Submission No 28

INQUIRY INTO THE SUPPLY AND COST OF GAS AND LIQUID FUELS IN NEW SOUTH WALES

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Inquiry into the supply and cost of gas and liquid fuels in New South Wales

Summary

APA Group (APA) welcomes the opportunity to lodge the following submission to the Inquiry into the supply and cost of gas and liquid fuels in New South Wales, initiated by the New South Wales Legislative Council.

A number of issues currently impact the supply and cost of gas in NSW are related to market and policy dynamics. These are outlined below.

The primary driver of the forecast medium term tightness in gas supply is as a result of the significant changes to the gas market structure being driven by the development of Liquefied Natural Gas (LNG) export facilities in Gladstone. Uncertainty over the sufficiency and availability of gas for the domestic market as a result of the tripling of east coast gas demand driven by the export facilities has meant that users have not been able to confidently enter into longer term supply agreements.

This uncertainty is largely driven by the absence of information on upstream reserves and supply commitments. Recent gas market reform activity has focused primarily on the downstream sector; with the current uncertainty, now would be a good time to look at options for greater upstream transparency initiatives.

The other primary cause of the tightness of supply is the inability for resource companies to respond to pricing signals to increase gas supply. There are more than adequate gas reserves for both domestic and LNG demand for the foreseeable future outlook; the challenge is getting that gas out of the ground. However, development of unconventional gas resources in NSW and Victoria is being prevented by regulatory barriers. It is these barriers that need to be removed so the market forces can, with appropriate environmental oversight, come into play.

There has been substantial reform in the downstream gas market including the introduction of the Gas Bulletin Board, Short Term Trading Markets in Sydney, Adelaide and Brisbane, Wallumbilla Supply Hub, and introduction of capacity trading facilities. These reforms need to be, and are being, built upon with further market-led developments. However, outside of these initiatives, APA does not see any further meaningful market reform options focusing on the transmission sector that would assist with the current tightness of supply or pricing pressures.

2. Introduction

2.1. About APA Group

APA Group (APA) is Australia's largest natural gas infrastructure business, owning and/or operating $12 billion of energy assets. Its gas transmission pipelines span every state and territory in mainland Australia, delivering approximately half of the nation's gas usage.

Relevant to NSW, APA owns and operates the Moomba to Sydney Pipeline (MSP), connecting the Sydney market with gas sourced from the Moomba basin and Queensland reserves. In addition, APA owns and operates the Interconnect pipeline, which connects the Victorian transmission system with the MSP, allowing for gas from the Otway and Gippsland Basins to be transported into NSW. APA owns and operates two other pipelines serving regional and rural communities in New South Wales, being the Central Ranges Pipeline to and the Central West Pipeline.

APA also owns and operates distribution assets in NSW, specifically the Tamworth network with approximately 2000 customers. Further, APA operates Australian Gas Network's (previously Envestra) Albury and Country Energy networks and Allgas' Tweed area network. These assets are shown in Figure 1 below.

Figure 1: APA gas investments in New South Wales

2.3. Benefits of Natural Gas

Natural gas is a key fuel for the transition to a low emission economy.

Whilst natural gas is a fossil fuel, it is more greenhouse efficient than coal or oil, with its emissions intensity being half that of black coal and a third that of brown coal. It is the cleanest burning of all fossil fuels. It is colourless, odourless, and non-toxic.

Natural gas provides low emission energy for applications ranging across home appliances, vehicles, commercial buildings, through to large industrial processes.

Natural gas is a suitable fuel for a range of distributed generation technologies including conventional engines, fuels cells, micro-turbines, co-generation and tri-generation.

The use of natural gas provides for a potential reduction in electricity network investment (and thus downward pressure on electricity tariffs for consumers), by using gas in greenfield and brownfield developments. This not only includes gas in conventional cooking, heating and hot water applications, but also used for innovative applications such as gas powered tri-generation and gas powered air conditioning.

Gas also has a part to play in driving energy efficiency, as evidenced by the recent NSW government's decision to include gas in the NSW Energy Savings Scheme (ESS). The government press release[1] announcing the changes, noted that the inclusion of gas would help NSW households and businesses to save energy and help to further reduce the pressure on energy bills.

2.4. Development of gas market over last decade

The Australian gas market has experienced significant development in the last decade. Starting from a fragmented market characterised by point-to-point (single basin to demand centre) gas supply, the south east Australian market is now highly interconnected with most major centres served by more than one pipeline, and gas able to be sourced from multiple basins to meet demand.

This development is shown in Figure 2 below, which compares the interconnectedness of the south east Australian gas market prior to 2002 to that now. Of particular note, the construction of the Eastern Gas Pipeline and the Interconnect Pipeline have directly linked the Melbourne and Sydney markets, the SEAGas Pipeline has linked the Melbourne and Adelaide markets, and the BassGas and South West Queensland pipelines have respectively linked the Tasmanian and the Queensland markets to the south eastern gas market.

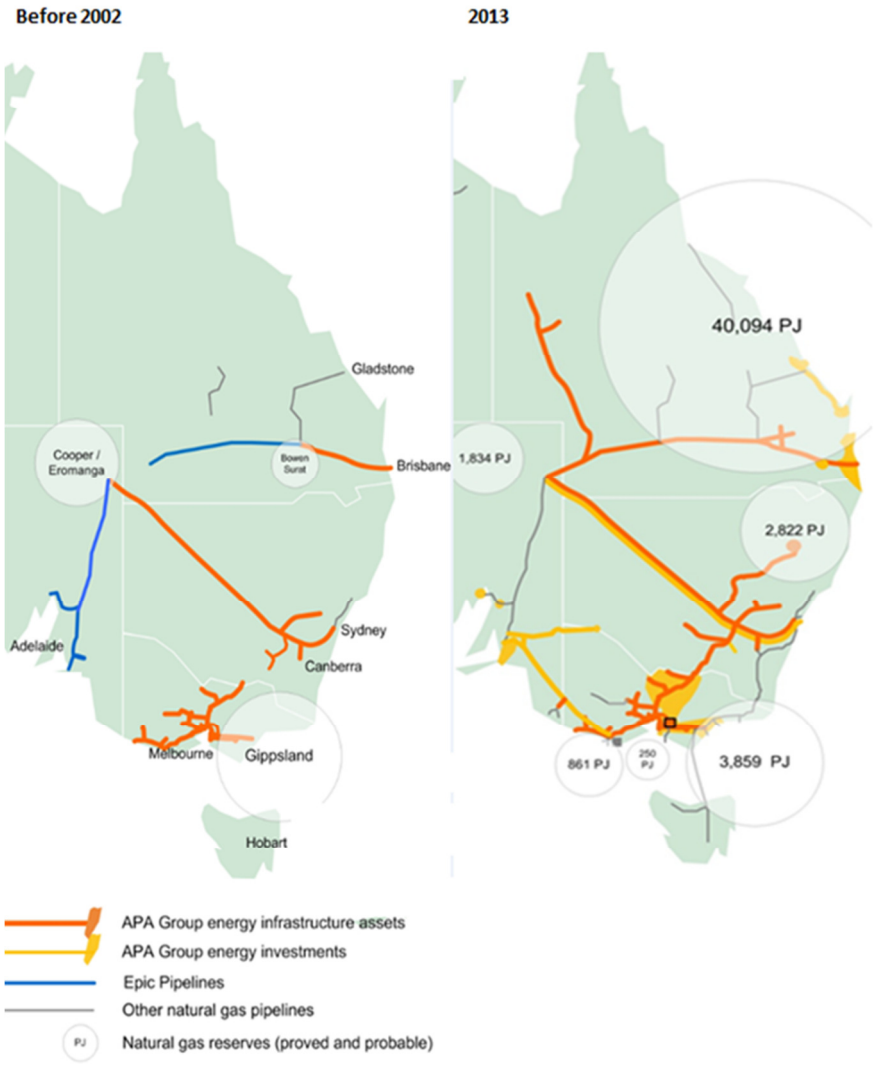
This interconnectivity has created the potential for basin-on-basin competition, providing scope for shippers to diversify their gas portfolios as existing long term contracts expire. In addition, new major gas production regions have emerged through the development of coal

[1] NSW Media Release – World Leading Scheme to Help Reduce Gas Bills, 11 November 2014

seam methane reserves in Queensland, and potential for similar development in New South Wales, further enhancing diversity in the south eastern gas grid.

However, while the increased interconnectedness of the east coast gas market has brought with it benefits associated with basin on basin competition, it has also directly contributed to the current tightness of supply facing the east coast of Australia. This has arisen because the once in a generation increase in demand associated with the Queensland LNG facilities is able to be, and is in fact being, sourced from any part of the east Australian gas market.

Figure 2 – Gas pipelines and reserves before 2002 compared with 2013



3. Responses to the Inquiry Terms of Reference

3.1. Scope of the Inquiry

APA notes that in mid-2013 the State and Regional Development Committee of the New South Wales Legislative Assembly initiated a review of the downstream gas supply and availability in NSW. APA lodged a submission into that inquiry noting, among other things, that the inquiry was limited to downstream gas supply and pointed out the critical importance of assessing the dynamics in the upstream sector in order to understand the market as a whole. APA is therefore pleased to see that this inquiry is assessing what APA believes is the key issue, being the factors affecting upstream supply and cost of gas in NSW.

The primary focus of this submission is on the supply and cost of natural gas, however APA recently lodged a submission on the Commonwealth Energy Green Paper which provided some views on liquid fuels. This component of the submission is provided at Attachment A.

3.2. Factors affecting supply and demand

a) *The factors affecting the supply, demand and cost of natural gas and liquid fuels in New South Wales*

To best understand the factors affecting the supply, demand and cost of natural gas in New South Wales, it is first necessary to understand how the natural gas market has evolved over recent times. The above section has already talked about the investment in interconnecting pipelines that has allowed basin on basin competition which, while bringing many benefits, has also had the undesirable effect of contributing to the current supply tightness.

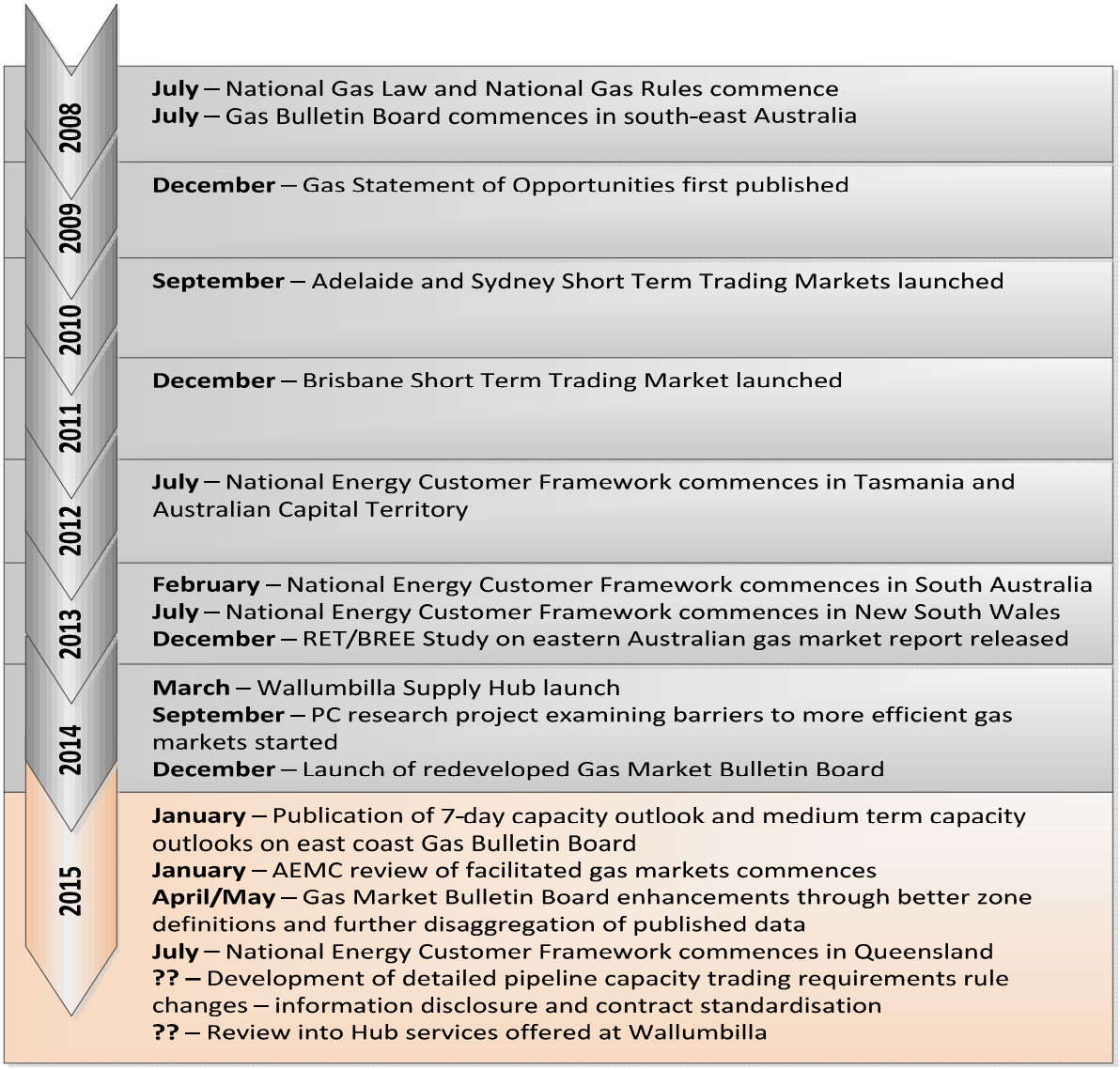
The following section provides an overview of recent downstream and upstream regulatory reforms, identifies some current regulatory impediments to on-shore gas exploration and supply and is followed by some recommendations on further reform opportunities.

Downstream gas market development

Market reforms to date have focused on improving competition and regulation in the downstream sector.

There have been a number of recent interventions intended to improve market transparency, asset utilisation, and the ability for smaller users to enter the market. These are set out in the timeline in Figure 3 below.

Figure 3 – Government interventions in gas market since introduction of National Gas Law in 2008



Of particular note in this timeline is the recent implementation of the Short Term Trading Markets (STTMs) in Sydney and Adelaide, which commenced on 1 September 2010, and the Brisbane STTM, which started on 1 December 2011. These reforms were intended (amongst other things) to provide greater opportunities for market participants to trade gas, thereby increasing competition in both the upstream and downstream markets.

Further, the Wallumbilla gas supply hub started on 20 March 2014. The COAG Energy Council has also agreed to implement policy options to support trading of pipeline capacity through increased information transparency and the development of a standardised capacity trading contract. APA notes that these options will be implemented alongside market-driven initiatives to support pipeline capacity trading.

Upstream gas market development

There is currently considerable debate about the medium term outlook for eastern Australian gas supply and demand, and therefore gas pricing. This is as a result of the significant changes to the gas market structure being driven by the development of Liquefied Natural Gas (LNG) export facilities in the east coast of Australia.

While the rapid expansion of gas exploration and production to support LNG export contracts creates significant opportunities for domestic gas market development, there is a high degree of uncertainty over the degree to which investments in new gas production will be able to meet LNG contracted amounts in the short to medium term. In fact, on 8 December 2014, the Asia-Pacific head of French oil major Total, Mr Jean-Marie Guillermou, which has a 30% interest in the GLNG Project said[2]:

> *"The only problem we have with GLNG: it's not a problem regarding the project; it is the problem of the amount of gas," Mr Guillermou said in an exclusive interview. "We have been losing reserves because of the too-high price."*
>
> *The Santos-led GLNG venture has struck several deals to buy gas from other companies that will feed the huge LNG venture, and Mr Guillermou said it was "not a secret" that it is also negotiating with the Arrow venture owned by Shell and PetroChina to access their gas."*

This is the first time that any of the Queensland LNG producers have publicly recognised the difficulties in obtaining necessary gas supplies to meet their contractual LNG commitments.

However, other than this rare insight into the current gas supply position with respect to the GLNG Project, there is a lack of transparency over gas sufficiency and availability which was particularly highlighted as a driver of uncertainty and costs in the domestic market in the Energy Green Paper released in September 2014 and the Eastern Australian Domestic Gas Market Study released in December 2013.[3][4]

Impact of upstream market changes on downstream market

Uncertainty over the sufficiency and availability of gas for the domestic market in the short to medium term has meant that gas users have not been able to confidently enter into longer term supply arrangements with producers. As a result, shippers are generally unable to commit to longer term infrastructure investments in their own plant, or in transportation services.

Therefore, while the growth of the market provides opportunities, the lack of transparency upstream may be negatively impacting efficient investment in dependent industries that may inhibit future economic growth. Even in cases where the domestic gas price is expected to rise, shorter term uncertainty over gas availability, and potentially higher prices than are otherwise justified due to a lack of information in the market, may be causing businesses to react to inefficient short term signals, to the detriment of the Australian economy.

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[2] Australian Financial Review, 8 December 2014, pg. 1
[3] Australian Government 2014, Energy White Paper, Energy Green Paper 2014, September, p 42
[4] Australian Government 2013, *Eastern Australian Domestic Gas Market Study*, December, p 36

Improving gas market function

Reform in the upstream sector

From APA's perspective there has been very limited reform activity in the upstream sector in recent years. It appears that this is beginning to change, with the most recent COAG Energy Council Communique and associated Australian Gas Market Vision highlighting the need for greater information transparency in respect of upstream gas resources, recognising that past efforts have focused on information disclosure in the downstream sector.[5]

While APA supports these initiatives, it also agrees with the conclusions in the Commonwealth Government's recently released Green Paper on the Energy Market (Green Paper) that the eastern Australian gas market is not 'broken'. Current price movements are a function of changing market dynamics brought about by demand from the LNG projects at Gladstone, and the current market volatility (with very low short term gas market prices, and high longer term gas contract prices) can be expected to ease. At the same time, a new price equilibrium will be found, which will undoubtedly be higher than historic norms.

While there does not appear to be a case for pronounced government market intervention, this does not mean that there are not actions that could be taken to improve the operation of the upstream gas market, in particular its transparency and depth, as discussed below.

Upstream gas availability and price transparency

A clear response to a tight gas supply/demand balance, leading to high prices, is to take action to increase gas supply and competition. This involves looking at options for both supporting the development of further gas supplies (including unconventional gas), and diversifying the ownership and marketing of that supply to stimulate further price competition.

There are more than adequate gas reserves for both domestic and LNG demand for the foreseeable future outlook. The challenge is getting this gas out of the ground and into the market in time to meet demand. Production on the east coast of Australia is increasing with new developments, upgrading existing infrastructure and pipeline expansions as well as construction of new LNG storage facilities. However, development of unconventional gas resources in NSW and Victoria is being prevented by bans and moratoriums on exploration and development of coal seam gas.

As the NSW Chief Scientist and Engineer found in her comprehensive review of the CSG industry, the risks of gas development can be effectively managed with the right regulation, engineering solutions and constant learning through monitoring and research.

APA also notes the recently released NSW Gas Plan: Protecting what's valuable, securing our future. APA considers it a positive that the NSW government has accepted the recommendations of the Chief Scientist and clearly articulated a way forward for assessing

[5] COAG Energy Council 2014, Australian Energy Market Vision, p 3

the appropriateness of CSG production in NSW. It is also pleasing to see increased certainty for Narrabri, Gloucester and Camden.

APA supports recent policy announcements to improve transparency in the upstream sector in regards to supply and capacity. APA believes that this transparency should be provided through publication of data on the redeveloped Gas Market Bulletin Board.

Any movement towards improved upstream transparency needs to be well-targeted and recognise there are aspects of commercial confidentiality that are appropriately protected. In this environment, however, there is also information that should be available to support gas market function, in particular information regarding gas availability and market-based prices.

While improved transparency over gas supply and availability (including information on gas reserves and production facility capacities) may require regulatory change to bring about, APA believes options to improve price transparency should focus on the operation of markets (such as the Wallumbilla gas supply hub) and the development of trusted price indices, rather than the publication of confidential contract prices. Both of these developments are likely to support the development of more liquid secondary trade of gas, as well as financial hedging products, which will improve the overall competitiveness of the gas sector.

APA considers the following minimum additional transparency initiatives should be implemented for the upstream industry:

- Data on gas reserves and production rates
- Aggregate LNG processing facility ramp-up rate;
- Aggregate LNG CSG production ramp rate against contractual commitments; and
- Aggregate LNG commercially committed ramp rates.

Any further information on gas pricing that avoids confidentiality issues should also be pursued.

Adequacy of pipeline infrastructure to meet NSW demand

It is important to note that the current tightness of gas supply on the east coast of Australia, and NSW in particular, is not linked to shortages of available pipeline capacity. In the case of NSW, it has sourced 95% to 100% of its gas requirements from interstate sources since the inception of the gas market. Historically, 100% of NSW gas supplies were sourced from the Cooper Basin in South Australia, and delivered to NSW by the Moomba to Sydney Pipeline (MSP). In 2000 this supply was supplemented with gas from off-shore Victorian basin and supplied through the Eastern Gas Pipeline. In the late 1990's additional pipeline capacity was added with the Interconnect which joins the Victorian Transmission System to the MSP at Culcairn in Southern NSW.

Current NSW peak demand is in the vicinity of 600TJ/d. The combined capacity of the MSP, EGP and Interconnect is approximately 800TJ/d. APA is also in the process of expanding the

Interconnect which will result in a 145% increase in capacity in a northerly direction through the Interconnect into NSW. So as can be seen, the tightness of supply is not a physical pipeline constraint issue, rather, it is one of physical gas commodity tightness.

Pipeline information transparency

Daily information on east coast gas pipeline utilisation has been published on the Gas Market Bulletin Board since 2008. This information, however, is difficult to access due to the structure of the Bulletin Board operated by the Australian Energy Market Operator (AEMO). These shortcomings are in the process of being addressed, as the Bulletin Board is currently being redeveloped to improve the accessibility of available data, and to improve its useability and relevance to the market. APA is a key participant in this process.

To further improve available information in respect of pipeline use and capacity trading, APA has developed a capacity trading website (capacitytrading.apa.com.au) to support its new facilitated capacity trading service. The website lists all major APA east coast connected pipelines, and provides daily information on:

- Pipeline nameplate capacity;
- Daily capacity;
- Contracted capacity;
- Daily nominations;
- Daily utilisation;
- Available capacity;
- Secondary capacity on offer;
- Daily secondary capacity traded; and
- Average annual capacity traded.

APA intends to continue to explore opportunities to expand its website in respect of the scope and accessibility of information to further support the market.

APA also made a comprehensive submission to the COAG Energy Council Consultation Paper on information to support enhanced capacity trading. APA's submission, alongside that prepared by the Australian Pipeline Industry Association (APIA) on behalf of the gas transmission sector, included suggestions for additional information that could be published on the Gas Market Bulletin Board, including details of spare (uncontracted firm) pipeline capacity for all pipelines, and a list of the holders of gas transportation contracts on each Bulletin Board pipeline. APA considers that these two additional areas of transparency would further support pipeline capacity trading and the development of the gas market more generally.

Outside of these market led pipeline transparency solutions, APA does not see any further meaningful market reform options focusing on the transmission sector that would assist with the current NSW tightness of supply or pricing pressures.

3.3. Impact of tight supply and increasing cost

b) The impact of tight supply and increasing cost of natural gas and liquid fuels on New South Wales consumers, including manufacturing, agriculture, energy production, small business, public services and household consumers

As a supplier of natural gas, rather than a consumer, APA is not directly impacted in a pricing sense from the tightness of supply facing New South Wales consumers. However, anecdotal evidence certainly suggests that the current tightness of supply and the lack of transparency generally, have the potential to result in inefficient decision making.

As noted above, uncertainty over the sufficiency and availability of gas for the domestic market has meant that gas users have not been able to confidently enter into long term supply arrangements with producers. Those supply arrangements that are being entered into are of much shorter duration than was historically the case, meaning less certainty of long term supply and pricing for our customers. This is manifesting itself into shorter term gas transportation agreements as shippers almost invariably choose to link the term of the gas supply agreement with the term of the transportation agreement.

3.4. Commercial conduct of the gas producers

c) The commercial conduct of gas producers and the operation of the international and domestic gas markets.

APA is not in a position to comment on this matter.

3.5. Commonwealth and State cooperation

d) The adequacy of Commonwealth and State Cooperation in gas market regulation.

APA does not see that there is a significant issue in terms of adequacy of Commonwealth and State cooperation as it relates to increasing gas supply to the east coast of Australia. What is important is the regulatory framework in NSW and Victoria that is preventing the exploration and development of unconventional on-shore gas reserves.

That said, from a pipeline construction or expansion perspective, there are some inefficient approval processes that would be beneficial if they were removed.

Inefficient approval processes

Any project involving the construction or expansion of a gas transmission pipeline will be subject to a range of technical, safety, land use, environmental and cultural heritage requirements and approvals.

The time required to prepare for and gain necessary approvals can add 12-18 months to project timelines before construction can start. These approval timelines can be expected

where pipelines cross state boundaries, and involve multiple government agencies at both the state and federal level. Many regulatory requirements are overlapping and duplicative, even within jurisdictions.

In addition to the costs of complying with this regulatory overlay, the broader economy can also bear costs through less timely investment that leads to higher costs and market inefficiencies.

Possible improvements to approval processes

APA's experience is that approval processes are significantly improved where there is coordination between approval bodies.

Without this coordination, there can be considerable overlap and very unclear boundaries between state departments and units, particularly in respect of environmental planning and approvals. This impacts requirements for surveys and environmental management plans in particular, which can be overlapping and duplicative, and is exacerbated where regional authorities, such as road and rail, also have requirements for environmental and other approvals, along with bespoke requirements from multiple local councils.

There are also unclear boundaries between state and federal bodies, in particular the trigger for the Environmental Protection and Biodiversity Act which can lead to additional survey and management requirements that can delay approval processes. The overlapping jurisdiction and lack of certainty over which laws will apply means that tasks such as survey work is often completed as if the highest level of approval has been triggered (even where this trigger is unlikely to occur), which adds significantly to costs, as the delay of having to repeat surveys (which are often seasonally dependent) can add twelve months to an approval process.

More streamlined processes, where environmental approvals are managed through a process with consistent requirements, would mean that survey and related work could be conducted and used for multiple parts of the approval process. This would reduce costs and the time required to gain approvals.

3.6. Regulatory responses to market fluctuations and failures

e) The possible regulatory responses to protect New South Wales gas consumers from adverse market fluctuations and failures.

APA supports the Australian Government's position as stated in the Energy Green Paper that bringing on new east coast supply as quickly as possible, and improving market transparency and competition, are the best responses to eastern gas market pressures.[6]

[6] Australian Government 2014, Energy White Paper, Energy Green Paper 2014, September, p 42

3.7. Impact of closure of liquefied fuel refineries

f) The impact of closures of liquid fuel refineries and storages in New South Wales.

See Attachment A for APA submissions to the Energy Green Paper as it related to liquid fuels.

Attachment A

APA submission to the Energy Green Paper as it relates to liquid fuel security

According to the Energy White Paper 2012, the transport sector is the largest end user of energy in Australia, consuming over a third of final energy. Road transport is also expected to double by 2050 and growth in light commercial vehicle and heavy truck activity is expected to be faster than private and passenger vehicles. The Energy White Paper 2012 also states that LNG and CNG have great potential in transforming the heavy-duty vehicle sector.

Australia's transportation sector is heavily reliant on imported fuels. According to the Energy White Paper 2012, Australia in 2010-11 imported 83% of its crude oil and other refinery feedstock. Some estimates in the market place suggest that due to further closures of domestic refineries Australia's reliance on imported transport fuels could shift towards 100% in the near future.

The Green Paper states "supply is maintained using domestic refineries, crude oil and refined product import terminals, and other stockholding facilities. Most of the supply chain is mobile, with about one-third of domestic supply at sea (at any one time) using a number of diversified and flexible shipping routes." With the Caltex Kurnell refinery converting to an import terminal in 2014, Australia has very limited domestic refining capacity for transport fuels and any disruption to the imported fuel supply chain could have significant implications to the Australian economy and potentially restricting the transport sector for extended periods.

The Green Paper states "increased domestic production of cost-competitive alternative transport fuels could strengthen Australia's liquid fuel security by diversifying supply." However currently there is no formalised transport energy roadmap to plan and facilitate the development of cost effective domestic alternatives to imported transport fuels.

APA has been working with participants in the transportation and energy sectors to encourage the Federal Government to prepare a comprehensive transport energy plan for Australia. A major component of this plan should consider alternative transport fuels, such natural gas, to mitigate exposures from supply disruptions to imported transport fuels and to realise environmental benefits.

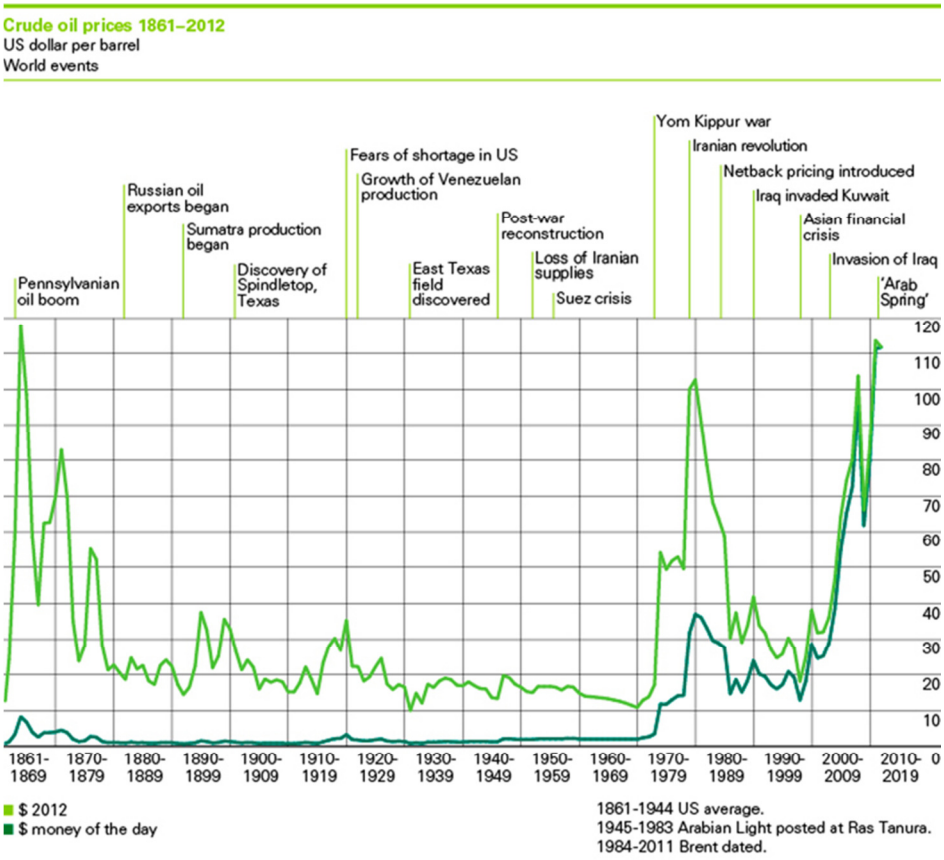
Natural gas can be used as a fuel for vehicles when it is liquefied (LNG) or compressed (CNG). When used as a substitute for diesel fuel in transport applications it results in approximately 30% less full lifecycle emissions. It is particularly useful as a fuel for medium and heavy vehicles such as buses and trucks. It is already well utilised as a fuel for bus fleets in Australia.

Depending on the prevailing oil and gas price, LNG and CNG fuel alternatives are up to 50% cheaper than imported diesel fuel on an equivalent per litre basis. LNG and CNG alternatives require additional upfront equipment expenditure however over the longer-term are more attractive in terms of lower and stable fuel costs and lower emissions compared to diesel.

Analysis compiled by the NRMA states that out of 28 International Energy Agency member countries Australia is the only one failing to meet its 90-day net oil import stockholding obligations. In 2012 our net oil import stockholdings were 71 days. This places essential products and services, such as medical supplies, at risk if disruptions to imported fuel were

to occur. Figure A-1 shows the variability in the oil price. Sharp fluctuations in the oil price can also cause short-term or terminal business stress.

Figure A-1 – Crude Oil Prices



Source: BP website

The transportation sector is also a significant contributor to Australia's carbon emissions. The latest National Greenhouse Gas Inventory released shows transport sector annual emissions to March 2014 was 94.6 million tonnes and represents 17.5% of Australia's national greenhouse gas inventory (Australian National Greenhouse Accounts March 2014).

Natural gas vehicles can play a significant role in meeting emission reduction targets and also to mitigate the risks associated with the reliance on imported fuels from regions which in the past have been associated with fuel supply instability. The Energy White Paper 2012 forecasts that by 2050 biodiesel could contribute around 13% of total transport fuel consumption, natural gas 12%, bio-derived jet fuel 8%, electricity for transport 5%, and synthetic diesel 2%. If Australia is to meet these material contributions it requires a national transport roadmap that provides initial support to emerging fuels and incentives for end users to switch away from imported and higher emission fuels.

A transport energy roadmap could include a national approach to fuel excise across alternative fuel classes (LNG, LPG, CNG, biomass, etc.) where rebates are provided to fuels based on emission intensity. Other policy recommendations include technology agnostic vehicle conversion programs, uniform discounts in state road registrations for cleaner

vehicles and weight based vehicle tax relief for additional weight for “on-board” fuel storage to achieve a superior environmental performance to diesel.

A mature Australian LNG and CNG industry would provide the impetus for the transportation sector to significantly reduce diesel consumption. LNG and CNG displacing diesel can provide a cheaper and cleaner alternative while mitigating exposure to oil imports and creating local jobs to support a domestic industry. A mature domestic LNG and CNG industry could provide significant long-term cost savings to the transportation sector.