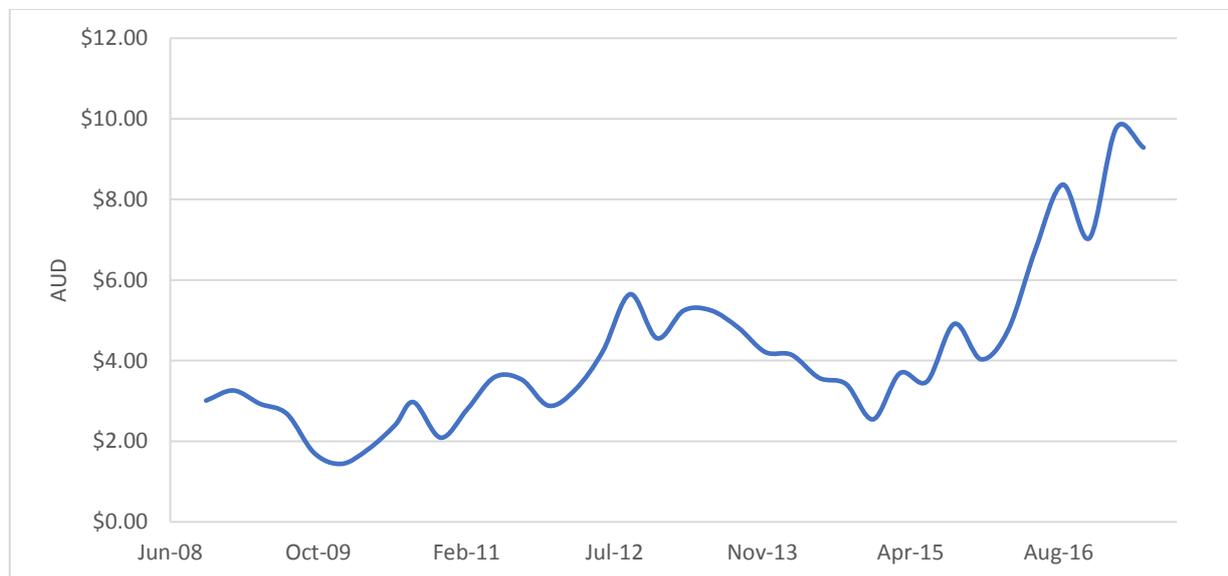


East Coast Gas Market

As you're no doubt aware from recent press coverage, East coast gas markets are facing a gas shortage. Many market analysts have been predicting this scenario for a number of years, but now the impact is being felt through pricing:



Source: AER, 2017

Whilst Australia has abundant reserves of gas – the issue is one of near-term supply relative to demand, and the longer-term incentives in place to bring new supply to market. The ACCC/AEMO see this shortage being a continuing problem over the short to medium term:

Table 1 Gas supply adequacy assessment (PJ)

	2018		2019	
Aggregate gas production	1,891		1,886	
Aggregate LNG export gas demand	1,303		1,336	
Gas supply available to domestic market	588		550	
	Expected	Uncertainty	Expected	Uncertainty
Residential, commercial, and industrial	466	492	463	495
GPG	176	203	135	157
Total domestic gas demand	642	695	598	652
Surplus / Deficit	-54	-107	-48	-102

For decades, Australia has enjoyed an abundant and ready supply of cheap gas. The present shortage has been caused by a convergence of a range of issues:

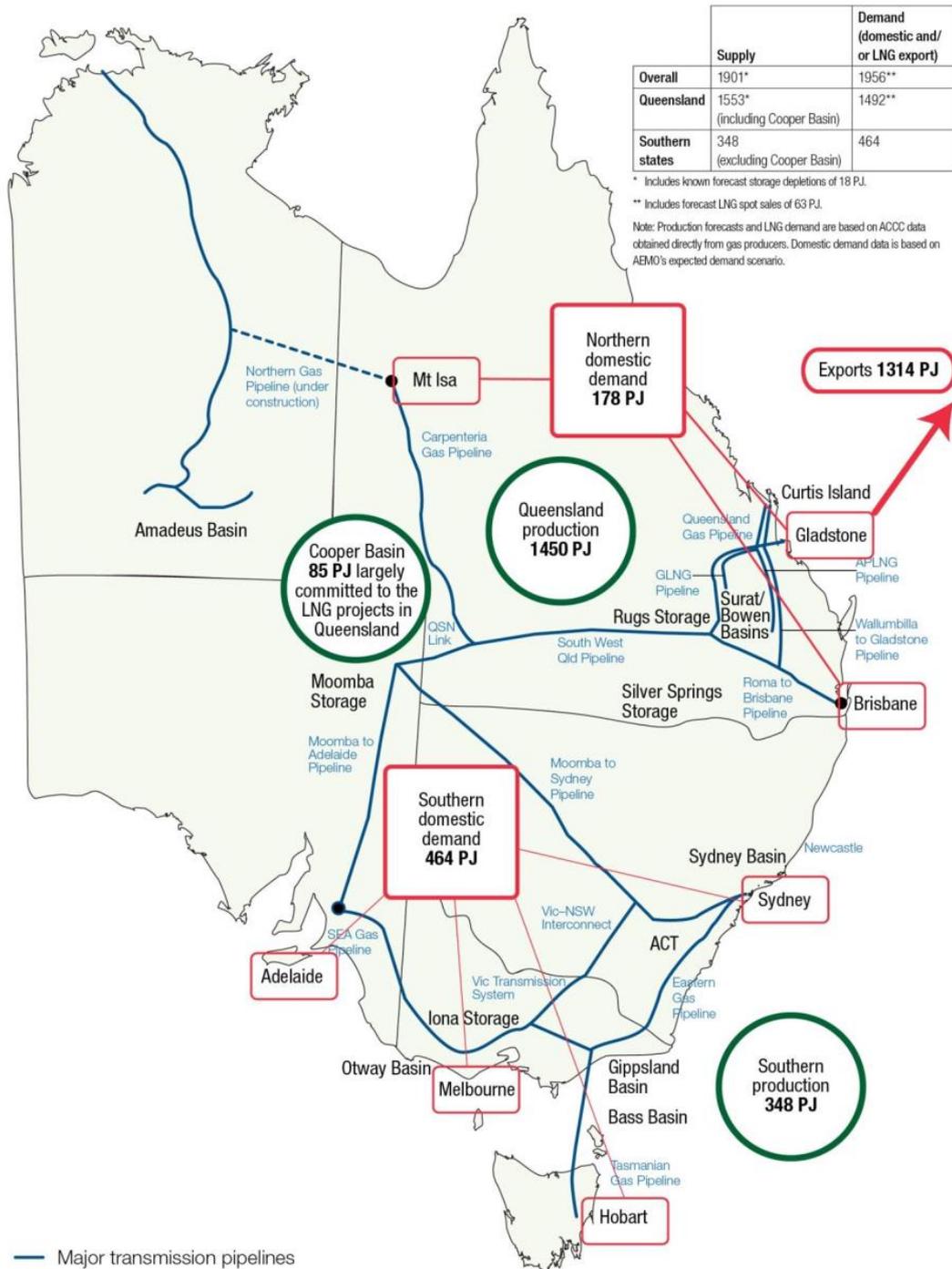
- Queensland LNG export facilities have progressively come online. Previously there were no export facilities on the east coast of Australia. Australia is now the second largest exporter of gas globally (Qatar is the largest) at 12% of total supply. Presently ~68% of Australian gas is exported. Much of the LNG is exported under long-term contracts. Traditionally the international gas price has been much higher than the Australian domestic price. With the development of the LNG export facilities, consistent with simple economics, the Australian east coast gas price has floated up towards the international price.
- 30% of gas consumed domestically is for the purpose of electricity generation. With the influx of renewables and the closure Hazelwood, gas powered generation is now the marginal price setter for electricity - due to its input cost, gas typically is only competitive at higher spot electricity prices. The closure of Hazelwood and SA's coal fired generators has increased the prevalence of gas generators. The price signal means that several

previously mothballed generators are coming back online (e.g. Pelican Point in SA) – and thus competing for more domestic gas supply.

- The international gas price is heavily influenced by crude oil prices. The recent fall in crude oil prices has reduced the incentives for gas developers to bring new supply online. Thus, development of greenfield sites has slowed in Australia (with large impairments booked by Australian suppliers). Australia has no shortage of available gas in the ground it is mainly a question of the economics of extraction.

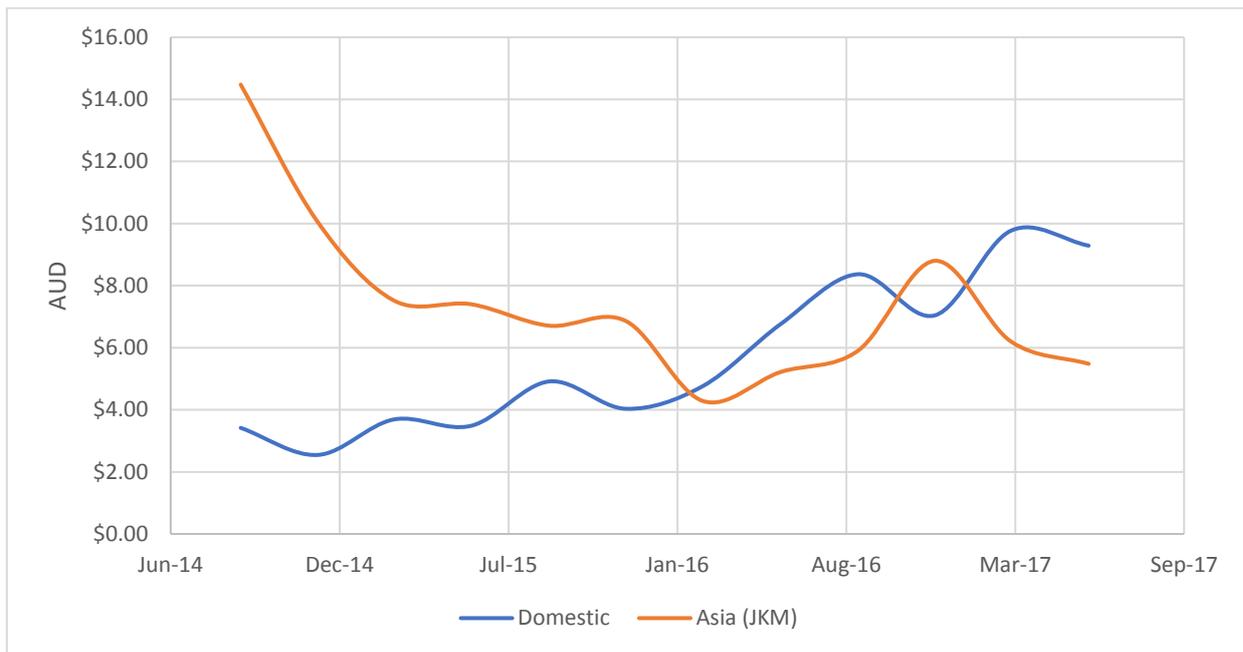
The ACCC shows the gas supply dynamic for the east coast as follows

Figure 1.1: Forecast gas production and demand in the East Coast Gas Market in 2018



Source: ACCC and AEMO data

The following chart shows the domestic and international (Asia) pricing dynamic through time:



Source: AER/Thompson Reuters Eikon.

When contrasting the domestic market to international markets it's important to note the differences in market structure. Australia has three large suppliers, whereas offshore there are many large suppliers.

In response to the current situation, the Australian Government is considering implementing export restrictions under Customs Regulations. These restrictions may help at the margin, but the nature of gas distribution networks means that it is not necessarily efficient to redirect the flow of gas (especially in relatively small quantities) south. At any rate, nowhere is it mentioned (nor likely) that this sequestered gas will be cheaper for domestic users (compared to export prices).

Bringing new supply online would address shortfall issues in the medium term, but as the ACCC clearly states this will not have any meaningful impact in 2018/19. At any rate, a key issue remains the price incentive to bring new supply online. The spectre of sovereign risk – where gas suppliers may be forced to reserve gas for domestic users (potentially at below market pricing) – will discourage rather encourage new investment.

Accelerating the penetration of renewables (wind and solar are cheaper than any other form of generation), together with altering the incentive structure within the electricity markets (demand management, storage etc), will lower electricity costs. Reducing the reliance on gas for electricity will free up supply for other parts of the domestic economy.

For the last few decades, Australians have enjoyed cheap gas. The current situation is not simple to fix, nor is there any one cause that gave rise to it. However, the policy environment of the last 10 years has certainly not helped and discouraged long-term investment (gas development, renewables, network investments). Electricity prices across this summer (when much of Australia experiences peak demand) will be high – reflecting the cost of gas powered generation. For those readers with investments in renewables generation plant, that have a merchant component, this summer could well turn out to be a remarkable period of above target returns.