



Price transparency in Australia's gas markets: a
research paper for the Energy Users Association
of Australia

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1 Introduction

This research paper has been commissioned by the Energy Users Association of Australia (EUAA) as part of an advocacy project funded by the Consumers' Advocacy Panel. The purpose of the research is to develop a detailed understanding of the impact of gas markets and contracts on price disclosure, to understand the views and experience of participants regarding gas pricing issues and to begin to explore options that enhance gas price transparency.

Gas users in many parts of south and eastern Australia have been concerned about price transparency. The lack of price transparency is an issue for Australia's very largest gas users who negotiate individual contracts with retailers and in a few cases, directly with gas producers or shippers. The concern about the lack of price transparency is reflected in several government reviews, consultancy reports and statements of government policy over the last decade (see for example (Abare, 2003) and (Council of Australian Governments Energy Markets Review, 2002), (Allens Consulting Group, 2005), (Ministerial Council on Mineral and Petroleum Resources / Ministerial Council on Energy Joint Working Group on Natural Gas Supply, 2007) and CME, 2010).

What does pricing transparency mean ?

In what respect is the price of gas less transparent than the price of electricity? Individual gas users obviously know what prices they are paying, and if they ask their peers then they are able to gather the data needed to compare prices and other contract terms. The same conditions apply in electricity where there is no published index of the actual prices in individually negotiated contracts.

In the literature we reviewed, the term transparency is not defined. Our interpretation is that the term price transparency is a generalised reference to the view that prices (including *ex field*, wholesale and retail) are not disclosed, generally published or made available so that non-tariff gas users have difficulty working out whether the price they are paying for gas is above or below the price that others in the market are paying.

This differs from the National Electricity Market (NEM), where the spot, wholesale contract, OTC trades and futures prices are more generally available, although the retail prices paid by contestable customers are not. Energy users, especially larger ones, make extensive use of this price discovery process in the NEM to assist them in their assessment of retail prices and contracts. It is perhaps the single most highly valued aspect of such negotiations, though electricity users do make use of other information (eg past contracts, advice from experts, competitive tenders and market research) in their purchasing decisions. The closeness of the gas and electricity markets and their substitutability makes this contrast in price transparency starker in the eyes of energy users who often use and purchase both commodities.

In the gas sector, the price discovery inbuilt into the NEM is largely absent. There is no published and generally available information on prices. Gas users rely instead on other devices to learn as much as they can about the past, current and future retail price of gas. Such devices include hearsay, word-of-mouth, expert views and modelling, market 'soundings' and regulated tariffs.

As a consequence, gas users generally have less confidence in the competitiveness of their gas price offerings. This appears to be closely aligned to their concerns about limited competition in the upstream and retail gas segments. Most commercial and industrial gas users put the absence of price transparency high on their list of concerns about the gas market and would express the view that they see the need to address this as high on their 'to do' list.

One way to improve transparency is to make information on what users are actually paying, publicly available so that individual users can see how they fare compared to others. Another way is to create transparent markets – of which a “spot” or “short-term” market is one. This is the course of action that policy-makers have pursued over the last five years, and so is a focus in this paper.

Structure of this paper

The paper is set out as follows:

- Section 2 examines how transparent prices are in Australia's various regional gas markets. The focus of this section is description of relevant aspects of the gas markets in New South Wales, Queensland, South Australia and Victoria;
- Section 3 examines the role that the Bulletin Board and Short Term Trading Market can be expected to play in promoting transparency; and
- Section 4 examines what gas users might do to make prices more transparent.

2 How transparent are prices in Australia's gas markets?

There are far fewer complaints about price transparency in electricity than there are in gas. Perhaps the main reason for this is the relative ease with which buyers are able to determine whether they are paying a fair price in electricity, relative to the difficulty of establishing comparable price information in gas. There are many factors that have a bearing on this. The purpose of this chapter is to describe those factors to establish the broader context to the problem of transparency. The broader context also establishes the starting point for the assessment of whether the Bulletin Board and Short Term Trading Market will help to improve transparency problems in gas. Figure 1 below summarises the main factors affecting price transparency in the electricity and gas markets. In the rest of this chapter, the factors in the table are examined in more detail in each regional gas market.

Figure 1. Summary differences between electricity and gas markets affecting transparency

Sector/issue	Gas	Electricity
Upstream	Very highly concentrated ownership of reserves and even more concentrated gas production.	Relative to gas industry, greater number of competing producers, especially in main NEM regions. Some smaller regions more concentrated.
Demand-side	Relative to electricity industry, very much smaller number of individually-negotiated sales agreements.	Large number of individually negotiated sales agreements.
Wholesale spot markets	Other than in Victoria, no co-ordinated market. Short Term Trading Markets in NSW, QLD and SA will result in some centralized co-ordination	Mandatory, centrally cleared wholesale market.
Forward and futures markets	No organized futures or forward market. No liquid forward or futures over-the-counter contract market.	Liquid organised futures markets and bi-lateral over-the-counter forwards and futures market.
Transmission access	Published tariffs on some pipelines. Negotiated access arrangements on most significant pipelines.	Published regulated tariffs.
Contract duration	Seldom shorter than five years for large contracts.	Seldom longer than three years.

2.1 The Victorian gas market

Upstream

The upstream gas supply to Victoria is very highly concentrated. A review of the AER's recent weekly gas market report (Australian Energy Regulator, 2010) shows around 80% of Victoria's gas supply being sourced from the Gippsland Basin and shipped from the Longford production centre, with the remainder shipped on the South West Pipeline. The Gippsland Basin gas is marketed through a joint venture between Esso and BHP Billiton.

Of the remaining 25% of Victoria's gas which enters Victoria on the South West Pipeline, around 50% originates from the Iona Gas Plant and storage facility and the remaining 50% in equal measure from the SeaGas Pipeline and Bassgas. Bassgas gas is jointly marketed by a joint venture representing Origin, AWE and various minorities.

Gas from the Otway Gas Project is now completely controlled by Origin Energy who has recently bought out Woodside's share in the project and has contracted with Benaris and Calenergy - the other equity holders - to purchase their gas. Woodside has previously sold its Otway gas production independently from Origin. Woodside's separate marketing of gas in the Otways has previously been cited as an example of increasing upstream diversity (see (Australian Energy Regulator, 2009, p. 239)).

The remaining participants in the Otway basin includes BHP Billiton and Santos. BHPB has a 90% interest in the Minerva gas field, and the gas is contracted to International Power and shipped on the SEAgas pipeline to South Australia and Victoria. Santos has a 10% interest in the joint venture with BHPB at Minerva and operates (and has a 50% interest) in the Casino gas field, whose gas is sold on a long-term contract to Truenergy.

Bringing these facts together, it is clear that there is a high degree of upstream concentration. BHP Billiton and Esso jointly produce and sell under contract around 80% of the gas used in Victoria. For the remaining 20%, most of this is accounted for by Origin Energy through the Otway Gas Project and Bassgas.

Demand side

On the demand-side, the AER's weekly gas report (Australian Energy Regulator, 2010), shows 4 retailers, 3 distribution and transmission customers and 2 traders making withdrawal bids on the Victorian Principal Transmission System. Of the retailers, in 2006 Origin, AGL and Truenergy together shared around 95% of the market, approximately equally (NERA, 2007, p. 71). Infratil is known to have recently entered the market in Victoria.

Wholesale spot markets

The Victorian gas market is widely considered to be the most transparent gas market in Australia. The main reason for this is the existence of an organized short-term trading market operated by the Australian Energy Market Operator (AEMO). The market is a

mandatory market (all gas bought in Victoria from the Victorian Transmission System is to be transacted through the market).

Prices are set once a day, based on the weighted highest supply bid needed to meet the expected demand in each of five scheduling periods. This spot price applies to the difference between the contracted demands and the actual demands on the system. Effectively therefore the Victorian spot gas market is a short term market for the settlement of imbalances in supply and demand between contracted positions and actual, on-the-day demand and supply.

The Australian Energy Regulator (Australian Energy Regulator, 2009, p. 245) says that 10%-20% of wholesale gas volumes in Victoria are effectively purchased through the spot market, and that spot market price outcomes are used as a guide to underlying contract prices.

Forward and futures markets

In September 2009, the Sydney Futures Exchange listed futures and options contracts struck with reference to the spot price in the Victorian gas market. These futures contracts (and the options on those futures) allow participants to hedge price risks in the spot market. The futures and options contracts are for up to two years ahead.

At the time of writing, the Sydney Futures Exchange website did not show any bids or offers in this market.

Transmission access

There is no separate market for access to and use of the Victorian Transmission System. If pipeline constraints require AEMO to schedule additional gas injections in order to balance the gas system, the cost of such additional above-market purchases are captured in an uplift charge. Effectively this means that market participants have “firm” access to the pipeline system, and that the task of relieving pipeline constraints is borne by AEMO and the resulting charge is recovered from those market participants who are deemed to have caused the pipeline constraints. This arrangement sometimes referred to as “market carriage” is a distinguishing feature of the Victorian gas market.

Contract duration

Although the Victorian gas market is operated through a short term spot market, there are long term contracts which effectively provided financial hedges against spot market outcomes. Woodside’s share of the Geopraphe and Thylacine development (now owned by Origin) was sold to TRUenergy on a 10 year contract (NERA, 2007, p. 23); the 425 PJ gas supply agreement entered into between Santos and TRUenergy for supply from the Casino fields is to be supplied over a 12 year period with an option to extend 3 years (NERA, 2007, p. 23).

2.2 The New South Wales (NSW) gas market

Upstream

The Eastern Gas Pipeline linking the NSW gas market to the Gippsland Basin was commissioned in 2000. Before that almost all NSW gas was sourced from the Cooper Basin, and supplied almost exclusively by AGL under the terms of a 30-year contract that was agreed with the Santos-led joint venture in the Cooper Basin. (Gill, 1995, p. 6). The NSW gas market was opened to competition in 2002. The Bulletin Board data now shows that the EGP – carrying mainly Gippsland Basin gas – accounts for around half of all gas consumed in NSW (Australian Energy Regulator, 2010, p. 5). A small amount of coal seam gas is also supplied from fields near Sydney.

The NSW gas market is the only gas market in Australia supplied almost exclusively from gas produced in other states. It is not possible to know with certainty what proportion of the NSW gas market is supplied with gas from which producer, without knowledge of the contracts between producers, the major retailers and largest customers that may have contracted directly with those producers. Nevertheless it is possible to build up an approximate picture as follows:

- Gas supplied through the Cooper Joint Venture is still likely to dominate the gas transported along the Moomba-Sydney gas pipeline;
- Gas from the Queensland side of the Cooper basin may account for part of the Moomba-Sydney flow. The recently commissioned QSN Link pipeline now provides a physical link between Ballera and Moomba. Even before this pipeline was established, swap contracts have facilitated inter-regional flows. For example, Origin and the South West Queensland gas producers agreed to swap up to 200 PJ of gas between 2004 and 2011. Origin Energy delivered gas produced in its fields in the Bowen/Surat basin to the South West Queensland producers at Roma which was then to be supplied to the South West Queensland Cooper Basin producer's customers located in south-east Queensland. At the same time the South West Queensland producers delivered an equal quantity of gas to Origin at Moomba (transported from Ballera via the Ballera to Moomba pipeline). (NERA, 2007, p. 31)
- Truenergy (who has major supply contracts with Origin (originally Woodside) and Santos from gas in the Otway Basin) has recently commissioned a power station that draws gas from the Eastern Gas Pipeline near Sydney.

While there is greater diversity in the sources of gas used in NSW now, compared to when the industry was deregulated in 2002, and this has facilitated some additional competition, the supply side is still highly concentrated. This may change if future pipeline capacity is built from Coal Seam Gas (CSG) resources in Queensland, or if the prospective Gunnedah or Hunter Valley CSG resources are developed.

Demand-side

There are seven registered suppliers in NSW, although AGL is by far NSW's dominant retailer. It had 98% market share in 1995 (Gill, 1995), then dropping to 84% when the market was liberalised in 2002 and then to 71% in 2009.¹

Wholesale spot markets

New South Wales gas is currently traded through contractual arrangements between gas producers, wholesalers and retailers. Any imbalances in gas supplies (differences between contracted and actual amounts injected or withdrawn) are addressed through balancing mechanisms in the contracts and also the retail market arrangements. These mechanisms inform gas shippers of the amount of gas they are required to inject into the gas system to maintain the security of supply. However, there is limited information provided on gas prices and quantities to allow gas users to respond to gas prices and undertake demand management. The short-term trading market will provide greater transparency and information on gas flows within the system as well as price incentives to better manage those flows in the gas network.

Forward and futures markets

There is no forward or futures market in NSW. All forward contracts are bi-laterally negotiated.

Transmission access

The Moomba to Sydney Pipeline was initially subject to regulation under the Gas Code. The coverage of the Moomba to Marsden segment of the MSP was revoked in November 2003. The remainder of the covered pipeline, from Marsden to Wilton (and laterals), has been subject to light regulation under the National Gas Rules since November 2008. The Eastern Gas Pipeline is unregulated. MSP has published tariffs covering access, throughput and imbalance charges. EGP has published zonal tariffs for Firm Forward, As Available and Backhaul services. On both pipelines capacity rights are tradable.

Contract duration

The establishment contracts for the Moomba-Sydney pipeline were of 30 years duration. Subsequent large volume gas contracts have tended to be shorter, but all are understood to be of at least 10 years duration.

¹ Transcript of the Second Reading of the National Gas (New South Wales) Amendment (Short Term Trading Market) Bill by Penny Sharpe, Parliamentary Secretary, available from <http://www.parliament.nsw.gov.au/prod/parlament/hansart.nsf/V3Key/LC20100421039>

2.3 The South Australian gas market

Up-stream

Data from the Bulletin Board shows that since July 2008 around half the gas consumed in South Australia was imported on the Moomba to Adelaide Pipeline and the other half on the SEAGas pipeline (Australian Energy Regulator, 2010, p. 5). The contracts between retailers and major consumers in South Australia are not publicly available but it is possible to infer the following from available information:

- Origin Energy – the dominant gas retailer in South Australia – has long standing contracts with the Santos Joint Venture for gas supply from the Moomba Basin and Otway Basin;
- AGL has contracts for gas from the Cooper Basin; and
- Origin, Truenergy and International Power have contracted gas from the Otway basin (Origin supplies itself from gas it owns in the basin, Truenergy contracted with Woodside’s Otway interests (now owned by Origin Energy) and International Power is also contracted with BHP Billiton for supply from the Minerva fields in the Otway Basin).

From this it is clear that the dominant up-stream producers for gas sold in South Australia are likely to be Origin Energy (from the Otway basin fields) and Santos from the Cooper basin, with BHP Billiton in a distant third place with gas from the Otway Basin.

Demand-side

Data from AEMO shows that around half of all gas consumed in South Australia is for electricity generation, and the remainder for residential, industrial and commercial supply (Australian Energy Markets Organisation, 2009, p. 19). Of all Australia’s gas markets, in South Australia electricity generation is the largest proportion of the market, relative to other demand sources.² In electricity generation, AGL is the dominant gas-fired plant operator (Torrens Island), followed by International Power (Pelican Point), Origin (Quarantine) and Truenergy (Hallet).

In non-electricity generation demand, Origin has 55% of the market, AGL 21%, Truenergy 15% and Simply Energy (which is owned by International Power) 9%.³

Wholesale spot markets

There is no wholesale spot market. Like the NSW gas market, gas is currently traded through contractual arrangements between gas producers, wholesalers and retailers.

² We have ignored Tasmania where gas in electricity generation may be larger, but in a small market.

³ Source: ESCOSA website <http://www.escosa.sa.gov.au/Content.aspx?p=188> accessed 1 June 2010.

Any imbalances in gas supplies (differences between contracted and actual amounts injected or withdrawn) are addressed through balancing mechanisms in the contracts and also the retail market arrangements. These mechanisms inform gas shippers of the amount of gas they are required to inject into the gas system to maintain the security of supply.

Forward and futures markets

There is no forward or futures market in South Australia.

Transmission access

The SEA Gas Pipeline commenced commercial operations in January 2004. It transports natural gas from Port Campbell and Iona in Victoria to Adelaide and other regional markets in South Australia and Victoria. Nearly all of the Pipeline's current load is sourced from the three Foundation Shippers (Origin Energy, International Power and TRUenergy) under 15 year agreements that expire at the end of 2018.

The Moomba to Adelaide Pipeline was constructed in 1969 by the South Australian Government. Before the pipeline was privatized in 1995, contractual rights to pipeline capacity were established, in contracts lasting 10 years (Epic Energy, 2005). Third party access was established through a regulated access arrangements from 2002, although capacity was not available pending expiry of the privatization contracts. Coverage of the pipeline was revoked in 2007 so that it is now unregulated.

Contract duration

The details of contracts are confidential, but we understand contract terms generally are 10 years or more. As noted above, when the Moomba to Adelaide Pipeline was privatized in 1995, 10 year access contracts were agreed. The foundation contracts for the SEA gas pipelines were 15 years. Adelaide Brighton Cement recently agreed contracts for the transportation of gas on the Moomba to Adelaide Pipeline to two industrial sites for a period of 10 years during 2008.

2.4 The Queensland gas market

Up-stream

In 2008, the total supply of gas in Queensland was around 265 PJ. This is made up of around 90 PJ of conventional natural gas from the Surat/Bowen and Ballera region (of which Santos is the principal supplier), around 165 PJ of Coal Seam Gas mainly from the Surat and Bowen basins, and around 9 PJ of Liquefied Petroleum Gas (LPG) mainly from the Surat basin.

The supply of conventional gas in Queensland peaked in 2002 at around 190 PJ and is progressively declining as existing fields are exhausted. The supply of CSG has increased from 2 PJ in 1998 to 150PJ in 2008. The main CSG resources are in the Surat, Bowen and Moranbah basins. The major CSG producers for gas sold in the Queensland

market have been Origin Energy, Santos, Queensland Gas Company and Arrow Energy. There has been rapid concentration in reserve ownership in response to the need to secure reserves for proposed LNG export projects. The willingness of LNG-focussed CSG producers to continue sell into the Queensland domestic market is a concern for many gas users and the Government of Queensland (see (Carbon Market Economics, 2010)).

Demand-side

The Queensland gas market is somewhat different to those in NSW, VIC or SA in that there are some significant load centres (e.g. Gladstone, Mt Isa, Townsville) that are distant, and either isolated from or not directly connected to the main demand centre in South East Queensland.

Queensland has a few large gas users that together account for 150 PJ of demand. A major (and growing) use is also in electricity production. There is currently 1,200 MW of open cycle gas turbine capacity (OCGT) (Mackay, Mt. Stuart, Oakley, Roma, Barcaldine) and 610 MW of combined cycle gas turbine capacity (CCGT) (Yabulu, Swanbank E) operational, whilst 150 MW of OCGT (Condamine) and 1,200 MW of CCGT (Braemar 2, Yarwun, Darling Downs) is currently under construction. Queensland's dominant gas generators - Origin Energy and ERM - source their gas directly from producers (and Origin Energy is itself a significant gas producer). There are two main gas retailers in Queensland, Origin Energy and AGL that together serve the vast bulk of the retail gas market.

Wholesale spot markets

There is no organised spot market in Queensland. Long-term contracts are typically structured as take-or-pay and often account for 80% to 90% of total consumption. Shorter-term gas supplies are negotiated bi-laterally. With a small number of major buyers negotiating individual contracts, there is no organised exchange and price discovery is poor.

Forward and futures markets

There is no organized forward or futures market in Queensland.

Transmission access

Some major pipelines in Queensland are regulated including the Ballera to Mt. Isa, Ballera to Wallumbilla and Wallumbilla to Brisbane pipelines. (Carbon Market Economics, 2010) describes a high degree of dissatisfaction amongst major Queensland gas users about the pipeline access arrangements. Challenges include difficulty in co-ordinating pipeline and gas supply contracts; allegations of under-investment and profiteering by pipeline owners and lack of redundancy to major load centres.

Contract duration

Historically, the main suppliers of gas to large energy users have been Santos and Origin Energy. Sales from CSG have increased rapidly over the last decade. Much of these sales have been concluded on long term (> 10 year) contracts. Typically these contracts have been indexed for inflation, and may be re-opened in limited circumstances. Major long-term CSG contacts include those between Incitec Pivot and QGC (in 2007) and between Rio Tinto and Origin Energy in 2008.

Until the prospect of LNG became more certain, CSG developers had been keen to negotiate long term off-take contracts in order to secure the income stream needed to raise capital to accelerate the exploration of their resources.

The ability to secure long term contracts has also been valued by large gas users in the context of major capital investments, where energy price certainty has been a significant investment variable. Transparency of long-term contracts is poor. Most contracts contain terms prohibiting gas buyers from disclosing terms.

3 Will the Short Term Trading Market (STTM) and Bulletin Board make prices more transparent?

3.1 Introduction

The jurisdictions – through the Ministerial Council of Energy (MCE) - have made the development of a gas Bulletin Board and a Short Term Trading Market the focus of their efforts to promote price transparency. This section describes these mechanisms and assesses the contribution that they might be expected to make to gas price transparency.

3.2 History of the development of the Bulletin Board and STTM

The path leading to the development of the Bulletin Board and STTM starts with the Council of Australian Government's Energy Market Review (EMR) (otherwise known as the Parer Review) in December 2002. That review suggested that the main problems in the gas industry were the upstream concentration (exacerbated by joint marketing) and lack of competition in pipelines. It made no mention of a Bulletin Board, Short Term Trading Market or any other such facilitated market as solutions. Instead, it suggested that the Governments should reassess the need for joint marketing of gas resources (Council of Australian Governments Energy Markets Review, 2002, p. 203), should consider arrangements to promote third party access to upstream facilities (Council of Australian Governments Energy Markets Review, 2002, p. 204), should review acreage management arrangements and should address the deficiencies in pipeline competition (Council of Australian Governments Energy Markets Review, 2002, pp. 194-196).

The conclusions of the Energy Markets Review about gas have generally been rejected by state governments. The states disagreed that action should be taken on joint marketing (Ministerial Council on Energy, 2004) or that third party access to upstream facilities was appropriate. Five years after the EMR recommendations, the jurisdictions had also not got further than concluding that acreage management arrangements merited "further investigation" (Ministerial Council on Mineral and Petroleum Resources / Ministerial Council on Energy Joint Working Group on Natural Gas Supply, 2007, p. 32)

Instead of taking action on the fundamental gas market issues identified in the EMR, the MCE preferred instead to focus their attention on the development of a Bulletin Board and Short Term Trading Market (STTM). The Ministerial Council on Energy commissioned a report by the Allen Consulting Group (ACG) on different ways to make prices more transparent. ACG described various options to achieve this including a "bulletin board" (Allen Consulting Group, 2005, p. 55) for posting price information and a "city gate scheme" which was proposed by the Energy Retailers Association of Australia. (Allen Consulting Group, 2005, p. 59)

The MCE then decided to outsource the development of a bulletin board and short term trading market to the industry. The Gas Market Leaders Group was tasked with the

development of a “Gas Market Development Plan”. This plan was published in June 2006 setting out how to develop the Bulletin Board (BB) and STTM.

The work to develop the BB was then delegated to various working groups under the control of the GMLG. Over time the BB has evolved from a mandatory price posting device with some operational data (as ACG had recommended) to a website that only contains operational data. The development of public pricing information was given over to a separate process through the STTM which was commenced after the BB work had been all but completed.

The BB was implemented in July 2008, and the STTM is due to “go-live” in South Australia and NSW in September this year, and in Queensland in July 2011.

3.3 Overview of the Bulletin Board and STTM

3.3.1 Bulletin Board

The website for the National Gas Market Bulletin Board (www.gasbb.com.au) describes the BB as

“ ... a single electronic communications system (website) covering all major gas production fields, major demand centres and natural gas transmission pipeline systems, including the interconnected systems of South Australia, Victoria, Tasmania, NSW, the ACT and Queensland. Provision has been made for Western Australia and the Northern Territory to partake in the Bulletin Board in the future.

The objective of the BB is to facilitate trade in gas and capacity over the relevant pipeline systems through the provision of system and market information which is readily available to all Bulletin Board users.

In addition, the BB has a facility developed specifically to support the work of the National Gas Emergency Response Advisory Committee (NGERAC) and jurisdictions in the event of major gas emergencies ... The BB will gather emergency information from the relevant BB Participants as required by NGERAC and/or the relevant jurisdictions. All registered BB Participants will have access to the BB “emergency information page” where this information is reported.

The value of the BB to the broader market will be when outages or maintenance occurs at production points or on pipelines. The BB would then show updated daily demands, actual or expected changes in the supply capacity to the demand centres and potentially, in the event of significant outages or system incidents, a flag indicating likely interruption of customer supplies.”

The BB website displays various operational data such as forecast pipeline flows, capacity outlooks, linepack capacity and actual flows. The website has no price information on the BB (contrary to the main purpose of the BB, as the ACG report had envisaged).

Notwithstanding the absence of price information on the BB, we have found data derived from the website and published by the AER to be useful in understanding

upstream gas market concentration (as reported on in Section 2). This sort of data would previously only have been available to pipeline operators, retailers and gas producers. In this sense, the BB is helping to make market-relevant information about operational and physical flows more transparent.

3.3.2 STTM

As its name implies, the STTM is a market for the short term trade in gas. It is a relatively small but nevertheless complex market. A useful and comprehensive description of the STTM is set out in (Australian Energy Market Operator, 2010). This document describes the essential purpose of the STTM as being to create a “market” between producers and consumers:

“Previously, a retailer might purchase gas directly from a producer and pay someone to deliver its gas to the network. With the STTM, “shippers” deliver gas to be sold in the market, and “users” buy gas for delivery to consumers. The same organisation might sell gas into the market and purchase gas from the market, but it does so at the daily market price, and it offers gas for sale under the same terms as any other shipper, and buys gas under the same terms as any other user. But it’s not “its gas” anymore. If an organisation has gas that is excess to its requirements, it can sell the gas the next day on the open market. Or, if demand is higher than expected, it can bid to purchase the extra gas, when and if it needs to.”

While the broad principles of the STTM are understandable, actually understanding in detail how the market works demands a descent into complex procedures. For the sake of brevity (taking account of the purpose of this paper) we only describe the essential main features of the STTM, avoiding much of the complexity.

Before the trading day

1. Users place bids to buy gas and shippers place bids to sell gas;
2. AEMO ranks ascending bids and descending bids and determines an *ex-ante* price at the point that the lines intersect (clears the market);
3. Shippers nominate the quantity of gas it requires from pipeline operators;
4. Pipeline operators aggregate the nominations and set a pipeline schedule, i.e. the quantity of gas to be flowed on the pipeline for the trading day.

During the trading day

1. Pipeline operators deliver gas and users withdraw gas;
2. Shippers may renominate the quantities of gas that they intend to flow;
3. Pipeline operators balance the system and ensure that pressures are maintained within their allowed limits.

After the trading day

1. The actual quantities of gas delivered to the hub are measured daily by the pipeline operator, who, the day after the trading day, provides AEMO with the quantities that were allocated to each shipper on the trading day. AEMO then allocates the total of all pipeline allocations at a hub to the users who withdrew gas from the hub. Gas that is supplied and withdrawn according to the market schedule is settled at the *ex ante* market price.

2. The difference between what shippers said they would inject or withdraw (at the day-ahead and as varied by their renominations) and what they actually injected/withdrew is called a deviation. Deviations cost more than the *ex-ante* price (for withdrawals) and are paid less (for injections). AEMO balances deviations based on the prices determined under its Market Operator Service.

3.4 Assessment of the contribution of the BB and STTM to price transparency

3.4.1 Bulletin Board

The BB makes no direct contribution to price transparency. As noted earlier, it was proposed by ACG to deliver price transparency through a mandatory requirement to post prices. But it changed into a repository of operational information. This operational information may be valuable in fundamental market analyses, but since it does not report prices, has no practical value in promoting price transparency.

3.4.2 STTM

The MCE and jurisdictional governments are promoting the STTM as making a major contribution to price transparency. For example, in the second reading in the New South Wales parliament of a Bill to implement the STTM, the Parliamentary Secretary said that:

“The short-term trading market ... integrates long-term contracts with more transparent pricing and information provision through a flexible, responsive trading arrangement that provides opportunities to both new and established participants. It will allow market participants to undertake short-term trades to better match short-term variations in supply and demand. Consumers, while not directly participating in the short-term trading market, are expected to benefit from market implementation through improvements to security of supply as well as more efficient gas pricing.”

The Bill was not opposed by the Opposition, but in the same reading the Deputy Leader of the Opposition noted:

“ ... industry raised concerns that this has seen a very expensive implementation and is a very complicated system. Eastern Star Gas supports the bill because it provides an option to sell surplus gas into the Sydney hub. However, it raises concerns that the short-term trading market is complex in both its design and risk for retailers. While most people are unhappy with the design, it is too late to change it.”

Numerous reports by consultants and other institutions have doubted the value of a short term trading market in promoting transparency.

In 2003, long before the idea of a short term trading market had been written down, ABARE noted that:

“In considering the potential liquid financial markets to develop in Australia, it is worth noting that transparent spot markets will only emerge and promote efficiency in the entire gas market if there is sufficient liquidity, which will only occur if there is sufficient competition. In the absence of sufficient liquidity, transparent spot markets are unlikely to emerge quickly. And where they do emerge, the lack of liquidity will make the market susceptible to the actions of a few market participants, which limits the ability to develop financial markets based on these physical markets because the risks associated with the exercise of market power diminish profitable financial trading opportunities.”(Abare, 2003, p. 5)

In its submission to the Allen Consulting Group’s report to the MCE, Exxon-Mobil noted:

“Gas sales are typically conducted under long-term bilateral agreements that are not compatible with daily spot trading. Due to the lack of depth in the wholesale market and the small number of participants in the wholesale gas market, appropriate gas sales and transportation arrangements have been established to manage the need for long term bilateral relationships with strong inter-dependencies;”(Allen Consulting Group, 2005, p. 59)

In its report to the MCE on the “city gate scheme” (which is the blue print for the STTM), Allen Consulting Group itself noted that:

“There is no guarantee that a city gate scheme will increase liquidity in the contract market. A spot price is already determined in Victoria and there is no evidence of liquid contract trading based on this price. Short term contract trading will still be conducted as it is today – bilaterally, without any other market participants getting information about the deals. The market would remain ignorant about prices and terms that have been dealt, stifling further trading. It is possible that a transparent spot price will encourage further trading, but the Victorian experience to date would suggest otherwise.”(Allen Consulting Group, 2005, p. 60)

The summary from this is that while the jurisdictional governments have been keen to promote the STTM as a significant step forward for price transparency, several well-informed analysts and market participants are on record suggesting that this is wishful thinking.

The STTM is a compulsory spot market – market participants are required to trade through it, and so it will establish a spot price. In this sense, it will achieve what policy makers intend – price transparency in a wholesale market. However, the relevant issue – from the perspective of transparency – is whether this spot price will bear any relation to the contracts offered to end user non-tariff customers.

As noted earlier, the AER says that 10-20% of Victoria’s gas supply is bought on spot markets, and that spot market outcomes are used as a guide to contract prices. If this is indeed the case, then such a spot market does indeed achieve price transparency. If the same success was achieved through the STTM in other regional gas markets then end users should be able to rely on the STTM prices as reflective in some sense of wholesale commodity prices.

We are doubtful that this is a likely outcome. Chapter 3 documented the very high degree of upstream and demand-side concentration in Australia’s gas markets. While

gas shippers and users will be compelled to trade through the STTM, they will hold contracts outside the STTM that will make them insensitive to STTM prices. If this is the case, then why should they place any particular effort in accurately reflecting their bids and offers in the STTM? Indeed, the high degree of market concentration may not just be a neutral factor: market participants could use the STTM to deliver prices that would deter new entry. This could be done, for example, by depressing prices for long periods, or by inducing price volatility that has the effect of increasing the risk for new entrant retailers or producers that are not fully contracted. In this way, the STTM can be used as a barrier to entry, and thus reduce competition. The AER, for example, has alleged that this sort of outcome is occurring in the spot market for electricity in South Australia (see for example (Willet, 2009) or (Australian Energy Regulator, 2008, p. 14)).

A counter-argument is that gas shippers will both bid and offer in the STTM and so the number of market participants on both sides of the market will increase with consequential improvements in market liquidity. There may be some truth in this, and if so this should expect to become evident in the trading record of the STTM once the market begins. However, fundamentally, it is difficult to see why introducing a new way for market participants to trade with each other in the short term, should suddenly induce those participants to reveal their true costs – especially since those participants are likely to be fully hedged, through long term contracts – against the STTM’s prices.

There are two other reasons to be doubtful about the ability of the STTM to deliver prices that will provide a guide to contract prices:

- **Complexity:** The STTM is a remarkably complex market. Participants seeking to operate in that market will need to master complex logic and procedures. It must be unlikely that all but the every largest market participants will be able to afford to develop or acquire the expertise to trade in this market. The market is therefore likely to raise barriers to entry and participation even further, reducing competitiveness and decreasing the reliance than can be placed on STTM prices as indicative of contract prices. To reinforce this point, several large gas users in Queensland that will be required to operate in the STTM once it commences in that State are concerned that the STTM is so complex that they struggle to understand it, that its effect on their current contracts is uncertain and that they will incur significant costs to participate with very little anticipated benefit.
- **Pipeline access:** The STTM is a commodity market. Users also need to negotiate access to pipelines to deliver the commodity. As noted in the previous section, these access agreements are almost always long term contracts – and to the extent that trade in pipeline access occurs, it is under the auspices of arrangements defined in those long-term contracts. The long-term nature of the pipeline access contracts will therefore encourage long-term commodity market contracting, further undermining the liquidity in the spot commodity market. By only capturing the commodity price, the STTM will not deliver transparency on shipping costs.

4 What can energy users do to make prices more transparent?

Chapter 2 has reviewed the gas markets in Australia's south and eastern states. High levels of upstream and retailer concentration is a feature of all the regional gas markets. Chapter 3 reviewed the Bulletin Board and STTM. It concluded that it is difficult to see why introducing a new way for market participants to trade with each other in the short term, should induce those participants to reveal their true costs – especially since those participants are likely to be fully hedged against the STTM's spot market prices.

Energy users have contributed to the debate that lead to the formation of the GMLG and development of the STTM and Bulletin Board. They made their views known that the focus of policy makers should be on the fundamental structural problems of market concentration and pipelines access. Is there more that energy users can do, by participating more actively in the on-going development of the STTM? Not all the participants to debates on market design will be as supportive of gas price transparency as energy users will be. If energy users collectively and individually want to influence the development of the STTM, such efforts would need to be very well resourced. In view of this, and having regard to the fundamental problem of structural concentration, it is not clear that this approach will be feasible or successful in delivering greater transparency.

The proof of a cake is in its eating. The prices that end users pay for their gas, and the security of their supply is the outcome that matters most to users. Users have the power to choose – subject to existing confidentiality agreements - whether to systematically and publicly share information on the prices they are paying. In the absence of a more competitive gas market or policy decisions to improve pricing transparency beyond the limited STTM, if price information is effectively compiled and presented, it is likely to be of immense value to gas users in helping them to decide whether they are getting a good deal from the market. Wider access to end users prices is also likely to act as a competitive pressure in the industry since it will provide better information to new entrant retailers, shippers and pipeline developers of the economics of the industry, and hence where profitable investment and business opportunities may lie.

As discussed in Chapter 3, the Allen Consulting Group explored the possibility of promoting price transparency through a bulletin board (see (Allen Consulting Group, 2005, pp. 42-43). They envisaged mandatory disclosure of price and also of various operational information on the Bulletin Board, and also possibly a trade-facilitation role. In its response to ACG's draft report, the Australian Pipeline Industry Association suggested that the idea had merit, but noted that on two pipelines shippers had preferred bilateral trading without a bulletin board. In its response to the draft report, Origin Energy noted the illiquidity in Australian gas markets and suggested that trade facilitation through a bulletin board was not likely to be successful. VENCORP suggested that a bulletin board would not be successful unless it was mandatory.

Our idea on a “bulletin board” is a little different to ACG’s in that it will be neither a trade facilitation device, and it will be end users – rather than shippers or retailers - that post prices on the board. We recognise that there are many reasons why it will be difficult to actually gather and publish such information:

- **Contractual restrictions:** many users may have agreed to contractual confidentiality;
- **Protection of commercially sensitive information:** Some users may not wish to make the terms of gas purchases known if doing that will effectively result in some commercially-sensitive information becoming available to competitors;
- **Free-riding:** some users may be afraid that their effort will provide uncompensated value to their competitors;
- **Potential embarrassments:** Some users may wish to protect themselves from the potential embarrassment that may arise if they are shown to have negotiated prices at a premium to those in the market;
- **Contractual specificity:** gas contracts can be complex with differences related to contract, certainty of supply, price bands, take-or-pay terms, re-openers and indexation. As such, constructing a fair comparison of prices may be difficult to do.

It should be possible to overcome these difficulties. Perhaps confidentiality clauses would restrict the publication of the terms in existing contracts, but future contracts need not be confidential. Commercial confidentiality and potential embarrassments should be avoidable if data is anonymous. Free-riding need not be a problem if there is widespread participation. Contractual specificity should be possible to deal with through analysis.

Perhaps the biggest challenge will be to find the will and resources to gather, process and publish the information. Strong support (and leadership) by significant energy users will be needed.

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