



**Energy Reform Implementation Group**

**The gas markets in Australia  
Impediments to efficient  
development**

December 2006

This report contains 58 pages

ERIG06-FinalGasMkts1912

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## **1 Executive summary**

In February 2006, the Council of Australian Governments (CoAG) established the Energy Reform Implementation Group (ERIG) to develop detailed implementation arrangements for further energy market reforms. ERIG has been asked to suggest policy measures to ensure the development of more transparent and effective energy financial markets.

To inform ERIG's recommendation to CoAG before the end of the year, ERIG has engaged KPMG to provide expert advice to facilitate the development of reliable and competitive energy markets. This report focuses specifically on the gas market and any impediments to its development.

The Australian wholesale gas markets have been, and to some degree still are, characterised by limited competition and a lack of liquidity and different regulations and rules between jurisdictions. Over the past 5 years there have been a number of studies undertaken on the issues impacting the development of the gas market. Notwithstanding this there are still a number of key issues and challenges that are impeding the further development of the Australian gas wholesale market.

We have considered these previous findings and studies to gain a greater understanding of the Australian wholesale gas markets. In particular we performed an analysis on how the issues raised as impediments to gas markets have been gradually resolved through the years. Our findings are backed by evidence (where possible) gathered during interviews or discussions with industry participants.

The Ministerial Council on Energy (MCE) has supported the gas industry's preference for an industry-led approach to market development through the establishment of the Gas Market Leaders Group (GMLG). In June 2006 GMLG released a National Gas Market Development Plan (GMDP) which addressed the available policy options capable of delivering benefits in terms of transparency and lowering barriers to market entry in the downstream gas market.

The recommendations of the GMLG represent the best next step in the process of gas reform towards delivering on the ultimate objective of increased competition, in accordance with the MCE Principles. The market is ready for this next step and it is wholly consistent with the evolution of a competitive wholesale gas market. This is supported by the high degree of alignment in the market participants' views of the GMDP.

No useful purpose is to be gained from the forced or accelerated introduction of secondary financial markets beyond that which is allowed to evolve through the mechanisms described previously.

Notwithstanding this, standardisation of the market structures, conventions and systems should be encouraged to the maximum extent possible to provide the appropriate platform to efficiently develop a secondary financial market.

Entrenched authorisations or state exemptions for joint marketing and joint selling by upstream joint venture gas producers necessarily reduces the efficacy of the GMLG proposals to increase gas market liquidity. The removal of such authorisations or state exemptions is unlikely to

occur without intervention. We recommend further work on how these impediments can be addressed.

The GMLG development plan should be endorsed. Specifically:

- the industry should be instructed to commence implementation;
- the Government should signal its willingness to contribute resources to support the GMLG processes; and
- policy guidance addressing issues identified by GMLG as requiring Government input should be provided promptly.

This is consistent with the MCE's announcement, following its October 2006 meeting, to endorse the GMLG's plan with respect to the development of a Bulletin Board (BB) and Short-term Trading Market (STTM).

To optimise the GMLG's process the Standing Committee of Officials (SCO) needs to promptly deal with the MCE's request to provide advice on the GMLG's suggestion to form a national Gas Market Operator to administer the BB and STTM and to decide if this function should be merged with the National Electricity Market Management Company (NEMMCO).

It is reasonable to expect that the GMLG will require other policy guidance from time to time. The MCE and SCO need to develop a streamlined process for providing such advice.

#### **Summary of key recommendations**

- The GMDP in its entirety should be endorsed by ERIG.
- The development of secondary financial markets should be encouraged to evolve on its own through the short-term trading market mechanism.
- Future policies should encourage standardisation to the maximum extent possible.
- SCO must formally advise MCE on the formation of a national Gas Market Operator (including if this function should be merged with NEMMCO) to prevent delays to the recommendations of the GMDP.
- Further work needs to be undertaken on upstream issues, including the current prevalence of joint marketing arrangements which may restrict competition.

## **2 Introduction**

On 10 February 2006 COAG established ERIG chaired by Mr Bill Scales AO and including industry experts (Mr Geoff Carmody, Mr Alan Rattray and Mr David Swift) to develop detailed implementation arrangements for further energy market reforms.

ERIG must report back to COAG before the end of 2006 with proposed policy measures to:

- achieve a fully national transmission grid;
- address any structural issues affecting the competitiveness of the sector; and
- ensure that there are transparent and effective financial markets to support energy markets.

ERIG's report will set out the case for or against further policy measures.

On July 2006 ERIG published an Issues Paper and it received over forty submissions.

ERIG has engaged KPMG to assist it in formulating its views in the financial markets area by examining three issues in further detail:

- the electricity trading market and any impediments to its development;
- the capital market and any impediments to investment in the energy sector; and
- the gas market and any impediments to its development.

This report addresses the third of these issues.

### **2.1 Scope of work**

KPMG was engaged to:

- Examine the extent to which a lack of market transparency is acting as a barrier to new market entry and is thereby impeding enhancement of competition as the cornerstone of the development of a national gas market; and
- Identify any other aspects of the gas market which are acting as barriers to new market entry and thereby impeding the development of a national gas market.

In particular, ERIG is seeking supporting evidence and examples to confirm that market transparency and any other issues identified are major impediments to the development of the gas market.

Appendix C contains our specific terms of reference.

## **2.2 Approach**

To undertake this assignment we have performed the following tasks:

- Data gathering and desktop research (the consideration of previous submissions, studies and findings on the subject);
- Stakeholder consultation (discussions with a sample of market participants across the gas industry);
- Issue identification and analysis (determination of issues raised by market participants and examination of evidence);
- Determined policy implications (assessment of how these issues will impact on future market policies);
- Reporting and feedback (drawing conclusions and reporting on our findings).

We have interviewed thirteen gas market participants including representatives from producers, retailers, consumers, pipeliners and market operators. We conducted the interviews under ‘Chatham House’ rules and therefore do not attribute comments we report.

ERIG has stressed its interest in factual material that supports any assertions made regarding impediments to investment. Our analysis therefore focuses on what participants believe are the most significant impediments and, in particular, on the evidence to support those beliefs. The participants we interviewed often produced strong anecdotal material to support their views, but less analytically verifiable evidence. We do not believe this is surprising given the current stage of development of the gas market. We also asked participants to provide details (where possible) on the nature and extent of any gas trading activities they currently undertake.

## **2.3 Outline of report**

This report provides the output of our analysis. In particular:

- Section 3 outlines the attributes of the Australian wholesale gas market, including a discussion on the current state and future developments;
- Section 4 identifies the issues impeding the development of the gas market;
- Section 5 outlines how the National Gas Market Development Plan addresses these issues;
- Section 6 discusses the importance of standardisation in promoting the development of the gas market;
- Section 7 discusses the purpose and recommendations made in the National Gas Market Development Plan, a key document within the current gas reform agenda; and

- Section 8 discusses the issues which may warrant a policy response and provides possible policy responses which can be carried forward.

There are seven appendices:

- Appendix A provides a background to the Australian energy sector and sets the context for this report;
- Appendix B outlines past studies and findings which will help provide a greater understanding of the Australian wholesale gas market;
- Appendix C summarises our Terms of Reference;
- Appendix D outlines the stakeholders we have consulted with;
- Appendix E provides an outline of the questionnaire we used to facilitate our consultations with stakeholders;
- Appendix F contains a glossary of key terms; and
- Appendix G contains a list of detailed references used within this report.

## **2.4 Disclaimer**

### *Inherent Limitations*

This report has been prepared as outlined in section 2. The procedures carried out in preparation of this report constitute neither an audit nor a comprehensive review of operations.

No warranty of completeness, accuracy or reliability is given in relation to the statements and representations made by, and the information and documentation provided by the officers of the Department of Industry, Tourism and Resources (DITR) providing a Secretariat Service to the Energy Implementation Reform Group who were consulted as part of the process.

KPMG has indicated within this report the sources of the information provided. We have not sought to independently verify those sources unless otherwise noted within the report.

In the course of our work, projections have been prepared on the basis of assumptions and methodology which have been described in our report. It is possible that some of the assumptions underlying our projections may not materialise. Nevertheless, we have applied our professional judgement in making these assumptions, such that they constitute an understandable basis for estimates and projections. Beyond this, to the extent that certain assumptions do not materialise, it must be appreciated that our estimates and projections of results will vary.

KPMG is under no obligation in any circumstance to update this report, in either oral or written form, for events occurring after the report has been issued in final form.

The findings in this report have been formed on the above basis.

#### *Third Party Reliance*

This report is solely for the purpose set out in section 1 of this report and for DITR which includes the use of this information in the Energy Implementation Reform Group's ongoing consultation process. The draft report is not to be used for any other purpose or distributed to any other party without KPMG's prior written consent.

This report has been prepared at the request of DITR in accordance with the terms of KPMG's engagement letter/contract dated 26 July 2006. Other than our responsibility to the DITR, neither KPMG nor any member or employee of KPMG undertakes responsibility arising in any way from reliance placed by a third party on this report. Any reliance placed is that party's sole responsibility.

### 3 Australia's wholesale gas market

This next section discusses the attributes of the Australian wholesale gas market. A thorough understanding of the gas market is essential in the development of appropriate policy responses.

#### 3.1 Comparison of market pre-reform or privatisation

The following table aims to provide a snapshot of the Victorian<sup>1</sup> gas markets before and after reform or privatisation. It is important to note that many commentators and participants in 1997 claimed that the industry structure at that time was appropriate if not optimal. Pro-competitive reform was characterised as unnecessary and creating more costs than benefits.

These views notwithstanding, it is evident that the gas market has developed and evolved significantly, with much denser infrastructure, new sources of gas supply, integration with the electricity market and the introduction of full retail contestability (FRC).

Table 1: The gas market in Victoria before and after reform

Features	Pre-1998	Now
Basins	1	3 +
	Gippsland	Gippsland, Otway, Bass Part physical / synthetic connection to other SE Australian basins
Gas producers	1	4 +
	Esso/BHP	ExxonMobil/BHPB, Santos, Woodside, Origin and smaller interests
Transmission pipelines	1	4
	Longford to Victorian load centres	Longford to Victorian load centres, Eastern Gas Pipeline, SEAGas, Culcairn Interconnector
Retailers	1	Many
	Gas and Fuel	AGL, Origin Energy, TRU Energy, Energy Australia, Victoria Electricity, Energex, and Ergon Energy
FRC	None	Yes – implemented in October 2002
Storage facilities	None	1
		Western Underground Gas Storage (TRU Energy) gas storage facility at Iona
Gas-fired generation	2	5+
	Newport and Jeeralang	Newport, Jeeralang, Valley Power, Somerton, Laverton (soon to be commissioned) and Bairnsdale.

<sup>1</sup> The Victorian market was chosen as an example as it is by far the most sophisticated gas market nationally.

As evidenced by the table above the Victorian market has changed significantly since the original reforms and privatisation. Other markets have similarly developed and changed (albeit to a lesser extent). These changes are a reflection of the success of the previous reforms and can be viewed as the starting position for subsequent reform initiatives.

## **3.2 Recent developments**

The Australian wholesale gas market has developed considerably in recent years. Some changes have been driven by Government reforms whilst others have been industry-driven. In particular, recent developments have included:

- new pipeline infrastructure;
- new sources of gas supply;
- full retail contestability / market development;
- new gas storage facilities; and
- increase in gas-fired electricity generation.

The impact of these changes has driven the need for and desire by certain sectors within the market to develop a more liquid and transparent market for gas. These trends will provide many of the fundamentals to enable a more sophisticated trading market to develop.

### **3.2.1 New pipeline infrastructure**

Prior to 1998, there were no interconnecting pipelines between supply basins. Each state had its own isolated State gas supply with Tasmania (TAS) having no gas supply at all.

Since 1997, more than 6,800km of new gas transmission pipelines and spur lines have been constructed involving an investment of almost \$3 billion<sup>2</sup>. New pipelines have now been constructed to interconnect new and existing gas supply basins with demand centres in South Eastern Australia (e.g. Eastern Gas Pipeline, SEAGAS pipeline, Tasmanian Gas Pipeline, etc).

The new pipelines have established an interconnected transmission grid in South Eastern Australia. Unlike overseas markets the grid is not in a loop structure, which provides an added level of security.

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<sup>2</sup> GMLG (2006), "National Gas Market Development Plan", *Gas Market Leaders Group report to Ministerial Council on Energy*, June 2006, p. 17

### **3.2.2 New gas supply**

At least five new upstream gas producers have commenced operations (in South East Australia) with contracts signed for supplies from Minerva, Patricia/Baleen, Yolla, Thylacine/Geographe, and other Coal Seam Methane (CSM) producers.

There is growing production of CSM in New South Wales (NSW) and Queensland (QLD) which now provides additional sources of new gas supply. PNG, North West Shelf and the Timor Sea are potential sources for future gas production.

### **3.2.3 Market development and full retail contestability**

The introduction of FRC has led to a substantial rise in the number of retailers servicing Australian gas markets. With the exception of the Northern Territory (NT)<sup>3</sup>, all jurisdictions have implemented or announced the introduction of FRC.

Market development differs nationally. Victoria (VIC) established a gas spot market since 1999 while South Australia (SA) has developed a swing gas balancing market. Both NSW and ACT have developed a balancing and reconciliation process.

### **3.2.4 Gas storage facilities**

An underground storage facility has been established at Iona in western Victoria (WUGS).

The development of pipeline park and loop facilities at interconnected pipelines now assist participants to manage load variations.

Balancing mechanisms have been developed to enable linepack use under contract for reasons such as supporting high demand requirements for peak power generation, and to compensate for periodic limited flow inlet rates from CSM gas supplies.

### **3.2.5 Gas-fired electricity generation**

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<sup>3</sup> The NT has not implemented or announced the introduction of FRC because it does not have a regulated retail gas market. The size of the market is small (less than 1000 customers) and currently only third party pipeline access arrangements are in place.

Figure 1 illustrates how gas-fired electricity generation has increased steadily over time. The proportion of gas used in electricity generation has increased from 10.6% in 1990/91 to 14.8% in 2002/03<sup>4</sup> and will continue to increase as further gas-fired generators are commissioned.

The following table and chart highlight the increase in gas-fired generation across Australia over the last 8 years. The total capacity of gas-fired generation has nearly doubled over the last 8 years and is expected to still increase significantly into the future. The most significant increase as measured in Megawatt (MW) of generation capacity has been in SA and QLD.

*Table 2: Growth of gas-fired generation in the Australian energy market*

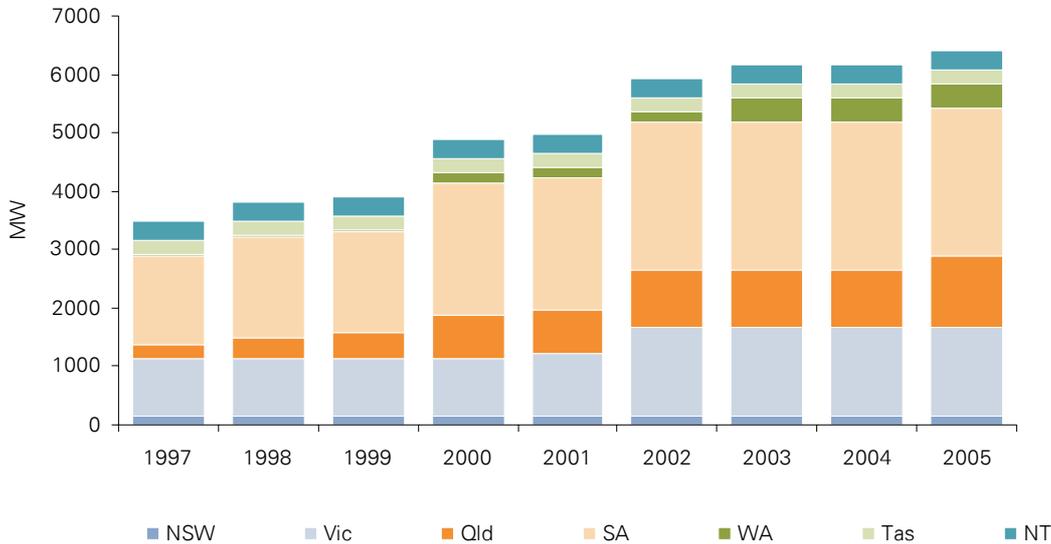
	1997	2005	Change
<b>Number of generators</b>			
• NSW	1	1	0
• Vic	2	5	3
• Qld	3	7	4
• SA	3	8	5
• WA	1	4	3
• Tas	1	1	0
• NT	6	4	-2
<b>Total</b>	17	30	13
<b>Total capacity (MW)</b>			
• NSW	160	160	0
• Vic	959	1,501	542
• Qld	250	1,217	967
• SA	1,526	2,548	1,022
• WA	21	417	394
• Tas	240	240	0
• NT	327.5	311.4	-16.1
<b>Total</b>	3,484	6,394	2,910

Source : ESAA<sup>5</sup>

<sup>4</sup> GMLG (2006), "National Gas Market Development Plan", *Gas Market Leaders Group report to Ministerial Council on Energy*, June 2006

<sup>5</sup> ESAA (2006), *Electricity Gas Australia 2006*, Energy Supply Association of Australia, Appendix 1: Power stations in Australia

Figure 1: Total capacity of gas-fired generation by state



Electricity generators require large volumes of gas within short periods and place upwards pressure on pipeline capacities and the ability to meet short-term demand requirements.

Accordingly, the convergence between gas and electricity markets is increasing. Appropriate price signalling and incentive mechanisms are required to better enable parties with both gas and electricity interests to optimise a combined gas and electricity portfolio.

Co-ordinated emergency response procedures are required to ensure that an appropriate market response is achieved allowing for the convergence of both energy types.

### 3.3 Current industry structure

#### 3.3.1 Regional energy markets

The Australian gas market now comprises of three separate regional energy markets:

- the Eastern Gas market;
- the Western Australian market; and
- the Northern Territory market.

The Eastern Gas market comprises the interconnected NSW, VIC, TAS and SA gas markets. QLD has limited interconnectivity with the eastern gas market. Within the eastern gas market,

transmission pipeline constraints exist such that there are limitations on the level of inter-basin competition.

### **3.3.2 Market participants**

The Eastern Gas market is still illiquid compared to US or European markets due to the small number of large participants in the market<sup>6</sup>, including:

- three major retailers;
- a few major transmission pipeline owners;
- limited storage service providers; and
- three major gas production joint ventures.

The market in Western Australia (WA) also remains concentrated, but to a lesser degree than the east.

### **3.3.3 Contractual arrangements**

Long-term bilateral contracts which underpin much of the infrastructure investment, cover approximately 95% of market demand<sup>7</sup>. Most of these contracts are point-to-point. The terms, prices and quantities of these contracts can vary significantly and are confidential to the parties to the transaction.

### **3.3.4 Market operations**

Short-term trading does occur in the gas markets, subject to negotiation on contract terms.

In the case of the Victorian wholesale market, participants are allowed to trade imbalances at a market price which has facilitated the development of financial derivatives.

## **3.4 Current status of gas trading**

The purpose of this section is to provide an insight into the current nature and extent of gas trading within the Australian gas market. Our discussions with participants identified that whilst still in limited volumes, significant gas trading does occur. Accordingly this is evidence that the current market structures are capable of facilitating gas trading. Notwithstanding this

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<sup>6</sup> APPEA (2005), Submission to the ACG's Options for the development of the Australian wholesale gas market, April 2005, p. 1.

<sup>7</sup> APPEA (2005), Submission to the ACG's Options for the development of the Australian wholesale gas market, April 2005, p. 2.

further developments would be required to increase the efficiency and level of gas trading. Recommendations on these developments are discussed later within this report.

### **3.4.1 Business or strategic objectives**

Long-term contracts still underpin investment in gas supplies and pipelines and account for the majority of gas supply contracts. Shorter term trades are largely for the purposes of hedging or risk management and portfolio optimisation.

Trades also take place in emergency situations where there are supply constraints.

### **3.4.2 Trading volumes**

Trading is common albeit in limited volumes with approximately 5 to 10 trades executed per year by those participants who trade. Emergencies account for 50% - 60% of these volumes and portfolio management the balance<sup>8</sup>.

Consistent with long-term contracts still underpinning 95% of gas supply and demand, gas trading typically accounts for less than 5% to 10% of participants' portfolios.

### **3.4.3 Other aspects of gas trading**

#### ***3.4.3.1 Participants who currently trade***

The participants to the current short-term trading market are large retailers, pipeliners and producers. In addition, large customers sometimes trade between themselves, with no retailer, producer or pipeliner involved. Trading occurs within all the eastern states.

#### ***3.4.3.2 Time taken to negotiate trades***

It typically takes 2 to 4 weeks to negotiate and organise trades. Naturally, larger deals with more complex legal issues can take longer than that.

It is possible to organise trades in less than one day if the situation requires it, for example during an emergency. This short timeframe is also possible if the trade is based on previous terms and conditions (other than price and volume parameters) already in place with the counterparty.

#### ***3.4.3.3 Products traded***

The current short-term trading market has largely physical based contracts. Trading occurs mainly with gas supply related products as opposed to haulage products.

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<sup>8</sup> Based on KPMG's consultations.

Locational swaps are also becoming common, one such example is a swap from East Queensland to Gippsland via a number of pipelines and gas sources.

Financial derivatives were previously offered and traded, however they largely ceased upon the takeover of Duke Energy by Alinta.

The existence of spot market within Victoria means that it has the widest variety of products traded.

### **3.5 Key future developments**

There are several key future developments in place for the Australian gas markets as discussed below. These developments need to be considered when determining possible policy implications.

- ***New pipeline infrastructure***

Significant new pipeline infrastructure is likely to be constructed to link the South Eastern Australia grid to future sources of gas supply. This will result in a more interconnected transmission grid and increased system security. PNG, North West Shelf and the Timor Sea have all been identified as possible new sources of supply. Greater interconnection between Queensland and the remainder of the Eastern Gas Market is also anticipated consistent with increased sales of CSM.

- ***Carbon tax***

The introduction of a carbon tax (or equivalent) will impact the relative cost of natural gas to other fuels and will therefore impact (almost certainly positively) the demand for natural gas.

- ***Liquefied natural gas***

An increase in the production and export of liquefied natural gas (LNG) particularly from new fields may begin to introduce an element of price parity with domestic pipeline gas. This in turn will also cause an impact on the allocation of capital for future gas supply sources, having potential price implications for domestic gas supply.

- ***Competition – retail and wholesale***

FRC has been announced to commence in Queensland in July 2007. In addition the Queensland Government is privatising its energy retail businesses and gas distribution business.

Whilst the concentration of gas producers is expected to lessen with new gas suppliers and sources emerging (including CSM), in the short to medium term, the majority of gas production in South East Australia is still expected to be derived from the three major supply basins which are expected to control 87% of the market in 2010.

- *Victorian gas market developments*

VENCorp is implementing several changes to the pricing and balancing features of the Victorian wholesale market, most notably the move from a daily ex-post price to an ex-ante four hourly price. These changes are due for implementation in early 2007.

### **3.6 Development of the National Gas Rules**

MCE recently released<sup>9</sup> a suite of documents for the further reform of the gas (and electricity) industry. The key documents released include exposure drafts of the National Gas Law (NGL) and amendments to the Australian Energy Markets Commission Establishment Act 2004 to implement new consumer advocacy arrangements. The release of the exposure draft of the National Gas Rules (NGR) is expected shortly. Once finalised the new framework of the NGL and the NGR will replace the current Gas Pipelines Access (South Australia) Act 1997 and the National Third Party Access Code for Natural Gas Pipeline Systems.

The current stage of the reform programme has seen the development of the 2006 legislative package to achieve the objectives described in the communiqué as:

- transfer of governance and institutional arrangements for the gas regime to the national framework, with the AER assuming the role of the independent industry regulator and the AEMC as the rule maker and market development body (In addition, Ministers and the NCC will retain their roles with respect to coverage);
- transfer of electricity distribution economic regulation to the national framework;
- implement remaining policy changes to the gas regime arising from the PC's review of the Gas Access Regime (May 2006);
- implement a common framework for revenue and network pricing;
- implement an effective merits review mechanism for economic regulatory decisions in the gas and electricity regimes; and
- strengthen consumer advocacy arrangements to facilitate consumer engagement with industry.

The MCE intends to achieve these goals within the framework of the gas and electricity access regimes which are to be certified under Part IIIA of the Trade Practices Act.

Comment from interested parties and stakeholders is sought by the SCO on the exposure drafts by 19 December 2006. Thereafter, it is intended to seek completion of implementation by mid 2007 once all States and Territories have passed equivalent legislation. .

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<sup>9</sup> MCE Communiqué, 7 November 2006, Legislative Package: Gas and Consumer Advocacy

## 4 Issues surrounding the gas market

### 4.1 Status of recommendations from the Parer review

Following the Parer review, measures have been taken to improve the governance of the gas markets. Specifically, there have been amendments to the Trade Practices Act to allow for the introduction of the AEMC and the AER policy and regulatory bodies.

The next section of this report attempts to evaluate the current status of the recommendations made from the Parer review, which is discussed in Appendix B.1 of this report.

Table 3: Status of recommendations from the Parer review

Recommendations	Status
Pipeline regulation	<p>The MCE implemented certain Productivity Commission (PC) findings in its May 2006 decision. These are:</p> <ul style="list-style-type: none"> <li>• insertion of an overarching objects clause to the national Third Party Access Code and Gas Access Regime;</li> <li>• alteration of the coverage test to include those pipelines where such coverage would result in a material increase in competition;</li> <li>• introduction of light-handed regulation where a pipeline may be assessed by the regulator as not having to implement a full access arrangement (exclusion of the need for upfront assessment of reference tariffs)</li> <li>• binding 15-year exemption from coverage for new pipelines assessed as not subjected to coverage; and</li> <li>• exemption from coverage for international pipelines automatically for 15 years.</li> </ul>
Encourage greater competition through separate marketing	<p>Being addressed by the Ministerial Council on Mineral or Petroleum Resources (MCMPR). MCMPR acknowledges that this issue does not exclusively deal with natural gas. Rather, it also encompasses other products or fuels.</p>
Include criteria to promote competition in acreage management regimes	<p>Being addressed by the Ministerial Council on Mineral or Petroleum Resources (MCMPR). MCMPR acknowledges that this issue does not</p>

Recommendations	Status
	exclusively deal with natural gas. Rather, it also encompasses other products or fuels.
Review the industry's principles for access to upstream facilities	<p>The APPEA voluntary guiding principles remain in place for providing a process enabling negotiation of access by third parties.</p> <p>No further actions being considered at present.</p>

## **4.2 Market participants' alignment of views**

### *Finding*

The GMLG and its working groups exhibited a degree of alignment and agreement of the way forward that could almost be described as unprecedented in gas or electricity markets. The degree of alignment is the strongest possible endorsement (albeit implicit) of the pro-competitive reform that has occurred in the gas market over the last 10 years. It suggests that the development to date has provided opportunities for participants – and further development is seen as likely to offer further opportunities.

This should send clear signals to the MCE and Government that major deviations from the GMLG recommendations is likely to be poorly received by the industry and could set back the current impetus for further development.

The momentum achieved by the GMLG should be maintained and encouraged. To facilitate this the Government should provide the policy framework and direction and, without relinquishing its energy policy prerogatives, let the industry determine the most suitable approach to the implementation plan .

### *Evidence / commentary*

The near unanimous support of the GMLG recommendations by all sectors within the gas market minimises the risk that parties are merely 'talking their own book' - as the interests of the various parties are rarely aligned.

Participants to the gas markets acknowledged that the threat of government intervention provided the GMLG with the appropriate incentive to move quickly and develop a plan within a relatively short timeframe. Amongst some of the comments made were that GMLG was a big leap forward and that getting to an agreement was an achievement that has been unprecedented.

### **4.3 Price transparency**

#### *Issue*

There are a number of key issues or challenges relating to market transparency that are impeding the further development of the Australian gas wholesale market.

There is a lack of transparent information around market prices, contractual arrangements, and general market and system capabilities. The existence of a spot market in Victoria has significantly improved the level of transparency in that State. However in the other jurisdictions especially NSW, QLD and SA transparency is still an issue.

There is also a lack of depth and liquidity in the market compared with the North American or European markets which is brought about by the small number of large participants and prevalence of long-term bilateral contracts. There is then a consequent limitation of opportunities for existing participants and new entrants to manage financial risk or better match short-term variations in supply or demand in the absence of a competitive market.

#### *Evidence / Commentary*

The contractual stipulation of price re-opening clauses and the occurrence of price resetting arbitrations/price review processes coupled with long-term gas supply contracts is implicit recognition that the present gas market in South Eastern Australia has inadequate transparency and does not provide sufficient price signalling.

In addition, there is also the lack of a forward curve in gas. A transparent short-term market would over time result in the development of such a forward curve.

Market participants have commented that within South Australia the majority of swing gas is procured “off market “ which means that swing gas is procured under bilateral contracts as opposed to via the Retail Energy Market Company (REMCo) market process. This has two consequences; it reduces the transparency of prices and it increases the risk for participants who are unable to secure a swing gas contract off market as there is little liquidity within the REMCo market process and prices have at times been significant (up to \$1,600 / GJ).

Retailers also commented that the Victorian market was the easiest market to enter with the lowest barriers to entry and that the SA and NSW markets were significantly harder to enter. One participant commented that it “was all too hard” to enter the SA gas market and that they would not pursue it until it was made significantly easier and more transparent.

During the emergency situation in Moomba, the extent of intervention could have been lessened had VENCORP and the affected Governments known what the supply and transport capacity was outside of their jurisdiction. This is supported by evidence that some industry players have commented on the difficulty in obtaining prices in certain jurisdictions especially in SA. Another has commented that it was difficult to obtain access to supply and or transportation in SA and NSW.

## **4.4 Joint marketing**

### *Issue*

The GMLG did not focus on upstream issues as the terms of reference and the group as a whole did not want to divert the focus away from market design and downstream issues. Their belief was that this was being addressed elsewhere through other forums and working groups.

Notwithstanding this, some parties commented that the prevalence of joint marketing arrangements reduces competition by reducing the number of parties with which to purchase gas from and altering the dynamics in the negotiation process for gas purchasing. The consolidation of the CSM market will further increase the impact of joint marketing on competition in the upstream gas industry.

The STTM is likely to reduce (to some extent) the barriers to competition that result from joint marketing and potentially alter the behaviour of gas producers.

Some factors which are relevant in the consideration of separate marketing of gas in Australia include the risk environment and the definition and degree of maturity of the market. The feasibility of joint marketing may also vary according to the changing stages of development that a joint venture may pass through. Certainly, any consideration of mandating that a joint venture should separately market its production would need to be done on a case by case assessment basis.

However, the feasibility of separate marketing is enhanced to the extent that new pipelines and interconnections are added to the national infrastructure: as this permits access to a broader market. Further there is some evidence that production joint ventures are willing to market separately where the circumstances are appropriate (see below).

### *Evidence / Commentary*

The ideal outcome for the gas markets is open gas wholesale markets which permit the development and operation of financial instruments and derivatives, thereby enabling efficient risk allocation, investment signals and enhanced competition both in physical and non physical markets.

To achieve these outcomes, greater liquidity in an inherently (at present) illiquid market is required. Namely the creation of an environment as will permit a material increase in the number and type of market participants / market segments and an increase in the frequency and number of transactions.

One aspect that can assist in achieving greater liquidity is by increasing competition between producers through the removal of joint selling authorisations. As a matter of theory, the abolition of joint marketing is likely to be effective in encouraging greater competition amongst upstream producers. In Australia, some large producers have individually marketed gas in South East Australia, for example BHP Billiton at Minerva, Santos at Casino and Woodside at Thylacine / Geographe. This highlights that individual marketing is a feasible and possible option for new developments. Looking to the future, a number of joint-marketing authorisations

that have been approved by the Australian Competition and Consumer Commission (ACCC) are set to expire (or have expired) with no renewal or extension requested.

The creation of a STTM will also provide an opportunity for smaller players to sell gas to ‘the market’ without the need for a long-term contract. It will also enable smaller buyers to purchase gas from “the market” without the need to contract with a retailer, shipper or producer.

## **4.5 Emergency situations**

### *Issue*

Market intervention in emergency situations is primarily driven by the lack of market transparency and appropriate price signalling capabilities. Government intervention in emergency situations needs to be avoided to provide confidence for market participants and enable a market-based solution to be achieved – wherever possible.

### *Evidence / Commentary*

Certain parties were disadvantaged significantly by the Government intervention in the most recent Moomba emergency. Large users had to reduce their volumes within their agreements and retailers and producers subsequently sold this ‘spare capacity’ for significant premiums. No compensation was provided to these large users.

Market operators have commented that they did not want to intervene but had no alternative due to the lack of information and a market based mechanism to solve the emergency. The lack of a price signal in jurisdictions other than Victoria during the emergency provided little or no incentive for a market based outcome.

The MCE and jurisdictions have recognised the need for further work to address emergency issues through the establishment of the National Gas Emergency Response Protocol and National Gas Emergency Response Advisory Committee (NGERAC).

NGERAC’s primary function is to advise the MCE and jurisdictions on efficient and effective responses to and management of major natural gas supply shortages (including the use of emergency powers) consistent with maintaining the integrity of the gas supply system and public health and safety.

Our discussions with market participants has identified that the development of the emergency response protocol and NGERAC is likely to assist in reducing the risk of Government intervention during emergencies and as such is not inconsistent with the development of the gas market more generally.

## 4.6 Other issues

### 4.6.1 Upstream access and acreage management

The upstream natural gas industry covers oil and gas exploration, production and processing. As at July 2005, natural gas was primarily sourced from eight basins, each which generally has a dominant player and therefore a lack of competition.

The gas industry acknowledged during the gas industry reform process in the 1990s that the lack of a specific regulatory regime has led to industry participants using their own discretion in negotiating commercial arrangements. As a result, in 1999 the Australian Petroleum Production and Exploration Association (APPEA) developed a set of principles to guide this process.

A recent KPMG survey<sup>10</sup> showed that the APPEA principles appeared to have had a marginally positive effect on the level of diversity and competition in the industry. The principles were considered to be consistent with generally accepted commercial negotiation arrangements. As there is no evidence of misuse of market power, this reliance upon commercial negotiations to resolve the major impediments to accessing facilities appear to be appropriate.

The APPEA voluntary guiding principles remain in place for providing a process enabling negotiation of access by third parties. We understand no further actions are being considered at present.

### 4.6.2 Pipeline access

Arrangements to pipeline access can be a key concern where an inappropriate regulatory regime deters future investments<sup>11</sup>. The degree to which the ACCC's application of the Gas Code has facilitated or deterred investment has been a matter of contention for nearly a decade. Investors have complained – while the ACCC has pointed to the quantity of pipeline investment as evidence of the effectiveness of its approach. That said, various reviews have been critical of access regulatory practise.

In May 2006, MCE formally responded to the Productivity Commission's (PC) review of the gas access regime which was completed in June 2004. The response was consistent with its policy position and will provide greater thrust to the gas reform agenda. The MCE's response focused on a few key policy areas, which were briefly outlined in Table 3. Each of them is discussed in greater detail below.

#### *Objects clause*

The MCE has approved the introduction of an overarching objectives clause under the Gas Access Regime and for its incorporation in the proposed new National Gas Law (NGL). The overarching objectives are “*to promote efficient investment in, and efficient operation and use*

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<sup>10</sup> KPMG (2005), Review of Third Party Access Principles in the Upstream Gas Industry, KPMG, July 2005

<sup>11</sup> MCE (2006), “Review of the national gas pipelines access regime”, *Decision*, Ministerial Council on Energy, May 2006.

*of, natural gas services for the long-term interests of consumers of natural gas with respect to price, quality, safety, reliability and security of supply of natural gas”<sup>12</sup>.*

The MCE Review states that one perceived benefit of introducing such an objectives clause is that it provides a uniform guiding principle in relation to all aspects of the regime, including distribution and transmission for gas and electricity regulation.

### ***Coverage test***

A gas pipeline is only to be made subject to economic regulation (covered) so that “only those for which coverage would generate a material increase in competition in a related market” should be covered<sup>13</sup>. The intent is that only pipelines with substantial market power will meet the test for coverage and that this should lessen the chances that coverage will be imposed where it is not absolutely necessary.

### ***Light-handed regulation***

The price monitoring regime will be modified as proposed by the PC to limit the full regulatory price control to pipelines with a ‘substantial’ degree of market power. There are to be two approaches. First, a continuation of the current approach where the regulator undertakes up front and periodic assessments of reference tariffs and the other elements in an access arrangement. Secondly, an alternative where there is no up front assessment for a reference tariff, with the pipeline owner free to negotiate with access seekers. In the event of a dispute, the existing dispute resolution procedures are to apply.

The MCE’s aim is to ensure that regulatory reviews of prices are only undertaken where the benefits exceed the costs.

### ***Regulatory certainty for new gas pipelines***

In order to promote investment in new pipeline projects, a gas transmission or distribution pipeline proponent may apply to the National Competition Council (NCC) for an upfront coverage assessment. If the NCC recommends that the proposal does not meet the coverage criteria, the proponent may be granted a binding 15 year ‘no coverage’ ruling. That is, should the proposed pipeline fall short of meeting the coverage criteria, it will remain unregulated for at least 15 years regardless of changes in market conditions. There is also a related change that encourages investment in international pipelines that bring gas to Australia and which is beyond the scope of this investigation.

The reforms for a binding no coverage ruling have already been made through an amendment to the National Third Party Access Code<sup>14</sup>.

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<sup>12</sup> Ministerial Council on Energy, *Review of the National Gas Pipelines Access Regime – Decision May 2006*. (“MCE Review”)

<sup>13</sup> MCE Review, *op cit*, section 4.2, page 10

<sup>14</sup> Gas Pipelines Access (South Australia) (Greenfields Pipelines Incentives) Amendment Bill 2006, passed 8 June 2006.

### **4.6.3 Re-trading of physical contracts**

Some old legacy contracts that certain retailers and producers have within their portfolios lack flexibility because they prevent gas from being either transported to alternative delivery points (that are not currently detailed within the contract) or for being used for purposes other than those detailed within the contract. Increasingly, this is less of an issue. Many of the old gas supply contracts have been amended over time to remove such restrictions and newer contracts provide for multiple delivery points (subject to capacity availability). Also, purchasers of gas now often have the ability to add delivery points during the term of the contract.

The development of the STTM is likely to further help with this issue by removing the physical need to contract for gas transportation at delivery points as market participants will be able to take gas from the market at various hubs.

The positive effects of these developments are supported by the existence of short-term trading between market participants and borne out in discussions with market participants, who concurred that this is no longer an impediment to the development of the gas markets.

## **5 The National Gas Market Development Plan**

This section of the report discusses the rationale for the Gas Market Development Plan (GMDP).

### **5.1 Terms of reference**

To further the developments in the Australian gas markets, the MCE established the GMLG with terms of reference to:

- develop Options 2 or 3 as identified in the Allens Consulting Group Report<sup>15</sup>; or
- recommend an alternative market development plan that provides equivalent benefits in terms of transparency and lowering barriers to market entry.

The GMLG was required to consider the following key elements:

- provision of information to the market on system capabilities, supply and demand, and how such information will be provided in a transparent and accessible manner;
- assessment of the market arrangements to promote greater levels of liquidity and competition;
- consideration of whether the publication of an annual report on the performance of the market and emerging transmission and supply constraints would be beneficial to market development;
- implementation timetable, including milestones; and
- identification of any regulatory and rule-making requirements which need to be put in place.

The GMLG proposed a development plan which recommends reforms that seek to overcome a generally agreed view of a lack of market transparency. It advocates for the open and transparent dissemination of information by producers, pipeline transmission operators and buyer or aggregator demand through the establishment of a BB. In addition, it proposes the establishment of a STTM that will provide a price based balancing mechanism for gas delivered to and withdrawn from defined market hubs.

### **5.2 Recommendations**

The GMLG made the following recommendations in its GMDP:

- the establishment of a BB covering all major gas production fields, major demand centres and transmission pipeline systems, providing information for both the gas market and NGERAC.

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<sup>15</sup> As discussed in Appendix B.3 of this report.

- detailed design of a STTM, for all states except Victoria, which aligns with the augmented Gas Market Development Principles.
- formation of a single National Gas Market Operator to manage the wholesale and retail gas markets, administer the BB and the STTM, and produce an annual national gas supply or demand statement. The Market Operator should assume the functions of The Gas Market Company (GMC) and REMCo and the gas functions of VENCORP.
- the Market Operator to support NGERAC in the collection, maintenance, publication and analysis of gas system information and in the provision of technical advice on the management of significant gas supply constraints.
- rule making and change processes be as streamlined and cost effective as possible, incorporating rule development and consultation by the Market Operator and approval by the AEMC.
- interim continuation of the GMLG to develop the BB and STTM and work with the MCE on the formation of the Gas Market Operator, with the costs shared between government and industry.

It is important to note that the GMLG developed these recommendations as a comprehensive and integrated package, rather than a set of individual recommendations for consideration.

### **5.3 Bulletin board**

The objective of the BB is to improve transparency and facilitate trade in gas through the provision of readily accessible and up-to-date system and market information to end-users, potential users, market entrants, and market observers.

Its benefits and limitation are discussed below.

#### ***Benefits***

- The BB will provide readily accessible and updated information on the state of the market, system constraints and opportunities. This information will assist existing and potential users to identify potential trading, risk mitigation or investment opportunities.
- The BB will provide historical information that existing and new industry participants can use in negotiating new long-term contracts, or for short-term trading around their contracted position.
- There is a very close relationship between the market information for a BB and the information required by the National Gas Emergency Response Advisory Committee (NGERAC) to allow informed decisions to be made in times of a major supply constraint.

### **Limitations**

- A BB may only provide limited added value to existing major players in the gas market who would already have access to much of the information it would provide.
- There is a need for legal arrangements to be developed to impose obligations on parties to provide or update the information on the BB.
- The BB needs to be implemented in such a way as to minimise the additional work and costs imposed on parties to provide the data.
- An independent Market Operator with gas market expertise is required to oversee the development, maintenance and operation of the BB.
- The BB will have no direct impact on the pipeline operations or the operation of existing gas supply or pipeline transportation contracts.

## **5.4 Short-term trading market**

The objective of the STTM is to establish a mandatory price based balancing mechanism for gas delivered to, and withdrawn from, defined market hubs.

Its benefits and limitations are discussed below.

### **Benefits**

- The STTM will remove the need for the OBG in NSW and Swing Gas in SA thereby eliminating a key area of jurisdictional difference.
- Participants will be able to purchase gas from the STTM without the need to contract with a supplier or pipeliner thereby reducing the previous complexities and barriers to entry.
- The STTM will facilitate gas trading on a daily basis at market driven short-term prices, providing transparent pricing signals between hubs, and facilitate greater demand side responses by users.
- The competitive market for gas will better enable existing participants and new entrants to manage financial risks and match short-term variations in supply or demand.
- A daily clearing price signal will directly assist the ability of the market to respond efficiently to shortages of supply, and so avoid the adverse commercial impacts of intervention and/or the exercise of emergency powers by jurisdictions in rationing scarce gas supplies.
- The proposed STTM arrangements will be compatible with the Victorian spot market, with pricing signals at hubs used in conjunction with signals from the Victorian market to enable participants to make informed decisions.

### **Limitations**

- As the STTM will not replace bilaterally negotiated long-term contracts, it will not necessarily increase the depth and liquidity of the wholesale gas market significantly.
- An independent Market Operator with gas market expertise is required to oversee the development, maintenance and operation of the STTM.
- The detailed design requires significant work around pricing, clearing, settlement details, and the governance or legal framework for its operation.
- Consideration needed on transition to proposed balancing arrangements from existing 'swing service' in SA and OBG arrangement NSW.

## **5.5 Single market operator**

The establishment and administration of a STTM and BB will require a Market Operator.

The GMLG considers that none of the existing market operators have the necessary governance, resources and expertise to act as the Market Operator. Co-existence with existing operators would add complexity and cost to the participation in a national gas market and would increase the likelihood of jurisdictional differences which will increase complexity and potential barriers to entry.

The GMLG's view is that a single National Gas Market Operator is seen as best placed to implement the MCE Principles.

### **5.5.1 Impact on existing operators**

The GMLG recommended that the National Gas Market Operator will be established separate to the National Electricity Market. Existing operators, GMC and REMCo will be wound up and their assets transferred to the new Market Operator. It is expected that the new Market Operator will also take over the gas functions of VENCORP.

### **5.5.2 Functions of the Gas Market Operator**

The new Gas Market Operator will oversee the following functions:

- develop, implement and operate the BB and STTM;
- support NGERAC through the collection, maintenance and analysis of gas system and market information;
- prepare a national annual gas supply and demand statement;

- operation the gas retail market arrangements in NSW/ACT, SA and WA, and plan for the future operations of retail markets in other States and Territories; and
- operate the gas market and networks in Victoria.

## **5.6 Rule-making body**

The current arrangement in the market is such that each existing market operator plays a major role in the development of their respective market rules. These market operators develop rules through extensive consultation processes, involving formally established consultative committees, industry working groups and wider consultation where appropriate.

The GMLG has proposed that the rules of VENCORP, GMC and REMCO to be grandfathered. The initial BB and STTM rules are to be developed by the Market Operator through its industry working groups, consultation processes and Board determination. These rules will then be approved by the AEMC prior to implementation. The AEMC decision will be final.

The GMLG also proposed that rule change proposals will be initiated by the Market Operator, which will be required to consider changes proposed by market participants and jurisdictions. The proposed changes will subsequently be submitted to the AEMC for its approval.

## **5.7 Implementation issues of the Gas Market Leaders Plan**

The Gas Market Development Plan lists the following as key issues requiring further consideration during the detailed market design.

- The STTM has been designed to have no direct impact on existing gas supply, transportation or retailer and shipping contracts. A number of issues require clarification to ensure this is the case (e.g. delivery to pipeline points where shippers have no contractual rights).
- An appropriate default price will need to be developed for situations where the STTM fails to clear. Development of a value for the default price has not been attempted and will require further work.
- Hubs will need to be defined such that there are no material physical constraints between delivery gate points within the hub. The practicalities of this has not been fully explored.
- STTM design involves variances in deliveries being allocated to shippers, meaning they may be exposed to contractual overrun charges or imbalance penalties under their transmission agreements with the pipeline operator.
- Logistical issues arising in establishing a practical and logical timetable for market operations.

- There is a need to further investigate the implications for existing system security arrangements currently in place in other jurisdictions.
- Further consideration of appropriate prudential framework for participation in the STTM.
- The point-to-point haulage within the AGL gas network in NSW is not compatible with user allocations arising under the STTM
- Further consideration of competitive neutrality issues associated with pipelines.

Our discussions with participants identified that there are unlikely to be any ‘show stoppers’ within the list of implementation issues identified by the GMLG.

Notwithstanding this the roles of the MCE and Government are critical to the successful implementation of a single market operator and rule making recommendations. As some participants put it, “*the Government should provide the policy framework and then let the gas industry get on with addressing the problem*”. GMC and REMCo currently operate under out-sourced business models, any significant delay by the MCE and Government in making a decision and subsequently implementing a single national gas market operator is likely to put significant staffing pressures on these businesses.

## **5.8 MCE Communiqué – October 2006**

The Ministerial Council on Energy (MCE) released a communiqué late in the course of this engagement which endorsed the recommendations made in the GMDP. The MCE’s decision was consistent with our view, which was to allow the gas markets to develop primarily through the continued support and high level participation of industry participants.

The announcement of MCE’s stance on the matter has helped to further validate and support the findings that we have presented in this report.

The MCE has specifically agreed to:

- the establishment of a BB;
- the design and development of a STTM; and
- reconvene the GMLG to continue the industry-led approach to gas market development.

In addition, the MCE has asked the Standing Committee of Officials (SCO) to advise on the GMLG’s suggestion to form a national Gas Market Operator to administer the BB and STTM and to decide if this function should be merged with NEMMCO.

Some amendments will be made to the rule change process in NGL to enable the AEMC to consolidate and streamline their work as a result of the amendments.

The MCE request for additional advice on the development of the national gas market operator (including if its functions should be merged with NEMMCO) further increases the risk of delays in its creation.

Our discussions with participants and subsequent analysis confirms that conceptually there is merit in the creation of a single energy market operator. However the complexities involved in making such a decision would require a substantial level of analysis and is beyond the scope of this report.

It is therefore important that the SCO commences work on this matter as soon as possible to enable it to provide its advice promptly to the MCE.

## **6 Standardisation – an issue impacting market development**

A key issue underpinning any growth in future liquidity and the development of financial markets in the Australian gas markets is the issue of standardisation across areas such as the market structures, rules, conventions, and systems. Multiple jurisdictional rules, market operators and pipeline operators has made it difficult for parties to trade across borders and has heightened the barriers to entry in certain markets.

### *How standardisation benefits the market*

Analysis of the evolution and development of financial markets has highlighted that the development of liquid financial markets are dependant on efficient physical markets and competitive market structures.

The absence of standardisation in the gas market is detrimental because it limits the efficiency of the physical market and the lack of homogeneity impacts the ease with which participants are able to execute trades. Consequently, this hinders the development of related financial markets.

### *Evidence / commentary*

There are currently multiple rules and market operators across jurisdictions, making it harder (but not impossible) for parties to trade across borders. There are also many detailed differences arising from existing contracts in conventions, systems, structures and processes between pipelines and states, such as the definition of gas days, nomination interfaces, contract terms and conditions and balancing regimes. These differences make it very difficult for both market operators and also market participants to leverage their systems and process infrastructure nationally. Accordingly this results in increased costs for the industry.

The requirement to develop complex allocation algorithms at delivery or receipt points can at times be due to the different regulatory and contractual conditions between pipelines and states. Some participants commented that it has taken in excess of 12 months to negotiate an allocation agreement at a specific injection point within the Victorian system.

Many participants also commented that it was always shorter to negotiate a deal the second time around with the same counterparty as the terms had been pre-agreed. This shows that pre-determined or standardised terms speed up the transaction process.

Consistent with the observation that standardised terms and conditions are a useful step towards improving the development of financial markets, some market participants have been working with the Australian Financial Markets Association (AFMA) to develop a gas International Swap and Derivatives Association (ISDA) Master Agreement, called a 'gas ISDA'. We understand this work is largely completed however has not yet been fully accepted by all market participants.

Once fully developed, the gas ISDA will contain a standard set of terms and conditions that can be used by market participants to underpin financial trading in gas. The use of standard terms and conditions would enable more efficient trading in financial derivatives. The gas ISDA is not expected to deal with the physical trading or transportation of gas.

By way of example that ISDA's can assist in the development of financial markets, the majority of bi-lateral electricity trading occurs between parties who have executed electricity ISDA's.

In addition, consistent with the recognised benefit of standardisation of systems and processes, GMC and REMCo identified that there were benefits in a potential merger of their operations. Prior to the formation of the GMLG and the development of the GMDP, GMC and REMCo were well progressed in merger discussions and both parties commented that a merger would have occurred if not for the GMLG process.

***Addressing the impediments***

Many of the inconsistencies across jurisdictions have been recognised by the GMLG and the MCE alike. One of the MCE principles of Gas Market Development recommends consistency across jurisdictions.

The recommended actions within the GMDP will provide a solid initial platform from which further standardisation can develop. For example, the GMLG's recommendation for the STTM recognises the complexity of the jurisdictional differences and will remove some of the key differences, namely the need for the OBG in NSW and the Swing Gas market in SA. The creation of a single gas market operator will assist in standardising some of the processes and systems currently in place between market participants and the market operators.

However, some of the compromises required for standardisation will involve parties to existing bi-lateral contracts in cost and inconvenience and are beyond the direct control of Government to amend or change. It is therefore unlikely that complete standardisation across the market will be achieved.

Notwithstanding this, to further progress standardisation and also to assist the GMLG process it would be beneficial for the MCE to provide a clear policy directive on standardisation. With a clear policy directive and the successful implementation of the GMDP it is feasible to envisage that standardisation across the gas market will develop to a sufficient level so as to enable the development of gas financial markets.

***Key costs and benefits of standardisation***

We have undertaken a high level qualitative analysis of the costs and benefits of standardisation and have summarised our key findings in the following table.

*Table 4: Costs and benefits of standardisation in the gas markets*

Costs	Benefits
<p>An increase in costs to both market operators and participants in adjusting to the new standards, (many of these costs are likely to be one-off). Examples of these include:</p> <ul style="list-style-type: none"> <li>• System costs to change nominations, pricing and billing systems;</li> </ul>	<p>Reduced transaction costs (both financial costs and time) to negotiate new contracts due to readily-available contracts in the marketplace</p>

Costs	Benefits
<ul style="list-style-type: none"> <li>• Legal and regulatory costs involved in developing and implanting changes to rules, contracts and regulations; and</li> <li>• Compliance costs.</li> </ul>	
Potentially diminished flexibility to tailor new contract terms to specific needs and requirements	Increased transparency and competitiveness may arise from a higher degree of comparability of terms and conditions of contracts
	A standardise market provides a framework that can promote confidence and reassurance to market participants and therefore enable markets to work more effectively
	Standardisation can encourage product innovation through the need for differentiation and competition

Prior to implementation, a detailed cost benefit analysis should be undertaken to determine the specific areas that are readily able to be standardised versus those that may need to be phased in over time. This will allow for an improved understanding and quantification of the implications of standardisation on the market and its participants.

In addition, during implementation of standardisation allowance should be made for the impacts on existing arrangements, in particular those pertaining to contracts, systems, metering and allocation algorithms.

Consistent with the GMLG principles used in developing the STTM, a standardised framework should make allowance for participants to retain the rights and any value within their existing contracts.

In addition, where possible attempts should be made to leverage off the levels of investment already made by market participants in existing systems and processes.

Any required changes should also be reviewed in light of any limitations due to metering capabilities and / or implications of existing allocation algorithms to ensure that the operation of the physical market is not adversely impacted.

## 7 How the Gas Market Development Plan addresses the gas market issues

Our review has confirmed that the gas markets in Australia has changed and developed significantly over the last ten years. The industry is characterised by relatively costly and long-term assets which are almost exclusively privately owned. Significant dollars are tied up in these long-term contracts, with bilateral contracts constituting 95% of demand. Short-term trading, albeit limited, is already occurring without government intervention.

There have been numerous recent reports and consultations on the development of the gas market. The GMLG has produced a development plan to address the MCE objectives. Based on the consultations with the industry undertaken to date KPMG has found unanimous support for the development plan within the industry. The following table provides an insight as to how the GMDP has addressed the issues discussed in Section 4 of this report.

Table 5: How GMDP addresses the gas market issues

Issue	How GMDP addresses issues
Standardisation	<ul style="list-style-type: none"> <li>• The creation of the STTM and thereby removing the OBG in NSW and the “swing” gas market in SA is consistent with the intention of standardisation</li> <li>• The development of a single market operator will facilitate further standardisation of systems, processes and rules</li> </ul>
Price transparency	<ul style="list-style-type: none"> <li>• Introduction of the BB will provide market participants and governments with additional gas market information to facilitate decision-making.</li> <li>• The development of the STTM will also provide price signalling and, as a result, increased transparency</li> </ul>
Joint marketing	<ul style="list-style-type: none"> <li>• The development of the STTM will enable smaller retailers and/or producers to buy or sell gas into the wholesale market without the need to enter into (long-term) contracts.</li> </ul>
Emergency situations	<ul style="list-style-type: none"> <li>• The BB will provide appropriate information on factors such as pipeline capacity and forecast demand to enable NGERAC, Government and market operators to better manage any responses (as required) during gas emergencies.</li> <li>• The STTM will provide price signalling to enable market based solutions to be achieved during emergencies and thereby reduce the need for Government intervention and consequentially remove associated market distortions.</li> </ul>
Upstream access and acreage management	<ul style="list-style-type: none"> <li>• Not addressed by GMDP</li> </ul>
Pipeline access	<ul style="list-style-type: none"> <li>• The STTM will provide a market based balancing mechanism which will remove the inconsistency between the various</li> </ul>

Issue	How GMDP addresses issues
	pipeline regimes and reduce the barriers to entry for new participants.
Re-trading of physical contracts	<ul style="list-style-type: none"><li>• The STTM will enable participants to readily buy and/or sell gas at hubs. This will reduce the impact that some legacy contracts have which restrict the ability to receive gas at alternative delivery points or use gas for alternative purposes.</li></ul>

## **8 Opportunities for gas market development - implications for policy**

Having presented a discussion on the issues surrounding the gas markets in Section 4.2 to Section 4.6, we can draw some conclusions on the likely issues which will require policy response.

### **8.1 Issues where more work is needed to assess whether a new policy response is warranted**

For reasons outlined in Section 4.6, some issues have to a large extent, been addressed through past policies or have been resolved through the development of the gas markets. As such more work is needed to assess whether a new policy response is warranted in these areas. These are listed below:

- Acreage management and upstream access – either have been addressed or are being addressed by the MCMPR.
- Pipeline access - matters pertaining to pipeline access were discussed in the MCE's Communique released in May 2006.
- Re-trading of physical contracts - the development of the STTM and discussions with participants has identified that this is no longer an issue

### **8.2 Issues which have been identified for a potential new policy response – requiring further investigation**

The principal areas that our analysis has highlighted that may potentially require a policy response and therefore, require further investigation are:

- joint marketing,
- emergency situations
- price transparency; and
- standardisation.

Table 5 outlines how the introduction of a STTM and BB will help in minimising the impact of these impediments on the development of the gas market.

In addition, appropriate policy responses should be implemented to address the initiatives that the GMLG recommended within their plan that have yet to be endorsed by the MCE. These relate to the creation of the single market operator who will oversee the STTM and BB independently, and will facilitate the rule making process. The GMDP has commented that

these are important considerations which will avoid unnecessary and costly duplication of industry processes.

The possible policy responses to address these issues are presented in the following section.

### **8.3 Possible policy responses**

Following the conduct of industry interviews by KPMG, research of the operation of the wholesale gas market and comparison to different (world) markets, we believe the recommendations of the GMLG represent the best next step in the process of gas reform towards delivering on the ultimate objective of increased competition, in accordance with the MCE Principles.

The market is ready for this next step as it is consistent with the evolution of a competitive wholesale gas market. This readiness is evidenced by the relative alignment of thought across producers, pipeline owner/operators and demand side participants and the commencement (albeit limited) of short-term gas trading between participants.

The development of secondary financial markets as part of risk mitigation for present and new entrant participants in derivatives such as futures, swaps, forwards and options is likely to evolve over time. It will do so initially through market participants' usage of price signals given by a developing short-term trading market. No useful purpose is to be gained from the forced or accelerated introduction of secondary financial markets beyond that which is allowed to evolve through the mechanisms described previously.

Notwithstanding this, standardisation of the market structures, conventions and systems should be encouraged to the maximum extent possible to provide the appropriate platform to efficiently develop a secondary financial market.

Entrenched authorisations or state exemptions for joint marketing and joint selling by upstream joint venture gas producers necessarily reduces the efficacy of the GMLG proposals to increase gas market liquidity. The removal of such authorisations or state exemptions is unlikely to occur without intervention. We recommend further work on how these impediments can be addressed.

There is little new thinking or metrics within industry or amongst reformists alike as would suggest the existence of a novel approach to improving transparency and increasing material competition. There is wide support for the GMLG plan, and likely goodwill in implementation.

The bottom line is the GMLG development plan should be endorsed. Specifically:

- the industry has to be instructed to commence implementation;
- the Government should signal its willingness to contribute its resources as required; and
- policy guidance should be forthcoming and consistent with previous policy and address the issues identified by GMLG as requiring Government input.

The first point is consistent with the MCE's recent announcement to endorse the GMLG's plan with respect to the development of a BB and STTM.

To avoid further delay in the development of the gas market the Government should act promptly in addressing the other two points above and in addition ensure the Standing Committee of Officials (SCO) actions the MCE's request to provide advice on the GMLG's suggestion to form a national Gas Market Operator to administer the BB and STTM and to decide if this function should be merged with NEMMCO.

#### **Summary of key recommendations**

- The GMDP in its entirety should be endorsed by ERIG.
- The development of secondary financial markets should be encouraged to evolve on its own through the short-term trading market mechanism.
- Future policies should encourage standardisation to the maximum extent possible.
- SCO must formally advise the MCE on the formation of a national Gas Market Operator (including if this function should be merged with NEMMCO) to prevent delays to the recommendations of the GMDP.
- Further work needs to be undertaken on upstream issues, including the current prevalence of joint marketing arrangements which may restrict competition.

## **A An overview of the Australian energy sector**

This Appendix briefly outlines some of the key features of Australia's energy sector as defined for the purposes of this engagement (i.e. the 'domestic' gas market). By way of contrast we provide some key differences with electricity markets.

### **A.1 Gas**

The following characteristics of the gas industry affect its form and development:

- Production and consumption are not instantaneous, gas transmission can act as a storage vessel and typically gas flows in one direction (i.e. point-to-point);
- There is relatively little interdependence in operation of gas transmission networks;
- There are less complicated market and dispatch arrangements due to more predictable long-term flows (due in part to the contracting regime that typically exists);
- Gas has lower variability of short-term flows than electricity; and
- Pipeline investment is typically underpinned by bilateral contracts for capacity.

At the point of use, electricity is a substitute for gas in almost all end uses, whereas gas is only a partial substitute for electricity. Gas is, therefore, primarily a fuel of choice. With technological developments in gas turbine technology, gas is becoming a partial substitute for electricity transmission and distribution as it can economically be used to generate electricity to meet base and mid load demands, in addition to its more conventional role in supplying peak electricity demands.

Investment in gas related infrastructure has typically been underwritten by long-term take-or-pay contracts.

### **A.2 Electricity**

Any analysis of the electricity sector needs to take into account electricity's unusual set of physical and technical attributes.

Paul Joskow, a noted US energy economist, has described these attributes well in recounting the difficult transition to competitive electricity markets in the US (a transition that has been much more difficult than in Australia). He states:

These attributes include:

- a. Electricity cannot be stored economically and demand must be cleared with "just-in-time" production from generating capacity available to the network at (almost) exactly the same time that the electricity is consumed.
- b. Physical laws governing electricity network operations are in real time to maintain frequency, voltage and stability of the network, along with network congestion, interact with non-storability

to require that supply and demand be cleared continuously at every location on the network. Creating a set of complete markets that operate this quickly, at so many locations, and without creating market power problems is a significant challenge.

- c. The short-run demand elasticity of electricity is very low and supply gets very inelastic at high demand levels as capacity constraints are approached. As a result, spot electricity prices are inherently very volatile and unusually susceptible to the creation of opportunities for suppliers to exercise market power unilaterally.
- d. Network congestion, combined with non-storability, may limit significantly the geographic expanse of competition by constraining the ability of remote suppliers to compete, further enhancing market power problems.
- e. Loop flow, resulting from the physics of power flows on AC networks, introduces additional complex interactions between generators at different points on the network, creating unusual opportunities for suppliers to take actions unilaterally to affect market prices, complicating the definition of property rights, and creating coordination and free riding problems...
- f. Electricity demand varies widely from season to season, between day and night, with extreme temperatures, and between weekdays and weekends (and holidays). The difference between the peak demand and the lowest demand over the course of a year is a factor of about three. Because electricity cannot be stored and varies widely over the year, a significant amount of the generating capacity connected to the system operates for a relatively small number of hours during the year to meet peak demands. Historically, there has also been little reliance on real time prices to ration peak demands. This means that the ability of generators that provide services for a small fraction of the year to recover their investment and fixed operating and maintenance costs is heavily dependant on the price formation process during periods when demand (and prices) are at their highest levels.
- g. The combination of non-storability, real time variations in demand, and low demand electricity, random real time failures of generation and transmission equipment, the need to continuously clear supply and demand at every point on the network to meet the physical constraints on reliable network operations, means that some source of real time "inventory" is required to keep the system in balance. This "inventory" is generally provided by "standby" generators that respond very quickly to changing supply and demand conditions, though demand side responses can also theoretically provide equivalent services as well. Compatible market mechanism for procuring and effectively operating these "ancillary services" are therefore necessary. Designing well functioning integrated markets for energy to meet demand and the need for multiple ancillary services to maintain network reliability is consistent with all of the other constraints and attributes enumerated above is very challenging.
- h. The performance of competitive markets for electricity depend critically on the way the regulated transmission network is operated, access to it priced and scarce transmission capacity is allocated. There are important complementarities between energy markets and transmission operations, especially congestion management and responses to emergencies. Integrating spot energy and ancillary services markets with the allocation of scarce transmission capacity is necessary to wholesale power markets to operate efficiently.

While there are many competitive industries that have one or perhaps two of these attributes, it is hard to think of any commodity market that has all of them,..., Ignoring these unusual attributes of electricity, and ignoring how and why historical governance arrangements evolved for dealing with them, is a very bad mistake.<sup>16</sup>

<sup>16</sup> Paul Joskow, *The Difficult Transition to Competitive Electricity Markets in the US*, AEI-Brookings Joint Centre for Regulatory Studies, July 2003, pp 9-11.

The Australian evidence supports Prof. Joskow's analysis; indeed, some parts of Australia (most notably South Australia and Victoria) provide an extreme example of the peakiness of electricity demand. For example, the Australian Government's white paper argues that peaks lasting for only 3.2 per cent of annual duration of the market account for 36 per cent of total spot market costs.<sup>17</sup> Major energy users argue that in 2005 0.2% of pool price periods generated 25% of the average pool price.<sup>18</sup>

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<sup>17</sup> Department of Prime Minister and Cabinet, *Securing Australia's Energy Future*, 2004, pg 70. It also argues that reducing the magnitude and cost of such peaks will reduce overall system costs.

<sup>18</sup> Major Energy Users Inc, *Submission to ERIG*. 14 August 2005, pg 16.

## **B Summary of previous studies and findings**

This appendix details past studies and findings which will help provide a greater understanding of the Australian wholesale gas market. As evidenced by the studies within this appendix a significant amount of work has been devoted over a number of years to the further development of the gas market. Most of which actively promotes the development of transparent and liquid gas markets for the benefits of all users.

The CoAG agreement in 1994 put in motion a series of energy sector reforms within the much broader framework of competition reform. This has resulted in the successful and continuing development of the markets in Australia.

### **B.1 CoAG Energy Markets Review 2002**

#### *Purpose*

The CoAG Energy Markets Review<sup>19</sup> report, also known as the Parer Review, was published in 2002. The review was conducted to identify broad policy directions for the energy markets.

#### *Issues*

The CoAG report discussed some key findings relating to Australia's gas market. The findings are outlined below.

- ***Our gas markets are best described as emerging***

While the Australian gas markets have progressed from monopoly supply, they are still relatively immature compared to the markets in the United States or United Kingdom. There is little supply competition, especially so in Australia's eastern gas markets. While regulatory regimes have freed up access to existing pipelines, they are restricting new investment. Most trades also seem to take the form of very long-term take or pay contracts.

- ***Conflicting views regarding the impacts of gas regulation***

The views of participants in the gas markets differ in relation to the necessity of the Gas Code. The review panel suggested that future form of regulation for key infrastructure to be consistent with the needs of the gas markets.

- ***Growth in the pipeline infrastructure***

A number of proposed pipeline developments can potentially result in more competition in the south eastern gas markets. It is important to bear in mind that regulatory arrangements must not adversely impact on future investments.

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<sup>19</sup> CoAG (Council of Australian Governments) Energy Market Review 2002, *Towards a truly national and efficient energy market*, Canberra.

- ***Perceptions of uncertainty***

Regulatory uncertainty causes additional risk to proposed pipelines arising from concerns about the adequacy of the new investment meeting regulatory criteria.

- ***No effective market supporting mechanisms***

There is a lack of mechanism to ensure sufficient competition for pipelines not covered under the Gas Code. Ring fencing arrangements will help to ensure that companies do not distort upstream and downstream competition in the gas markets. There is also an information asymmetry between pipeline companies and users.

- ***Tradeable pipeline capacity in secondary markets***

This encourages more intense competition in gas supply and carriage besides creating the opportunities to increase the efficiency and flexibility of gas transportation. There is very limited capacity trading in the Australian market.

- ***Limited upstream competition***

There is little competition in gas supply, particularly to the eastern Australian markets due to the distances between supply and demand centres, high concentration of ownership of supply, joint marketing by producers, very long-term nature of contracts, competitive alternative fuel supplies and a small domestic market.

- ***Government facilitation of new gas projects***

The provision of incentives by the government to encourage the development of certain projects should not distort the market as a whole.

- ***Greenhouse gas reduction measures***

The rolling out of schemes to curb the emission of greenhouse gas may increase the penetration of natural gas in the energy markets.

### ***Recommendations***

The CoAG report made some recommendations to address the above issues. These recommendations which had a major focus on regulatory arrangements and upstream competition were pipeline regulation, encouragement of greater competition through separate marketing, promotion of competition in acreage management regimes and review of access to upstream facilities. We elaborate more on each recommendation as follows.

*Pipeline regulation*

- There should be binding up-front ‘coverage’ rulings. This warrants an amendment to the Gas Code to allow proponents of new pipelines to seek a binding ruling from the National Energy Regulator.
- Proponents of new pipelines which are covered under the Gas Code have the flexibility to be subjected to 15-year economic regulation-free periods or to enter upfront regulatory agreements to provide regulatory certainty.
- A review of the Gas Code to ensure actions are taken to ensure a more competitive and dynamic industry.
- A code of conduct to non-covered pipelines should be applied to ensure a competitive market. A range of market supporting mechanisms can be used, such as ring fencing and the requirement to post prices.

*Encourage greater competition through separate marketing*

- The Australian Competition and Consumer Commission (ACCC) should be notified of all joint-marketing arrangements. The ACCC will then perform an assessment to gauge the possibility of separate marketing.

*Promote competition in acreage management regimes*

- The promotion of competition should be a criteria in awarding exploration acreage.

*Review the industry’s principles for access to upstream facilities*

- The review should examine if the industry’s principles have led to the benefits of achieving greater upstream competition and enabling commercially negotiated third party access to upstream gas facilities.

## **B.2 ABARE Australian Markets 2003**

*Purpose*

Upon the request of the Australian Gas Association, The Australian Bureau of Agricultural and Resource Economics (ABARE) published a report<sup>20</sup> on the competitiveness and development of the gas market in 2003.

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<sup>20</sup> ABARE (Australian Bureau of Agricultural and Resource Economics) 2003, *Australian Gas Markets: Moving Towards Maturity*, Canberra, <http://www.abare.gov.au> .

ABARE investigated the characteristics of competitive gas markets by drawing comparisons from existing arrangements in the United States, United Kingdom and Victoria, and contrasted these to the current status of the Australian gas markets. It then addressed the issues relating to the medium-term development of the Australian gas markets.

### *Issues*

The report found that the market is characterised by the following.

- ***Limited number of players***

There is very limited number of players and hence, a lack of liquidity and transparency. This shortcoming significantly hindered the development of transparent spot markets.

- ***Bilateral short-term trading***

Trades occur through bilateral contracts and arrangements. Third parties are unable to obtain information regarding these trades. There is little incentive for broking services which offer standard contracts due to insufficient market participants.

- ***Limited end use needs***

There was less depth and variety of end use needs in Australia unlike overseas markets where transparent spot markets exist. Fluctuations in demand are essential elements for trading opportunities and establishment of spot markets. This variability is lacking in the Australian gas markets.

ABARE also considered how the operations of Australian gas markets can evolve over the medium term. Hubs, where various owners' pipelines meet are likely to emerge and with these, the initiation of spot markets. Storage facilities may potentially be augmented to encourage trading opportunities at hubs. It is possible that mechanisms to allow for greater transparency and information flows might be introduced for a trading spot market to develop.

### ***Recommendations***

Considering the 'point to point' nature of the pipeline network outside Victoria, ABARE concluded that a bilateral trading model with market hubs was the most appropriate model for wholesale trading in Australia. Mature markets overseas show that transparent spot markets can co-exist with long-term contract markets.

However, a lack of liquidity means spot markets are unlikely to develop in the short to medium term. A market without liquidity is highly dictated by the actions of the limited market participants and restricts the opportunities for trade of gas-based financial products.

### **B.3 MCE – Principles for Gas Market Development**

The MCE established a set of principles in 2004 to guide the future development of Australian wholesale gas markets. The objectives of these principles are to encourage transparency, new market entrants and investment, and to cater to the management of supply and demand interruptions.

We state the principles below:

- Information on market and systems operations and capabilities at all stages of the gas supply chain (subject to recognition of existing contractual confidentialities) should be publicly available and frequently updated.
- Gas market structure to facilitate a competitive market in all sectors.
- Gas market participants should be able to freely trade between pipelines, regions and basins.
- There should be regulatory certainty and consistency across all jurisdictions.
- Market design and institutional requirements responsive to and reflective of the needs of the market and market participants.

### **B.4 Allen Consulting Group’s Report 2005**

#### *Purpose*

As part of the MCE’s program, the Allen Consulting Group (ACG) was engaged to examine future options to accelerate the development of a wholesale natural gas market. These options which had to facilitate a reliable, competitive and secure wholesale gas market were reported<sup>21</sup> for consideration by the Gas Market Development Working Group (GMDWG).

The focus of the ACG work was on downstream markets and competition, rather than upstream or gas access regime issues. The assessment of options was primarily guided by the MCE’s gas market principles.

#### *Issues*

Based on the premises of efficiency and transparency, practicality and simplicity, and implementation cost, ACG considered a total of four options in their report:

- the current market with organic development;
- the current market with bulletin board facilities;

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<sup>21</sup> ACG (The Allen Consulting Group) 2005, *Options for the development of the Australian wholesale gas market, Final report.*

- the city gate scheme; and
- extension of the Victorian model.

Each is discussed briefly below.

***Current market with organic development***

This is the status quo of the wholesale gas market structure. Under this option, no new developments will be implemented in the current market and will be left to evolve on its own.

***Current market with bulletin board facilities***

The arrangements in the current wholesale gas market will be preserved. However, contract trading bulletin board facilities will be introduced to allow market participants to post bids and offers for trading purposes. In addition the bulletin board will act as an information service.

***City gate scheme***

This option sees the establishment of spot markets at several demand hubs to enhance the volume of traders and therefore, liquidity. The city gate scheme utilises market mechanism to clear imbalances in the wholesale gas market.

***Extension of the Victorian model***

This option proposes for the extension of the Victorian spot market model to some or all of the other major transmission pipeline systems. It will feature market-carriage services, daily spot trading of gas and the integration of the Queensland, NSW, ACT, Victoria, SA and Tasmania as one market.

***Recommendations***

The ACG report concluded that further reform of Australia's wholesale gas markets is required to improve transparency, enhance competition and lower potential barriers to new market entry. It acknowledged the fact that there is a trade-off between efficiency and fulfilling gas market principles, and practicality and cost.

Further, it stated that options 2 and 3 are relatively less disruptive and costly. It recommended that options 2 and 3, or a combination of both of them, were most suitable for further consideration and possible implementation.

## **B.5 Gas Market Leaders Group formation**

The Gas Market Leaders Group (GMLG) was established by the MCE in December 2005 to develop a Gas Market Development Plan (GMDP) due to the industry's preference for an industry-led approach to market development.

Specifically, the GMLG was asked to develop a plan to:

*“deliver on the MCE’s objectives for a competitive, reliable and secure natural gas market delivering increased transparency, promoting further efficient investment in gas infrastructure and providing efficient management of supply and demand interruptions, as set out in the MCE’s Expanded Gas Program”.*

Section 5 discusses the GMDP in further details.

## **C Our terms of reference**

In June 2006, the GMLG provided the MCE with their National Gas Market Development Plan (GMDP) which made some recommendations in relation to the further steps in the gas markets reform agenda. A key assumption underpinning the GMDP is that a major impediment to the development of the national gas market is the lack of price transparency.

ERIG has been asked to report to the Council of Australian Governments (CoAG) by the end of the year on the implementation of further reforms to the energy market.

To assist ERIG in providing recommendations to the MCE to inform their decision regarding the GMDP, we were asked to provide:

- supporting evidence and examples to confirm that market transparency has been a major impediment in the development of the national gas market; and
- identification of any other wholesale market barriers or impediments that should be removed to assist in the development of the national gas market.

## **D Stakeholders consulted**

In surveying investors we have held face-to-face interviews with the parties identified in the Table B1 below. We would like to thank these individuals for their assistance in providing their time and input.

Sector	Organisation	Individual
GMLG Chair	N/A	Ted Woodley
Gas Retailers	AGL	Peter Geers
	TRU Energy	Rod Sparkes / Mark Frewin
	Jackgreen	Geoff Pollard
	Victoria Electricity	Darryl Flukes
Gas Producers	Santos	Rick Wilkinson / Kon Wong
Gas Market Operators	VENCorp	Matt Zema / Terry Grimwade
	REMCo	Stephen Thompson
	GMC	Patricia McKenzie
Gas Consumers	One Steel	Mark Gell
	Rio Tinto	Mark Grenning
	International Power	Mike Downey
Gas Pipeliners	EPIC Energy	Stephen Livens

## **E Questionnaire outline**

The following questionnaire was used to facilitate discussion with market participants. Where required it was amended and tailored according to the discussion at the time.

### **General Overview**

- |   |
|---|
| <ol style="list-style-type: none"><li>1. How is the national gas market developing in your view? Is it too slow? Have things improved over recent years?</li><li>2. What do you think the gas market will look like in 10 years in terms of market structure?</li></ol> |
|---|

### **Gas trading**

We would like to understand the level and nature of trading within the gas market to provide factual information to ERIG about the current state of the market.

- |  |
|--|
| <ol style="list-style-type: none"><li>1. Does your organisation undertake any gas trading (long-term and/or short-term)? If so can you describe the business context within which gas trading is undertaken and where within the organisation this function resides.</li></ol> |
|--|

(for our discussion we will define gas trading as including purchasing, sales, transportation, hedging, speculation or trading of physical gas or gas related financial products)

- |   |
|---|
| <ol style="list-style-type: none"><li>2. Has your organisation undertaken any short-term gas trading?</li></ol> |
|---|

(for the purposes of our discussion we will define short-term as  $\leq 1$  year in duration)

Are you able to provide us with some or all of the following details?

Business or strategic objective for undertaking trades – hedging, speculation, price discovery, other?

Approximate number of trades executed - daily , weekly, monthly

Approximate volume of trades executed (in GJ or PJ)– both aggregate and as a proportion of your total gas portfolio

The typical range of counterparties you have traded with.

Your method of execution – ISDA based, long form conformation, other?

Approximate time taken to negotiate trades

The style of product – for example gas swap, physical, financial derivative, balancing, other?

The region(s) or pipelines in which you usually trade

The approximate number of forecast trades you anticipate undertaking in the next 12 months and 24 months.

3 Have there been any times where your organisation has wanted to undertake a short-term gas trade but were unable to?

What reason (if any) prevented you from undertaking the short-term trade?

No suitable counterparty?

Insufficient data to appropriately assess the trade?

Too expensive?

No suitable product?

Market structural impediments?

Lack of price transparency?

Other?

How many times have these 'missed opportunities' arisen within the last 12 – 24 months?

4. Why has your organisation not undertaken short-term gas trading?

- short-term trading is not considered essential to your business?
- inappropriate systems or capabilities within your business?
- insufficient data to appropriately assess the trade?
- inability to find appropriate counterparties or products?
- too expensive?
- lack of standardisation in contracts, nomination system interfaces, other
- contractual and regulatory requirements are too complex and onerous.
- long-term haulage or supply contracts do not allow the flexibility or are too restrictive
- market structural impediments?
- lack of price transparency?
- other?

5. Are you aware of other organisations undertaking short-term gas trades? Can you describe the volume and nature of the trades you believe other organisations are undertaking?

6 Do you believe that liquidity within the short-term gas market has increased over the last 12 – 24 months? If so why do you think it has improved? If not why do you think it has not increased? Has any increase in liquidity been confined to a certain geographic region or is it national?

7 Do you believe that liquidity within the short-term gas market will increase over the next 12 months? 24 months? Or 36+ months? If so what will drive this improvement? If not why not and what can be done to increase liquidity? Is the increase likely to be experienced nationally or just within certain geographic regions? Why?

### **Gas Market Leaders Group – National Gas Market Plan July 2006**

We want to further explore the conclusions and issues raised within the GMLG report and forum.

1. What involvement did you and your organisation have in the development of the Gas Market Leaders Group (“GMLG”) Plan released earlier this year?
2. What (gas market) issues do you understand the GMLG were seeking to address when they developed their plan? Are there any issues you believe are increasing barriers to entry and thereby reducing competition that the plan should have addressed but did not?
3. Do you have any evidence to support the existence of the issues just discussed?
4. What potential solutions were considered as being able to address the issues? Why (if any) were potential solutions rejected?
5. Other than the MMA report commissioned by the GMLG was there any additional quantification of the issues or solutions that was undertaken by the GMLG? Has your organisation independently undertaken any quantification of the issues or solutions?
6. Do you believe the GMLG recommendations to develop a bulletin board and a short-term trading market will reduce barriers to entry and improve competition within the gas market?
7. What (if any) do you consider are the major implementation issues that will need to be considered and addressed prior to the implementation of the GMLG recommendations?
8. Do you believe there are any alternative or additional solutions to address the issues that will reduce barriers to entry and improve competition within the gas market?

## **F**      **Glossary**

ACCC	Australian Competition and Consumer Commission
AEMC	Australian Energy Market Commission
AER	Australian Energy Regulator
APPEA	Australian Petroleum Production and Exploration Association
BB	Bulletin board
CoAG	Council of Australian Governments
CSM	Coal seam methane
ERIG	Energy Reform Implementation Group
FRC	Full Retail Competition
GMC	Gas Market Company
GMDP	Gas Market Development Plan
GMLG	Gas Market Leaders Group
MCE	Ministerial Council on Energy
NEMMCO	National Electricity Market Management Company
NGERAC	National Gas Emergency Response Advisory Committee
NGL	National Gas Law
NGR	National Gas Rules
OBG	Operational Balancing Gas
REMC <sub>o</sub>	Retail Energy Market Company
SCO	Standing Committee of Officials
STTM	Short-term trading market
VENC <sub>o</sub> r <sub>p</sub>	Victorian Energy Networks Corporation
WUGS	Western Underground Gas Storage

## **G**      **References**

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