

The Northern Gas Pipeline

A Submission by the Institute for Energy Economics and Financial Analysis

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Introduction

In May 2016 the Institute for Energy Economics and Financial Analysis (IEFFA) wrote a report that highlighted that the Northern Gas Pipeline (NGP) was not a commercial venture without substantial government subsidies either in the form of direct grants or inflated tariffs to transport the gas.

The report provided a comprehensive analysis of the global markets for traded liquid natural gas (LNG) and highlights the fact that global markets are currently oversupplied and demand is much weaker than expected from the major importing nations of Japan, Korea and China. There is a large amount of new LNG production that will come on stream between now and 2020 from projects that are already under construction further exacerbating the over supply situation. The glut in global LNG supply is expected to last out until 2030. The outlook for gas prices in such a market is similarly weak.

This submission is a supplement to our report entitled Pipe Dream – A Financial Analysis of the Northern Gas Pipeline.

The need to supply manufacturing industry with gas on the East Coast of Australia is a pressing issue for policy makers in the Energy arena. However what is missed in the debate is that this supply must be at a globally competitive price. Without globally competitive gas pricing for manufacturing these downstream businesses will simply go out of business.

The NEGI will not be able to supply either the east coast manufacturers or the export market at a reasonable price.

It will be able to supply some manufacturers in Mt Isa however the gas will not flow further as it is simply uneconomic when high pipeline transportation costs are factored in.

The Northern Territory government (via the wholly owned Power and Water Commission) is paying over twice a commercial rate of return to transport the gas it is proposing to supply to the Northern Gas Pipeline. This is wholly uncommercial and unsustainable.

The monopoly power of Jemena's Northern Gas Pipeline highlights many of the issues that were raised in the ACCC report into the East Coast Gas market that found that Gas transmission pipeline operators were price gouging consumers and charging monopoly prices.

If the Northern Gas Pipeline is built it is the owners of Jemena, the Chinese and Singapore Governments, to which a major portion of the economic benefit of Northern Territory gas will accrue.

1. The extent of price gouging by Jemena

Australia is one of the few countries in the Western world where gas transmission pipelines are not wholly regulated. Gas transmission pipelines are natural monopolies and hence even in the USA, are wholly regulated.

In Australia, however, the government at both State and Federal levels is happy to see gas transmission pipeline operators charge inflated monopoly prices. This embeds in the Australian economy high priced energy where, given our abundance of cheap energy sources, we should pay amongst the lowest prices in the world.

2. What Will Jemena charge?

In their environmental impact statement Jemena have stated that they will charge a base tariff of \$1.40/GJ and an additional \$0.72/GJ for Nitrogen reduction.¹ This submission will concentrate on the \$1.40/GJ charge and will not pass comment on the \$0.72/GJ Nitrogen reduction charge except to say if the price gouging occurring for the pipeline charge is replicated in the Nitrogen charge it is likely that Jemena are using their monopoly position for their own economic advantage and charging an excessive amount.

¹ Pipeline tariffs have been set to recover the overall investment in the Project and pipeline and allow shareholders to make a return on their investment.

The NGP is currently designed to carry up to 90TJ/d of gas to Mount Isa. Jemena has posted a base tariff for use of the pipeline of \$1.40/GJ for Firm Forward Haulage (FFH). Nitrogen reduction from the natural gas is essential and adds approximately \$0.72 to the tariff bringing the total to around \$2.12/GJ for gas transported.

Source: Page 9-30 Northern Gas Pipeline – Environmental Impact Statement
https://ntepa.nt.gov.au/_data/assets/pdf_file/0004/368122/jemena_draft_eis_ch9.PDF

3. Comparable Pipeline Charges

In February 2015 the Australian Electricity Market Operator commissioned Core Logic to produce a report on Gas Production and Transmission Costs in Eastern and South Eastern Australia.² The report summarised the tariffs charged by various gas transmission pipelines in eastern Australia.

4. TRANSMISSION COSTS

4.1 Summary of Existing Transmission Tariffs

A summary of Core's estimate of transmission tariffs are provided in Table 4.1 below and the location of these pipelines is presented in Figure 4.1.

Table 4.1 Summary of transmission costs – major existing pipelines | AUD/GJ

Basin	Low	Ref	High
Carpentaria Gas Pipeline	1.82	1.48	1.48
Eastern Gas Pipeline	1.33	1.21	1.09
Longford to Melbourne Gas Pipeline	0.29	0.25	0.25
Moomba to Adelaide Pipeline System	0.73	0.67	0.60
Moomba to Sydney Pipeline System	0.99	0.90	0.85
Queensland Gas Pipeline	1.03	0.94	0.94
Roma - Brisbane Pipeline	0.63	0.57	0.57
South East Australia Gas Pipeline	0.88	0.80	0.80
South West Pipeline	0.30	0.28	0.28
South West Queensland Pipeline	1.08	0.98	0.89
Tasmania Gas Pipeline	2.55	2.05	2.05

Source: Core Energy Group with Operator input for a number of areas.

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This table shows that the NGP is the second most expensive onshore pipeline in the country. However the only pipeline that is more expensive than it is the Carpentaria gas pipeline that is 35% longer than the NGP. The Tasmanian Gas Pipeline is under the Bass Strait so it is not comparable.

² [https://aemo.com.au/-/media/Files/Gas/National Planning and Forecasting/GS00/2015/Core--Gas-Production-and-Transmission-Costs.ashx](https://aemo.com.au/-/media/Files/Gas/National_Planning_and_Forecasting/GS00/2015/Core--Gas-Production-and-Transmission-Costs.ashx)

³ Source: Page 10 Gas Production and Transmission Costs – Eastern and South Eastern Australia – Core Energy Group
[https://aemo.com.au/-/media/Files/Gas/National Planning and Forecasting/GS00/2015/Core--Gas-Production-and-Transmission-Costs.ashx](https://aemo.com.au/-/media/Files/Gas/National_Planning_and_Forecasting/GS00/2015/Core--Gas-Production-and-Transmission-Costs.ashx)

Figure 3.2(1) Major Gas Transmission Pipelines

<u>Pipeline</u>	<u>Location</u>	<u>Length (KM)</u>	<u>Capacity (TJ/D)</u>	<u>Covered?</u>	<u>Owner</u>
EASTERN AUSTRALIA					
Queensland					
North Queensland Gas Pipeline	Qld	391	108	No	Victorian Funds Management Corporation
Queensland Gas Pipeline (Wallumbilla to Gladstone)	Qld	629	142	No	Jemena (State Grid Corporation 60%, Singapore Power International 40%)(1)
Carpentaria Pipeline (Ballera to Mount Isa)	Qld	840	119	Yes (light)	APA Group
Berwyndale to Wallumbilla Pipeline	Qld	113		No	APA Group
Dawson Valley Pipeline	Qld	47	30	No	Westside (51%), Mitsui (49%)
Roma (Wallumbilla) to Brisbane	Qld	440	233	Yes (2012 – 2017)	APA Group
Wallumbilla to Darling Downs Pipeline	Qld	205	400	No	Origin Energy
South West Queensland Pipeline (Ballera to Wallumbilla) ..	Qld	756	404	No	APA Group
QSN Link (Ballera to Moomba)	Qld-SA and NSW	180	404	No	APA Group
Gladstone LNG Pipeline	Qld	435	1430	No	Santos, Petronas, Total, KOGAS
Wallumbilla Gladstone Pipeline	Qld	334	1530	No	APA Group
Australia Pacific LNG Pipeline	Qld	362	1530	No	Origin Energy, ConocoPhillips, Sinopec
New South Wales					
Moomba to Sydney Pipeline	SA-NSW	2035	1030	Partial (light)	APA Group
Central West (Marsden to Dubbo) Pipeline	NSW	255	10	Yes (light)	APA Group
Central Ranges (Dubbo to Tamworth) Pipeline	NSW	300	7	Yes (2015 – 2019)	APA Group
Eastern Gas Pipeline (Longford to Sydney)	Vic-NSW	795	291	No	Jemena (State Grid Corporation 60%, Singapore Power International 40%)(1)
Victoria					
Victorian Transmission System (GasNet)	Vic	2035	1030	Yes (2013 – 2017)	APA Group
South Gippsland Natural Gas Pipeline	Vic	250		No	DUET Group
VicHub	Vic		126	No	Jemena (State Grid Corporation 60%, Singapore Power International 40%)(1)
South Australia					
SEA Gas Pipeline (Port Campbell to Adelaide)	Vic-SA	680	314	No	APA Group and REST (equal shares)
Moomba to Adelaide Pipeline	SA	1185	241	No	QIC Global Infrastructure
Tasmania					
Tasmanian Gas Pipeline (Longford to Hobart)	Vic-Tas	734	129	No	Palisade Investment Partners
NORTHERN TERRITORY					
Bonaparte Pipeline	NT	287	80	No	Energy Infrastructure Investments (APA Group 20%, Marubeni 50%, Osaka Gas 30%)
Amadeus Gas Pipeline	NT	1512	104	Yes (2011 – 2016)	APA Group
Daly Waters to McArthur River Pipeline	NT	330	16	No	Power and Water
Palm Valley to Alice Springs Pipeline	NT	140	27	No	Australian Gas Networks (Cheung Kong Infrastructure)

⁴ Page 89

<http://jemena.com.au/getattachment/About/investors/investor-information/SGSPAA-Offering-Circular.pdf.aspx>

4. Jemena's charges per kilometre

Onshore Australian Pipeline Costs Per Kilometre			
Pipeline	Tariff (\$/GJ)	Distance (Kilometres)	Tariff of 1 GJ/KM (cents/km)
Northern Gas Pipeline	1.40	622	0.23
Carpentaria Gas Pipeline	1.48	840	0.18
Eastern Gas Pipeline	1.21	795	0.15
Queensland Gas Pipeline	0.94	629	0.15
South West Queensland Pipeline	0.98	756	0.13
Roma-Brisbane Pipeline	0.57	440	0.13
South East Australian Gas Pipeline	0.80	680	0.12
Longford to Melbourne Gas Pipeline	0.25	250	0.10
Moomba to Adelaide Pipeline System	0.67	1185	0.06
Moomba to Sydney Pipeline System	0.90	2035	0.04
Average Tariff			0.13

Sources: AEMO and Jemena cited in footnotes 3 and 4

The table above looks at the Northern Gas Pipeline on the basis of the tariff charged per kilometre.

The NGP will charge the highest tariffs in Australia for the transport of gas at 0.23 cents per kilometre. This is almost double than the average 0.13c tariff/km charged in Australia.

The Northern Gas Pipeline will charge the highest tariffs in Australia, a country where, according to the ACCC⁵ we pay too much for pipeline services.

⁵ https://www.accc.gov.au/system/files/1074_Gas_enquiry_report_FA_21April.pdf

5. Determining a reasonable tariff for Jemena to charge.

The Core Logic report on Gas Production and Transmission Costs in Eastern and South Eastern Australia, commissioned by the Australian Energy Market Operator, published a table that summarised the Low to High range of capital costs for pipelines of varying configurations for a 100 km length together with an indicative tariff based on a reasonable real rate of return of 7%.

The following table provides a Low to High range of capital costs for pipelines of varying configuration for a 100km length, together with an indicative tariff based on a real rate of return of 7%.

Table 4.3 Summary

Pipeline configuration	Low AUD Million	Ref. AUD Million	High AUD Million	Ref. Tariff
8 inch Class 600, 5.6mm wall thickness	28.4	31.5	34.7	AUD0.11/GJ
14 inch Class 600, 9.1 mm wall thickness	55.9	62.1	68.3	AUD0.10/GJ

Source: Core Energy Group with Operator input for a number of areas.

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Post tender win the Northern gas pipeline was reduced in size following a lack of demand from 14 inches to 12 inches. This means that the pipeline falls in between the indicative tariffs of \$0.10/100 km and \$0.11/100 km.

Taking the higher end of the price range indicated \$0.11/ 100 km we can see that a reasonable tariff for Jemena to charge on its 622 km pipeline would be \$0.68/GJ.

Jemena is charging \$1.40/GJ some 105% more than a benchmark tariff based on a reasonable rate of return of 7%.

Essentially, Northern Territory gas producers and the Northern Territory government will be paying over twice the tariff that they should be to get their gas to Mt Isa, effectively a massive proposed subsidy even if the pipeline is used to full proposed capacity.

By any scale this is Jemena exercising its monopoly power to charge an excessive amount.

⁶ Source: Page 10 Gas Production and Transmission Costs – Eastern and South Eastern Australia – Core Energy Group

https://aemo.com.au/-/media/Files/Gas/National_Planning_and_Forecasting/GS00/2015/Core--Gas-Production-and-Transmission-Costs.ashx

6. Is it Economic to transport gas half way across Australia to be then converted and exported as LNG from Gladstone?

In short the answer is definitively no it is not economic to transport gas half way across Australia to export it or indeed for domestic industry to consume it.

The Australian gas pipeline industry is not globally competitive as it charges monopoly prices and unlike its competitors in New Zealand, USA and the EU it is not regulated as to price and availability.

For a fuller explanation of this please refer to the following article

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

The table below outlines the pipeline charges that would be incurred by a Northern Territory gas producer to get its gas to the east coast to export it through Gladstone. When evaluating this analysis it must be recognized that this assumes that the gas is at Tennant Creek. Most Northern Territory producers would incur further costs to get the gas to Tennant Creek and hence the \$5.52 price for Nitrogen reduction and transport is the lowest possible cost.

Cost to Transport gas to Gladstone for Export	
Nitrogen reduction charge	\$0.72
Tennant Creek to Mt Isa	\$1.40
Mt Isa to Ballera (Carpentaria pipeline)	\$1.48
Ballera to Wallumbilla (SWQP)	\$0.98
Wallumbilla to Gladstone (QGP)	\$0.94
Total	<u>\$5.52</u>
Source: Jemena and AEMO	

Currently, the spot price for gas in Japan⁷ is USD 5.40/ GJ or Australian \$7.05/GJ.

With the glut in global LNG supplies persisting into the foreseeable future it is our contention that the global price for gas will remain depressed well below the rate required for Australian east coast LNG facilities to achieve anything like an economic return.

Likewise for Australian industrial consumers the price offered by the cartel of east coast gas producers must be globally competitive in the long term otherwise the industrial customers will be unable to compete with imported product and will go out of business.

According to Origin Energy⁸ it costs at least US\$2.90 or A\$3.80 to liquefy and transport the gas.

⁷ <http://www.meti.go.jp/english/statistics/sho/slmg/result/pdf/201608-e.pdf>

This A\$3.80/GJ price does not include the capital cost of the LNG plants or an economic return on investment. All of the LNG plants at Gladstone have large amounts of debt and hence have to make an economic return on their investments in LNG liquefaction facilities in order for them to satisfy their bankers. The A\$3.80/GJ is just the marginal cost of production to liquefy and transport the gas.

At a bare minimum it costs to transport by pipe from Tennant Creek to Gladstone and liquefy and transport the gas to Japan A\$9.32/GJ. This compares to current prices of A\$7.05/GJ making the process uneconomic before we have even taken into account exploration and production costs in the Northern Territory or paying the bankers of the LNG export facilities.

Summary and Conclusion

The Northern Gas pipeline is an ill-conceived proposal.

There is a global gas glut extending out to 2030 as new supply continues to come on line in a market already over supplied. Attempting to open up new expensive onshore gas reserves in such a fiercely competitive global market is not economic.

The rates to transport gas from Tennant Creek to Mt Isa are the highest of any pipeline in Australia. The rate charged is 91% more than the average tariff/km charged in Australia.

Jemena will earn 105% more than a benchmark tariff based on a reasonable rate of return of 7%.

The venture at current prices is wholly uneconomic other than to supply customers in Mt Isa.

The Northern Territory government is paying extortionate rates to transport the Power and Water Commissions excess gas to Mt Isa.

The Northern Gas pipeline will not open new markets on the east coast or export markets through Gladstone as the tariffs charged are simply too high to make it economic in the current global gas market.

The Northern Territory government has gifted the governments of China and Singapore an unregulated monopoly to transport gas from the NT to the east coast. If in the long term the pipeline and gas industry in the Northern Territory is developed it will be to these two foreign governments that a major portion of the economic benefit will accrue.

⁸www.asx.com.au - Origin Energy – Presentation to Analysts and Financial Markets 18 August 2016 Page 39

