

Briefing to the Incoming Minister for Energy and Resources on NZ's downstream LPG and natural gas industry.

1. BACKGROUND

This Briefing to the Incoming Minister has been prepared by the Gas Association of NZ (GANZ) and the LPG Association (LPGA).



A key role for both Associations is to promote the safe and efficient distribution and use of LPG and natural gas. The Associations' membership comprises all parts of the industry from downstream of production, through to appliance manufacturers and installers. The Associations have a particular interest in promoting the direct use of gas in residential, commercial and industrial sectors, including water heating, space heating, industrial processes and cooking.



2. INDUSTRY OVERVIEW

Natural gas and LPG comprise a substantial component of New Zealand's energy supply make-up. They play an important role in meeting the challenges of the energy trilemma; namely balancing affordability and security of supply with sustainability. Natural gas and LPG provide consumers with an economical direct energy choice, support electricity supply security and, because they are clean burning and have the lowest carbon emission of any carbon-based fuel, can contribute to the country's environmental sustainability goals.

Using gas and LPG as a direct energy source relieves the load on the electricity supply sector. It reduces the need for additional electricity infrastructure and allows for the increased use of renewable generation.

This is because natural gas provides an energy source for around 268,800 consumers. LPG is mainly supplied by product sourced from the Taranaki oil/gas fields and supplies approximately 135,000 "fixed" consumers, as well as substantially more users of gas BBQs cooktops and cabinet heaters.

While gas does have a carbon footprint, the direct use of gas and LPG can assist in reducing CO₂ emissions so these energy sources do have an important and ongoing role to play in New Zealand's energy supply sector.

Gas plays a key role globally in reducing coal use, with all the associated environmental benefits, and can fill the same role in New Zealand, again with environmental benefits.

Because of the various advantages offered by the direct use of gas, it is important not to consign it to the bin as 'just another fossil fuel'. Gas does and should continue to play a key role in New Zealand's ongoing transition to a lower carbon future and this must be kept in mind when decisions about this country's energy sector are considered. This is especially true for the residential sector where the CO₂ emissions for all residential users of LPG and natural gas represent only:

- 0.75% of New Zealand's total greenhouse gas emissions (i.e. comprised of Agricultural, Energy-related, Industrial Processes, and Waste)
- 1.85% of New Zealand's energy-related emissions.
- 4.6% of emissions attributable to households and private individuals.

Scale of investment in the industry

Natural Gas Transmission – \$1.3B, Distribution \$1B, and LPG Distribution and storage approx. \$0.5B

3. NATURAL GAS

Around half of the domestic supply of natural gas is used for petrochemical production, and other key uses include dairy, pulp and paper, refining and food production. Natural gas is used by 268,800 industrial, commercial and residential consumers in the North Island only.

The role of natural gas in New Zealand's energy supply landscape is changing significantly. A key example is the reducing use of gas for electricity generation. Having said that, gas has developed an important role as a 'peak generator', especially to meet growing morning and evening peak electricity demand in Auckland. The development of this new role has been facilitated by new gas turbine technologies.

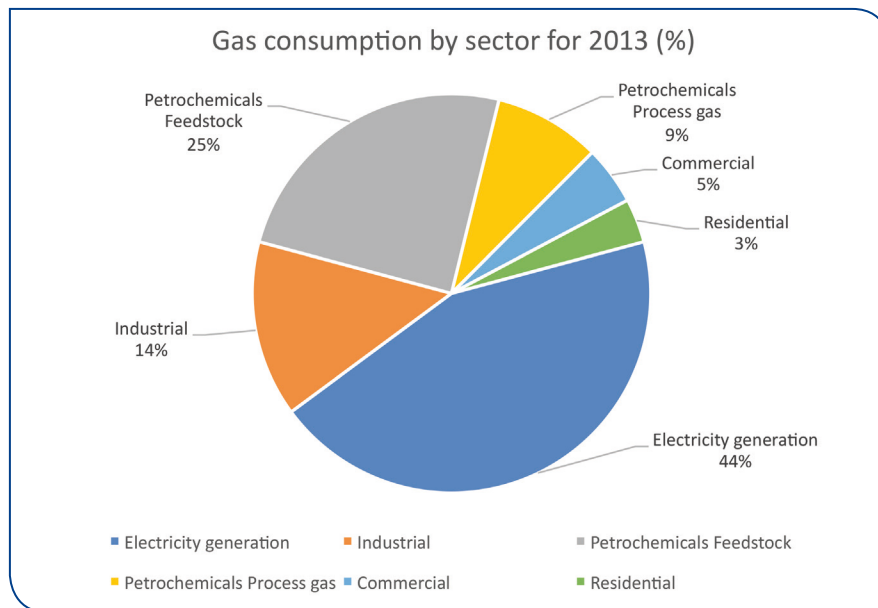
The combustion of gas to produce energy or electricity does result in CO₂ emissions, but at much lower levels than the use of other fossil fuels. Its use will facilitate the growth of New Zealand's predominantly renewable electricity generation sector.

Natural gas is supplied from 15 fields and delivered through 2,520km of high pressure gas transmission pipelines and 17,560km of regional gas distribution networks. These networks transport gas from gate stations (transmission pipeline delivery points) and reticulate it into residential houses, offices, hospitals, factories, businesses and community amenities.



There are five gas distributors: GasNet, Powerco, First Gas, Nova Gas and Vector.

There are 10 retailers operating in New Zealand. They are: Contact Energy, Genesis Energy (and its subsidiary Energy Online), Greymouth Gas, Mercury Energy (part of Mighty River Power), OnGas, Nova Gas (part of Todd Corporation), Trustpower (and its subsidiary Energy Direct NZ) and Pulse Energy. Of these, OnGas and Greymouth Gas supply only commercial and industrial customers. A breakdown of the natural gas market is below.



4. LPG

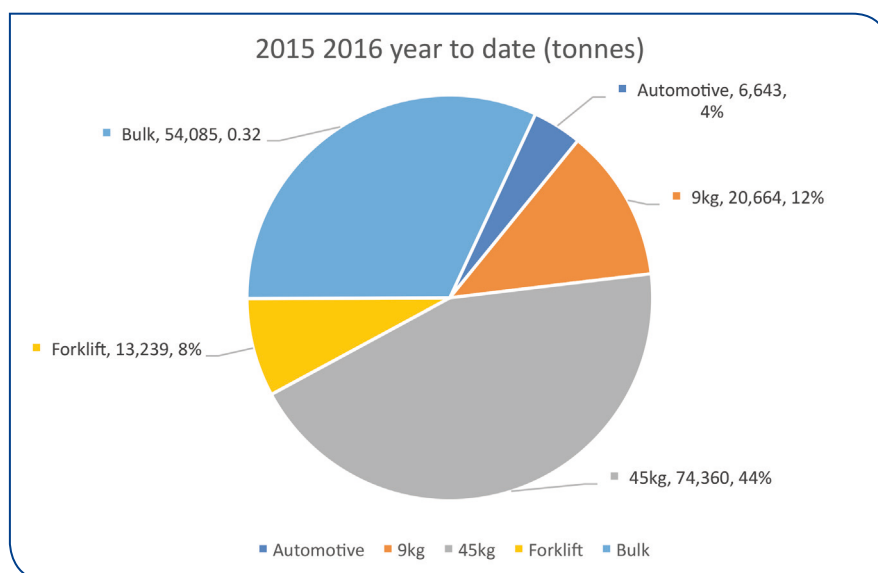
LPG is used by 135,000 “fixed” consumers across both Islands. It is produced by both on- and off-shore fields in Taranaki and can be imported from Australia as necessary to meet demand.

Most residential and light commercial LPG is supplied in 45kg cylinders, but there is a sizeable market using 9kg cylinders for BBQs, cook tops and cabinet heaters. LPG is also reticulated in Christchurch, Queenstown, Dunedin, Te Anau, Tekapo, Arrowtown and Wanaka. There are also numerous housing subdivision-sized LPG networks. Larger commercial and industrial customers are usually supplied from onsite bulk LPG tanks.



Total consumption of LPG in 2016 was 170,000 tonnes or approx. 8.5 petajoules. This is up two percent on 2015 figures. Some small and steadily decreasing volume is still used as an automotive fuel in high mileage vehicles like taxis.

A breakdown of the LPG market is below.



5. INDUSTRY GOVERNANCE

Downstream governance/regulation is working well for the industry.
There is:

- A formal consumer switching regime in place
- A free independent complaints process for small consumers
- Voluntary retail and distribution contract oversight schemes
- A framework for retailer insolvency
- A process for formal downstream reconciliation arrangement
- A formal compliance regime
- Industry transparency, with key market data published and reported widely.

6. THE CO₂ CREDENTIALS OF GAS AND LPG

The Gas Industry Company commissioned the “Consumer Energy Options” report to guide consumer decision making around energy options. It reviews the pros and cons of gas and LPG and includes a comparison of CO₂ emissions, running costs and purchase costs for various appliance types using electricity gas and LPG.

The report states instant gas water heating is the most cost-effective option for a home’s new water heater with medium to large water heating requirements.

If gas is already being used for water heating, gas space heating may be cheaper than equivalent heat pump options. The most cost-effective solution will depend on house size, insulation, geographic location and a person’s heating preferences.

Instant gas water heating also delivers significant additional value to consumers due to endless hot water, and freeing up interior house space used for the cylinder.

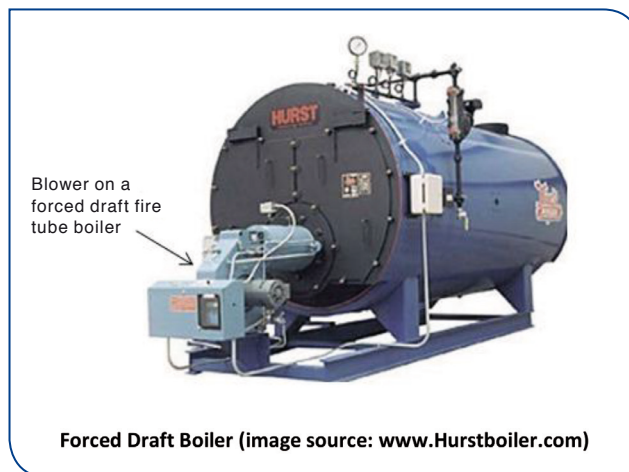
For many New Zealand homes, the combination of gas-fired water and space heating may have a lower carbon footprint compared with standard resistance water heating and a heat pump.

Analysis shows that, as consumers begin to understand the benefits of gas water and space heating, there could be a higher uptake of gas solutions in the home.

Gas is very competitive in the industrial sector too, according to the report. Gas-fired boilers are cheaper than other medium and small-sized industrial options.

In addition, gas units are currently significantly cheaper than coal for new industrial boiler requirements. This position will strengthen with the government’s recently announced climate change policy (the economics of gas-fired boilers, relative to other fossil-fuelled boilers, improves as CO₂ prices increase).

It should be noted that electricity is not a practicable option for process heat given the high temperatures that are required, and the underlying economics. However, if an industrial consumer has an existing coal-fired boiler it may not be cost-effective to switch away to a new gas unit, particularly for large-scale industrial process heat applications.



Forced Draft Boiler (image source: www.Hurstboiler.com)

This is unfortunate, given the government's draft NZ Energy Efficiency and Conservation Strategy 2017-2022. That strategy identifies process heat as an area where there is significant potential to reduce carbon emissions and improve energy efficiency. Gas-fired process heat has the potential to meet many of the objectives of this plan (it provides the opportunity for improved efficiency while also delivering a lower carbon footprint).

Globally, gas is playing a significant role in helping countries reduce their carbon footprints, especially around coal use, and lower greenhouse gas emissions.

Both internationally and domestically, the role of gas will change as the world moves to meet the targets agreed in Paris. Ultimately, gas in New Zealand will need to be justified in the context of New Zealand's Nationally Determined Contribution and the Paris Agreement.

7. SUMMARY OF WHAT IS REQUIRED FROM GOVERNMENT

The Government's goal of making the most of NZ's energy potential is in line with the gas industry's strategic plan to ensure energy markets are effective and efficient. In doing so, the LPGA and GANZ hope to encourage efficient energy use, the development of resources where it is economic to do so, and the minimisation of the environmental impacts of energy supply and use, while alleviating the NZ's carbon footprint.

Simply put, the industry is comfortable with the existing regulatory environment and is concerned to ensure the status quo is maintained.

In order to achieve the above, the following is required:

- A continuing commitment to push for delivery of high quality gas resources to consumers in a safe, efficient, fair, reliable and environmentally sustainable manner.
- The facilitation and promotion of the ongoing supply of gas to meet New Zealand's energy needs, by providing access to essential infrastructure and competitive market arrangements.
- Barriers to competition in the gas industry are minimised.
- Incentives for investment in gas processing facilities, transmission and distribution, energy efficiency and demand-side management are maintained or enhanced.
- Delivered gas costs and prices are subject to sustained downward pressure.
- Risks relating to security of supply, including transport arrangements, are properly and efficiently managed by all parties.
- Consistency with the Government's gas safety regime is maintained.

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