# The Australian LPG Industry

## September 2017

### Our Value to the Nation

Gas Energy Australia

# Our Mission is

***"...to improve the nation's energy security and environment and reduce energy costs by maximising the benefits of gaseous fuels to the community..."***

## Our Industry

LPG is available everywhere all of the time.  With its availability and diverse applications, in the transport and stationary energy sectors, the industry is equipped to immediately contribute to a safe and sustainable energy solution whenever and wherever the need arises.

As an alternative energy source, LPG is playing an important role in shaping Australia's future energy policy and lowering our carbon footprint.  LPG is a significant contributor to the Australian economy both in exports and providing access to an easily transported and safe low carbon energy source for Australians everywhere.

## Our Customers

Millions of Australians currently use LPG every day across hundreds of applications.  Our customers enjoy the multiple uses of the gas for private, commercial and industrial applications, including transportation, farming, power generation, hot water, cooking, space heating and outdoor recreation. LPG can be used anywhere and anytime, without large investments in infrastructure.

## Building a more secure energy future through increased use of LPG

With greater use of LPG there are significant flow-on benefits to the Australian economy in terms of increased energy security, reduced greenhouse gas emissions, improved air quality and health outcomes, lower energy costs for households and businesses, creating more local jobs and reversing the Australian economy's growing dependency on fuel imports.

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# About this Report

Gas Energy Australia (GEA), on behalf of its members and associates, has published this report to provide a "snapshot" of the value that the Liquefied Petroleum Gas (LPG) industry represents to Australia and its people in terms of:

- customers;
- people;
- infrastructure;
- emissions reductions; and
- autogas capabilities.

This is a follow-up report from the initial report completed in December 2014. As with the previous report, the Association's Secretariat has worked closely with its members and associates through the Association's Stationary Energy LPG Taskforce to design and conduct a survey of GEA members, Rivet Group, Elgas, Kleenheat, Origin and Supagas, to collect the data on which this report is largely based. The Secretariat subsequently collated the results of the member survey and developed this report for publication.

The report uses a combination of official ABS data and data reported by GEA members. It is worthwhile noting that the true size of the industry when including the leisure, camping and automotive sector is likely to be significantly larger than indicated by the GEA member only survey data figures. Additionally, any discrepancies in numbers is due to the differences in data source.

This report also contains data on numbers of caravans and campervans which form an important part of the leisure sector. The majority of these vehicles use LPG as a fuel for a range of applications.

The GEA member survey data in this report has been supplemented with research undertaken by the consulting firm pitt&sherry, which compares the cost of greenhouse gas emissions performance of different types of water heaters. This research estimates the emissions abatement associated with LPG in comparison with other water heater energy types such as electric resistance. It has also been supplemented by data contained in the 2016 GEA LPG Supply and Demand Study, which was prepared for the Association by ACIL Allen Consulting.

In relation to gas bottle numbers, information in this report refers only to gas bottles owned by GEA members and associates which include around 4.5 million exchange cylinders. Gas bottles privately held (and their value) are not included, the number of which are believed to be very similar.

For the first time, this report also contains data on Australia's autogas sector. Autogas is a low emissions transport fuel which is produced domestically, thereby adding to Australia's energy security.

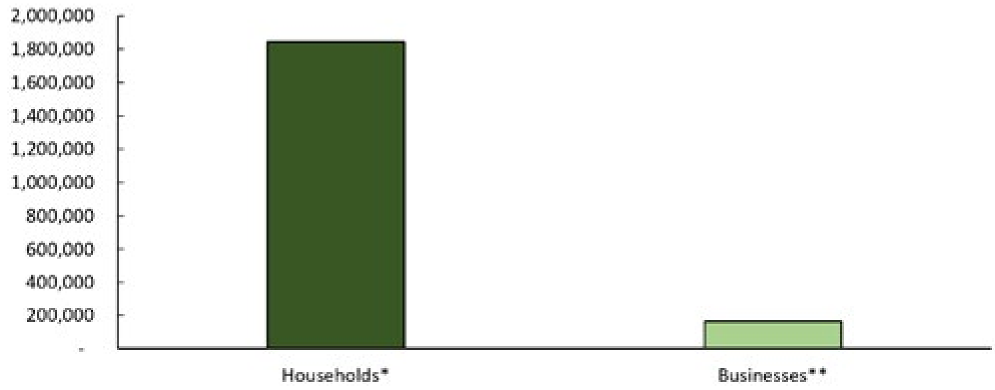
# Stationary energy LPG: a national snapshot

## Our Customers

Our value statement:

*"...Around two million customers across Australia use LPG indoors"*

### Figure 1: Number of consumers by type



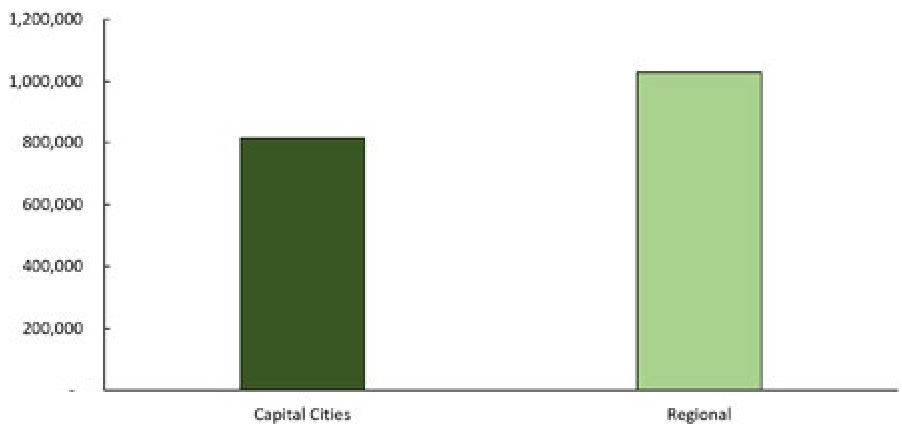

*Source: *ABS Energy Use and Conservation, March 2014*
**ABS Household and Family Projections, Australia 2011-2036*
***2016 GEA Member Survey*

**LPG supports many Australian households and businesses:**

- Nearly 2 million Australian households consume LPG in their homes.
- Our members supply over 160,000 Australian businesses.
- Our members supply more than 1,155,000 Australian customers (not including recreational and autogas customers).

While not included in the ABS data, a significant component of the industry is portable leisure cylinders. There are around 9 million of these cylinders in Australia, comprising roughly 4.5 million exchange cylinders; and 4.5 million privately owned cylinders.

### Figure 2: Households using LPG indoors by location

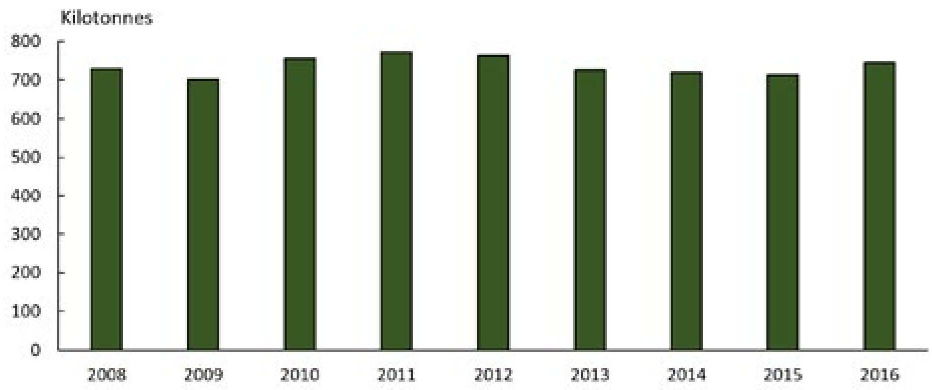



*Source: ABS Energy Use and Conservation, March 2014*
*ABS Household and Family Projections, Australia 2011-2036*

**Consumers in capital cities and regional areas rely on LPG in their homes:**

- Over a million households in regional areas use LPG in their homes.
- Over 800,000 consumers in the capital cities use LPG in their homes.

## Figure 3: Total national volume of stationary LPG demand

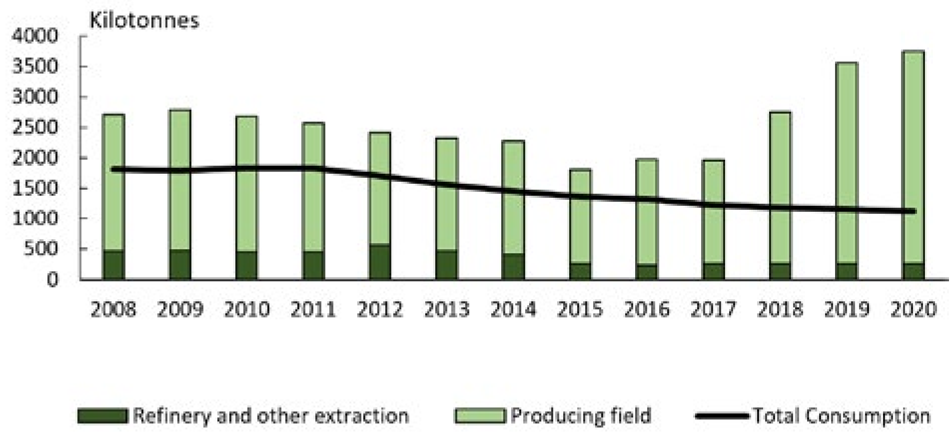



*Source: GEA 2016 LPG Supply and Demand Study*

**Stationary energy LPG demand has remained steady over time.**

- Australian consumption of stationary energy LPG has averaged 736 kilotonnes per annum since 2008, despite the government subsidised extension of the natural gas network into some LPG markets.

## Figure 4: Total national volume of LPG demand and supply

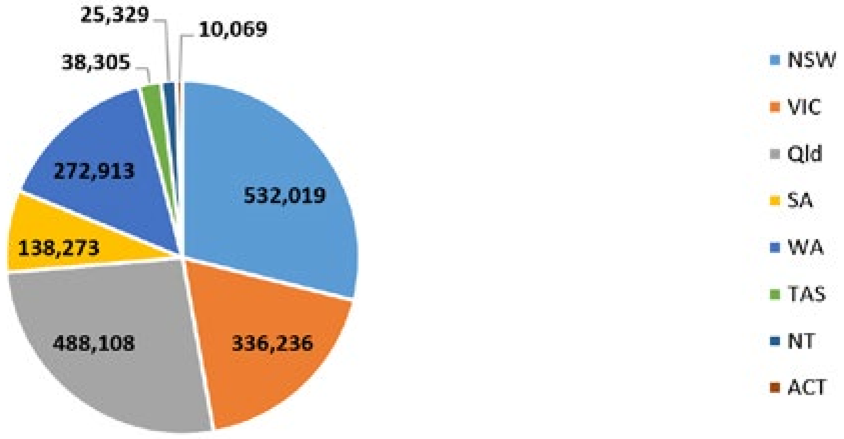



*Source: GEA 2016 LPG Supply and Demand Study and industry forecasts from 2017*

**Australia's LPG industry is well placed to meet demand**

- The Australian LPG industry has always been able to meet Australian demand for its product.
- The Australian LPG industry is forecast to continue to have more than adequate supply to meet demand.

## Figure 5: Number of households using LPG indoors by State/Territory




Source: *ABS Energy Use and Conservation, March 2014*
*ABS Household and Family Projections, Australia 2011-2036*

- New South Wales is the largest market with more than 500,000 household consumers.
- Queensland is the second largest market with nearly 490,000 household consumers.
- Victoria is the third largest market with over 335,000 household consumers.

# GEA Member Household and Business Customers

## Figure 6: Share of Customers by State/Territory and Type


*Source: 2016 GEA Member Survey*

**We support households and businesses in every state:**

- Queensland has the highest proportion of household consumers at 87 per cent.
- Western Australia and Northern Territory have the next greatest proportion of household consumers at 86 per cent.
- The ACT has the highest proportion of business consumers at 22 per cent.

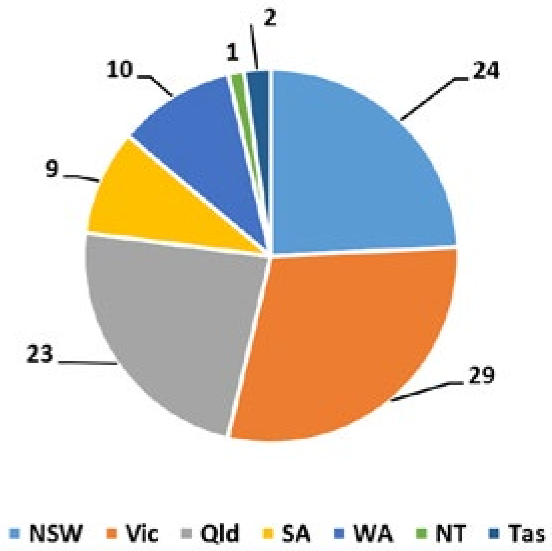
## Figure 7: Share of Households by State/Territory and Location (a)


*Source: ABS Energy Use and Conservation, March 2014*
*ABS Household and Family Projections, Australia 2011-2036*
*(a) Data not available for publication for NT and ACT, but included in totals where applicable*

**We support customers living in regional Australia**

- NSW, Queensland and Tasmanian all have a higher proportion of their customers in regional areas.
- Queensland is the highest with nearly 70 per cent of customers living in regional areas.
- Victoria has the highest proportion of its customers living in a capital city at 56 per cent.

## Figure 8: Share of national stationary LPG demand by State/Territory (per cent)




*Source: GEA 2016 LPG Supply and Demand Study*

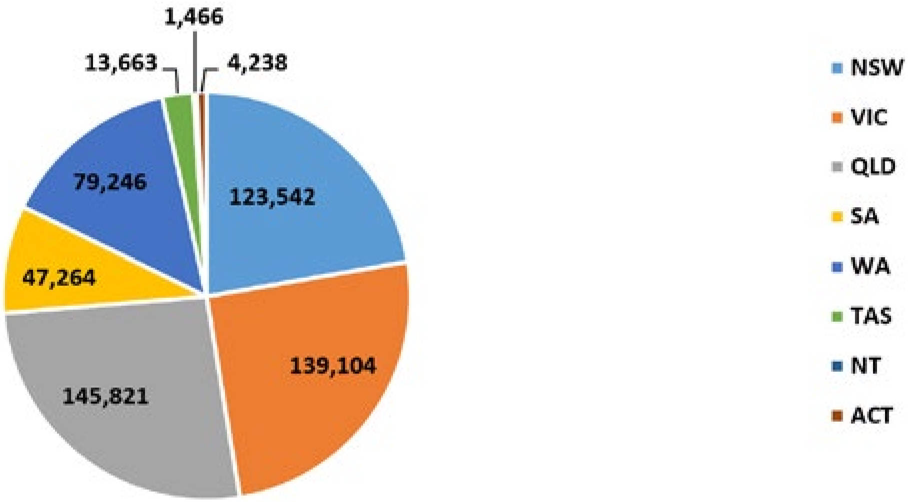
**All states demand LPG for stationary energy:**

- Victoria has the highest demand at 30 per cent of total demand.
- New South Wales and Victoria are also large consumers of LPG at 25 per cent and 24 per cent respectively.
- Total stationary energy LPG demand is estimated at 726 kilotonnes in 2016.

# Caravan and Campervan Consumers

Caravans and campervans form an important part of the leisure sector and the majority of these vehicles use LPG as a fuel for a range of applications, especially cooking and heating. In addition, nearly 2,000 campervans use autogas LPG as a transport fuel .

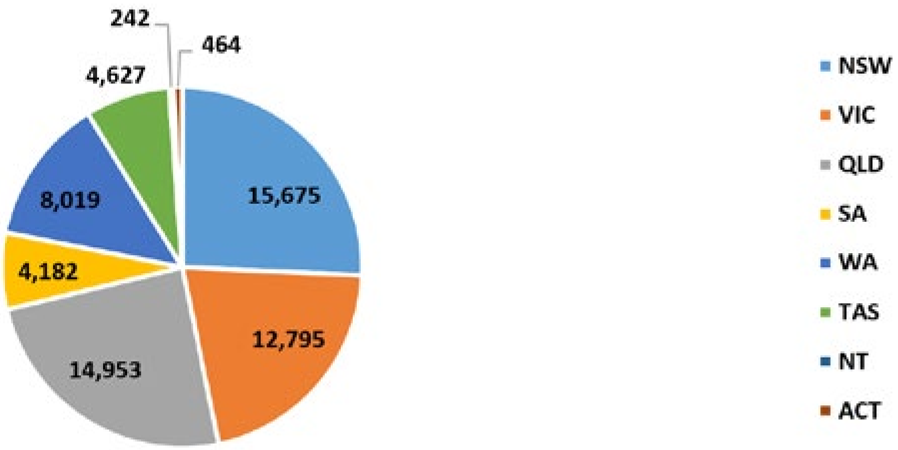
## Figure 9: Number of registered caravans by State/Territory*




**As at 31 January 2016*
*Source: Caravan Industry Association of Australia, www.caravanindustry.com.au/latest-caravan-and-camping-industry-business-sentiment-report*

- There were more than 550,000 registered caravans in 2016.
- Queensland and Victoria had the largest numbers of caravans at almost 140,000 registrations each.

## Figure 10: Number of registered campervan by State/Territory*




**As at 31 January 2016*
*Source: Caravan Industry Association of Australia, www.caravanindustry.com.au/latest-caravan-and-camping-industry-business-sentiment-report*

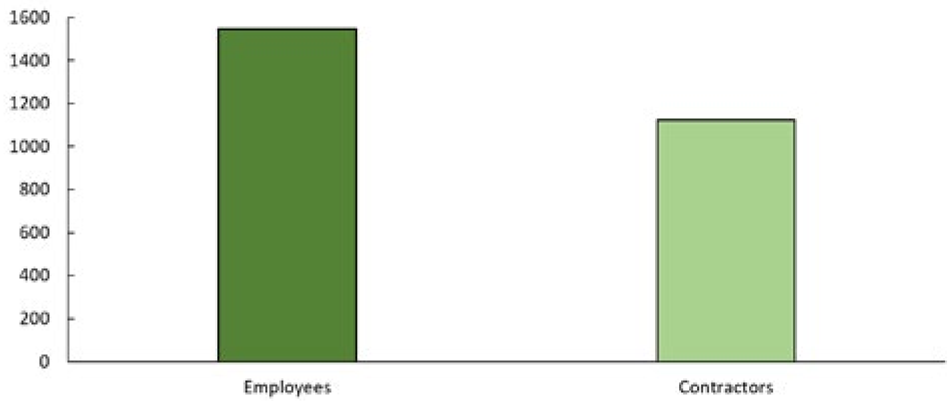
- There were more than 60,000 registered campervans in Australia in 2016.
- Queensland and NSW had the largest numbers of registered campervans at over 14,000 each.

# Our People

Our value statement:

***"…We provide a livelihood for families through our support of contractors as well as employees."***

## Figure 11: Workforce numbers by type

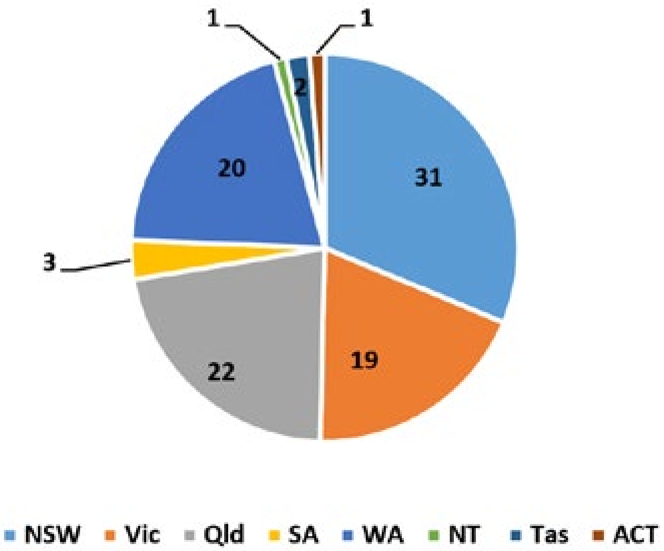



*Source: GEA 2016 Member Survey*

We employ a substantial number of contractors as well as direct employees.

- Our members directly employ in excess of 1,500 people.
- We employ in excess of 1,100 contractors and externally hired people.

## Figure 12: Share of workforce by State/Territory (per cent)




*Source: GEA 2016 Member Survey*

**Our members employ people in every state and territory:**

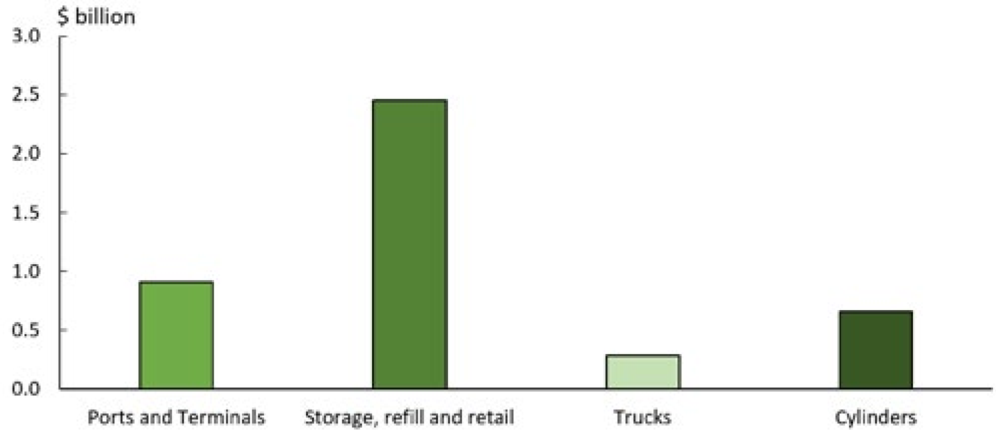
- A total of 834 people are employed in New South Wales, our largest state for employment at 31 per cent.
- 508 people are employed in Victoria while 586 are employed in Queensland.
- Due to the large number of customers in regional and remote Australia, our members provide significant employment in these areas.

# Our Infrastructure

Our value statement:

***"… Gas Energy Australia members have around $4 billion invested in delivering stationary energy LPG across the Australian continent – and are continuing to invest to improve reliability, safety and service."***

## Figure 13: Value of infrastructure by type*

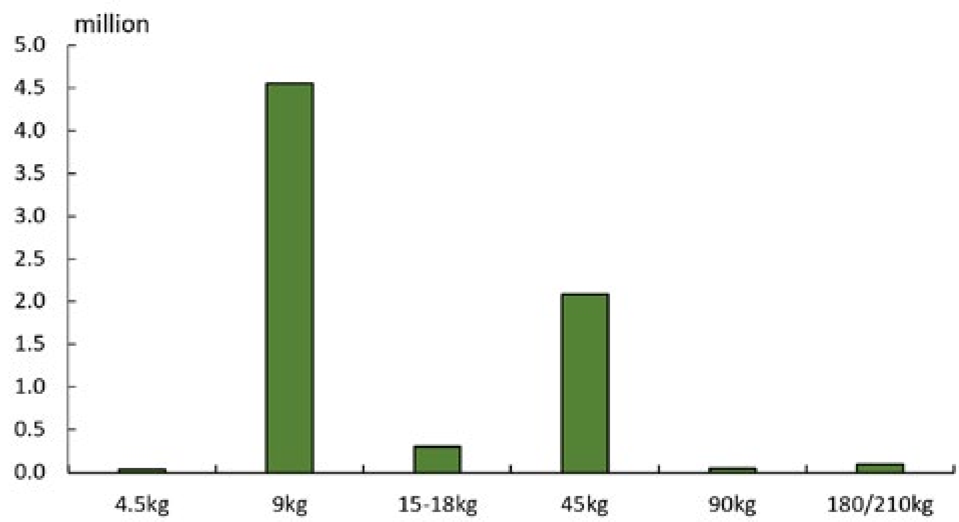



*Source: 2016 GEA Member Survey*
**2014 9kg data used as 2016 data unavailable*

**Our members have almost $4.3 billion invested in facilities, trucks and cylinders:**

- More than $900 million invested in facilities such as ports, terminals, storage and retail facilities.
- Almost $2.5 billion invested in storage, refill and retail.
- Around $285 million is invested in trucks.
- Almost $660 million invested in cylinders.

## Figure 14: Number of cylinders by type*

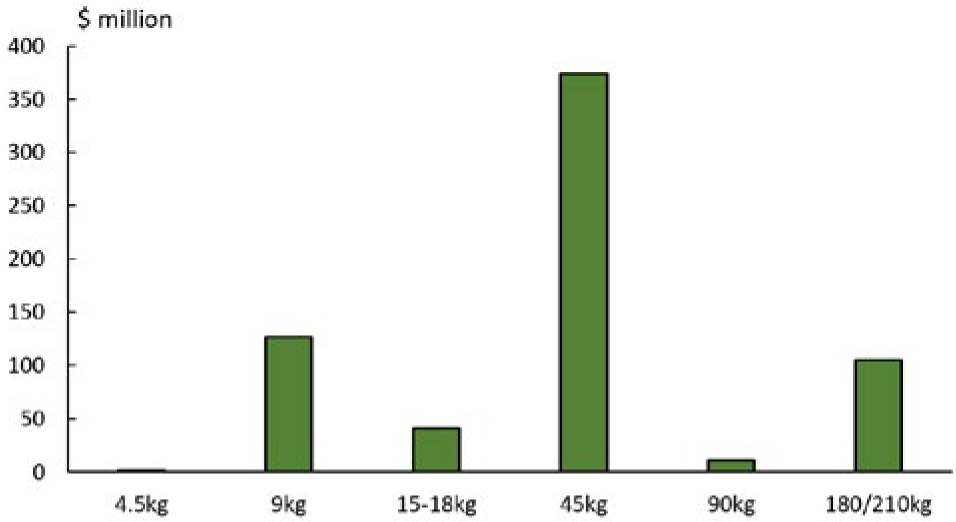



*Source: 2016 GEA Member Survey*
**2014 9kg data used as 2016 data unavailable*

**Over 7 million gas cylinders have been provided for stationary energy LPG customers:**

- Over 4.5 million 9kg cylinders have been provided.
- Over 2 million cylinders are the 45kg type.
- There are nearly 300,000 15-18kg cylinders.
- Six cylinders types are available to provide an "anywhere – anytime" energy source.

## Figure 15: Value of cylinders by type*




*Source: 2016 GEA Member Survey*
**2014 9kg data used as 2016 data unavailable*

**Our members have invested a total value of more than $650 million in gas cylinders:**

- Almost $375 million has been invested in 45 kg cylinders.
- Over $125 million has been invested in 9 kg recreational cylinders.
- More than $100 million has been invested in 180-210 kg cylinders.

## Figure 16: LPG Bulk Storage – Bullet Tanks


In addition to the cylinder sizes shown in Figure 15, commercial and business customers who consume large quantities of LPG use bulk storage tanks which come in various sizes for different applications.  Bullet tanks can be used for commercial, industrial, and agricultural applications.

## Figure 17: LPG storage solution

Figure 18 details some of the various sizes of bulk tanks available in Australia.

## Figure 18: LPG Bulk Storage Tank Sizes

| Capacity (tonnes) | Diameter (mm) | Length (mm) |
|---|---|---|
| 0.5 | 915 | 2250 |
| 1 | 1065 | 2690 |
| 2 | 1220 | 3920 |
| 2.5 | 1220 | 5940 |
| 3 | 1220 | 7960 |

## Figure 19: LPG marine storage capacity

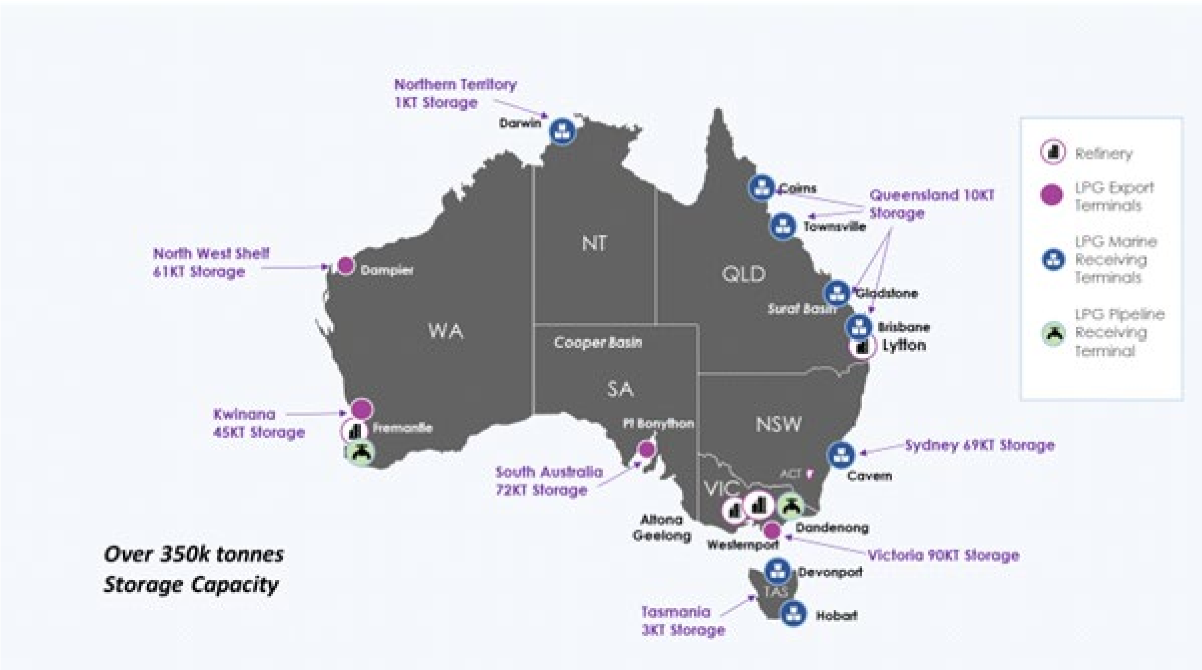



Figure 19 shows that the LPG industry has significant marine port storage capacity – over 350k tonnes.

## Figure 20: Total value of infrastructure by State/Territory


*Source: 2016 GEA Member Survey*
**2014 9kg data used as 2016 data unavailable*

**Our members have invested in every state of Australia:**

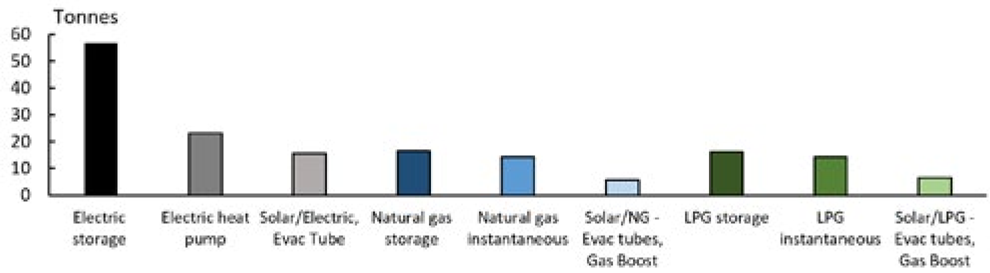
- New South Wales represents the highest level of investment at more than $1.6 billion.
- Western Australia represents the second largest investment at more than $800 million.
- Victoria and Queensland combined total more than $1.2 billion.

# Our Emissions Reduction Performance

Our value statement:

***"…LPG offers significant emissions reductions compared to electricity"***

## Figure 21: Lifetime emissions from household water heaters by energy type (weighted capital cities average)




*Source: pitt&sherry, ABS Consumer Price Index*

**Water heaters using LPG emit significantly lower emissions than those using electricity:**

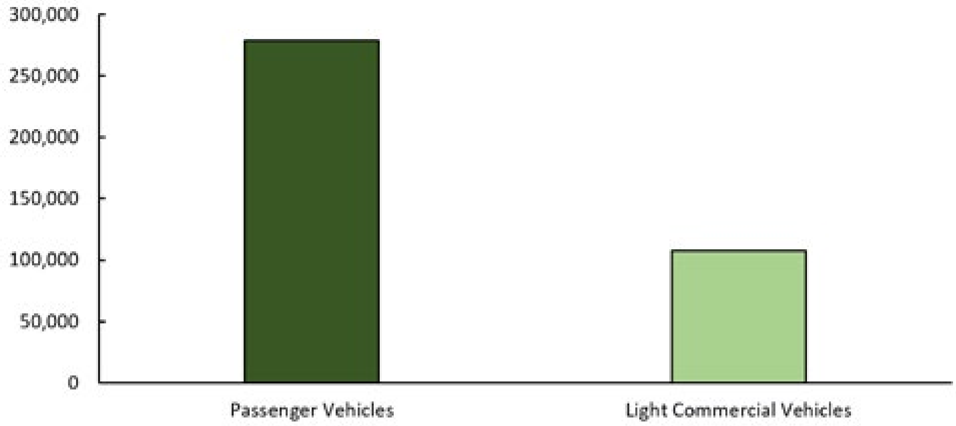
- The average instantaneous LPG hot water heater emits only 14.3 tonnes per annum, generating an emissions savings of 42.3 tonnes compared to an electric storage hot water heater.
- The average solar LPG boosted water heater (evacuated tube) emits only around 9 tonnes of emissions– a saving of 9 tonnes or almost 60 per cent compared with a solar electric water heater.

# Autogas: a national snapshot

Our value statement:

***"…Autogas is an established low emission, affordable and domestically available transport fuel…"***

## Figure 22: Number of light vehicles using LPG




*Source: ABS Motor Vehicle Census 2017*

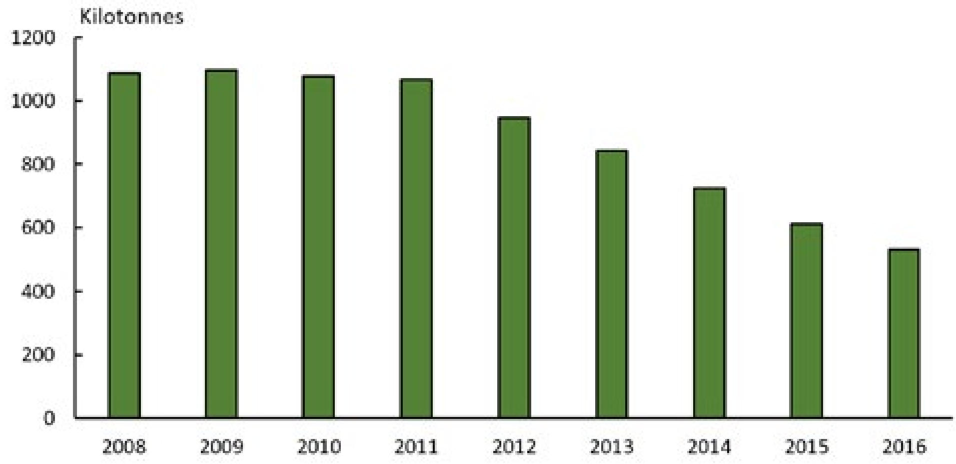
There were almost 400,000 vehicles on the road in 2017 that ran on LPG.

- Nearly 300,000 were passenger vehicles.
- Over 107,000 were light commercial vehicles.

## Figure 23: Price of Autogas as a percentage of unleaded petrol


*Source: Fueltrac Retail Report*

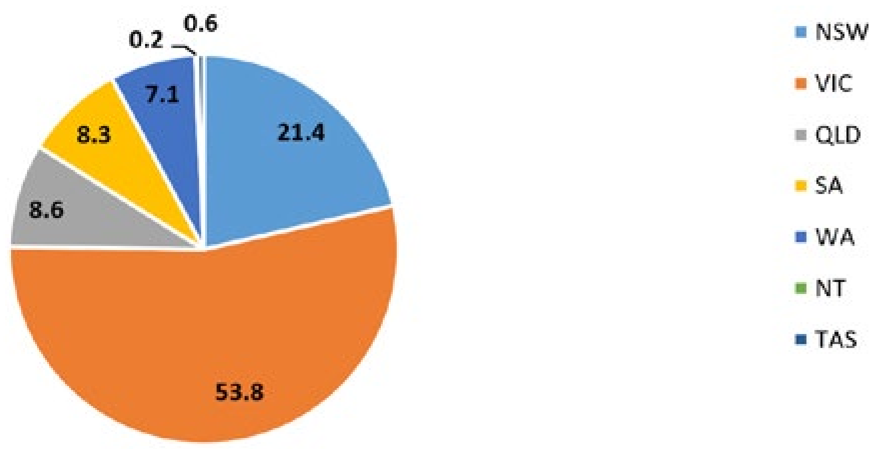
## Figure 24: Autogas demand in Australia




*Source: LPG Supply and Demand Study, 2016*

- Demand for autogas in Australia was 532 kilotonnes in 2016.
- Demand for Autogas in Australia has fallen in recent years in line with the lack of availability of autogas vehicles, the removal of the government subsidies for new LPG cars and converting existing cars to LPG cars and the imposition of excise on autogas.

## Figure 25: Autogas demand by State/Territory - per cent of total




*Source: LPG Supply and Demand Study, 2016*

- Victoria has the highest demand for Autogas, consuming nearly 50 per cent of Australian autogas.
- New South Wales is the second largest consumer of Autogas at almost 25 per cent of total demand.

# Our Export Performance

Our value statement:

## *"…Australia's LPG industry is world leading and continues to contribute to our exports…"*

Our industry continues to contribute to Australia's exports.
Table 1 and Figure 23 detail the range of goods and services exported from our industry and the destination countries of these goods.

## Table 1: LPG equipment exports

| | | |
|---|---|---|
| Autogas nozzle boot | LPG dispensing equipment | Rubber expansion joints |
| Brass and steel fittings | LPG industrial and dispenser hoses | Tanks - cylinder, storage, road |
| Breakaway coupling | LPG refuelling nozzles | Technical support and training |
| Bypass valves | Pipes | Test points |
| Clamps | Pumps | Tools |
| Cylinder manifolds | Pump sets | Underground autogas LPG stations |
| Hoses | Pressure Gauges | Valves |
| Marine and industrial dry disconnect and breakaway couplings | Regulators | |

## Figure 26: LPG equipment export destinations


*Source: 2016 GEA Member Survey*

Figure 23 shows that Australian LPG products are exported to many parts of the globe.

# About Us

Gas Energy Australia (GEA) was established on 15 October 2012 as the national peak body that consolidates the advocacy, industry and technical policy development, and communications profile of the Australian downstream gaseous fuels industry, which includes LPG, Compressed Natural Gas (CNG) and Liquefied Natural Gas (LNG).

GEA's members and associates include producers, refiners, distributors, transporters, retailers, vehicle manufacturers, equipment manufacturers and suppliers, installers, educators and consultants and cover all aspects of the downstream gaseous fuels industry.

GEA's goal is to convey a united industry voice to key stakeholders (governments, state authorities and the community) on the value and benefits of gaseous fuels. This advocacy helps GEA achieve a cleaner environment, improved safety, enhanced energy security and lower energy costs to deliver sustainable economic prosperity in a lower carbon economy.

GEA's advocacy and stakeholder engagement is supported by progressive policy development based on sound research, analysis and expert commentary, the ongoing development of national and regulatory standards, innovative products and technology, proactive media and community engagement, and the development of the industry's specialist workforce.

# Our Structure

Gas Energy Australia is a not-for-profit organisation governed by a Constitution and Board of Directors who are approved annually by our Advisory Council Members. Industry Task Forces, Advisory Council Working Groups and Technical Committees are established by our members and associates in response to policy and technical development initiatives – supported by a Secretariat based in Canberra.

**Australian Liquefied Petroleum Gas Association Limited**
Trading as Gas Energy Australia
Suite 7, 16 National Circuit Barton ACT 2600 Australia
Phone 02 61763100
Fax 02 61760207
Email: mail@gasenergyaustralia.asn.au
www.gasenergyaustralia.asn.au
ACN 002 703 951 abn 11 002 703 951
Incorporated in New South Wales as Public Company limited
by guarantee Inaugurated 1958 Incorporated 1984

Gas Energy Australia