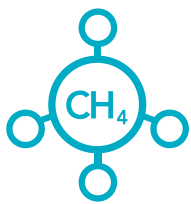
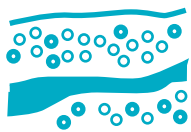


05 SUPPLY AND DEMAND



1,505 PJs
of gas were produced in
Queensland in FY21



97.1%
or 1,376 PJ was CSG



91.4%
of all gas produced in
Queensland during
FY21 was used to
produce LNG



1,316 PJ
of gas was exported as LNG

PETROLEUM AND GAS PRODUCTION OVERVIEW

With the world's energy supply chains still experiencing disruption as a result of the COVID-19 pandemic and the global energy mix rapidly changing to accommodate more renewable energy and less coal-fired generation, the demand for gas remains strong.

The International Energy Agency's (IEA) [Q1 2022 Gas Market Report](#) for the 2021 calendar year (CY21) saw the international gas market rebound by 4.6% globally, more than double the decline seen in CY20. Global supply shortages led to tight markets and steep price increases, putting the brakes on demand growth in the second half of 2021.

Queensland's key buying region for liquefied natural gas (LNG), Asia, saw record-high spot prices and a strong recovery in the LNG trade with an increase of 7% on the previous year and is projected to increase by a further 5% in 2022.

Locally, gas use in Australia's eastern and south-eastern gas sectors continues to transform, predominately due to the changing mix of electricity generation.

Despite low quarterly use of gas for power in the National Electricity Market (the NEM) in late 2021, the first 5 months of 2022 saw a 38% increase due to the displacement of coal by renewables, leaving gas-fired power generation to fill the void.

In the next few years, the Australian Energy Market Operator's (AEMO) gas-fired power generation is predicted to be higher because of planned closures and unplanned outages in coal-fired power generation.

The Australian Bureau of Statistics (ABS) national average domestic wholesale gas price index increased by 31.9% and 9.3% between the last quarter (Q4) of CY21 and Q1 CY22. Continued price spikes may have influenced a change in use through alternative means, such as the Victorian Government's desire to move residential users away from gas for heating and cooking through electrification.³⁶

While price spikes have not led to a decrease in demand, continued spikes may accelerate the establishment of new infrastructure to help lessen future fluctuations in price. This new infrastructure may include upgrades to pipe and storage networks that would allow more gas to flow to where and when it is needed, and increased renewable energy storage options to relieve pressure on gas-fire electricity generators.

AEMO's [2022 Gas Statement of Opportunities](#) forecasts gas to continue to play a critical role in the NEM, especially as coal-fired power generation is reduced, with gas-fired power generation predicted to support and firm variable renewable energy based power generation.

While CY21 saw a continued decline in gas consumption for electricity generation to just over 98 petajoules (PJ) due to the uptake in renewables, gas-fired power generation is still forecast to provide critical dispatchable capacity, particularly due to the fact that several of the NEM's coal-fired power generators are set to retire in the coming years.

For residential and commercial use in applications such as heating, hot water and cooking, the use of gas has remained steady but is forecast to decline, primarily due to electrification.³⁷ Despite a small decline, gas remains crucial for household heating in the southern states during the winter months.

As a feedstock for industrial consumption such as large-scale mineral processing, mining, manufacturing and large food processors, the demand for gas has remained consistent. It remains as an irreplaceable key ingredient in chemical manufacturing, such as nitrogen-based fertilizers.

With supply from southern states expected to decline as existing resources are exhausted and less new resources being proven, traditional east coast buyers will likely be looking to Queensland and the Northern Territory as the main sources of alternative supply.

2022 EAST COAST WINTER ENERGY CRISIS

June 2022 saw a number of factors align resulting in extremely high energy prices for both electricity energy and gas. This was due to a combination of unusually lower temperatures across the eastern seaboard resulting in increased household demand for both electricity and gas for heating purposes, high global commodity prices and reduced coal-fired generation. This ultimately resulted in a decreased energy supply and higher wholesale energy prices.

To ensure supply came at a reasonable cost to consumers, AEMO intervened, capping the price power generators can sell to the NEM.³⁸ Due to the high costs of supplying electricity, some operators were forced to cut supply. As a result, AEMO directed all power generators to maintain supply, with the regulator supplying financial compensation.

The Australian Government is now working with state governments to ensure reliable supply at reasonable prices whilst also considering implementing a 'capacity mechanism',³⁹ which could see some power generators being paid to stay online, rather than needing to operate in the spot market.

Regardless of the outcome, a reliable and plentiful supply of gas remains crucial to Australia's east coast for the generation of electricity, heating and as an industrial feedstock for the foreseeable future.

³⁶ [Victoria's Gas Substitution Roadmap](#)

³⁷ [AEMO – Gas Statement of Opportunities, March 2022](#)

³⁸ [AEMO – "7am Update: Price caps administered across multiple states"](#)

³⁹ [The Hon Chris Bowen MP - Minister for Climate Change and Energy – Press conference on the Energy Ministers' meeting](#)

WHAT IS A PETAJOULE?

A petajoule is a measure of energy.



The energy used by **19,000 homes in a year.**

The average home used approximately 50 gigajoules of energy in 2014–15



The electricity used by **868,000 refrigerators in a year.**

A typical 2.5 star fridge uses 320 kWh of electricity per year



The electricity used by **2,354,000 televisions in a year.** A 50 inch 5 star label television uses 320 kWh of electricity per year

INSIGHTS

92.2%

of all gas produced in Queensland during FY21 was used to produce LNG, of which 1,316 PJ (91.4%) was exported.

1,505 PJ

of gas was produced in Queensland during CY21, of which 97.1% was CSG.

