



# Chapter 3

Strategic context and need



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## Chapter 3 Strategic context and need

### 3.1 Overview

Natural gas is used in more than one million family homes in NSW and around 33,000 businesses. About 500 heavy industrial users consume approximately 75 per cent of the gas supplied to NSW and it is estimated that about 300,000 jobs rely on a safe and secure supply of natural gas.

NSW, which imports more than 95 per cent of its natural gas from other states, is at risk of supply shortages and increasing prices, largely due to Australia's changing natural gas market.

The Australian Competition and Consumer Commission (ACCC) have stated the importance of additional sources of gas supply to assist in putting downward pressure on prices. The ACCC found that an increased level and diversity of supply, if located close to demand centres in markets south of Queensland, would improve the competitive dynamics in the south and would likely lead to better pricing outcomes for domestic users.

Major users of gas in NSW including the Business Council of Australia (2015), NSW Business Chamber (2015), Manufacturing Australia (2013) and the Plastics and Chemicals Industries Association (2016) have called for more gas to be allowed to enter the NSW market and for regulatory impediments to be lifted to allow this to occur.

The NSW Government has acknowledged that energy affordability and supply is a key concern to the government and community. It has identified the need to increase gas supply within the State as a key element in increasing energy security and putting downward pressure on prices (NSW Government 2013, 2014). The NSW Gas Plan reaffirmed that 'to put downward pressure on energy prices and secure supply, we need the growth of viable gas projects' (NSW Government 2014).

The Narrabri Gas Project can produce sufficient gas to meet up to half of NSW's natural gas demand. The ability of the project to contribute substantially to the amount of gas available for the NSW market saw it designated as a strategic energy project by the State Government in 2014.

The Narrabri Gas Project would be an appropriate and positive response to the changing eastern Australian gas market. It would help NSW achieve greater energy security and economic sustainability. The project would also result in NSW being less reliant on gas from Victoria, and therefore, would help to reduce supply risk inherent in over-reliance on a single gas source.

In addition to the major benefits of supply security, the project would assist in the preservation of jobs, the creation of new employment and increased government revenue streams through royalty payments.

### 3.2 Dynamic shift in the East Coast gas market

The development of Australia's position as a global leader in Liquefied Natural Gas (LNG) exports has, and will, make a critically important contribution at all levels of the Australian economy. After the approval of multiple export gas projects in 2009–2010, it became clear that the gas market in eastern Australia would change.

By the end of 2016, LNG exports from Queensland are expected to have increased from zero in 2014 to 1,400,000 terajoules per annum (AEMO 2015). This export demand is effectively 'locked in' by long-term contracts between liquefied natural gas suppliers and their customers. The volume of gas tied up in these export arrangements exceeds total domestic consumption in eastern Australia, which is around 581,000 terajoules per annum (AEMO 2015)—of which about 128,000 terajoules is consumed in NSW.

Prior to 2009, the Cooper Basin in South Australia and the Gippsland and Otway Basins in Victoria provided gas to NSW via the main transmission pipelines (the Moomba to Sydney Pipeline and the Eastern Gas Pipeline). In recent years, natural gas from coal seams in eastern Queensland has augmented supply to NSW. However, with liquefied natural gas shipments from Gladstone now underway, this has changed.

## 3.3 NSW gas market

### 3.3.1 Supply of natural gas in NSW

A large proportion of the gas purchased by retailers in NSW is underpinned by long-term contracts with gas producers in other states. Historically, approximately 40 per cent of NSW's natural gas has come from the Cooper Basin in South Australia, approximately 55 per cent has come from Victoria, and up to 5 per cent has come from supplies in NSW.

From 2017 a major shift will occur when all three liquefied natural gas facilities in Queensland will reach more stable production levels. The majority of the gas that was previously contracted from the Cooper Basin will no longer be available to supply NSW, as it has been contracted from 2016 to meet some of the supply requirement of these liquefied natural gas facilities.

Energy company AGL has also announced it will not develop its coal seam gas assets in NSW, including its proposed Gloucester Project, which had the capacity to supply around 15 per cent of NSW's gas needs. AGL have also announced its Camden natural gas field will cease production in 2023, ten years earlier than expected. As the only producing natural gas field in NSW, closure of Camden could result in NSW importing 100 per cent of its gas from interstate.

This absence of alternative sources of gas going forward, coupled with the diversion of gas from the Cooper Basin to fulfil LNG export contracts, means NSW will require the vast majority of its gas to be supplied from Victoria. This reliance on a single supply source may pose significant security of supply risk in the event of an interruption, as occurred in 1998 when there was an event at Longford gas plant in Victoria that resulted in severe gas shortages across the state.

The proposed new pipeline connecting the Northern Territory with eastern gas markets is also unlikely to provide NSW with access to a new gas source. The Northern Gas Pipeline will connect Tennant Creek to Mt Isa through a small capacity pipeline, suitable only to meet the needs of Mt Isa. It is unlikely that NSW will benefit from this development due to the capacity of the pipeline, the distance that the gas would need to travel, and the associated cost.

It is also important to acknowledge that when supply is sourced from interstate, it is outside the control of the NSW Government to effectively manage or influence upstream development approval timelines. Without developing gas of its own, NSW has no ability to manage its own energy supply security in a changing energy market.

The ACCC in their 2016 inquiry into the east coast gas markets noted that there is the need to increase the amount of supply and suppliers in the southern market. Only supply sourced closer to demand centres will reduce the amount paid to transport the gas from further afield. A recommendation from the ACCC stated:

*'There is a need for more sources of gas supply, particularly in the southern states. The gas users in these states are becoming overly dependent on the jointly marketed GBJV (Gippsland Basin Joint Ventures) gas. If their alternative to dealing with the GBJV is to transport gas from Queensland, southern users may have to pay considerably more for gas than they are otherwise likely to pay in a competitive market. This is exacerbated by the high cost of transportation. Increasing the level and diversity of supply, located close to southern demand centres, will improve the competitive dynamics in the south and is likely to lead to better pricing outcomes for domestic users.'*

The Narrabri Gas Project compliments this recommendation as it would be a new supply of domestic gas, relatively close to the demand centre of Sydney, which as the ACCC states will improve the competitive dynamics leading to better pricing outcomes for domestic users.

The COAG Energy Council, in response to the ACCC recommendations, has identified four priority areas of gas market reform—the first being reform to enable additional gas supply. The Energy Council has developed a *Gas Supply Strategy* (2016) and implementation plan to develop regulatory systems which build and sustain the confidence of the community and investors. Key reports such as these are an important step in continuing to build confidence in the gas industry and the regulations around the development of this essential state resource.

The recent decision by the Victorian Government to permanently ban onshore unconventional gas developments, and continue the moratoria on conventional onshore gas developments, has eliminated a potential source of future gas supply, not only to Victoria's manufacturing base but also to other demand centres including NSW. Responses from major gas users, industry associations and Regulators has been consistent, in that additional gas supply is needed. A selection of responses is provided below.

*'Today's decision by the Victorian Government will slug manufacturing, households and the broader economy with further unnecessary burden and cost increases. Continuing moratoria will place ongoing upward price pressure on these inputs, making all Victorian manufacturing sectors, including agriculture, less competitive.'* (Plastics and Chemicals Industries Association 2016a)

*'Increasing Australia's gas supply is the best way to ensure that Australia can access reliable and competitively priced gas to support the transition to a lower emissions economy.'* (Business Council of Australia 2016)

*'It comes at a time when there is a critical need for more gas supply in the east coast, particularly in the south. Without this supply it is clear that gas prices must increase, which will damage commercial and industrial users, and increase household energy bills.'* (Rod Simms' (ACCC Chairman) keynote address to South East Asia Offshore and Onshore Conference Darwin, 15 September 2016).

*'The Australian Forest Products Association urges all levels of government to put in place balanced energy policies to ensure adequate supplies of affordable gas, underpinning increased certainty for our manufacturing industries into the future.'* (Australian Forest Products Association 2016).

Future reliability and security of natural gas supply for NSW can be substantially enhanced if NSW's own gas reserves are developed to supply its industrial and household consumers.

### 3.3.2 Economic importance of and demand for natural gas in NSW

NSW gas production is the lowest in eastern Australia, while more than 95 per cent of gas consumed in NSW is imported from interstate (NSW Chief Scientist and Engineer 2013). This is despite the fact that natural gas is both an important source of energy as well as a manufacturing feedstock in NSW. More than one million homes and over 33,000 businesses rely on natural gas in NSW and an abundance of energy is a key contributor to Australia and NSW's economic prosperity; as supported by:

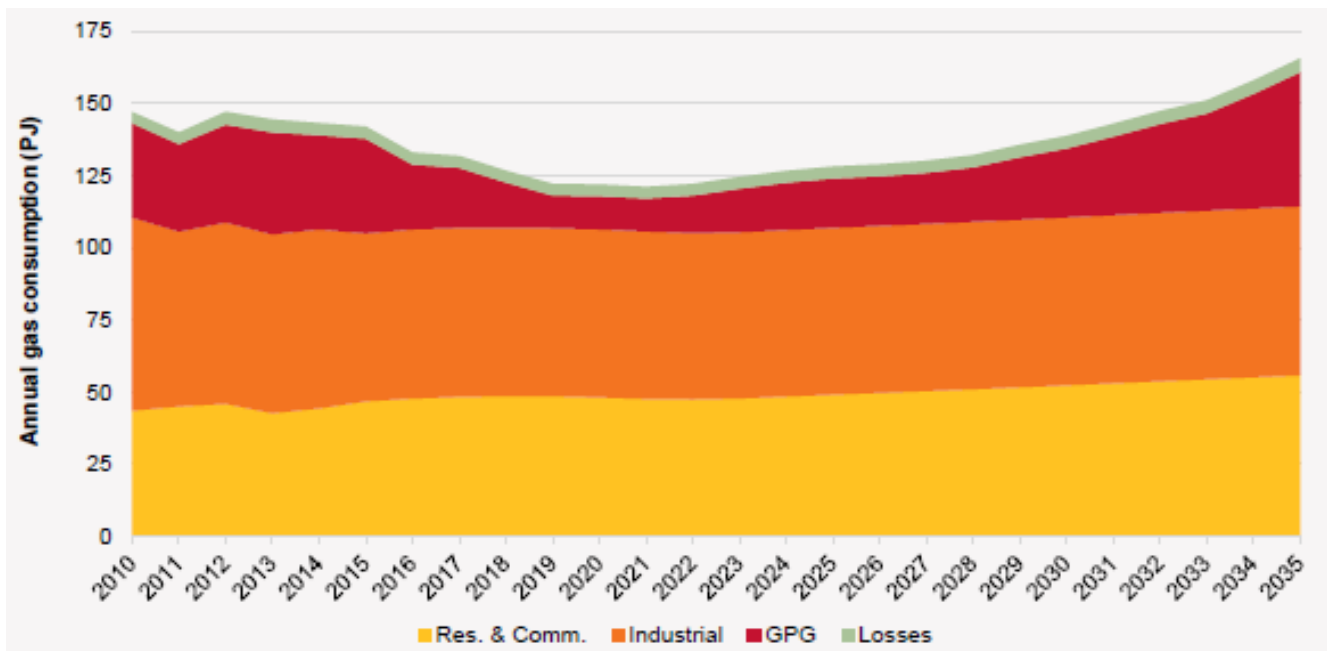
- Estimates that Australia's manufacturing industry will be exposed to \$29 billion in lost value in the event of significant increases in the price of gas, with a \$12 billion reduction in economic value-adding and a nine per cent drop in employment (Manufacturing Australia 2013)
- the NSW Energy Security Summit, which stated in a communique that 'NSW energy security is fundamental to the State's economic wellbeing and any changes to the amount, price or even balance of each source of energy in the mix [would] have significant and lasting impacts' (NSW Government 2013)
- new sources of gas, especially on the east coast, which will allow consumers and businesses to save on their gas bill. Taking a 'wait and see' approach until 2019 will not provide the pathway for long term investment in this critical energy source (Business Council of Australia 2015)

- New South Wales gas market forecasts released by AEMO, which confirm that failing to bring additional gas supply into the NSW market will drive gas prices unnecessarily high and result in job losses (NSW Business Chamber 2015a)
- a submission from The Council of Social Service of NSW to IPART (2014) which highlighted that escalations in utility prices were causing some families to forego other essentials in order to pay utility bills.

Annual gas demand in NSW was estimated at 137,800 terajoules in 2015 (AEMO 2015) and is divided between:

- gas-powered electricity generation (GPG) facilities comprising 24 per cent of demand compared to one per cent in Victoria, although this share is forecasted to reduce as gas supply tightens
- the residential and commercial sector, which includes homes and small to medium sized businesses, comprised 34 per cent of NSW demand in 2015 and is forecasted to grow slightly. Residential and commercial use in NSW as a proportion of total demand is the second highest in eastern Australia, reflecting its importance as an energy source for homes and businesses
- other large industrial users who consume more than ten terajoules each per year. It is this segment that will result in the biggest impact for the NSW economy as a whole. Industrial demand reduced from 66.9 petajoules in 2010 to 58.2 petajoules in 2015. It is this decline in the manufacturing and industrial segment that has raised concerns by industry and Governments. As a result, industry associations, major gas users and the Commonwealth Government are calling for more supply to be made available to maintain supply security in NSW, and put downward pressure on prices.

The proportion of demand in each sector is shown in Figure 3-1.



Source: AEMO 2015. Projections include Australian Capital Territory.

Figure 3-1 Annual demand for gas in NSW for each sector

Gas has an important role to play, not only in the future economic success of NSW, but also in enabling NSW and Australia to meet its international climate change commitments. Australia’s electricity generation fleet will require less carbon intensive technologies to ensure that the electricity sector can deliver reductions.

Gas, like wind and solar, is in abundance in Australia. Gas has also been described as the perfect partner fuel to enable the transition to a lower carbon intensive electricity generation mix. Both wind and solar are intermittent sources of electricity generation, which require another set of generation or storage facilities to ensure that there is



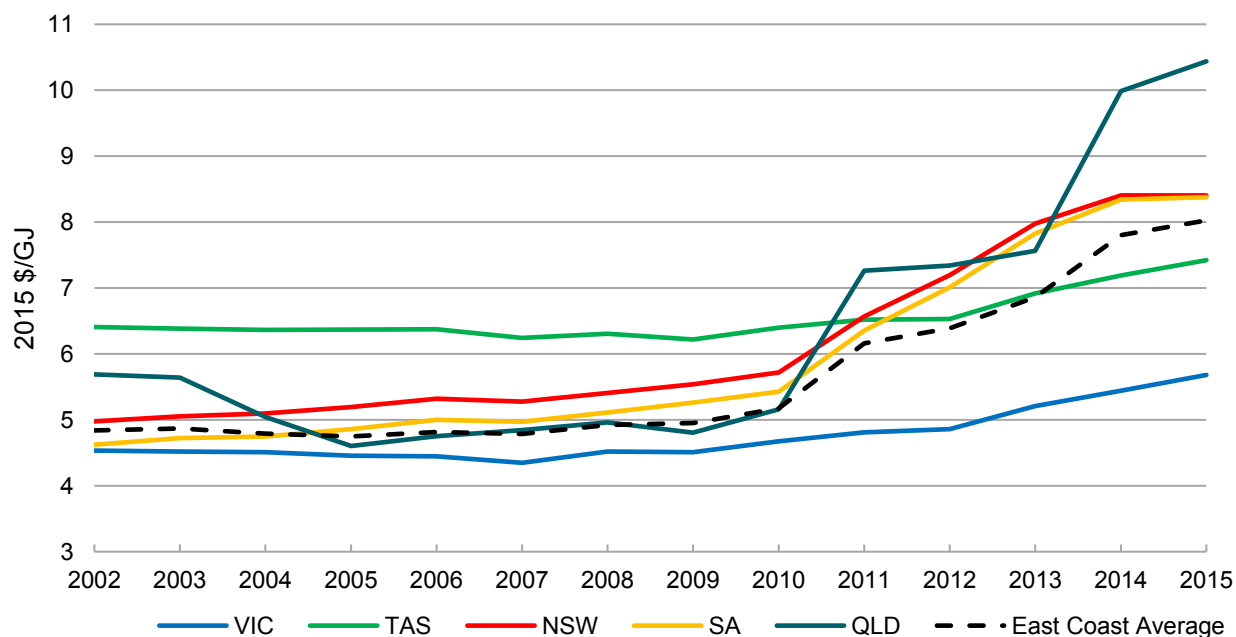
a consistent supply of electricity meeting the requirements of the homes and businesses as well as the ancillary services essential to maintain the frequency control in the system. The cost and of scale of storage technologies has meant that the best way of ensuring security and consistency of supply is the utilisation of fast start gas fired generation which can kick in when the natural variations in wind and solar occur.

As can be seen in Figure 3-2, the role of gas fired power generation in NSW is expected to diminish in the medium term, although this will be dependent on what renewable energy facilities are installed or interconnected to the state

Gas also has less than half the emissions of coal, is a transition fuel that can power electricity generation at baseload level, particularly at peak, which as seen in South Australia during the July 2016 “crisis”, gas is not only important for the future economic prosperity of the gas intensive industries of NSW, but is also a complementary fuel source to enable the smooth transition to a lower carbon future.

### 3.3.3 Price of natural gas

Gas prices in the eastern Australia gas market have been increasing in recent years and may rise further due to uncertainty over the development of future gas projects (refer to Figure 3-2). The reliance of NSW on other states for its supply of gas adds further complexity and risk to the supply of natural gas and is reflected in the gas price paid by consumers.



Source: *Gas Price Trends Review* (Oakley Greenwood 2016)

Figure 3-2 Average delivered wholesale gas prices in new gas supply agreements for large industrial users (>1PJ)

Gas prices for large industrial consumers have risen over recent years from a relatively steady state. This occurred when it was announced that the east coast gas market would be opened up, thereby exposing it to international gas prices. This linkage, plus the ever increasing cost of exploring and developing more challenging gas deposits, has resulted in a significant increase in price and a subsequent reduction in available, uncontracted supply over the past five years. Increases in the price risk of procuring gas for large industrial businesses can have a material impact on the efficiency and profitability of their operations.

Only an increase in supply, especially for projects that are located near domestic demand centres, can assist putting downward pressure on prices.

Both governments and stakeholders representing business and community groups have expressed their concerns at the prospect of rising gas prices which can create significant welfare and economic issues. The NSW Government has specifically identified the need to increase supply as a key element to increasing energy security and putting downward pressure on prices (NSW Government 2013).

### 3.4 Need for future development

There are sufficient undeveloped natural gas resources to meet the long-term domestic and export demands of the east coast gas market (Commonwealth Department of Industry 2014). The ability to procure and transport a sufficient quantity of gas, while maintaining an acceptable price for consumers, depends on the efficient development of these natural gas resources so that gas supply to the market can be increased.

The ACCC's inquiry into the east coast gas market (ACCC 2016) reported that there was sufficient gas production forecasted to meet domestic and LNG demands until at least 2025, providing that the gas is developed from those currently undeveloped projects. ACCC (2016) stated that:

*'... domestic gas users in the southern states are now likely to have fewer options for supply. This is likely to reduce the competitiveness of supply offers in this region. Pricing outcomes for gas users in the southern states will therefore be critically influenced by the volume and diversity of supply in those states.'*

It is the volume and diversity of the supply source that makes the Narrabri Gas Project a state significant project.

By 2019 there will need to be gas available from currently undeveloped projects to meet forecasted demand (AEMO 2016). This highlights the importance of projects such as the Narrabri Gas Project to help meet gas demand. Without continued development of projects there may be shortages in the gas market by 2019. The *Gas Statement of Opportunities* (AEMO 2016) states:

*'From 2019, as developed 2P [proved and probable] reserves decline, the delivery of new gas reserves from existing fields, and / or the development of fields that are not yet producing gas, will be critical to maintaining sufficient gas supply to meet forecast demand to 2035.'*

The Narrabri Gas Project is one of the only new, non-Queensland projects identified by AEMO to potentially meet future gas demand on the east coast. Based on the estimated cost of supply AEMO's (2016) modelling showed that the Narrabri Gas Project would be called upon to supply gas due to its relatively lower overall cost than other alternatives to meet demand. This AEMO model optimises development opportunities based on the total delivered cost, which includes estimated development and transportation costs to market.

The quality of the resource, its proximity to the large demand source of Sydney, and its ability to diversify demand from existing projects, makes the Narrabri Gas Project an important project not just for NSW but for the entire east coast market.

The Productivity Commission supported this in their report *Examining Barriers to More Efficient Gas Markets* (Commonwealth of Australia 2015), which discussed the impacts and costs of not developing coal seam gas on the broader market as follows:

*'The moratoria on coal seam gas production in New South Wales and Victoria impose a constraint on the supply of gas in the eastern Australian gas market and may necessitate the development of more expensive sources of supply. Where this occurs, a cost will be imposed on some, or all, of the gas industry, domestic gas users and the broader community.'*

The Commonwealth Government's *Energy White Paper* (Commonwealth Department of Industry and Science 2015) also noted that:

*'Increasing supply is the best way to ease price pressure.'*

Exposure to only a few interstate sources of gas supply in a market constrained by the expansion of Australia's LNG export industry, means NSW has limited ability to manage structural imbalances and short-term emergency supply situations.

The Narrabri Gas Project would help ensure that NSW can take advantage of the many opportunities arising from utilisation of its natural resources. The project's capacity to supply up to half of NSW's natural gas needs would promote balance across east Australian, NSW and export markets. A well-balanced market that allows both consumers and producers to respond to price signals efficiently is critical in ensuring maximum benefit to all stakeholders.

### 3.5 Other benefits of the project

In addition to addressing a strategic need for natural gas in NSW, the project would also deliver benefits for residents of Narrabri Shire, local businesses and the members of the local Aboriginal community, as the proponent is committed to:

- employing local people while minimising the use of a fly-in, fly-out workforce
- utilising local businesses and suppliers where possible
- continuing to spend locally on goods and services, and to support a number of local community events, sports team and local initiatives
- assisting to diversify the economic base of Narrabri Shire to provide economic security for the local population.

Detailed economic modelling indicates that the project would generate a range of benefits (refer to Chapter 27). In particular:

- The estimated \$3.6 billion capital investment will contribute to the economies of Narrabri, the wider region and NSW as a whole
- The project will create job opportunities, including direct creation of approximately 1,300 jobs during peak construction, sustaining approximately 200 jobs through operation and the further creation of indirect job opportunities
- Average direct and indirect employment over the 25-year assessment period of 512 full time equivalent jobs, were shown to be:
  - 127 full-time equivalent jobs in the Narrabri Local Government Area
  - 161 full-time equivalent jobs in the wider region, being the Council areas of Gunnedah, Tamworth, Uralla, Armidale Dumaresq, Glen Innes Severn, Gwydir, Moree Plains, Walgett, Coonamble, Gilgandra, Dubbo, Warrumbungle and Liverpool Plains
  - 224 full-time equivalent jobs in the rest of NSW
- Establishment of a Gas Community Benefit Fund which would receive an estimated \$120 million through the life of the project. The NSW Government has committed that for every two dollars paid by a gas producer that holds a petroleum title into an authorised Gas Community Benefit Fund, the company will receive a one-dollar rebate on its gas royalties, up to a maximum of 10 per cent of the royalty due in each year.
- Economic modelling undertaken during this environmental impact assessment shows that real income will increase by some \$526 million in the Narrabri Local Government Area.

