
ELRI Policy Pitch Competition Brief

FIXING AUSTRALIA'S GAS MARKET

By

William Garske

&

Stanley Kern

Introduction

In contemporary Australia, energy usage is an underlying inelastic good utilised in many facets of life. With public opinion on an environmental trajectory, energy generation and thus resource consumption has changed within the nation, much to the detriment of prices and supply. This is no more apparent than in the natural gas industry, where the supply of gas has faced the dual headwinds of increasing costs and buoyant international and domestic demand. Consequently, policy makers must work quickly and effectively to negate surging prices.

Policy Proposition

It is proposed that the Australian Government approve the construction of the East-West gas pipeline.

Background

Domestic gas prices have been rising steadily in correlation with the reducing availability of easily obtainable gas for the domestic market and the growing demand for international contracts. While the reduced availability of gas sources may be unavoidable, the same cannot be said for the impact of international contracts. International contracts are limiting domestic contracting due to the uncertainty about the ability of coal seam gas developments to meet the LNG export commitments. The net result of this uncertainty is that profit margins in the domestic market are increasing at an unprecedented rate, adversely affecting the consumer and the economy. Firms have favoured these international contracts due to the consistency they provide, and have been able to easily withhold their domestic supply due to the nature of the market in Australia.

Currently, the gas market in Australia is oligopolistic. An oligopoly is a market with limited suppliers and significant barriers to entry in which the natural forces of supply and demand are disrupted due to the firms' ability to restrict supply and thus artificially inflate price. In the case of the gas industry, this is evident in numerous firms withholding of supply from the domestic market to keep prices at high levels. Furthermore, the market fits Cournot's concept of oligopoly, where the suppliers sell easily substitutable products but as mentioned artificially inflate price through the withholding of supply to optimise price. This is achieved by exporting the resource to foreign consumers, which pushes up domestic prices while securing stable contracts and revenue streams. Without adjustment to the nature of the market in Australia, there is little incentive for firms to alter their supply mechanisms. To make matters worse, despite flexing its power in the market it is unlikely that the Government will intervene.

The Government will struggle to directly intervene in the gas market for a variety of reasons. Firstly, imposing a price ceiling would act as a brake on economic growth and would only shift additional supply away from the domestic market. Secondly, restricting exports will decrease investment

confidence, which will reduce economic growth, damage Australia's Sovereign Credit Rating, and inadvertently increase the gas shortage by reducing investment in further gas ventures.

Analysis

Through economic analysis it will be shown that the Government should approve the construction of the pipeline as it will support the growth of the economy by reducing gas prices. Reduced gas prices support the economy by decreasing the dead weight loss associated with inefficient markets and increasing consumer and investment confidence by reducing costs for firms in multiple industries. Tangible evidence of this impact is displayed in *Table 1* – which considers production across multiple industries under various gas market situations. It will be shown that the pipeline will reduce gas prices by providing more incentive for firms to supply gas domestically and increasing competition in the domestic market.

By reducing marginal cost, the West-East pipeline will increase domestic supply and thus reduce gas prices. Liquefying, shipping and re-gasifying natural gas is estimated to cost around \$7.20/GJ in Australia. In comparison, it is expected to cost around \$5/GJ to ship gas via the West-East pipeline based on the pipeline path alternatives displayed in *Figure 1* (Latimer, 2018). As made clear through the marginal cost analysis shown in *Graph 1*, this will result in increased supply. Consequently, prices on the East Coast can be expected to decrease as shown in *Graph 2*.

The pipeline will also decrease prices by increasing competition in the gas market. Currently, the lack of competition in the gas market has resulted in a Cournot oligopoly. Consequently, firms are raising prices above the natural equilibrium in order to maximise profit as shown in graph 3. However, by combining the two markets and thus increasing the number of firms competing, it can be expected that the market will shift to become a more competitive market as the collusion and oligopolistic nature of the market is dependent on the limited number of suppliers available. This will result in increased supply and reduced dead weight loss as observed in graph 3 – reducing prices and greatly benefiting the economy overall.

It should also be noted that by increasing supply, the two factors above will also provide incentive for firms to limit their international contracts in order to cover variations in their increased domestic supply. This will ensure additional supply is available to cover domestic shortages and thus keep prices low.

Conclusion

It is evident that with the addition of the gas pipeline, prices will be reduced and hence the economic efficiency of the economy as a whole will be drastically improved. Without strong support, this hugely beneficial project may fall victim to political instability and election-driven tactics which often derail long-term economic policies.

Appendices

Table 1; Output in Industries Under Differing Gas Market Situations:

Table i: Industry output impacts for Australia for the years 2015, 2018 and 2021 and cumulative Net Present Value (NPV) of output impacts over 2014 - 2021

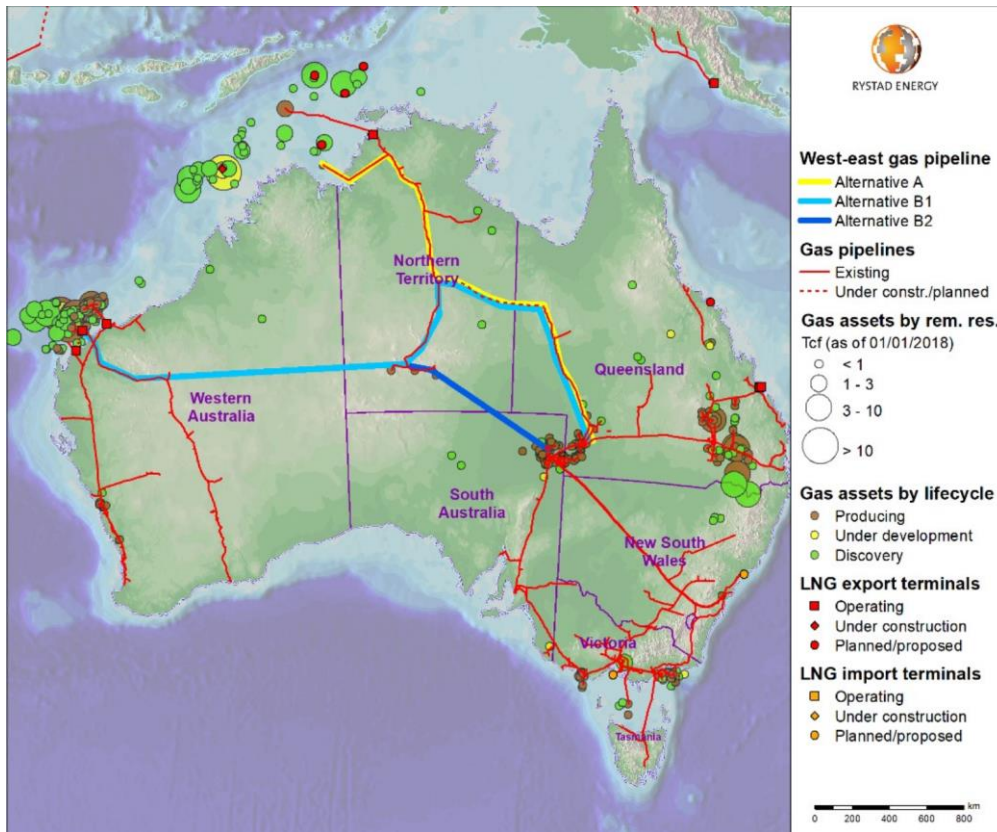
	Value of difference from baseline			% difference			NPV
	2015	2018	2021	2015	2018	2021	Cumulative impact over 2014-2021
IES scenario							
<i>Output (\$ million)</i>							
Manufacturing	-17,937	-15,810	-25,070	-3.07	-2.47	-3.61	-87,701
Gas	7,119	15,448	22,141	38.15	57.37	52.16	69,965
Mining	-6,789	-5,196	-8,773	-3.34	-2.32	-3.59	-30,245
Agriculture	-1,116	-713	-1,304	-1.99	-1.18	-2.01	-4,421
Electricity and Water	-1,277	-1,278	-1,730	-2.19	-1.99	-2.45	-6,812
Construction and Trade	20,077	2,701	12,106	3.11	0.38	1.55	42,644
Transport	-2,226	-1,690	-2,940	-1.61	-1.12	-1.79	-9,856
Commercial & Services	3,296	-558	734	0.28	-0.04	0.05	3,221
SKM scenario							
<i>Output (\$ million)</i>							
Manufacturing	-23,199	-22,259	-30,386	-3.97	-3.48	-4.38	-118,069
Gas	8,922	17,672	24,225	47.81	65.63	57.07	80,746
Mining	-7,226	-6,031	-9,679	-3.55	-2.69	-3.96	-33,804
Agriculture	-1,110	-798	-1,430	-1.98	-1.32	-2.21	-4,705
Electricity and Water	-1,962	-1,989	-2,204	-3.36	-3.09	-3.12	-10,269
Construction and Trade	18,049	2,443	13,265	2.80	0.34	1.69	38,519
Transport	-2,328	-1,988	-3,288	-1.68	-1.31	-2.00	-11,044
Commercial & Services	3,015	-897	649	0.26	-0.07	0.05	1,695

Source: Deloitte Access Economics

Note: The discount rate of 7% was used to calculate the NPV figure.

Note: The 'IES Scenario' projects prices in a competitive, low-price gas market, while the 'SKM Scenario' assumes current high prices and market power.

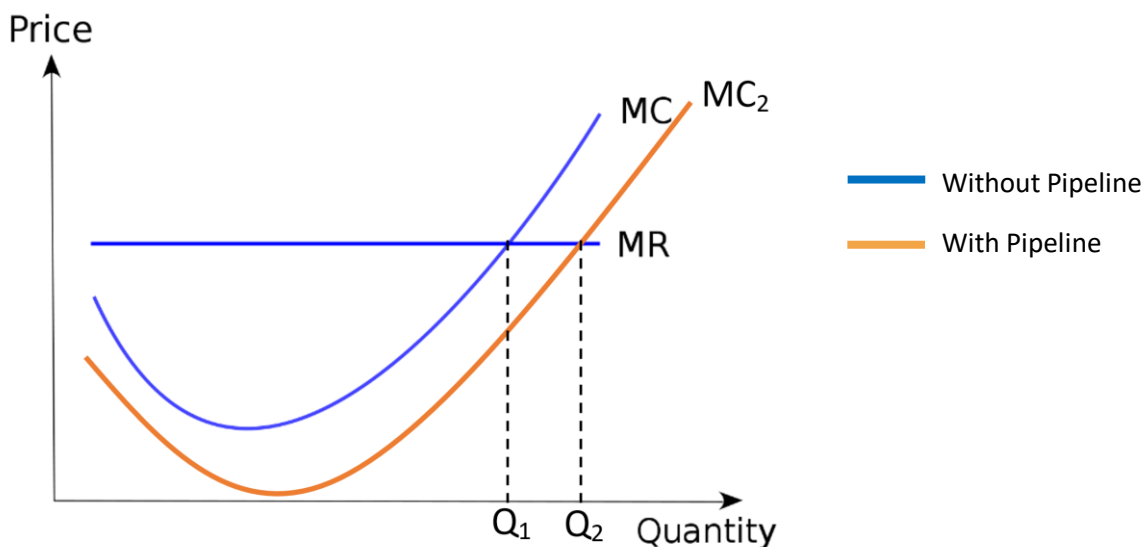
Figure 1; Pipeline Path Alternatives:



(Latimer, 2018)

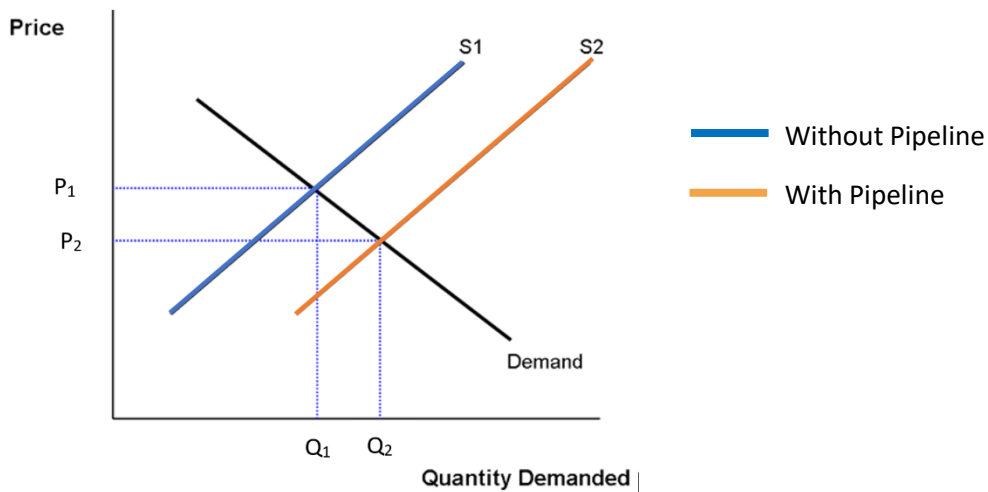
With reduced marginal costs, we observe an increase in the quantity a firm is willing to supply at a constant price as shown by the marginal cost analysis conducted below:

Graph 1; Marginal Cost Analysis of Impact of Pipeline



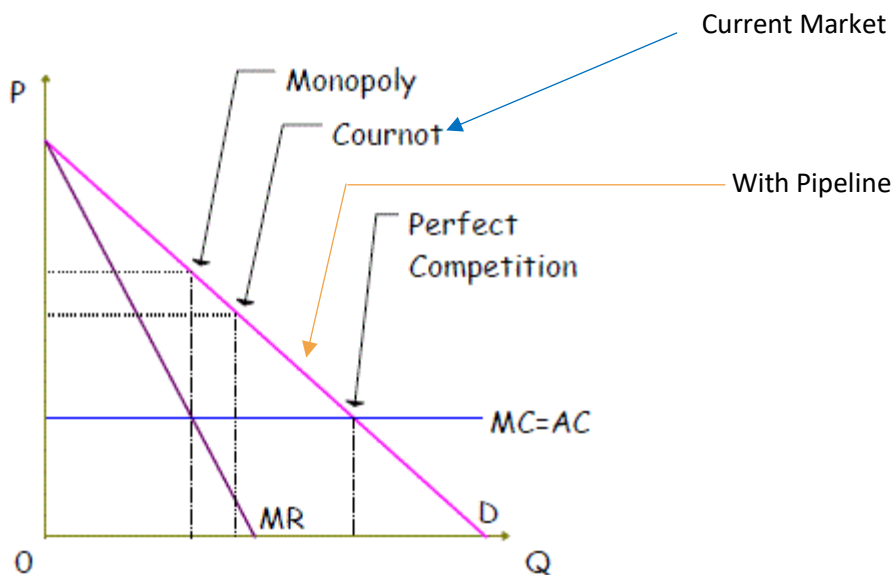
This results in a decrease in selling price as observed through a fundamental supply and demand curve:

Graph 2: Impact of Increased Supply on Gas Prices:



With increased competition, we observe that the market shifts from a Cournot oligopoly to a more competitive market. Consequently, supply will increase and dead weight loss will be reduced:

Graph 3; Change in Supply Resulting from a More Competitive Market:



References

- Australian Gas Taskforce | energy.gov.au. (2018). Retrieved from <https://www.energy.gov.au/government-priorities/energy-markets/australian-gas-taskforce>
- Deloitte Access Economics Pty Ltd. (2014). *Gas market transformations– Economic consequences for the manufacturing sector* [Ebook]. Sydney. Retrieved from <https://www2.deloitte.com/au/en/pages/.../australian-gas-market-transformations.html>
- Latimer, C. (2018). WA to east coast gas pipeline takes leap forward. Retrieved from <https://www.smh.com.au/business/wa-to-east-coast-gas-pipeline-takes-leap-forward-20171030-gzarby.html>
- McKinsey and Company. (2017). *Meeting east Australia's gas supply challenge* [Ebook]. Retrieved from <https://www.mckinsey.com/~media/McKinsey/Featured%20Insights/Asia%20Pacific/Meeting%20east%20Australias%20gas%20supply%20challenge/Meeting%20Australias%20gas%20supply%20challenge.ashx>
- Parkinson, G. (2018). Clarke and Dawe absolutely nail the Australian energy debate. Retrieved from <https://reneweconomy.com.au/clarke-and-dawe-absolutely-nail-the-australian-energy-debate-28852/>
- Prendergast, J. (2018). Why more gas supply won't reduce gas prices. Retrieved from <https://reneweconomy.com.au/gas-supply-wont-reduce-gas-prices-94637/>
- Torres Diaz, C., Farruggio, G., & Weiss, J. (2018). High Asian LNG prices prove bitter-sweet for Australia's west-east gas connector. Retrieved from <https://www.rystadenergy.com/newsevents/news/press-releases/high-asian-lng-prices-prove-bitter-sweet-for-australias-west-east-gas-connector/>