# CHAPTER 6. VICTORIAN FORECASTS

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 40.

6.1 Key findings

Key short-term (2014-19) findings for Victoria are:

- Total gas consumption is forecast to decrease at an average annual rate of 1.7%.
- Residential and commercial consumption is forecast to increase at an average annual rate of 1.1%, driven by new gas connections.
- Industrial gas consumption is forecast to decrease at an average annual rate of 1.6%, driven by industrial closures.
- GPG gas consumption is forecast to decline at an average annual rate of 24.5%, driven by rising gas prices that reduce GPG competitiveness in the NEM.

Figure 18   Comparison of 2013 (actual) and 2019 (forecast) annual gas consumption
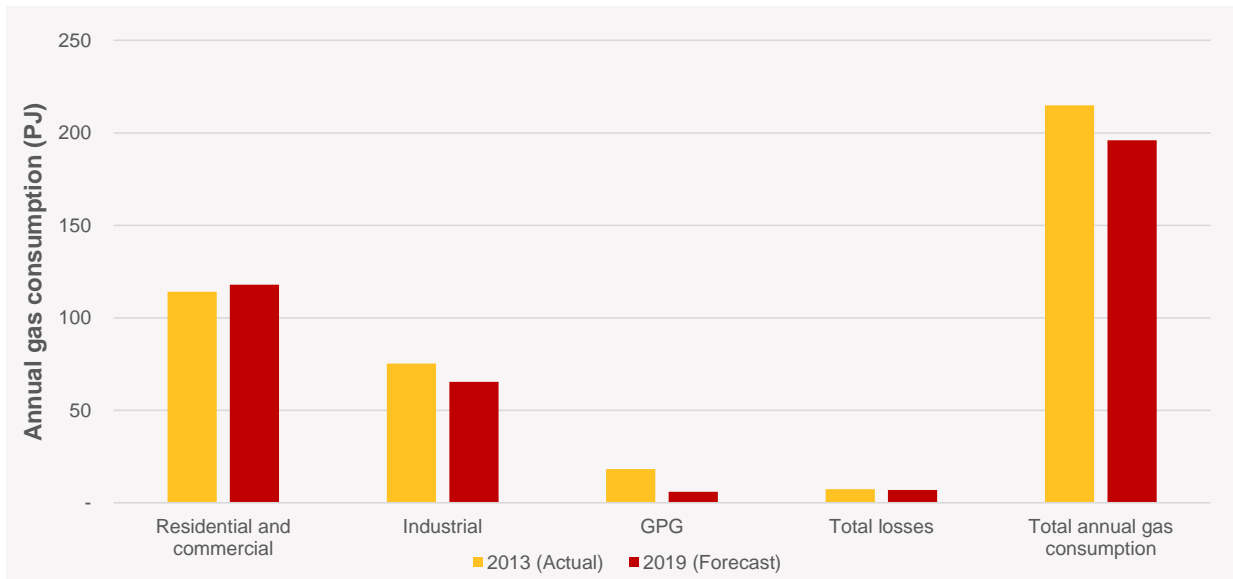
6.2 Annual consumption

Historically, from 2010 to 2013, Victorian gas consumption declined from 217.8 PJ to 214.9 PJ. This average annual decline of 0.4% is driven by declining residential and commercial, and industrial consumption. The decline in residential and commercial consumption is linked to weather, with 2013 having a warm winter. The industrial decline is driven by closures over the period.

The annual consumption includes total losses from transmission and distribution networks. Refer to Appendix A for further details.
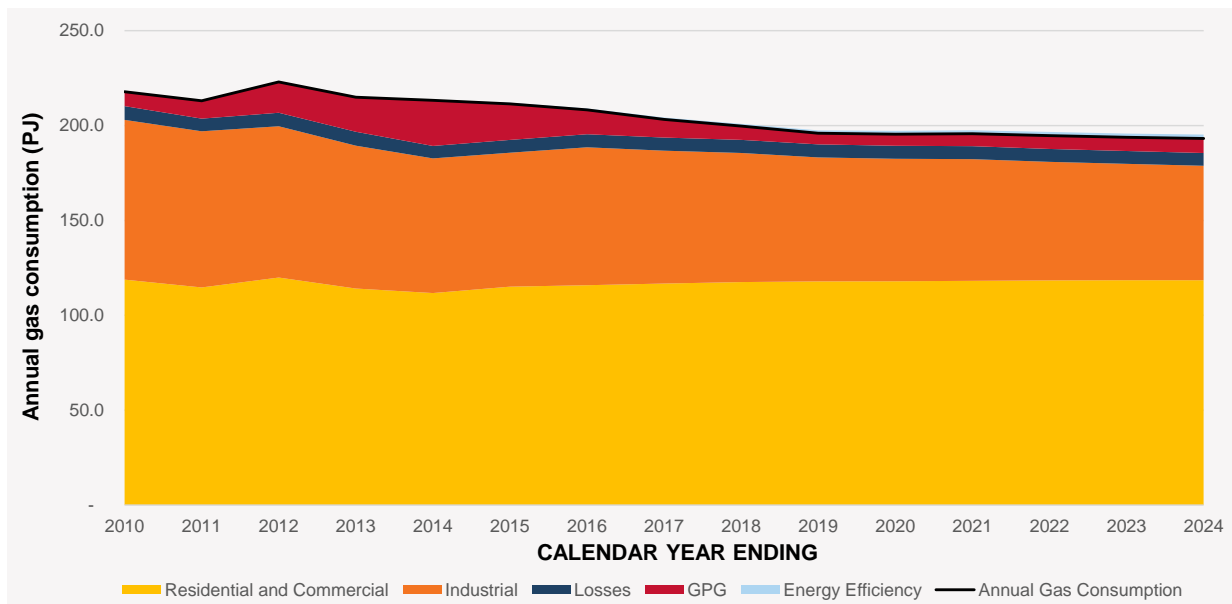
Table 35 demonstrates the annual consumption trends and drivers over the short, medium, and long term.

Table 35   Total annual gas consumption over the short, medium, and long term

Timeframe	Forecast (PJ)	Average annual growth	Drivers
Short term (2014-19)	213.3 to 196.0	1.7% decrease	Decrease in industrial driven by closure of car manufacturing plants[28,29,30] and Alcoa Point Henry aluminium smelter[31]. Decrease in GPG consumption driven by reduced dispatch in electricity market due to rising gas prices.
Medium term (2019-24)	196.0 to 193.2	0.3% decrease	Industrial consumption decline due to higher gas prices, offset by increase in residential and commercial and GPG consumption.
Long term (2024-34)	193.2 to 198.9	0.3% increase	Continued growth in residential and commercial.

Figure 19   Annual consumption forecast segments for Victoria

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[28] Source: http://www.theaustralian.com.au/business/news/toyota-to-stop-making-cars-in-australia-follows-ford-and-holden/story-e6frg906-1226822823246. Accessed: 13 November 2014.

[29] Source: http://www.heraldsun.com.au/news/holden-to-cease-making-cars-in-australia-in-2017-while-toyota-considers-if-it-can-go-it-alone/story-fni0fiyv-1226780690797. Accessed: 13 November 2014.

[30] Source: http://www.abc.net.au/news/2013-05-23/ford-to-close-geelong-and-broadmeadows-plants/4707960. Accessed: 13 November 2014.

[31] Source: http://www.alcoa.com/australia/en/alcoa_australia/location_overview/point_henry.asp. Accessed: 13 November 2014.

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

The high, medium, and low scenario short-term forecasts decline at annual average rates of 0.3%, 1.7%, and 4.1% respectively. Key differentiating factors are outlined in the individual component forecast sections below.

Figure 20   Comparison of high, medium, low scenario forecasts, including LNG
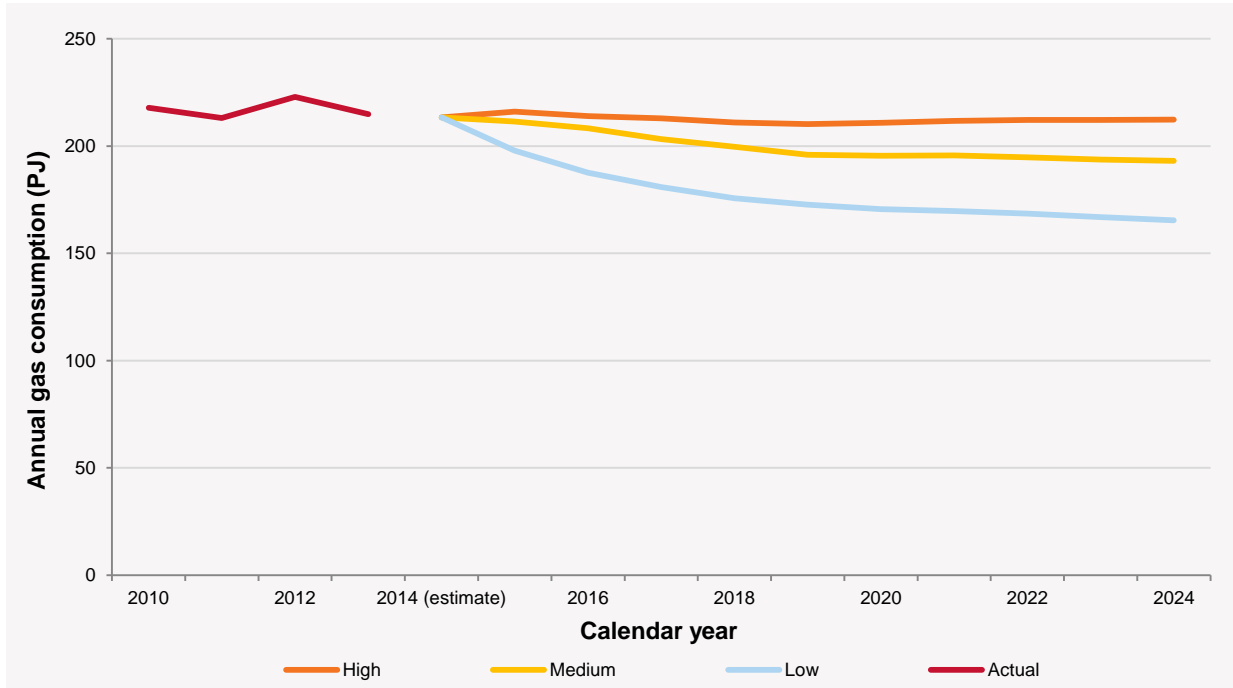
Table 36   Annual gas consumption for Victoria (PJ)

	Actual	High	Medium	Low
2014 estimate	213.3			
2015		216.0	211.5	197.8
2016		214.0	208.3	187.6
2017		213.0	203.3	180.9
2018		211.0	199.7	175.7
2019		210.2	196.0	172.7
2020		210.8	195.5	170.6
2021		211.7	195.7	169.8
2022		212.2	194.7	168.5
2023		212.2	193.8	166.9
2024		212.4	193.2	165.4

6.2.1   Residential and commercial consumption (Tariff V)

Historically, from 2010 to 2013, residential and commercial consumption decreased from 118.8 PJ to 114.1 PJ. This average annual decrease of 1.3% was due to warm weather during the 2013 winter. On a weather-corrected basis[32], residential and commercial consumption increased at an annual average of 0.8%. This reflects an increase in connections to the gas network (due to a combination of new housing growth and all-electric homes connecting to gas). Average use per connection declined over the period, linked to rising gas prices and savings from federal energy efficiency programs.

Table 37 demonstrates the residential and commercial consumption trends and drivers over the short, medium and long term.

Table 37   Residential and commercial gas consumption over the short, medium, and long term

Timeframe	Forecast (PJ)	Average annual growth	Drivers
Short term (2014-19)	111.7 to 117.9	1.1% increase	Increase in connections to the gas network due to new housing growth and fuel substitution from existing non-gas homes. This is offset by a decline in average use per connection linked to rising retail gas prices and federal energy efficiency savings.
Medium term (2019-24)	117.9 to 118.5	0.1% increase	
Long term (2024-34)	118.5 to 123.6	0.4% increase	

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

6.2.2   Industrial consumption (Tariff D)

Historically, from 2010 to 2013, industrial consumption decreased from 84.2 PJ to 75.3 PJ. This average annual decrease of 3.7% is linked to closures of large industrial plants including Amcor's Fairfield plant[33] and Bluescope Steel's Western Port hot strip mill[34] which closed in 2011, as well as reduced consumption at other plants. Table 38 demonstrates the continued decline and drivers in industrial consumption over the short, medium, and long term.

Table 38   Industrial consumption over the short, medium, and long term

Timeframe	Forecast (PJ)	Average annual growth	Drivers
Short term (2014-19)	71.0 to 65.3	1.6% decrease	Industrial closures including car manufacturing plants[35,36,37], Alcoa's Point Henry aluminium smelter[38], and other large customers reducing their gas consumption in response to higher gas prices, and less favourable economic conditions.
Medium term (2019-24)	65.3 to 60.3	1.6% decrease	Increasing gas prices are forecast to reduce small-to-medium industrial customer gas consumption.
Long term (2024-34)	60.3 to 56.9	0.6% decrease	Further reductions in consumption from small-to-medium industrial customers.

6.2.3   Gas-powered generation

Historically (2010-13): GPG gas consumption increased from 7.6 PJ to 18.2 PJ. This average annual increase of 33.9% was driven by the commissioning of Mortlake Power Station in 2012. Table 39 demonstrates the trend and drivers in GPG gas consumption over the short, medium, and long term.

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[32] Weather correction methodology published in NGFR methodology paper.
[33] Source: http://www.abc.net.au/news/2008-02-20/amcor-jobs-under-threat/1048252. Accessed: 26 November 2014.
[34] Source: http://www.theaustralian.com.au/business/news/bluescope-to-shut-furnace-mill-and-cut-1000-jobs/story-e6frg906-1226119226393. Accessed: 26 November 2014.
[35] Source: http://www.theaustralian.com.au/business/news/toyota-to-stop-making-cars-in-australia-follows-ford-and-holden/story-e6frg906-1226822823246. Accessed: 13 November 2014.
[36] Source: http://www.heraldsun.com.au/news/holden-to-cease-making-cars-in-australia-in-2017-while-toyota-considers-if-it-can-go-it-alone/story-fni0fiyv-1226780690797. Accessed: 13 November 2014.
[37] Source: http://www.abc.net.au/news/2013-05-23/ford-to-close-geelong-and-broadmeadows-plants/4707960. Accessed: 13 November 2014.
[38] Source: http://www.alcoa.com/australia/en/alcoa_australia/location_overview/point_henry.asp. Accessed: 13 November 2014.

Table 39   GPG gas consumption over the short, medium, and long term

Timeframe	Forecast (PJ)	Average annual growth	Drivers
Short term (2014-19)	24.1 to 5.9	24.5% decrease	Increasing gas prices reduce the competitiveness of GPG plant in the NEM.
Medium term (2019-24)	5.9 to 7.6	5.3% increase	Increasing electricity consumption leads to a greater reliance on GPG plants in the NEM
Long term (2024-34)	7.6 to 11.6	4.2% increase	

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

Table 40   High, medium and low drivers for Victoria (PJ)

Forecast component	Scenario	Forecast (PJ)	Average annual growth	Key drivers
Residential and commercial	Medium	111.7 to 117.9	1.1% increase	Growth in new connections, outpacing reductions in average use per connection.
	High	111.7 to 120.4	1.5% 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	111.7 to 111.7	<0.1% decrease	Higher gas prices, fewer new customers (due to lower population growth) and more federal energy efficiency savings.
Industrial	Medium	71.0 to 65.3	1.6% decrease	Industrial closures including car manufacturing plants, Alcoa's Point Henry aluminium smelter, and other large customers reducing their gas consumption due to high gas prices, and less favourable economic conditions.
	High	71.0 to 76.8	1.6% increase	More optimistic operating forecasts due to favourable economic conditions, higher GDP growth, higher commodity prices, lower gas prices, lower exchange rates, and modest plant growth.
	Low	71.0 to 48.2	7.4% 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	24.1 to 5.9	24.5% decrease	Rising forecast gas prices which reduces the competitiveness of GPG plant in the NEM.
	High	24.1 to 5.8	24.7% decrease	Higher electricity consumption results in fewer modelled retirements of existing brown coal fired power stations. Despite lower gas prices in this scenario, the higher availability of coal-fired power reduces GPG gas consumption below both the medium and low scenario forecasts.
	Low	24.1 to 6.8	22.4% decrease	Lower electricity consumption results in substantially more modelled retirement from existing brown coal fired power stations (2500 MW compared to 300 MW in the medium). Despite higher gas prices in this scenario, the reduced availability of coal-fired power increased GPG consumption above both the medium and high scenario.

6.3   Winter MD

MD in Victoria occurs in winter and is primarily driven by residential and commercial demand. The 2014 winter MD was 1,286.7 TJ on 1 August 2014. Summer MD forecasts and growth rates are published in the 2014 NGFR datasheets.[39]

Table 41 demonstrates the growth and drivers of MD over the short, medium, and long term.

Table 41   Winter MD over the short, medium, and long term

Timeframe	Forecast (TJ/d)	Average annual growth	Drivers
Short term (2014-19)	1,319.2 to 1,274.8	0.7% decrease	Closures in large industrials and reduced GPG leads to declining MD.
Medium term (2019-24)	1,274.8 to 1,276.5	<0.1% increase	Linked to growth in GPG MD as electricity winter MD grows in the medium term. This growth is offset by a decrease in industrial.
Long term (2024-34)	1,276.5 to 1,295.8	0.2% increase	Linked to GPG MD growth, offset by annual average decreases of in industrial MD. This growth is offset by a decrease in industrial.

The high, medium, and low short-term forecasts decrease at annual averages of 0.1%, 0.7%, and 2.0% respectively. Consistent with consumption forecasts, key drivers for the differences from the medium scenario are:

- In the high scenario, higher customer connection growth and lower gas prices lead to higher residential, commercial and industrial demand. This is partially offset by fewer modelled retirements of coal-fired plants that reduce reliance on GPG plants in the NEM.

- In the low scenario, lower customer connection growth and higher gas prices lead to lower residential, commercial, and industrial demand. This is partially offset by additional modelled retirements of coal-fired plants that increase reliance on GPG plants in the NEM.

Figure 21   Winter 1-in-2 and 1-in-20 year event MD forecasts for Victoria
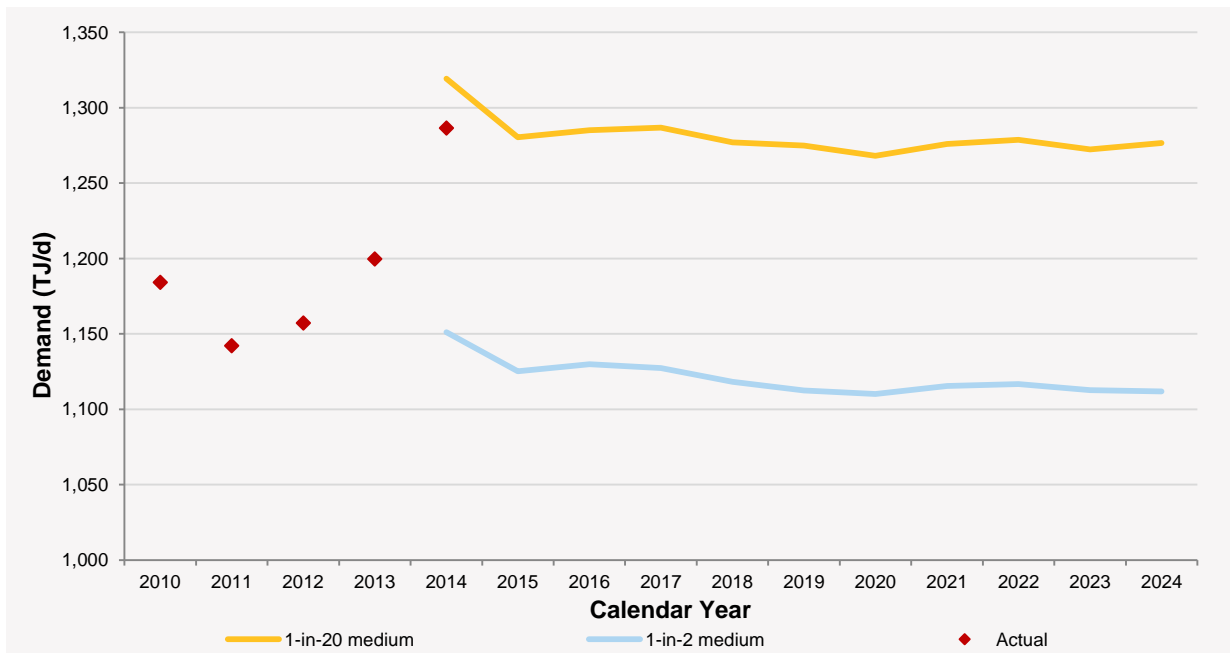
[39] Available at http://aemo.com.au/Gas/Planning/Forecasting/National-Gas-Forecasting-Report. To be published 17 December 2014

Table 42   Winter 1-in-2 and 1-in-20 year event MD for Victoria (TJ/d)

	Actual	High		Medium		Low	
		1-in-2	1-in-20	1-in-2	1-in-20	1-in-2	1-in-20
2013	1,199.6						
2014ª	1,286.7	1,151.1	1,319.2	1,151.1	1,319.2	1,151.1	1,319.2
2015		1,141.7	1,296.5	1,125.1	1,280.4	1,076.8	1,228.2
2016		1,150.0	1,306.0	1,129.8	1,285.0	1,059.1	1,208.9
2017		1,158.6	1,315.0	1,127.3	1,286.8	1,046.0	1,196.1
2018		1,152.3	1,308.5	1,118.2	1,277.0	1,036.8	1,195.5
2019		1,155.1	1,315.1	1,112.5	1,274.8	1,030.5	1,189.9
2020		1,154.1	1,315.3	1,110.2	1,268.1	1,025.9	1,176.3
2021		1,165.7	1,323.2	1,115.4	1,276.0	1,038.4	1,194.7
2022		1,170.6	1,331.1	1,116.7	1,278.6	1,030.0	1,191.3
2023		1,169.4	1,331.6	1,112.7	1,272.4	1,024.7	1,188.7
2024		1,174.4	1,341.9	1,111.8	1,276.5	1,018.2	1,181.6

a) Post-winter data up to 30 September 2014 is available for Victoria.