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16 September 2014

Electricity Market Review Project Office
Public Utilities Office
Department of Finance
PERTH WA 6000

(via email: electricitymarketreview@finance.wa.gov.au)

Dear Mr Middleton,

RE: ELECTRICITY MARKET REVIEW DISCUSSION PAPER – APPEA COMMENTS

The Australian Petroleum Production & Exploration Association (APPEA) is the peak national body representing Australia's oil and gas exploration and production industry. APPEA has more than 90 full member companies exploring for and producing Australia's oil and gas resources. These companies currently account for around 98 per cent of Australia's total oil and gas production and the vast majority of exploration. APPEA also represents over 240 associate member companies providing a wide range of goods and services to the industry.

APPEA welcomes the opportunity to provide comment on the *Electricity Market Reform Discussion Paper* developed by the Electricity Market Review Steering Committee. This letter provides some general comments related to natural gas supply matters presented in the Discussion Paper.

The comments that follow should be read in the context that a significant number of commercial assumptions in the gas supply section of the Discussion Paper come from what appears to be a confidential report to the Steering Committee: "*KPMG/RISC, Outlook for Fuels for Generation Draft Issues Paper, May 2014, p.9, APPEA data*". APPEA and our members are disappointed that this report, extensively relied upon in the Discussion Paper, has not been publicly released for stakeholders to consider. APPEA recommends this report be immediately released.

Western Australia's gas markets

Australia's and Western Australia's (WA) LNG export market began in August 1989 when the first LNG cargo left the North West Shelf (NWS) destined for Japan. Since this time, LNG has been a critical export commodity for Australia and WA. By the early 1990s, the volume of natural gas exported as LNG exceeded the amount supplied to the WA domestic market.

In 2013, WA's gas production totalled 1.28 trillion cubic feet (tcf) of which 0.38 tcf (30 per cent) was sold into the WA market[1], with the remainder exported as LNG. It is anticipated that the size of the WA LNG market will be approximately seven times the WA domestic market by the end of 2022[2].

[1] APPEA, *Annual production statistics 2013*, available at: www.appea.com.au/?attachment_id=5432.
[2] Independent Market Operator, *Gas Statement of Opportunities*, July 2013, available at: www.imowa.com.au/GSOO.

Export market

The International Energy Agency (IEA) recently forecast that natural gas will be the fastest growing traditional source of energy, with demand set to increase by 48 per cent to 2035[3]. While the IEA forecasts that demand in Australia's traditional gas export destinations remains relatively flat, gas demand in China is set to quadruple and in India almost treble out to 2035. This global demand for natural gas is being driven by a combination of energy diversification, a desire to reduce greenhouse gas emissions and a desire for improved air quality outcomes.

WA is well poised to capture the significant opportunities available through the large resources of natural gas onshore and offshore and nearly half a century of expertise in the oil and gas industry here.

Australia's export LNG industry is currently built on three projects, two of which are located in WA – the North West Shelf Venture and the Pluto LNG project – and one in the Northern Territory – the Darwin LNG project.

WA Based LNG Trains	Capacity (Mtpa)
North West Shelf Train 1	2.5
North West Shelf Train 2	2.5
North West Shelf Train 3	2.5
North West Shelf Train 4	4.4
North West Shelf Train 5	4.4
Pluto Train 1	4.3
Total WA LNG Export Capacity	**20.6**

Table 1: IMO 2013, Existing LNG Export Facilities in WA

To meet the growing global demand, two additional onshore LNG facilities (Gorgon and Wheatstone) and one floating LNG (FLNG) facility (Prelude) are under construction, and these facilities are expected to add approximately 28.1 million tonnes per annum (Mtpa) of LNG export capacity in WA by 2018.

Export Facilities Under Construction	Expected Capacity (Mtpa)	Status
Gorgon Train 1	5.2	Anticipated to be operational in 2015
Gorgon Train 2	5.2	Anticipated to be operational in 2015
Gorgon Train 3	5.2	Anticipated to be operational in 2015
Wheatstone Train 1	4.5	Anticipated to be operational in 2016
Wheatstone Train 2	4.4	Anticipated to be operational in 2016
Prelude FLNG	3.6	Anticipated to be operational in 2017
Total Committed Capacity	**28.1**	

Table 2: IMO 2013, Committed LNG Facilities under Construction in WA

[3] International Energy Agency, *World Energy Outlook 2013*, November 2013.

Domestic market

Following the discovery of large gas reserves on the NWS, the WA Government played a major role in the development of the reserves by signing – through the SECWA – a long-term take or pay contract to purchase gas from the project for domestic consumption for 20 years.

Also key to the development of the reserves was the construction of the Dampier to Bunbury Natural Gas Pipeline (DBNGP), which would deliver the NWS gas to customers in Perth and further south. The pipeline was commissioned in 1984 and deliveries of gas followed soon afterwards.

The take-or-pay contract between the NWS Venture and SECWA created a supply overhang – there was more gas supply than gas demand – and that kept prices low, which, in turn, discouraged new domestically-focused gas exploration and development for many years because it was not commercially viable.

The North West Shelf Venture (NWSV) now currently accounts for around 54 per cent of WA gas sales[4]. While this project expects to have delivered its domestic gas obligation under State Agreement by the end of 2014, it has already committed additional volumes and has contracts that run past the end of the decade.

The Apache operated Varanus Island hub is the next largest supplier at around 28 per cent of the WA market. Gas is also supplied by the recently commissioned Devil Creek facility (10 per cent)[5] and several fields in the onshore Perth Basin supply around two per cent of the market (Beharra Springs operated by Origin Energy, and Dongara operated by AWE).

BHP Billiton and Apache Energy have also recently developed the Macedon gas field with production commencing in August 2013. The Macedon facility has a capacity of 200 terajoules per day (TJ/d). Chevron Australia and its joint venture partners also intend to initially supply 150 TJ/d of domestic gas from the Gorgon Project from 2015, with this capacity expanding to 300 TJ/d around 2020. In addition, the Chevron-operated Wheatstone Project includes the development of a 200 terajoules per day domestic gas plant Domestic gas production from the Wheatstone Project is expected to commence in 2018.

Importantly, non-LNG linked domestic capacity can meet 87 per cent of current average daily demand of around 980 Tj/d.

[4] APPEA, *Annual production statistics 2012*, available at: http://www.appea.com.au/industry-in-depth/industry-statistics/annual-production-statistics-2012/

[5] See www.apachedcdp.com for further information.

Facility	Operator	Capacity (Tj/d)	Average Throughput (Tj/d)	Location
Karratha Gas Plant (NWSV)	Woodside	630	477	Burrup Peninsula, Pilbara
Varanus Island	Apache	390	289	Varanus Island, Pilbara
Devil Creek	Apache	220	91	Devil Creek, Pilbara
Macedon	BHP Billiton	200	149	Onslow, Pilbara
Dongara	AWE	18	2	Dongara, Mid-West
Beharra Springs	Origin	19.6	11	Mid-West
Red Gully	Empire Oil and Gas	10.6	4	Mid-West

Table 3: IMO 2013 & IMO 2014, WA Domestic Gas Processing Facilities

Other new sources of gas supply are also being planned subject to customer demand. Rapid growth in the production of natural gas from coal seams in Eastern Australia and shale gas in the U.S. is also triggering interest in WA's unconventional gas potential with several drilling programs now underway or being planned (for example, the Warro Gas Field development has seen Latent Petroleum Limited and Alcoa form a joint venture to appraise and develop the Warro Gas Field north of Perth[6]). A range of other onshore 'tight gas' fields are being actively appraised and onshore shale gas exploration is taking place in the Canning Basin.

The near doubling of domestic supply capacity by 2020, resulting from the gas supply developments outlined above, would require demand for gas to increase by more than seven per cent per year, compared to a ten-year historical average of 1.1 per cent a year[7]. It is worth noting that demand has historically been significantly influenced by mining and mineral resource projects, many of which are sensitive to global economic influences and historically do not see a high rate of realisation.

The fact that six of the seven current domestic gas processing facilities are not linked to an LNG project suggests that this is the result of buyers willing to commit to contract terms that underpin the enormous investment required to develop and construct a gas processing facility[8]. Clearly, there are no substantial commercial barriers to obtaining gas supply in WA.

The market is responding to genuine demand and needs to be able to respond to market signals without the unnecessary hindrance of government intervention. There is ample evidence that gas consumers are able to obtain gas supplies on commercial terms.

These factors point to the need for policy makers to review the need for a domestic gas reservation policy and to look at market-based options that deliver energy security to the state.

[6] See www.latentpet.com/about.asp for further information.
[7] Independent Market Operator, *Gas Statement of Opportunities*, July 2013, available at: http://www.imowa.com.au/GSOO
[8] See: http://www.bhpbilliton.com/home/investors/news/Pages/Articles/BHP-Billiton-celebrates-first-gas-at-Macedon.aspx and http://investor.apachecorp.com/releasedetail.cfm?ReleaseID=357625

Upstream Costs

The *Discussion Paper* on page 33 highlights that exploration and development costs are key factors in the changing conditions of the WA domestic gas market. As indicated in Figure 1, annual expenditure on offshore exploration drilling is indeed increasing, however the number of exploration wells drilled offshore is in decline. This is clear evidence of the increasing costs of exploration activity. The average offshore exploration well now costs over $130 million to drill. In 2003, the average cost was $8.8 million.

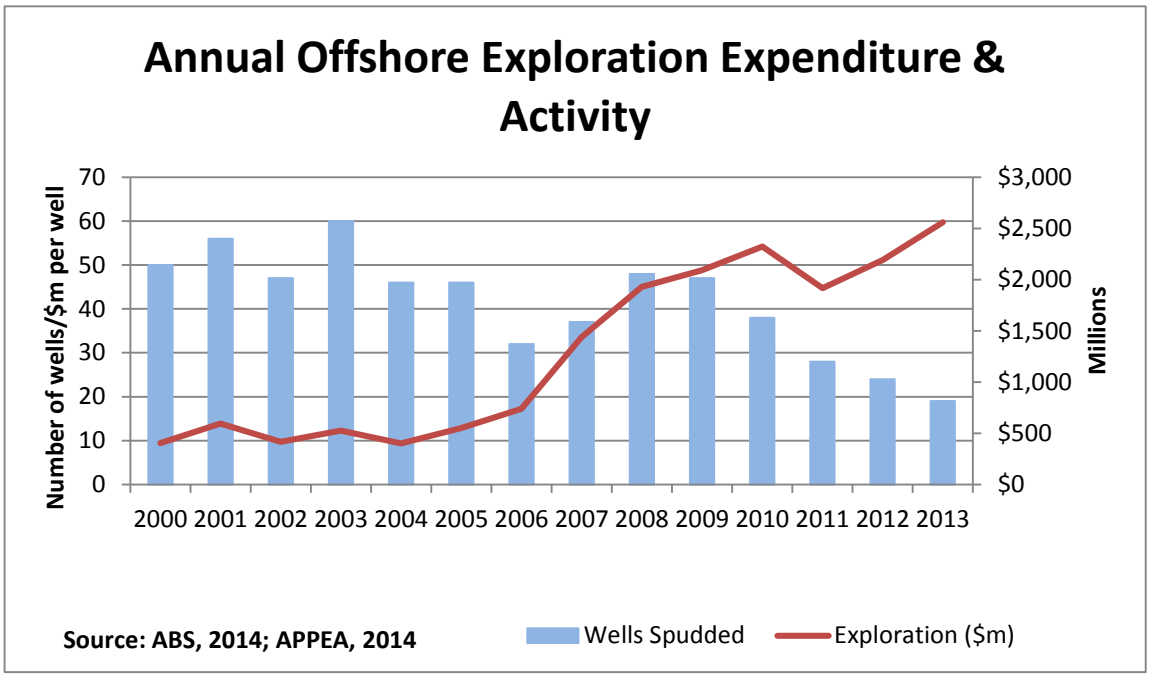
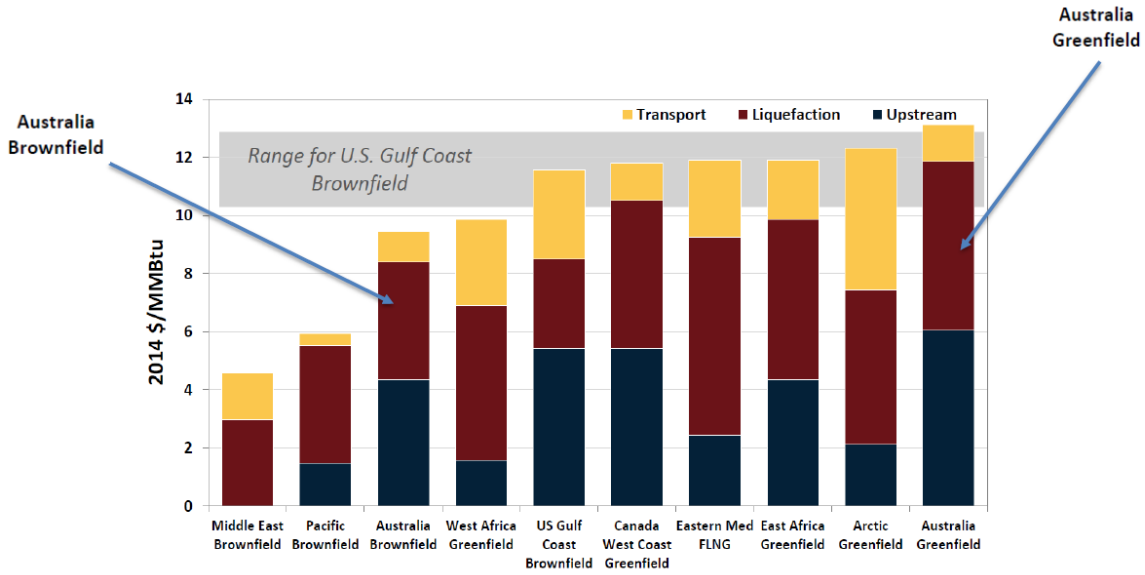


Figure 1 Annual Offshore Exploration Expenditure & Activity, 200-2013

Similarly, Australia is at the top of the cost curve for bringing gas to market. As shown in Figure 2, Australian greenfield LNG projects can be almost double the cost of new LNG competitors in East Africa, North America and other locations.



Source: IHS Inc. (2014)
Based on Japan delivery. Discount rates - 12% Upstream, 10% Liquefaction

Figure 2 Cost of supply of LNG projects targeting Asia-Pacific

Cost challenges are not unique to the oil and gas industry; many Australian industries are facing global competitive challenges, most notably in specific sectors (for example automotive and aluminum) of the Australian manufacturing industry. Indeed Alcoa recently told a WA business forum that it was cutting jobs from its local operations and pushing all of its contractors to reduce their rates by 12 per cent to improve efficiency and productivity[9]. In this context, the most recent defence of WA's interventionist gas reservation policy by the Department of State Development stating that "*Projects in this State continue to reach final investment decision …with a negotiated domestic gas commitment*"[10] is increasingly unrealistic given current cost pressures. This defence also misses the key point that to the extent projects reach final investment decision, they are doing so despite the gas reservation policy, not because of it.

Further gas market development

The discussion paper seeks stakeholder views on the further development of WA's gas market through trading at the wholesale level. APPEA, along with a number of other gas market stakeholders, recently provided submissions to the Independent Market Operator (IMO) on a proposal to introduce a government regulated wholesale gas market in WA.
Rather than repeat our comments here, APPEA's submission to the IMO is provided at Attachment 1.

[9] See: www.businessnews.com.au/article/Alcoa-squeezes-contractors.
[10] See: www.dsd.wa.gov.au/documents/Prospect_September_November_2013.pdf.

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Conclusion

APPEA appreciated the opportunity to provide comments on the Discussion Paper. To discuss any aspect of APPEA's submission, please contact Mr Adam Welch – Senior Policy Adviser at awelch@appea.com.au or 9426 7205.

Yours sincerely

Damian Dwyer
Director – Economics

Encl

Attachment 1

Provided as a separate file.