



CHAPTER 2. EASTERN AND SOUTH-EASTERN AUSTRALIA GAS FORECAST

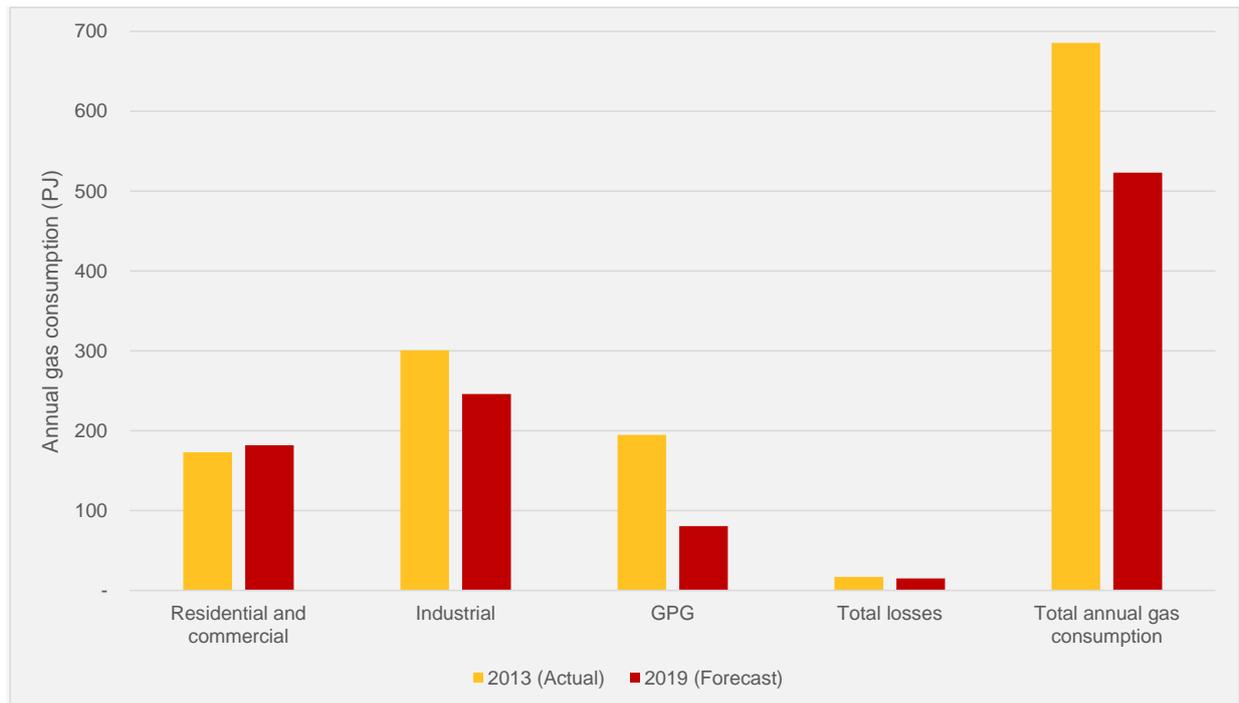
This chapter focuses on the medium scenario short-term forecast. A comparison of the high and low scenario short-term forecast is summarised in Table 10.

2.1 Key findings

Key short-term (2014-19) findings for the eastern and south-eastern Australia gas region overall are:

- Excluding LNG, total gas consumption is forecast to decrease at an average annual rate of 5.2%.
- Including LNG, the forecast increases at an average annual rate of 23.0%.
- Residential and commercial consumption is forecast to increase at an average annual rate of 1.1%, driven by new gas connections despite average use per connection continuing to decline.
- Industrial gas consumption is forecast to decrease at an average annual rate of 3.4%, driven by industrial closures.
- GPG gas consumption is forecast to decline at an average annual rate of 16.8%, driven by rising gas prices and the modelled entry of new renewable generation in the NEM.

Figure 3 Comparison of 2013 (actual) and 2019 (forecast) annual gas consumption, excluding LNG⁴



⁴ GPG gas consumption may include some gas used for electricity production that is subsequently used for LNG processing.



2.2 Annual consumption

Historically, from 2010 to 2013, consumption decreased from 700.9 PJ to 685.6 PJ. This average annual decrease of 0.7% was mainly driven by reduced GPG and residential and commercial consumption. The decrease in residential and commercial consumption in 2013 is linked to warmer winters in New South Wales, Victoria, and South Australia.

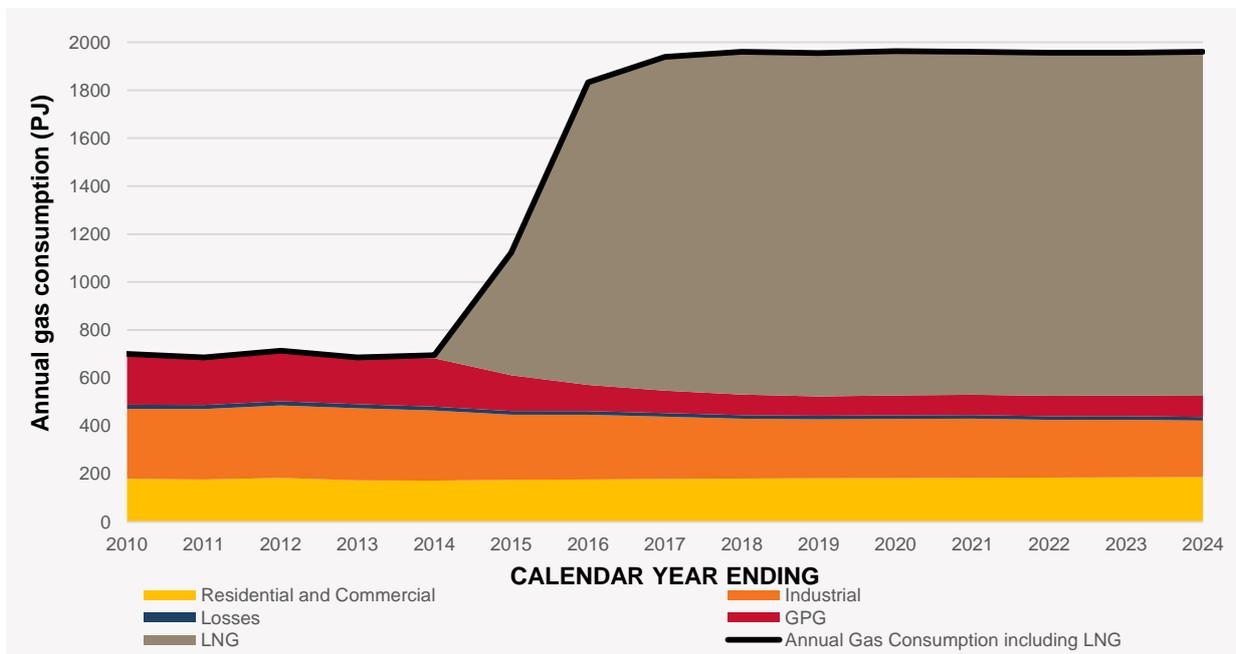
Annual consumption includes total losses from transmission and distribution networks. Refer to Appendix A for further details.

Table 5 and Figure 4 presents the annual consumption trends and drivers.

Table 5 Total annual gas consumption over the short, medium, and long term (excluding LNG)

Timeframe	Forecast (PJ)	Average annual growth	Drivers
Short term (2014-19)	682.2 to 523.3	5.2% decrease	Decline in industrial forecasts driven by rising gas prices, plant closures, improved plant efficiencies, and fuel substitution. Decline in GPG gas consumption driven by increasing gas prices and assumed new renewable generation that reduce reliance on modelled GPG plants in the NEM.
Medium term (2019-24)	523.3 to 525.7	0.1% increase	Increase in residential and commercial consumption reflecting growth in customer connections outpacing the reduction in average use per connection. Increase in GPG gas consumption linked to modelled coal-fired power stations retirements and increasing GPG competitiveness in the NEM.
Long term (2024-34)	525.7 to 567.5	0.8% increase	Increase in residential and commercial consumption.

Figure 4 Annual gas consumption (including LNG exports) for eastern and south-eastern Australia





Differences between high, medium, and low scenario short-term forecasts, 2014-19

Excluding LNG exports, the high, medium, and low scenario short-term forecasts decline at annual average rates of 3.4%, 5.2%, and 7.8% respectively.

Including LNG exports, the high, medium, and low scenario short-term forecasts increase at annual average rates of 24.7%, 23.0%, and 20.2% respectively. Key differentiating factors are outlined in the individual component forecast sections.

Figure 5 Comparison of high, medium, and low scenario forecasts, including LNG

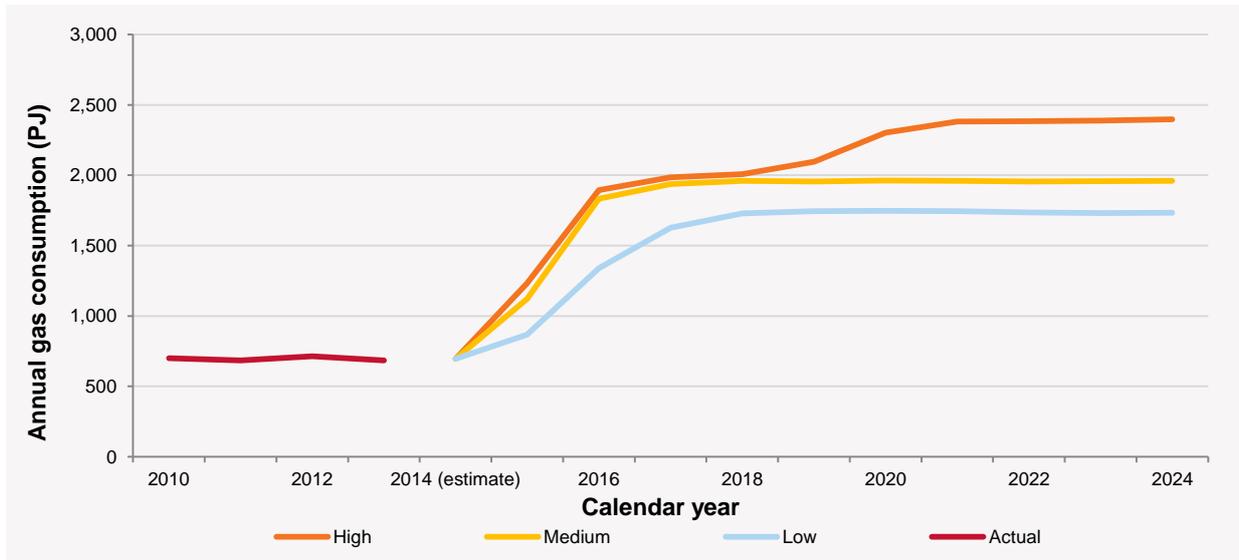


Table 6 Annual gas consumption for the eastern and south-eastern Australia gas region (PJ)

	Excluding LNG exports				Including LNG exports			
	Actual	High	Medium	Low	Actual	High	Medium	Low
2014 estimate	682.2				718.4			
2015		631.2	611.3	556.0		1,263.9	1,127.1	845.5
2016		596.4	571.1	503.4		1,892.8	1,832.5	1,319.2
2017		581.7	547.2	468.7		1,981.4	1,938.6	1,612.0
2018		575.1	530.9	449.2		2,003.3	1,960.8	1,717.9
2019		573.4	523.2	444.6		2,091.1	1,954.9	1,734.5
2020		583.3	527.4	445.0		2,297.1	1,963.1	1,738.4
2021		590.1	530.2	447.1		2,375.5	1,960.6	1,735.7
2022		591.0	526.0	438.6		2,375.9	1,956.4	1,727.2
2023		596.1	526.8	434.9		2,380.1	1,957.0	1,723.2
2024		601.9	525.7	434.6		2,390.4	1,959.8	1,726.5



2.2.1 Residential and commercial consumption (Tariff V)

Historically, from 2010 to 2013, residential and commercial consumption decreased from 179.7 PJ to 173.2 PJ. This average annual decrease of 1.2% was due to warm weather during the 2013 winter. On a weather-corrected basis, residential and commercial consumption increased at an annual average rate of 0.8%.⁵ This reflects the increase in connections to the gas network (due to a combination of new housing growth and fuel substitution from existing non-gas homes). Average use per connection declined over the period, linked to rising retail gas prices and federal energy efficiency savings.

Table 7 demonstrates the continued growth of and drivers for residential and commercial consumption.

Table 7 Residential and commercial consumption over the short, medium, and long term

Timeframe	Forecast (PJ)	Average annual growth	Drivers
Short term (2014-19)	171.9 to 181.9	1.1% increase	Increase in connections to the gas network, outpacing reductions in average use per connection.
Medium term (2019-24)	181.9 to 186.6	0.5% increase	
Long term (2024-34)	186.6 to 199.7	0.7% increase	

Refer to Appendix B for further details on savings from federal energy efficiency programs.

2.2.2 Industrial consumption (Tariff D)

Historically, from 2010 to 2013, industrial consumption increased from 291.6 PJ to 300.7 PJ. This average annual increase of 1.0% is mainly driven by expansion of existing facilities and new gas connections.

Table 8 demonstrates the industrial consumption trends and drivers.

Table 8 Industrial consumption over the short, medium, and long term

Timeframe	Forecast (PJ)	Average annual growth	Drivers
Short term (2014-19)	292.5 to 245.8	3.4% decrease	Industrial closures including BP oil refinery ⁶ in Qld, and the Caltex oil refinery ⁷ in NSW.
Medium term (2019-24)	245.8 to 235.9	0.8% decrease	Less favourable economic conditions, including increasing gas price, which result in closures or reduced operation from industrial customers.
Long term (2024-34)	235.9 to 225.7	0.4% decrease	

2.2.3 Gas-powered generation

Historically, from 2010 to 2013, GPG gas consumption decreased from 212.3 PJ to 194.8 PJ. This average annual decline of 2.8% is linked to declining electricity consumption that reduces reliance on GPG plants.

Table 9 demonstrates the GPG gas consumption trends and drivers.

Table 9 GPG gas consumption over the short, medium, and long term

Timeframe	Forecast (PJ)	Average annual growth	Drivers
Short term (2014-19)	201.5 to 80.5	16.8% decrease	Rising gas prices and modelled new renewable generation which reduces the competitiveness of GPG plant in the NEM.
Medium term (2019-24)	80.5 to 88.3	1.9% increase	Increasing electricity consumption, and the modelled retirement of several coal-fired power stations.
Long term (2024-34)	88.3 to 126.5	3.7% increase	

⁵ Based on weather corrected data for NSW, SA, Victoria and Queensland. Data for Tasmania is included but not weather corrected.

⁶ Source: http://www.bp.com/en_au/australia/media/media-releases/bulwer-island-refinery-processing-halt.html. Accessed: 14 November 2014.

⁷ Source: <http://www.caltex.com.au/CommunityAndEnvironment/KurnellSiteConversion/Pages/Home.aspx>. Accessed: 13 November 2014.



2.2.4 Summary of high, medium, and low scenario trends and drivers in the short-term (2014-19)

Table 10 High, medium, and low drivers for eastern and south-eastern Australia gas region (PJ)

Forecast component	Scenario	Forecast (PJ)	Average annual growth	Key drivers
Residential and commercial	Medium	171.9 to 181.9	1.1% increase	Growth in new connections outpacing reductions in average use per connection.
	High	171.9 to 186.4	1.6% increase	Lower gas prices, a higher rate of new connections (due to higher population growth) and no additional federal energy efficiency savings beyond current programs.
	Low	171.9 to 172.3	<0.1% increase	Higher gas prices, fewer new customers (due to lower population growth) and more federal energy efficiency savings.
Industrial	Medium	292.5 to 245.8	3.4% decrease	Closures in several regions. The largest of which include BP oil refinery ⁸ in Qld, and the Caltex oil refinery ⁹ in NSW.
	High	292.5 to 285.0	0.5% decrease	More optimistic operating forecasts due to favourable economic conditions, higher gross domestic product (GDP) growth, higher commodity prices, lower gas prices, lower exchange rates and modest plant expansion.
	Low	292.5 to 198.0	7.5% decrease	Reduced production forecast due to less favourable economic conditions, lower GDP growth, lower commodity prices, higher gas prices and higher exchange rates. AEMO adopted a probabilistic approach to reflect the reduced production or closure of aluminium smelters in response to less favourable economic conditions.
Gas-powered generation	Medium	201.5 to 80.5	16.8% decrease	Rising forecast gas prices which reduces the competitiveness of GPG plant in the NEM.
	High	201.5 to 85.9	15.7% decrease	Lower gas prices and faster growth in electricity consumption result in higher utilisation of GPG plant in the NEM, and therefore slower decline in GPG gas consumption.
	Low	201.5 to 71.0	18.8% decrease	Higher gas prices and slower growth in electricity consumption result in lower utilisation of GPG plant in the NEM, and therefore faster decline in GPG gas consumption.

⁸ Source: http://www.bp.com/en_au/australia/media/media-releases/bulwer-island-refinery-processing-halt.html. Accessed: 14 November 2014.

⁹ Source: <http://www.caltex.com.au/CommunityAndEnvironment/KurnellSiteConversion/Pages/Home.aspx>. Accessed: 13 November 2014.