

6 May, 2009

CLEANER FUEL FOR THE LONG HAUL – AN INTRODUCTION TO EVOL LNG

A well publicised increasing dependence on imported fuels, combined with the impact on Australia's balance of payments and the increasingly volatile global oil price, has sparked a search for a diesel fuel alternative that is able to power a wide range of heavy vehicles and large industrial engines.

Kleenheat Gas (a business unit of Wesfarmers Energy), is a pioneer in the field of alternative fuels, having produced and marketed Liquefied Petroleum Gas (LPG) for automotive, industrial and domestic applications for over 50 years.

More recently the company has also invested heavily in Liquefied Natural Gas (LNG), through the construction of the \$137 million project in Western Australia which includes the LNG plant and strategically located refuelling infrastructure.

Marketed under the 'EVOL LNG' brand, Kleenheat Gas currently supplies LNG and supporting refuelling facilities to approximately 200 trucks in Western Australia and Victoria with plans afoot to further expand into NSW, QLD and SA.

Major fleets already using LNG with great success include the Murray Goulburn Co-Operative (Devondale brand of milk products), Sands Fridge Lines, Mitchell Corporation, McColls, Cleanaway, SITA Environmental Solutions, Cootes and a growing internal fleet within Kleenheat Gas.

More than just a fuel producer, the EVOL LNG team works closely with original equipment manufacturers and specialist diesel-LNG engine companies to ensure the fuel delivers the best operational and environmental outcomes for its customers.

"To be successful in this emerging industry you need to make the fuel transition as easy as possible by engaging management and fleet drivers," Kleenheat Gas' LNG Manager, Brad Lawson said.

"We do a lot more than simply supplying the fuel - we supply the LNG refueller network, provide driver and workshop training, site audits and facilitate the entire conversion process. Further, we have trucking experts embedded within our team," Mr Lawson said.

The recent official opening of Wesfarmers Energy's 175 tonne-per-day Kwinana plant (commissioned in September 2008) combined with the company's commitment to increasing national refuelling infrastructure will set the platform for the greater availability and use of LNG in the future. The 175 tonnes per day production capacity of this new LNG plant is equivalent to approximately 250,000 litres of diesel per day.

What is LNG?

LNG is a clear, colourless, non-toxic liquid that is produced when natural gas is cooled to minus 161 degrees Celsius at atmospheric pressure.

Being 600 times the density of natural gas and three times the density of compressed natural gas (CNG), LNG is the most efficient method of transporting and storing gas.

LNG is vapourised or 'reconverted' back to its natural gas state when required for use in applications such as industrial applications, power generation, heating and transport.

The Advantages of LNG

LNG fuel delivers the best outcomes for companies operating long haul fleets over medium to large distances.

LNG offers several environmental benefits over its oil-based counterparts; unlike diesel, the most traditional heavy transport fuel, natural gas burns more cleanly and with lower carbon emissions.

When used in modern truck engines, LNG emits significantly less Particulate Matter and Nitrogen Oxides when compared to diesel engines. Furthermore, internal testing by various manufacturers globally has proven that the current generation of gas-powered engines exceed the highest environmental requirements (EURO V and Japanese New Long Term 05) making LNG engines some of the cleanest internal combustion power plants available.

Australia has an abundant supply of natural gas reserves, providing us with natural advantages in terms of supply and pricing stability when compared to diesel.

Current LNG technology

With increased political and public pressure on the transport industry to reduce its carbon footprint, several manufacturers are in the process of introducing factory installed, high powered heavy duty LNG engines and fuel systems.

For example, Kenworth Australia, a division of PACCAR, has commenced production of LNG trucks with the road train specification T908 available to order now, and the popular B-Double K108 model and T408SAR cab chassis will be available later in the year. Additional models are then expected to follow.

Derived from the Cummins ISX diesel engine, Canadian based LNG engine company, Westport Innovations offers the GX engine with high pressure direct injection providing comparable horsepower, torque and efficiency to the diesel engine, with ratings of up to 1850 lb-ft of torque and 580 peak horsepower.

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For further information, please contact:

Brad Lawson
Manager, LNG
EVOL LNG
Phone: 08 9312 9382

For EVOL LNG media releases & photos:

Arkajon Communications
Phone: 03 9867 5611
Email: evol.LNG@arkajon.com.au