

Submission to Scientific Inquiry into Hydraulic Fracturing in the Northern Territory

prepared by

Bruce Robertson



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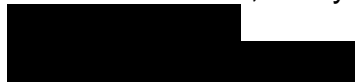
Submitted to:

Hydraulic Fracturing Inquiry
GPO Box 4396
Darwin, NT 0801

By email: fracking.inquiry@nt.gov.au

For further information on this submission, please contact:

Bruce Robertson, Analyst Gas/LNG Australasia



Introduction

Professional Experience:

I have been an analyst / fund manager /professional investor for 32 years.

Links to reports and media articles:

Specifically on the Northern Territory and its place in the global market authored by myself:

Pipedream – A financial analysis of the NEGI - May 2016

<http://ieefa.org/wp-content/uploads/2016/05/Pipe-Dream-A-Financial-Analysis-of-the-NEGI-MAY-2016.pdf>

The Northern Gas Pipeline – A submission to the EIS - 4/10/2016

<http://ieefa.org/wp-content/uploads/2016/10/The-Northern-Gas-Pipeline-Submission-to-the-EIS.pdf>

A sample of other podcasts/media interviews and articles on the gas/LNG industry in Australia and globally in the last 2 months:

Interview with Alan Jones 2GB 24/4/17

<http://www.2gb.com/podcast/bruce-robertson/>

Follow up interview following Gas Export restrictions 27/4/17

<http://www.2gb.com/podcast/bruce-robertson-2/>

Interview with Leon Byner with 5aa – 24/4/17

<http://www.fiveaa.com.au/shows/leon-byner/leon-byner-on-gas-price-increases>

Stephen Long ABC National News 18/04/17

<http://www.abc.net.au/news/2017-04-18/gas-export-plants-one-third-owned-by-foreign-governments/8448800>

Why is Australia's gas market broken?- Australian Politics Live podcast - The Guardian 28/3/17

<https://www.theguardian.com/australia-news/audio/2017/mar/28/why-is-australias-gas-market-broken-australian-politics-live-podcast>

The Gas Industry's Power play- The Saturday Paper - Mike Secombe 25/3/17

<https://www.thesaturdaypaper.com.au/news/resources/2017/03/25/the-gas-industrys-power-play/14903604004401>

SA's crazy gas shortage – why are we importing our own gas at a higher price? – Today Tonight Channel 7

<https://www.todaytonightadelaide.com.au/stories/crazy-gas-prices>

The absurdity of Australia facing a gas shortage – news.com.au – 14/3/17
<http://www.news.com.au/finance/business/mining/the-absurdity-of-australia-facing-a-gas-shortage/news-story/7ce0d2e9bf0029d6049a90bcfa4243a3>

A gas company “cartel” is forcing up the price of power in Australian well above international prices – Leon Byner 5aa Adelaide – 14/3/17

<http://www.fiveaa.com.au/shows/leon-byner/the-local-gas-cartel-ripping-off-aussie-customers?app=novafm&>

Older articles with particular relevance to the Northern Territory:
The expensive pipeline network in Australia co authored with Michael West – 15/7/16:

<http://www.michaelwest.com.au/its-a-gas-australian-gas-prices-are-a-bargain-in-japan/>

The Northern Territory Pipeline 19/5/16

<http://www.ntnews.com.au/business/gas-pipeline-a-big-white-elephant/news-story/0b15e0f2626e3ed751e245cc51dabb6f>

Is onshore gas in the Northern Territory financially viable?

Background

This paper should be read in conjunction with [Pipe Dream – A Financial Analysis of the Northern Gas Pipeline.](#)¹ In this report the global demand and supply of LNG is outlined.

The conclusion is that globally the LNG market faces an unprecedented increase in supply with Global LNG capacity increasing by 30% over the period 2015-2020 to 400MT. Out to 2030 demand is forecast to grow to 391MT by the Office of the Chief Economist.² Official government forecasts are for a long term glut in supply out to 2030. The official forecasts for demand are however too high implying that the glut could well extend beyond 2030.

Introduction

The onshore gas industry in the Northern Territory is predicated on supplying the export Liquefied Natural Gas (LNG) terminals at Gladstone in Queensland or the East Coast Australian domestic gas market.

The export gas terminals at Gladstone are currently loss making and face significant economic challenges in the short, medium and long term.

Costs of production in the Northern Territory are estimated to be around A\$7.50/GJ. The onshore unconventional gas industry has consistently under estimated its costs. Even taking this figure at face value it is not possible to see how this is economic in a low cost gas world.

The global gas markets are in a state of glut and the glut currently looks as if it will be extended. In the US there is renewed impetus to approve more export LNG facilities and Qatar, the worlds lowest cost producer has just lifted a 12 year moratorium on gas development in its massive North Field.³

The development of high cost shale gas in the Northern Territory could result in higher prices and decreased energy security for Northern Territory consumers as has occurred in the Eastern States of Australia.

¹ <http://ieefa.org/wp-content/uploads/2016/05/Pipe-Dream-A-Financial-Analysis-of-the-NEGI-MAY-2016.pdf>

² P84-88 <https://industry.gov.au/Office-of-the-Chief-Economist/Publications/Documents/gas-market/Gas-Market-Report-2015.pdf>

³ <https://www.oxfordenergy.org/wpcms/wp-content/uploads/2017/04/Qatar-Lifts-its-LNG-Moratorium.pdf>

There is significant risk that if the industry proceeds in the Northern Territory the assets may become stranded as export customers look to lower cost sources of supply and domestic consumers look to fuel switching to electricity.

Costs of Production of Northern Territory Gas

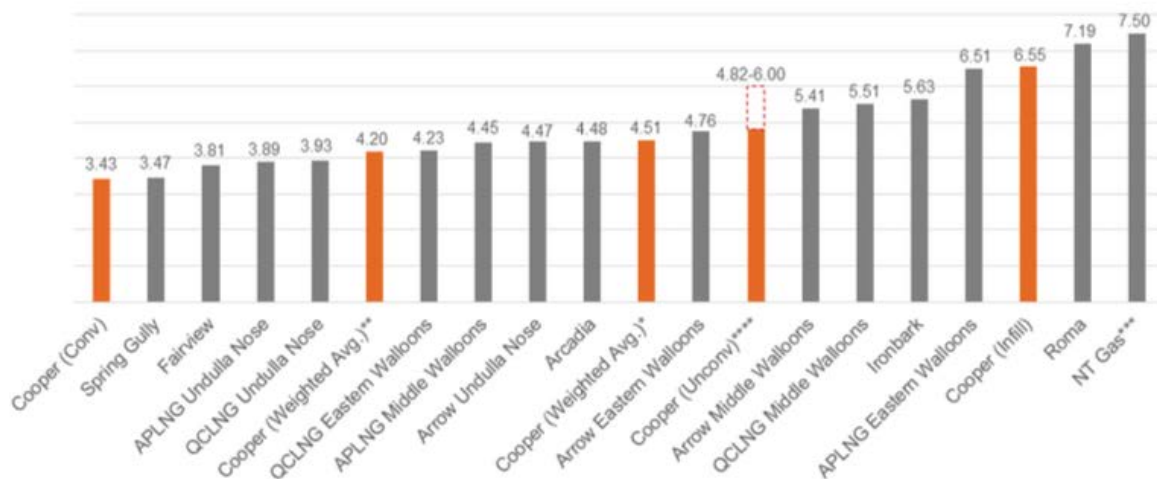
The onshore gas industry in Australia has consistently underestimated their costs of production.

Santos in their Environmental Impact Statement (EIS) for the GLNG export terminal at Gladstone stated that:

*“Morgan Stanley (2008) estimate that industry-wide operating and development costs for CSG are in the order of \$2.20/GJ to \$2.70/GJ, however as resource quality declines and recovery becomes more difficult, these costs are expected to increase, notwithstanding any technological break throughs.”*⁴

Current CSG field costs range from A\$3.55 through to A\$8.50/GJ, according to a report commissioned by the Australian Energy Market Operator (AEMO).⁵ Essentially the cheapest field on the east coast of Australia cannot produce gas at the top end of the estimated industry wide operating and development costs.

In the Northern Territory production costs have been estimated at A\$7.50/GJ⁶ by Core Energy in a report commissioned by the South Australian Department of State Development’s Energy Resource Division.



⁴ Page 6.15.11 Santos EIS March 2009

⁵ Source: Gas Production and Transmission Costs – Core Energy/AEMO

⁶[http://petroleum.statedevelopment.sa.gov.au/data/assets/pdf_file/0005/283919/Core Energy - Cooper-Eromanga Basin Outlook - Final - Oct2016v1.pdf](http://petroleum.statedevelopment.sa.gov.au/data/assets/pdf_file/0005/283919/Core_Energy_-_Cooper-Eromanga_Basin_Outlook_-_Final_-_Oct2016v1.pdf)

It is likely that this estimate will also prove to be optimistic. Even taking the cost of production at face value of A\$7.50/GJ the costs of production do not compare favourably on a global scale. Taking our two largest competitors Qatar and the US is instructive. In Qatar gas production costs are extremely low at below A\$0.20/GJ whilst in the US the delivered price to the Henry Hub market averaged A\$3.55 in March 2017.

Delivered to a metropolitan market or to the Wallumbilla Hub the price of Northern Territory gas blows out to become in excess of A\$11/GJ. This is more than three times the cost of gas delivered to the Henry Hub in the USA.

Gas Play	VTS ¹⁴	Adelaide	Sydney	Wallumbilla	Mt Isa
Ironbark	8.03 plus NVI tariff	7.75	8.03	5.63	8.34
APLNG Eastern Walloons	8.91 plus NVI tariff	8.63	8.91	6.51	9.22
Cooper (Infill)	7.55 plus NVI tariff	7.27	7.55	7.45-7.95	8.36
Roma	9.59 plus NVI tariff	9.31	9.59	7.19	9.90
NT Gas	11.86 plus NVI tariff	11.58	11.86	11.76	9.05

⁷The Victorian Transmission System ("VTS") is the transmission network across Melbourne and rural Victoria. The NSW-Vic Interconnect ("NVI") is the transmission pipeline running between Victoria and NSW, connecting the VTS and the Moomba to Sydney Pipeline.

Currently spot prices in Japan are less than A\$7.50/GJ. ⁸ That is after the gas has gone through the expensive liquefaction and transport process a process that costs around A\$4.95/GJ. Total costs of Northern Territory gas would be over A\$16/GJ delivered to Japan which is more than twice the price currently being paid.

The current contract prices being realised in Asia can be gleaned from the latest quarterly report put out by Santos.⁹ They state a realised price for their LNG exports of \$US7.09/mmBtu which is equivalent to A\$8.96/GJ. Total costs of Northern Territory gas delivered Asia would be over A\$16/GJ. This is 78% higher than the customers are currently paying under long term contracts.

Gas produced in the Northern Territory is currently not economic to export to Asia on either the spot markets or the contract markets by a very considerable margin.

⁷ page 19

[http://petroleum.statedevelopment.sa.gov.au/_data/assets/pdf_file/0005/283919/Core_Energy - Cooper-Eromanga Basin Outlook - Final - Oct2016v1.pdf](http://petroleum.statedevelopment.sa.gov.au/_data/assets/pdf_file/0005/283919/Core_Energy_-_Cooper-Eromanga_Basin_Outlook_-_Final_-_Oct2016v1.pdf)

⁸ Source: Nikkei Asian Review dated April 14

<http://asia.nikkei.com/Markets/Commodities/LNG-spot-prices-plunge-in-Asia-on-supply-glut-concerns>

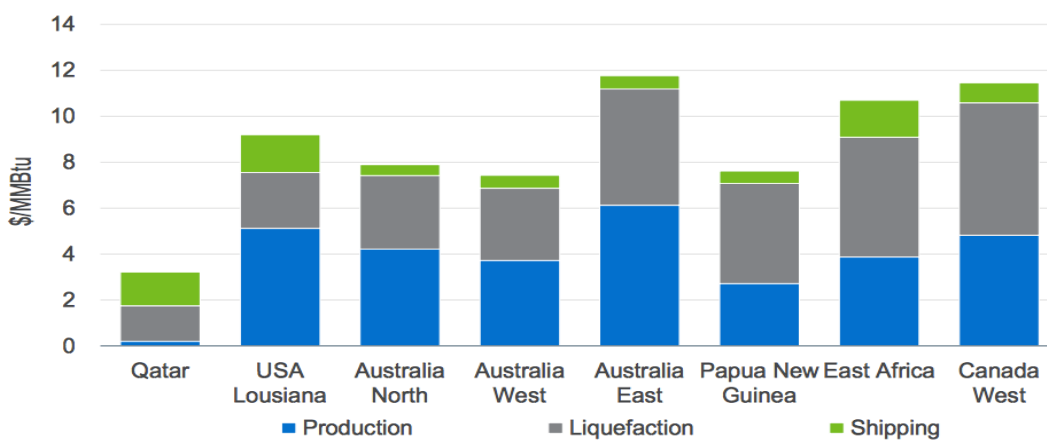
⁹ <http://www.asx.com.au/asxpdf/20170420/pdf/43hmd0h79z0h82.pdf>

The Threats to the three plants at Gladstone

The three export gas plants at Gladstone sit at the very top of the global cost curve.¹⁰ After any major investment boom in the resources sector there comes a bust. It is the globally high cost producers that typically exit the market to see it rebalance. The three plants at Gladstone sit at the top of the global cost curve and are therefore very susceptible in the current downturn in global prices.

The lowest cost producer in the world, Qatar, recently announced that it has lifted a moratorium on development of its massive North field. If it goes ahead and develops this resource it will place further pressure on gas prices in the early to mid 2020's.

Cost Stack From Various Supply Sources to Japan (DES)*



*For calendar year 2024

2016 EIA Energy Conference, Washington, DC, July 11-12

12

Nexant

Could the Northern Territory Gas supply the southern states?

The domestic gas price in Australia has risen to levels above those in Japan and more broadly Asia. The Cartel of gas producers on the East Coast of Australia restrict supply and force up the price. Recently, the government has introduced some temporary export restrictions in a bid to place downward pressure on domestic gas prices.

These export restrictions may or may not have the desired effect depending on how they are implemented. In any case the political pressure is on to reduce domestic prices. The Minister for Energy Josh Frydenberg, is on record as saying that we should be paying the netback price. He described what he saw as the netback price as:

¹⁰ <http://www.eia.gov/conference/2016/pdf/presentations/mikhaiel.pdf>

“The reasonable price should be actually what is called the netback price, that is what we are being charged internationally minus the cost of the transportation of the gas and the liquefaction process”¹¹

If we paid the netback price for contract gas to Asia we would be paying less than A\$5/GJ in the domestic market. Clearly a long way from the contract price of up to A\$20/GJ¹² that we are currently paying.

If the government is successful in lowering domestic gas prices Northern Territory onshore gas will simply be an uneconomic proposition.

Conclusion

The development of an onshore gas industry in the Northern Territory is not currently economically possible. The costs of production and transportation do not match the prices consumers are willing to pay in either Asia or domestically.

There is a high likelihood that shale gas will not offer greater energy security for the Northern Territory. It could result in the opposite effect. If the expensive to extract shale gas were brought to market the high price would be passed on to consumers.

This has already clearly been seen in the Eastern States of Australia where the development of the high cost coal seam gas industry has not seen increased energy security in fact it has resulted in soaring domestic prices for gas and decreased availability for domestic consumers. Energy security for the Eastern States consumers has declined with the development of Coal Seam Gas.

There is a risk that investment in high cost shale gas, in the Northern Territory would stymy investment in energy that can be provided at a lower price and with greater certainty to consumers.

¹¹<http://www.fiveaa.com.au/shows/leon-byner/latest-on-the-gas-market-from-josh-frydenberg>

¹² <http://www.accc.gov.au/speech/recognising-australias-east-coast-gas-crisis>