Unconventional Gas Facts: Gas Supply, Demand and Price

The development of an export gas industry based on coal seam gas (CSG) production in Queensland has led to dramatic changes in the eastern-Australian gas market.

Since the three new liquefied natural gas (LNG) plants in Gladstone came online in 2015-16, domestic gas prices in eastern Australia have increased by up to 500%[1], causing significant hardship for Australian consumers.

Rising gas prices are a direct result of three factors: linking of the Australian market to the historically more expensive North Asian market; redirection of domestic gas resources overseas to fulfil long term supply contracts; and cartel-type behaviour by gas companies.

According to the Melbourne Energy Institute (MEI)[2], high prices are here to stay, however implementation of gas-demand-management options would relieve pressure on Australia's dwindling gas reserves and ease the transition to higher prices.

Higher than export-parity pricing

For decades, the eastern-Australian gas market was a captive domestic "buyer's" market[3]. Consumers enjoyed access to some of the cheapest gas in the developed world, with wholesale gas prices in the range of $3 to $4 per gigajoule. However, once the Gladstone LNG export plants became operational, the economics of gas in eastern Australia changed and an internationally-linked "seller's" market prevailed. It was expected that "domestic gas" prices would be linked to higher international prices, enabling gas companies to charge Australian consumers 'export-parity' prices. However, Australian gas prices have increased relentlessly to levels unseen virtually anywhere else in the world. For example, in early-2017, Australian gas was sold in Japan for $A10.41/GJ, whilst at the same time, the price being offered to Australian businesses was $20/GJ[4].

Regulatory failure and gas industry manipulation have now led to the extraordinary situation where in the midst of a global gas supply glut and falling international prices, contract prices for gas in Australia are skyrocketing far beyond parity with export prices. Rising wholesale and retail gas prices are adding to household energy bills, impacting negatively on the industrial sector, and feeding into higher electricity costs.

Increased gas demand

The second factor impacting gas prices after the start-up of the new Queensland CSG-to-LNG industry was the huge jump in demand for gas once projects came online. As the Institute for Energy Economics and Financial Analysis (IEEFA) explains[8], industry found that when it went to drill for gas - *after* securing gas contracts and building the export plants - the CSG fields that were expected to supply the plaints failed to produce the gas expected. In particular, gas company Santos has been unable to adequately supply its LNG plants from its CSG production fields and is buying large volumes of third-party gas out of the east coast domestic market to fulfil long term export contracts[9]. IEEFA notes that the purchase of third-party gas for export is putting significant pressure on domestic prices.

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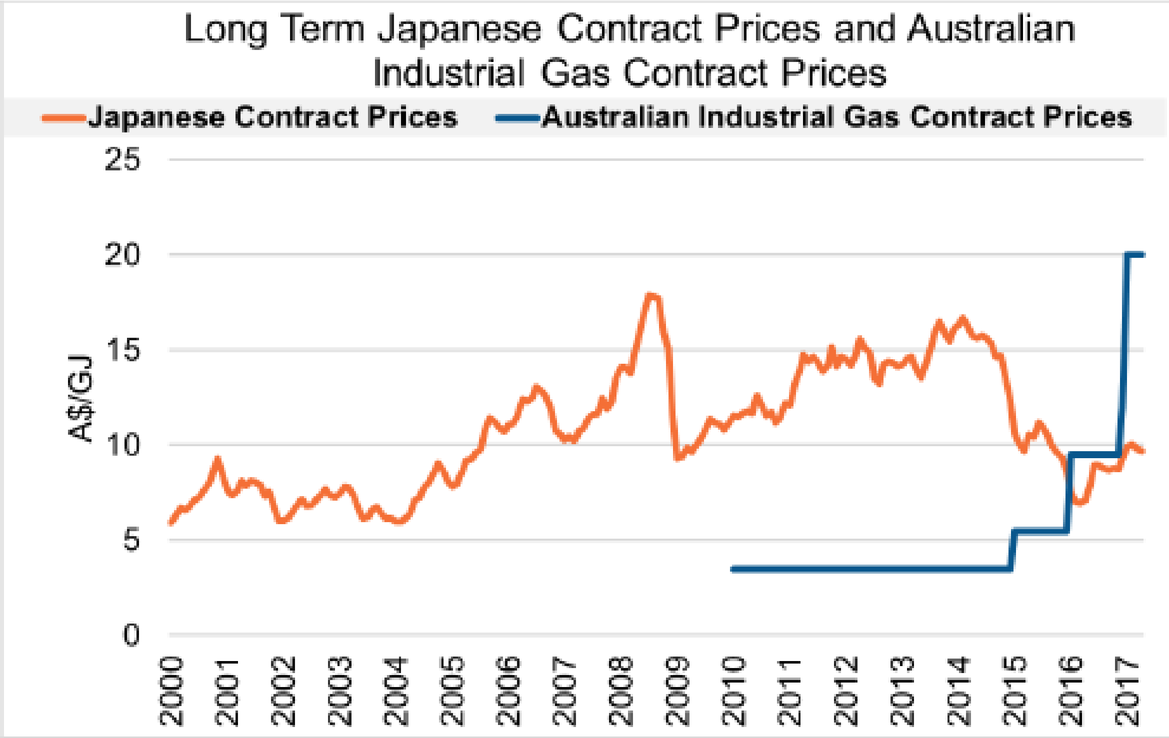
[1] Sydney Morning Herald, *Higher Energy Prices have little to do with gas shortages researchers say*.
[2] Melbourne Energy Institute (MEI), Switching off gas: An examination of declining gas demand in Eastern Australia. & *A Short-lived Gas Shortfall: A Review of AEMO's Warnings of Gas Supply Shortfalls.*
[3] Ibid
[4] Institute for Energy Economics and Financial Analysis (IEEFA), *How Australian gas companies are gouging Australians.*
[8] Institute for Energy Economics and Financial Analysis (IEEFA), Australia's Export LNG Plants at Gladstone: The Risks Mount
[9] Ibid

Furthermore, a 2017 Australian Competition and Consumer Commission (ACCC) report[10] into gas supply issues has revealed that gas exporters also shipped a lot of extra gas overseas in addition to the gas they were contractually obliged to export. The commission says that in 2018 the big three gas exporters are planning to export 64.3 petajoules of gas that they are not contractually required to export. (One petajoule is enough to supply the residential needs of a city like Warrnambool, Wollongong or Penrith for a year; or enough to supply one very big industrial user.)



Sources: Reserve Bank of Australia (RBA) Brent Crude prices, Australian Industry Group, IEEFA calculations

Source: Institute for Energy Economics and Financial Analysis (IEEFA), Australia's Export LNG Plants at Gladstone: The Risks Mount.

Gas supply scenarios

As gas prices steadily rose, the gas industry and the Australian government aggressively promoted the false notion of a 'gas supply crisis'[11]. This confected 'crisis' has been used to try to force an expansion in unconventional gas development across the country and roll back state government controls implemented in response to community pressure. In the midst of heated national debate on this issue, in May 2017 the MEI released a detailed review[12] of gas supply in the east coast gas market. The MEI report notes that "the volume of eastern-Australia's gas reserves and resources is significantly in excess to what is required for both domestic use and LNG export". Similarly, in March 2017, the head of APA Group[13], the nation's biggest gas transporter, declared that the domestic market remained as consistently and fully supplied as ever, noting that "we do not have a gas supply crisis….what we have is a bitter division between suppliers and customers over what it is costing to get the gas they need."

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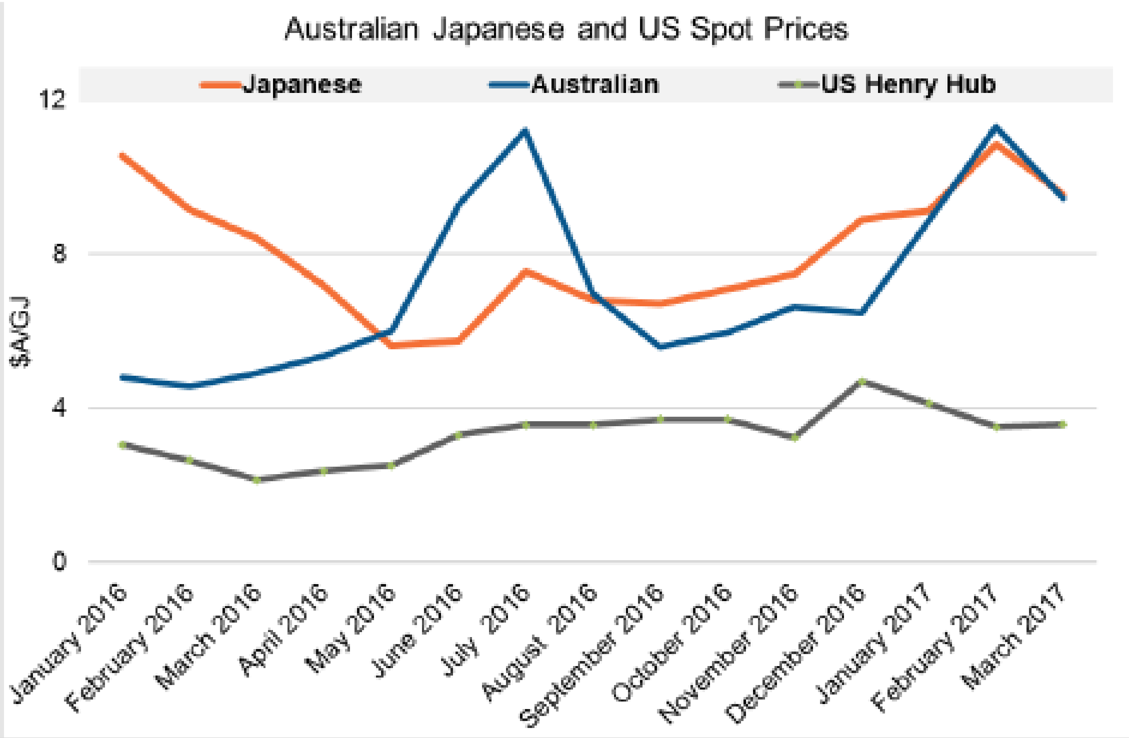
[10] Cited in this article: No easy answers as the world's second biggest gas exporter prepares to run short

[11] See for example Michael West's article *Gas Crisis: A Crisis of Guile and Greed* and Australian Financial Review article, *Gas crisis is about price not supply.*

[12] Melbourne Energy Institute (MEI), *A Short-lived Gas Shortfall: A Review of AEMO's Warnings of Gas Supply Shortfalls.*

[13] Australian Pipeline Association CEO, quoted in the Australian Financial Review article: *Gas crisis is about price not supply*.

A mid-2017 report[14] from the Institute for Energy Economics and Financial Analysis (IEEFA) highlighted the fact that record high gas prices in Australia are coinciding with a global gas supply glut. In this report IEEFA noted that weak demand growth and large increases in LNG production capacity worldwide has led to an expanding glut on world markets that could last till the mid-2020's.



Sources: Australian Energy Market Operator (AEMO), Ministry of Economy, Trade and Industry (Japan), US Energy Information Administration, Reserve Bank of Australia (RBA), IEEFA calculations.

Source: Institute for Energy Economics and Financial Analysis (IEEFA), Australia's Export LNG Plants at Gladstone: The Risks Mount.

In September 2017, the Australian Energy Market Operator put out an updated Gas Statement of Opportunities report after one gas company indicated a drop in production. New figures showed that because massive volumes of gas were caught up in export contracts, there might not be enough for Australian users next year. According to the ACCC, it would be possible for the exporters to ship out less than they are planning to without breaking contracts, and whilst moves have been made in that direction, it is "unclear" why they have not done more[15].

The Gas Cartel

Another factor cited[16] by the MEI as contributing to rising gas prices is the lack of a competitive and transparent domestic gas industry[17]. In Australia[18], data on gas markets, including prices, gas reserves and production costs, is a closely guarded industry secret. The market in Eastern Australia is controlled by four players who operate like a cartel: BHP/Exxon, Origin Energy, Santos and Shell. They divulge as little information as possible and withhold supply to domestic spot markets, enabling them to control pricing

[14] IEEFA, *Australia's Export LNG Plants at Gladstone: The Risks Mount*
[15] Cited in this article: No easy answers as the world's second biggest gas exporter prepares to run short
[16] Melbourne Energy Institute (MEI), *Switching off gas: An examination of declining gas demand in Eastern Australia.*
[17] The industry was the subject of an Australian Competition and Consumer Commission Inquiry in 2015: East Coast Gas Inquiry 2015.
[18] IEEFA, *Australia's Export LNG Plants at Gladstone: The Risks Mount*

into the domestic Australian market. As IEEFA Energy Analyst Bruce Robertson notes[19]: "the Australian gas cartel is restricting supply to the domestic market in order to force up the price." Robertson blames state and federal governments for failing to develop a proper energy policy in Australia to avoid these problems.

According to Robertson[20], the gas cartel is losing money in the export business due to the downturn in global gas prices and are making that money back by gouging Australian gas consumers. Robertson suggests: "What we have here is an industry holding Australia to ransom [and] using this leverage to try to open up new coal seam gas fields."

Gas demand-management

The MEI reports[29] that rising gas prices and other factors are driving "economic fuel-switching" from gas to electricity, reducing demand for gas. Since 2012, the amount of gas consumed in eastern Australia has declined each year and will continue on a declining trend[30]. As eastern Australia enters the new era of high-price gas, there are many opportunities available to manage demand and extend the life of conventional gas reserves- including economic fuel-switching and improving energy-efficiency in the residential, commercial and industrial sectors.

Residential fuel switching options include: increased use of heat pump water heaters, using reverse cycle air conditioners for heating and replacing gas appliances with induction cooktops. Improved household energy efficiency measures such as insulation, draught-proofing, and improved windows and window treatments would also reduce demand. The MEI notes: "In eastern Australia, there are potentially 500,000 to 1,000,000 homes where residents are unaware that they can immediately start to save hundreds of dollars per year on their heating bill by using their existing reverse-cycle air conditioners (RCACs) instead of gas. This economic fuel-switching frees up gas for industry."

Regulatory Failure

The Queensland Government's original "Blueprint for Queensland's LNG Industry"[31], published in September 2009, acknowledged that the development of the Queensland LNG export industry had the potential to negatively impact domestic supply. Likewise, in 2013, the potential that the creation of gas-export capability would lead to higher gas and electricity prices, which would in turn lead to energy demand destruction and associated losses in manufacturing output, was forewarned by the Australian Industry Group in 2013[33]. However, both State and Federal governments ignored the warnings and failed to develop a proper energy policy- instead giving industry free rein to do as it pleased[34].

IEEFA notes the need for urgent changes to energy policy in Australia - including the implementation of a Federal Government enforced price trigger to ensure provision of domestic gas at a reasonable cost. They also recommend that Australia adopt standards and rules similar to those in operation in the US to regulate the operation of the Australian gas market including. These measures include the requirement for reserves to be calculated using the same oil price as well as disclosure rules that mandate reporting of average sales prices for oil and gas produced and average production costs for each operating gasfield[35].

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[19] IEEFA Energy Analyst Bruce Robertson quoted in News.com article: *Gas cartel is pushing prices up in Australia.*

[20] Ibid

[29] Melbourne Energy Institute (MEI), *A Shortlived Gas Shortfall: A Review of AEMO's Warnings of Gas Supply Shortfalls.*

[30] Australian Energy Market Operator (AEMO) quoted in *A Shortlived Gas Shortfall: A Review of AEMO's Warnings of Gas Supply Shortfalls.*

[31] https://www.cabinet.qld.gov.au/documents/2009/aug/lng%20impacts%20review/Attachments/LNG%20Industry.pdf

[33] Melbourne Energy Institute (MEI), *A Shortlived Gas Shortfall: A Review of AEMO's Warnings of Gas Supply Shortfalls.*

[34] IEEFA Analyst Bruce Robertson in News.com: *The 'absurdity' of Australia facing a gas shortage.*

[35] IEEFA, *Australia's Export LNG Plants at Gladstone: The Risks Mount*