FACT SHEET:

Gas Fuels Technology

Australian gas fuels - Liquefied Petroleum Gas (LPG), Liquefied Natural Gas (LNG) and Compressed Natural Gas (CNG) - have an important role as a reliable component in a lower carbon energy setting.

They are also cleaner, Australian, support thousands of local jobs and are a more readily available source of energy than conventional fuels.

GAS FUELS INDUSTRY TECHNOLOGY

It's not just emerging tech industries that are innovating. The Australian gas 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 in Melbourne and an interstate LPG dual fuel heavy truck trial.

There is a strong national interest in ensuring that economic policy supports 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 technological development 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 278 confirmed ships and 139 additional LNG-ready ships either in operation or on order.

CLEANER, RELIABLE, AUSTRALIAN ENERGY FOR OUR 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 gas fuels where renewables are not a feasible alternative.

ABOUT GAS FUELS

Australian gas fuels - Liquefied Petroleum Gas (LPG), Liquefied Natural Gas (LNG) and Compressed Natural Gas (CNG) address the triple drivers of reliability, cost and the environment - while securing local jobs and reducing Australia's reliance on foreign oil imports.

It is therefore critical to take the necessary steps to ensure that these fuels become a bigger part of Australia's energy mix - which will help create even more Australian jobs.

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.

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 2017, it was worth almost $40 billion to our economy and paid $8.2 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.

DID YOU KNOW...

- GEA Members have almost $4.3 billion invested in LPG facilities, trucks and cylinders.
- Gas delivers 44% of Australia's household energy - but only 13% of household greenhouse gas emissions.
- Australia's gas infrastructure can store the same amount of energy as 6 billion Powerwall batteries.
- Half of the gas used in Australia is for mining and manufacturing – contributing $196 billion to the national economy and employing over 949,000 Australians.
- 70% of homes use mains or bottled gas – that's 6.5 million homes and growing.
- Replacing 10% of diesel used on heavy on-road transport with gas fuels could reduce imported diesel by 1,018 million litres per annum - reducing CO2 emissions by up to 597,000 tonnes.
- LPG, LNG and CNG fuels can reduce carbon emissions by up to 25% and virtually eliminates particulates along with NOx and SO_2.

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 HYBRID TAXIS

Over the last few years, Australian taxi company 13CABS has been adding Toyota Camry Hybrids equipped with Sprint Gas sequential vapour injection LPG systems to its vehicle fleet.

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 per year.