliver cleaner and cheaper products, lower emissions and better outcomes for its customers.

Recent examples include LNG marine bunkering in Western Australia, High Density CNG fuel system technologies for mining vehicles developed in Queensland, including a 'plug in plug out' tank, the LPG Autogas Centre of Excellence recently established in Melbourne and an interstate LPG dual fuel heavy truck trial.

GEA has long advocated for the need for government at all levels to support innovation in the gaseous fuels industry for initiatives like those listed above.

There is strong national interest in ensuring the National Science and Innovation Agenda and economic policy support the Australian gas sector because of its potential contribution to energy security, emissions reductions, niche Australian technology/manufacturing jobs and the clean air agenda.

It is also imperative that Australia retains the skills and knowledge from its manufacturing sector and captures and develops the expertise and skills from the recent capital investment phase of the growing export gas sector. Supportive innovation and R&D policy settings can help do this and build and promote a leading role for Australians in developing gas-related technologies.

This would mean we are not just exporting another resource commodity, but also harnessing the downstream environmental and health benefits along with local niche design, manufacturing and production jobs.

EVOL LNG'S LNG MARINE BUNKERING

EVOL LNG is supplying cleaner shipping fuel for marine vessels, with the first commercial LNG bunkering operation undertaken in Western Australia early last year.

LNG is a cleaner fuel than marine diesel, emitting 25 per cent less carbon dioxide, less nitrogen oxides and almost zero sulphur oxides and particulates - and leaves no residue in the unlikely event of a spill.

The number of LNG-fuelled ships in operation worldwide has increased steadily from a handful - to more than 75 - with an additional 80 ships expected to be built in the next three years.

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.

CASE STUDY

INTELLIGAS, QUEENSLAND

Queensland company Intelligas, has recently developed technology to retrofit a range of mine vehicles including trucks, dozers and shovels with a 'plug in plug out' tank and High Density Compressed Natural Gas (HDCNG) fuel system.

Fitting these vehicles with a HDCNG engine not only reduces carbon emissions, but it improves the life of the engine and reduces engine noise by substituting up to 85% of diesel with gas - while maintaining equivalent performance levels or better.

CLEANER, CHEAPER FUEL FOR AUSTRALIA'S LONG-HAUL TRUCKS

What is little known to most Australians, is that we operate some of the largest truck engines in the world.

Ironically - because the rest of the world does not run things like road trains to the same extent as Australia - there is little demand elsewhere for 15 litre truck engines which are no longer being made overseas.

However, Australia still needs such large engines for our heavy freight applications which are an ideal platform for lower emitting gaseous fuels where renewables are not a feasible alternative.

Gas is the only viable alternative to diesel for long-haul trucking with our trucking industry being an important part of the Australian economy. In 2011, it was worth $35.6 billion to our economy and paid $6.5 billion in wages to Australians.

Working closely with the National Heavy Vehicle Regulator, Unigas and its partners have been working on an LPG dual fuel heavy truck trial - and are now discussing steps for developing an Australian compliance model that will allow the industry to adopt a solution that involves installing an engine system that runs on both diesel and LPG.

The system has the advantage of maintaining engine power and torque - and remaining within the engine's designed operating performance.

Trial results consistently showed 18 to 20 percent energy equivalent savings, a 60 per cent reduction in particulate matter and a 2 per cent CO2 reduction.

While still in the early stages, results show this technology has the potential to help the Australian heavy vehicle industry reduce emissions and operational costs, without compromising safety.

LPG AUTOGAS CENTRE OF EXCELLENCE

A joint initiative between Unigas, Prixcar and Sprint Gas established the LPG Autogas Centre of Excellence in Melbourne, which opened in December 2017.

The LPG Autogas Centre of Excellence will provide Australian fleet operators with direct access to a low-cost, high quality LPG installation service for new vehicles through port of entry or dealerships.

The new facility provides a strict quality control with highly experienced Autogas system designers, manufacturers and skilled vehicle fitters that streamline installation processes to ensure competitive conversion costs.

The LPG Autogas Centre of Excellence is currently completing a contract for a taxi company where a Sprint Gas Sequential Vapour Injection LPG system is being installed into 100 new Toyota Camry Hybrids.

Testing has revealed that the Toyota Camry Hybrid with LPG produces fuel cost savings of up to 45 per cent, with a payback on conversion of just over six months. Switching to LPG also reduces CO2 emissions by approximately 3.45 tonnes per vehicle.

Find out more at: **www.cleanercheaperfuels.com.au**