

5 September – 11 September 2010

## Preface

As part of its monitoring roles for the National Gas Market Bulletin Board (Bulletin Board) and the Declared Victorian Wholesale Gas Market (Victorian Gas Market), the AER publishes a weekly gas market report. Part A of the report looks at gas usage and flows of registered facilities in southern and eastern Australia (as reported on the Bulletin Board). Part B provides a summary of operational and market data in the Victorian Gas Market.

The AER is responsible for monitoring and enforcing compliance with Part 20 of the National Gas Rules that authorise and govern conduct in the Short Term Trading Market (STTM). The STTM is a market for the wholesale trading of natural gas at defined hubs between pipelines and distribution systems, and began operation on 1 September 2010. With initial hubs of Sydney and Adelaide, additional hubs are intended for the future. Each hub is scheduled and settled separately, but all hubs operate under the same rules. Part C provides a summary of operational and market data in the STTM.

The Victorian Gas Market lies between the two STTM hubs and shares common production sources with the Adelaide and Sydney hubs. Participation in the Victorian Gas Market and the STTM hubs occurs on the basis of a different set of market rules and requires contractual arrangements with different pipeline owners. Participants operate in only those markets where they have production, gas and pipeline contracts. The larger number of retailers participating in the Victorian gas market reflects the increased number of retailers in Victoria. Some key differences between the STTM and the Victorian Gas Market are set out at the start of Part C.

This report will evolve over time and the nature of information presented may change. The AER welcomes feedback on the report from interested parties. Feedback can be sent to [aer inquiry@ aer.gov.au](mailto:aer inquiry@ aer.gov.au), with the subject title 'Comments on weekly gas report'.

## Summary

For the second consecutive week average prices in Victoria fell compared to the previous week, from \$1.44/GJ in the previous week to \$1.35/GJ, consistent with a reduction in demand of 4 per cent. Average prices in the Victorian gas market were lower than prices in the Sydney and Adelaide hubs as shown in Figure 1.

**Figure 1: Average daily price (\$/GJ) – All gas markets**

5 September – 11 September	Victorian market*	STTM Sydney hub**	STTM Adelaide hub**
<b>Average Price</b>	1.35	3.02	3.45

\* weighted average daily imbalance price

\*\* ex ante market price

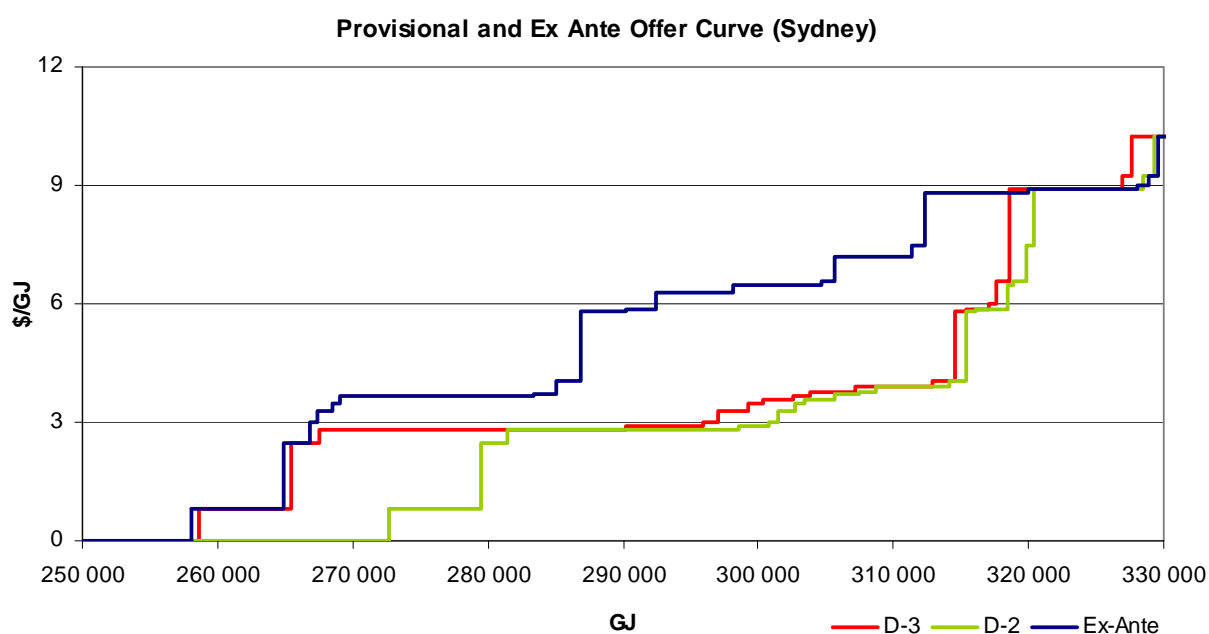
The largest price differential occurred on 9 September 2010 as shown in Figure 2.

**Figure 2: Prices (\$/GJ) on 9 September**

	Victorian market	STTM Sydney hub	STTM Adelaide hub
Weighted Average Daily Imbalance Price	0.32	N/A	N/A
Ex ante price	N/A	4.06	3.47
Ex post price	N/A	6.50	3.44

The ex ante price in the Sydney hub was significantly higher than in Adelaide. Provisional (d-3 and d-2) prices for the Sydney hub, however, were only \$2.80. The difference between provisional and ex-ante price appears to have been driven by changes in offers to the hub rather than changes in user price taker bids (or demand forecasts). Figure 3 shows the outcome of this re-offering (see also Figures S13 and S15 in Part C).

**Figure 3: Comparison of offers in the Sydney hub (D-3, D-2 and ex-ante) for 9 September**



The higher ex post price (\$6.50) reflected higher than forecast network allocations on the day. Figure 3 shows the sensitivity of price to changes in gas demand whereby the offers curves have a number of steep steps starting from approximately 250 TJ indicating that a small change in demand will lead to a significant increase in price.

#### *5 September - default allocations at Sydney Hub*

Jemena EGP failed to provide allocation data for 5 September, as required under rule 419(1) of the National Gas Rules. As a result AEMO was required to use default allocation data, which meant that the ex post price was not set on the basis of actual meter readings. In response to a query to Jemena EGP, it has indicated to the AER that this was related to the failure of computer equipment. EGP has since identified preventative measures to avoid a recurrence.

## **STTM Gas Markets (Adelaide and Sydney)**

Average ex ante and ex post prices decreased compared to the previous week in both hubs. (see Figures S3, S4).

Higher network allocations than scheduled network demand contributed to the higher ex post prices on Tuesday and Thursday in Sydney and on Wednesday in Adelaide. On Saturday the ex post price was lower in Adelaide with lower allocated gas than scheduled (see Figures S5, S6). The incidence of under-forecasting of gas requirements is illustrated in the net deviation figures reported in Part C (see Figures S19, S20).

The predominant source of gas delivered to both hubs continues to be from the Moomba Sydney Pipeline and the Moomba Adelaide Pipeline. Allocations across all pipelines are well below capacity (see Figures S7 and S8)

The highest service payments for MOS (balancing gas) occurred on Thursday 9 September. This was driven by significant requirements for MOS on Tuesday - the Rules require payment two days after the requirement (that is on Thursday) at the ex ante market price (for Thursday) for the MOS that was provided on Tuesday (see Figures S17, S18)

The quantity of market schedule variations (MSVs) doubled compared to the previous week in Sydney (see Figure S21), with the largest occurring on Sunday (approximately 14 TJ).

## **Victorian Gas Market**

In line with a decrease in demand in Victoria, average gas injections fell by 29 TJ (4 per cent) compared to the previous week (see Figure V3). The average imbalance price decreased from \$1.44/GJ the previous week to \$1.35/GJ (see Figure V2). AEMO issued demand overrides of 2 TJ on Tuesday and -12 TJ on Friday (see Figure A5). Supply and Demand Point Constraints (SDPCs) were applied to injections at Longford and withdrawals at Culcairn on 9 September. Directional Flow Point Constraints (DFPCs) were also applied to injections and withdrawals at SEA Gas on 5 September, and at Vic Hub on 7 and 9 September.

## **National Gas Market Bulletin Board**

There were three instances of missing flow data on the Bulletin Board this week. Flow data for the Tasmanian Gas Pipeline was missing for 5 September, while Esso's Longford production facility and APA Group's Carpentaria Gas Pipeline were missing flows for 11 September.

Figure N4 shows changes in gas demand and production and pipeline flows compared to the previous week. Total average daily demand for gas was steady compared to the previous week. Small increases in demand occurred in most regions except Victoria, with Queensland steady.

Total average daily gas powered generation (GPG) gas usage rose by 54 TJ (12 per cent) compared to the previous week. This was the result of increased GPG demand in all regions except Tasmania, where GPG usage remained stable.

Average daily production volumes were relatively unchanged from the previous week.

Average daily pipeline flows remained relatively unchanged for most pipelines this week. Flows to South Australia on the SEA Gas Pipeline increased by 32 TJ (16 per cent) due to increased demand in the state and reduced demand in Victoria.

# Part A: National Gas Market Bulletin Board

## Overview of pipeline and production flows

Figure N1 sets out the average daily pipeline flows into each key demand region across the National Gas Market. A list of pipeline facilities for each demand region is provided in Figure A1 of the Appendix.

**Figure N1: Average daily pipeline flows (TJ) into each demand region**

Average daily flows	NSW	ACT	VIC	SA	TAS	Brisbane	QLD	
							Mt Isa	Gladstone
5 September – 11 September	401	35	777	341	49	190	94	117
Financial Year-to-date 2010-11*	451	46	914	323	49	187	92	101
Financial Year-to-date 2009-10**	444	42	847	283	25	148	90	68

\*Average daily estimated gas consumption measured from 1 July 2010 to the current week (inclusive)

\*\*Average daily estimated gas consumption measured from 1 July 2009 to the equivalent week in 2009 (inclusive)

Source: National Gas Market Bulletin Board <http://www.gasbb.com.au>

Figure N2 provides the average daily amount of gas used for GPG (gas-powered generators) in each state.

**Figure N2: Average daily gas (TJ) used by gas-powered generators in each state**

Average daily gas for GPG usage^	NSW	VIC	SA	TAS	QLD
5 September – 11 September	70	9	205	33	168
Financial Year-to-date 2010-11*	80	19	182	34	160
Financial Year-to-date 2009-10**	85	42	146	10	107

^Estimated values based on application of implied heat rates for generators within the demand region sourced from ACIL Tasman's 2009 Final Report 'Fuel resource, new entry and generation costs in the NEM'

\*Average daily estimated gas consumption measured from 1 July 2010 to the current week (inclusive)

\*\*Average daily estimated gas consumption measured from 1 July 2009 to the equivalent week in 2009 (inclusive)

Source: <http://www.aemo.com.au>

Notes: Data for each state collected on the following basis:

1. NSW - Smithfield Energy, Uranquinty, Hunter Valley GT, Colongra and Tallawarra power stations
2. VIC - Laverton North, Valley Power, Jeeralang A, Jeeralang B, Somerton, Bairnsdale, and Newport power stations.
3. SA - Dry Creek GT, Hallet, Pelican Point, Torrens Island, Mintaro, Osborne, Ladbroke Grove, and Quarantine power stations.
4. TAS - Tamar Valley power stations.
5. QLD - Braemar 1, Braemar 2, Roma, Oakey, Barcaldine, and Swanbank power stations.

Figure N3 sets out the daily average flows from production and storage facilities from each production zone across the National Gas Market. A list of production/storage facilities for each zone is provided in Figure A2.

**Figure N3: Daily average production flows (TJ) for each production zone**

Average daily flows	Roma (QLD)	Eastern Victoria	Otway Basin (VIC)	Moomba (SA/QLD)
5 September – 11 September	554	947	315	340
Financial Year-to-date 2010-11*	564	1041	349	363
Financial Year-to-date 2009-10**	421	853	353	363

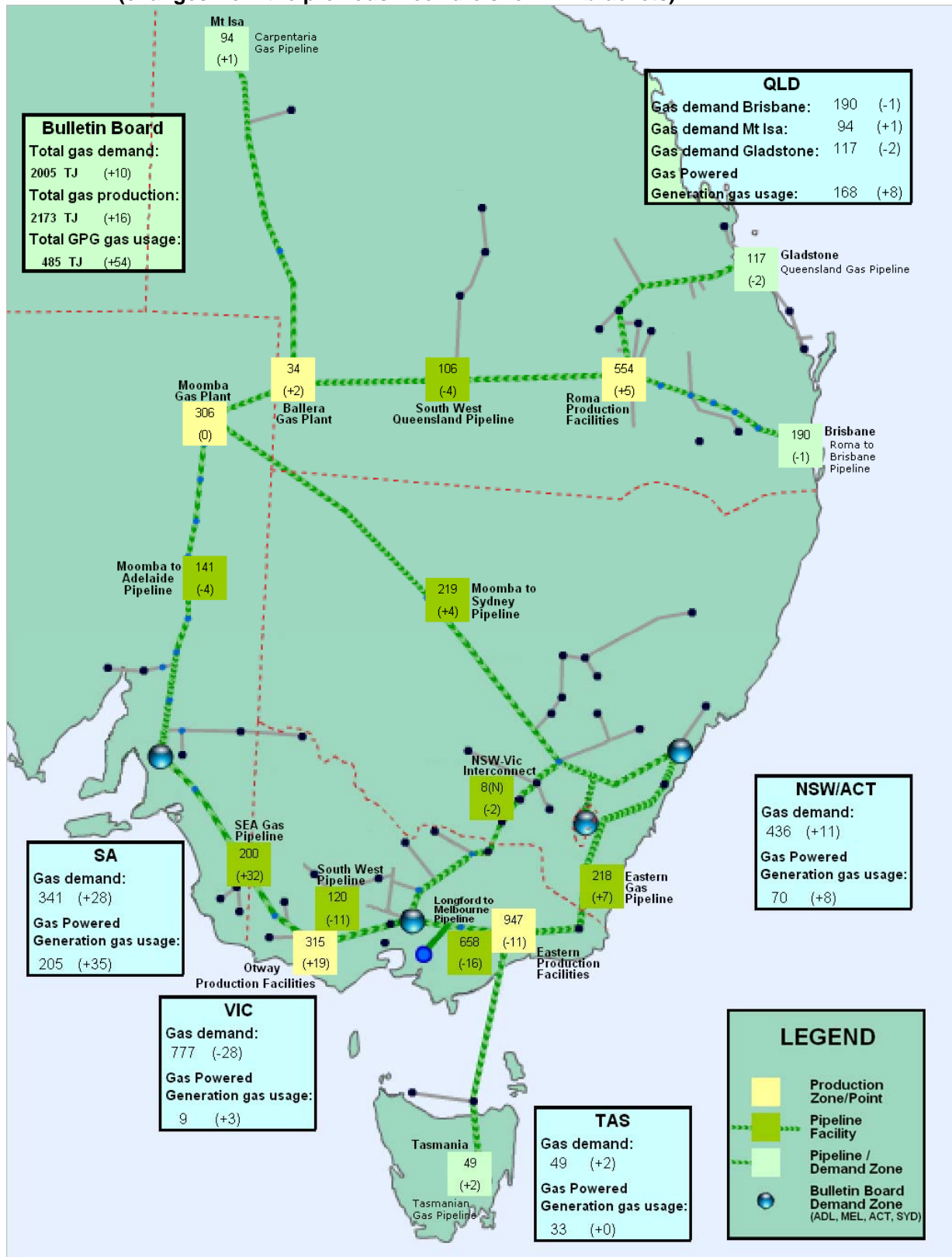
\*Average daily estimated gas consumption measured from 1 July 2010 to the current week (inclusive)

\*\*Average daily estimated gas consumption measured from 1 July 2009 to the equivalent week in 2009 (inclusive)

Source: National Gas Market Bulletin Board <http://www.gasbb.com.au>

Figure N4 shows the changes in average daily pipeline and production flows compared to the previous week, as well as the gas demand and GPG usage of gas in each region.

**Figure N4: Gas production/consumption and pipeline flows (TJ)**  
 (changes from the previous week are shown in brackets)

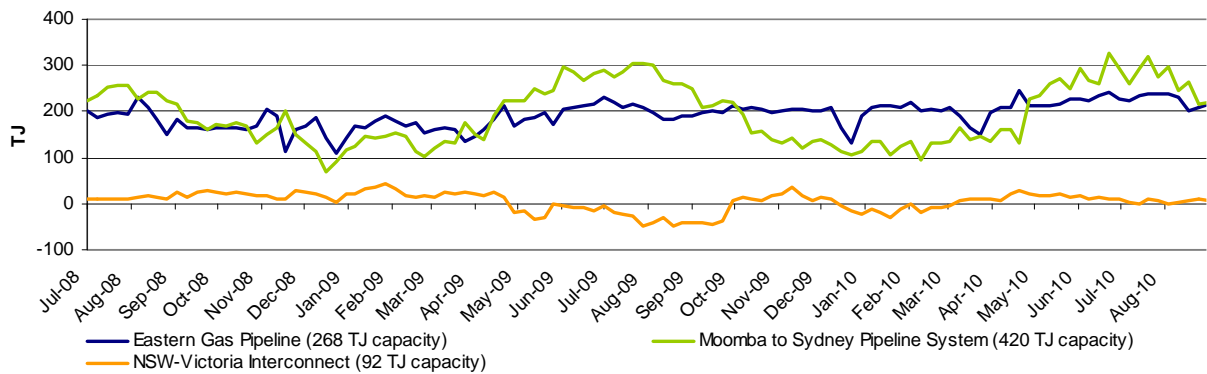


Source: Natural Gas Market Bulletin Board <http://www.gasbb.com.au>  
 Notes: Direction of aggregate daily flows along the NSW-Vic Interconnect indicated on map by S (South) or N (North).  
 Numbers in brackets indicate a change in average daily flow from the previous week.

## Gas flows into demand regions

The figures below provide the average daily flows into each of the demand regions served by multiple pipelines and supply sources.

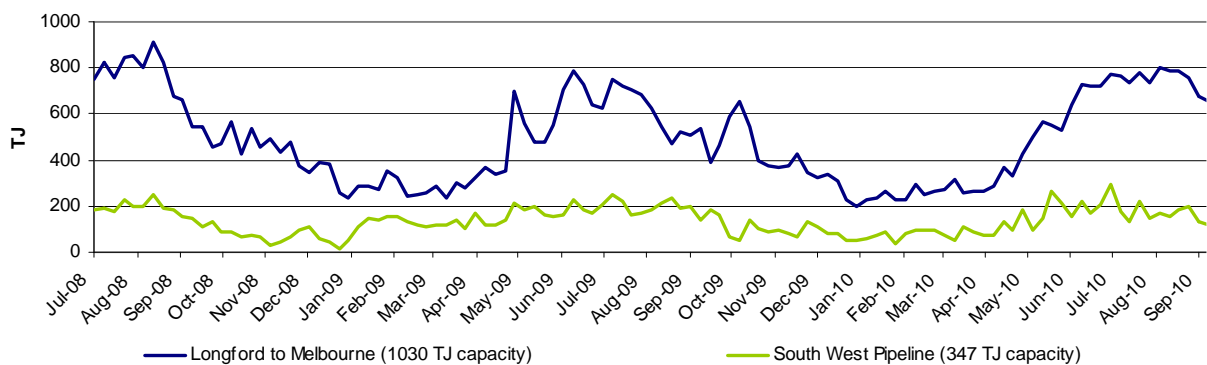
**Figure N5: Average daily flows (TJ) into NSW/ACT demand region**



Source: Natural Gas Market Bulletin Board <http://www.gasbb.com.au>

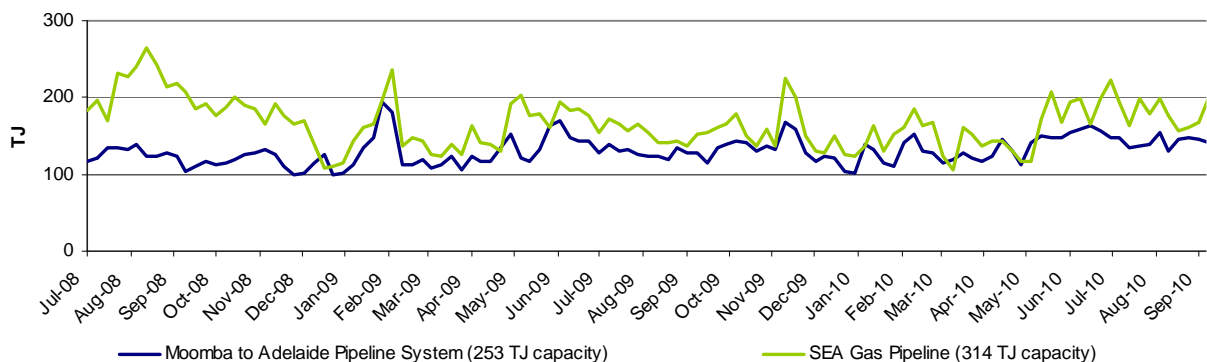
Notes: Negative flows on the NSW-Victoria Interconnect represent flows out of NSW into VIC.

**Figure N6: Average daily flows (TJ) into VIC demand region**



Source: Natural Gas Market Bulletin Board <http://www.gasbb.com.au>

**Figure N7: Average daily flows (TJ) into SA demand region**



Source: Natural Gas Market Bulletin Board <http://www.gasbb.com.au>

# Part B: Victorian Gas Market

## Participation in the market

Figure V1 shows participant bids submitted at the start of the gas day (6 am) at injection and withdrawal points on the Victorian Principal Transmission System (VPTS). The orange shaded boxes indicate that the participant submitted bids at that location on at least one occasion during the week. An “S” indicates that some of this nominated gas was scheduled into the gas market, while “NS” indicates that none of the gas was scheduled. Green shading indicates where a change has occurred from the previous week.

Bids are scheduled in price merit order — this means injection bids which are less than the market clearing price will be scheduled, while withdrawal bids which are greater than the market clearing price will be scheduled into the market.

**Figure V1: Injection and withdrawal point bids in the VIC Gas Market<sup>^</sup>**

Market Participant	Participant type	No. of injection / withdrawal bid points	Injection bids in the VPTS							Withdrawal bids in the VPTS				
			BassGas	Culcairn	IONA	LNG	Longford	SEA Gas	VicHub	Otway	Culcairn	IONA	SEA Gas	VicHub
AETV Power	Trader	1							S					S
AGL (Qld)	Retailer	1				NS								
AGL	Retailer	4		NS	S	NS	S				NS	NS		
Aurora Energy	Retailer	1					S							
Aust. Power & Gas	Retailer	3			S	NS	S					S		
Coogee Energy	Transmission Customer	1					S							
Country Energy	Transmission Customer	1									S			
Energy Australia	Retailer	3			S		S		NS					S
International Power	Transmission Customer	1											S	
Lumo Energy	Retailer	5		NS	S	NS		S	S					
Lumo Energy	Trader	2			S				S			S		S
Origin (Vic)	Retailer	6	S	S	S	NS	S	S			NS	S		
Origin (Uranquinty)	Trader	1					S							
Red Energy	Retailer	1					S							
Santos	Retailer	3			S									S
Simply Energy	Retailer	4			S	NS	S	NS						
TRU Energy	Retailer	4			S		S					NS		NS
Visy Paper	Distribution Customer	2					S				S			

<sup>^</sup>Bids taken from 6am data for each gas day during the current week.

Source: <http://www.aemo.com.au> (INT131)

## Market Prices

Figure V2 displays volume-weighted average daily imbalance prices, compared to the 2010-11 financial year-to-date average and the 2009-10 financial year-to-date equivalent as well as daily imbalance prices for each day during the current week.

The daily average market price is a volume weighted imbalance price taking account of trading amounts at five times through the gas day — 6am, 10am, 2pm, 6pm and 10pm.

**Figure V2: Imbalance Weighted Prices (\$/GJ)**

	5 September – 11 September	29 August – 4 September	2010-11 Financial YTD*	2009-10 Financial YTD**
<b>Average daily price</b>	1.35	1.44	2.58	1.75

5 September – 11 September	Sun	Mon	Tue	Wed	Thu	Fri	Sat
<b>Daily price</b>	0.96	2.79	1.13	2.82	0.32	0.32	1.12

\*Average daily imbalance weighted average price from 1 July 2010 to the current week (inclusive)

\*\*Average daily imbalance weighted average price from 1 July 2009 to the equivalent week in 2009 (inclusive)

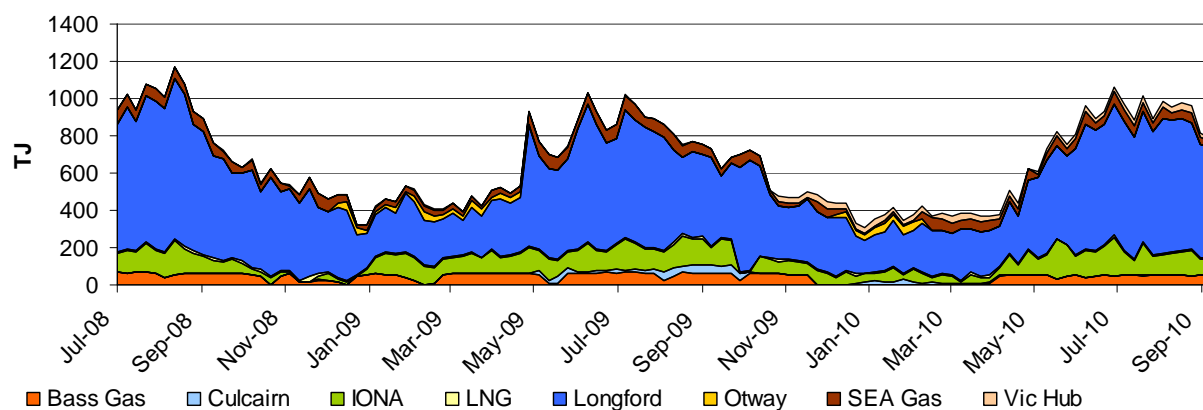
Source: <http://www.aemo.com.au> (INT 041)

## System Injections

Figure V3 shows the average daily injections into the VPTS for the current and previous week, compared with the 2010-11 and 2009-10 equivalent financial year-to-date daily averages.

**Figure V3: Average daily flows (TJ) from Injection Points on the VPTS**

Injection Point:	5 September – 11 September	29 August – 4 September	2010-11 Financial YTD*	2009-10 Financial YTD**
<b>Culcairn</b>	0	1	1	32
<b>Longford</b>	591	607	673	558
<b>LNG</b>	9	9	8	9
<b>IONA</b>	89	89	117	133
<b>VicHub</b>	18	20	29	1
<b>SEAGas</b>	28	39	48	66
<b>Bass Gas</b>	51	50	50	58
<b>Otway</b>	0	0	0	0
<b>TOTAL</b>	<b>787</b>	<b>816</b>	<b>926</b>	<b>856</b>



\*Average daily estimated gas consumption measured from 1 July 2010 to the current week (inclusive)

\*\*Average daily estimated gas consumption measured from 1 July 2009 to the equivalent week in 2009 (inclusive)

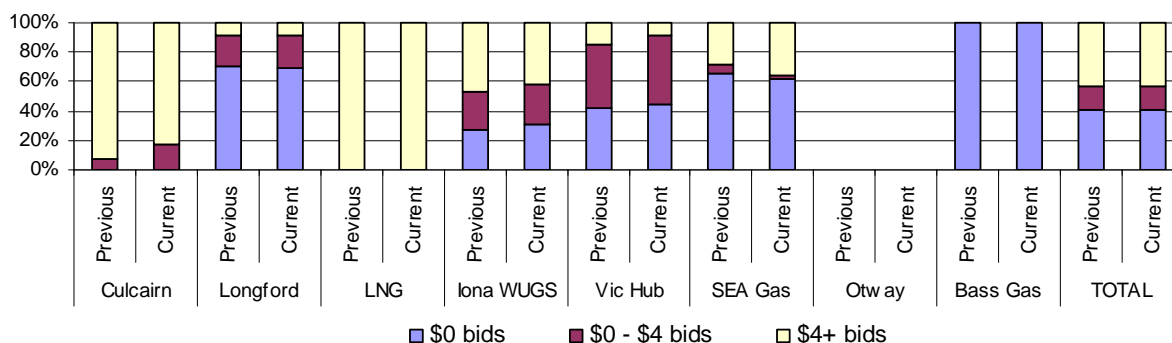
Source: <http://www.aemo.com.au> (INT 150)

## Bidding Activity

Figure V4 compares the price structure of gas bid at each of the injection points on the VPTS, within three price bands of \$0/GJ, \$0/GJ to \$4/GJ, and \$4/GJ and above, for the current week and for the previous week.



**Figure V4: Price structure of bids by injection points**



Source: <http://www.aemo.com.au> (INT 131) - bids submitted for the 6am schedule on each day of the week.

Notes: Figures in the table are rounded off the nearest round number (TJ); the maximum allowable bid is \$800/GJ.

Figure V5 provides a table of injection points on the VPTS where market participants submitted intra-day renominations, for each day of the week.

**Figure V5: Intra-day rebidding of gas injections**

Injection Point:	Sun	Mon	Tue	Wed	Thu	Fri	Sat
<b>Culcairn</b>	Origin		Origin		Origin	Origin	
<b>Longford</b>	AGL TRU	AGL TRU	AGL TRU	AGL	AGL	TRU	AGL TRU
<b>LNG</b>							
<b>Iona</b>	TRU APG	TRU APG Lumo	TRU APG Lumo	TRU Lumo	Origin Lumo	APG Lumo	
<b>VicHub</b>	AETV	AETV Lumo	AETV Lumo	AETV Lumo	AETV Lumo	AETV Lumo	AETV
<b>SEAGas</b>	Origin Simply	Simply		Simply	Simply	Simply	Simply
<b>Bass Gas</b>							

Source: <http://www.aemo.com.au> (INT 131)

Notes: Origin = Origin Energy | AGL = AGL Sales | TRU = TRUenergy | Simply = Simply Energy | AETV = AETV Power  
 APG = Australian Power & Gas | CE = Country Energy | Lumo = Lumo Energy (formerly Victoria Electricity) |  
 AGL (QLD) = AGL Sales (Queensland)

## System withdrawals

Figure V6 shows the average daily gas usage on the VPTS for the current and previous week, compared with the 2010-11 and 2009-10 equivalent financial year-to-date daily averages.

**Figure V6: Average daily withdrawals (TJ) from system demand zones on the VPTS**

System withdrawal zone:	5 September – 11 September	29 August – 4 September	2010-11 Financial YTD*	2009-10 Financial YTD**
<b>Ballarat</b>	37	39	44	40
<b>Geelong<sup>^</sup></b>	91	95	105	96
<b>Gippsland</b>	49	52	57	56
<b>Melbourne</b>	539	560	639	593
<b>Northern</b>	75	79	84	73
<b>TOTAL</b>	<b>790</b>	<b>825</b>	<b>930</b>	<b>858</b>

<sup>^</sup>Data presented also includes withdrawals for the Western system withdrawal zone or Western Transmission System (WTS).

\*Average daily estimated gas consumption measured from 1 July 2010 to the current week (inclusive)

\*\*Average daily estimated gas consumption measured from 1 July 2009 to the equivalent week in 2009 (inclusive)

Source: <http://www.aemo.com.au> (INT 150).

## Part C: STTM MARKET DATA

### What is the STTM?

The STTM is a market for the trading of natural gas at the wholesale level at defined hubs between pipelines and distribution systems. Currently the STTM has two hubs: Sydney and Adelaide.

This, the first edition of the Gas Weekly Analysis report containing a section on the new STTM, deliberately contains a significant amount of information on the STTM. It is envisaged that over time as readers become familiar with the market, the amount of information will be reduced, while being mindful not to compromise the quality of the report.

Although the STTM and Victorian gas markets (discussed in Part B of this report) are both spot markets for gas, there are a number of key differences. Some of these differences are listed in the table below.

Key area of difference	Victoria Gas Market	STTM
AEMO role	<ul style="list-style-type: none"> <li>Wholesale market operator,</li> <li>Retail market operator,</li> <li>Transmission pipeline system operator</li> </ul>	<ul style="list-style-type: none"> <li>Wholesale market operator,</li> <li>Retail market operator</li> </ul>
Scheduling	<ul style="list-style-type: none"> <li>On the day scheduling comprising five pricing and operating schedules at set times. Ad hoc schedules if required.</li> <li>Day ahead and 2-Day ahead schedules (forecast data only).</li> </ul>	<ul style="list-style-type: none"> <li>Day ahead market schedules</li> <li>Shippers may vary from their market schedules when they nominate to pipeline operators</li> <li>2-Day ahead and 3-Day ahead schedules (forecast data only).</li> </ul>
Market Price	<ul style="list-style-type: none"> <li>Five ex ante prices for imbalances set on the day</li> <li>Ex ante prices in subsequent schedules after the 6am schedule apply to deviations</li> <li>Market price is for commodity only. Transportation is charged separately by pipeline owner</li> </ul>	<ul style="list-style-type: none"> <li>One ex ante market price set the day before the gas day</li> <li>One ex post imbalance price set the day after the gas day</li> <li>Price includes both commodity and delivery to the hub and represents purchase of gas at the hub</li> </ul>
Linepack management (pipeline balancing mechanism)	<ul style="list-style-type: none"> <li>AEMO defines linepack target depending on operational conditions and is generally set seasonally not daily.</li> <li>Linepack account covers costs that includes costs of day to day linepack variations</li> </ul>	<ul style="list-style-type: none"> <li>On the day pipeline balancing through Market Operator Service (MOS), provided by MOS offers from shippers</li> </ul>
Transmission pipeline constraint management	<ul style="list-style-type: none"> <li>Ancillary payments for higher priced gas scheduled that relieves constraints</li> <li>Uplift payments to fund ancillary payments</li> </ul>	<ul style="list-style-type: none"> <li>Capacity payments from shippers with non-firm contracts to shippers with firm contracts if a pipeline is constrained (based on the pipeline capacity price)</li> </ul>

AEMO's website ([www.aemo.com.au](http://www.aemo.com.au)) contains documents that provide further detail on how the STTM works, including a glossary of terms.

## Participation in the market

Figures S1 and S2 show participant supply offers and withdrawal bids submitted in the Sydney and Adelaide STTM hubs. The orange shaded boxes indicate that the participant submitted offers and bids at that location on at least one occasion during the week. An “S” indicates that some of this gas was scheduled into the gas market, while “NS” indicates that none of the gas was scheduled. Green shading indicates where a change has occurred from the previous week.

Offers and Bids are scheduled in price merit order—this means offers that are less than the market clearing price will be scheduled, while withdrawal bids that are greater than the market clearing price will be scheduled into the market.

**Figure S1: Supply Offers and Withdrawal Bids (Sydney Hub)^**

Trading Participant	Participant type^^	No. of supply offer / withdrawal bid points	Offers			Bids			
			EGP	MSP	ROS	EGP	MSP	ROS	SYD - NET
AETV Power	Shipper								
AGL Energy Sales & Marketing Pty Ltd	STTM User, Shipper	4	S	S	S				S
AGL Wholesale Gas Limited	Shipper	2	S	NS					
BHP Billiton Petroleum (Bass Strait) PL	Shipper								
BlueScope Steel	STTM User, Shipper	1	S						
Country Energy	STTM User, Shipper	2	S				S		
Delta Electricity	STTM User, Shipper	2	S						S
EnergyAustralia	Shipper, STTM User	2	S	S					
Esso Australia Resources Pty Ltd	Shipper								
OneSteel Manufacturing Pty Ltd	STTM User, Shipper	1	S						
OneSteel NSW Pty Ltd	STTM User, Shipper	1	S						
Origin Energy LPG Limited	STTM User, Shipper								
Origin Energy Retail Ltd	STTM User, Shipper	2	S	S					
Santos Direct Pty Ltd	STTM User, Shipper	1	S						
TRUenergy Pty Ltd	STTM User, Shipper	2	S	S					
Tyco Water	STTM User								

^Offers and bids taken from the (D-1) ex ante schedule

^^STTM Users also submit price-taker bids to satisfy customer demand, which are not included in this table

Source: <http://www.aemo.com.au> INT 651, 659, 668

**NOTE:** This figure includes both market trial data (until 31 August) and live data

EGP=Eastern Gas Pipeline, MSP=Moomba to Sydney Pipeline, ROS=Rosalind Park Production facility, SYD-NET=Sydney Hub

**Figure S2: Supply Offers and Withdrawal Bids (Adelaide Hub)^**

Trading Participant	Participant type^^	No. of supply offers / withdrawal bids	Offers		Bids		
			MAP	SEAGAS	MAP	SEAGAS	ADL - NET
AGL South Australia Pty Limited	STTM User,Shipper	1	S				
AGL Wholesale Gas (SA) Pty Ltd	Shipper	2	S	S			
Adelaide Brighton Cement Ltd	STTM User,Shipper	2	S	S			
OneSteel Manufacturing Pty Ltd	Shipper						
Origin Energy Retail Ltd	STTM User,Shipper	2	S	S			
Pelican Point Power Limited	Shipper						
Simply Energy	STTM User,Shipper	2	S	S			
TRUenergy Pty Ltd	STTM User,Shipper	2	S	S			

^ Offers and bids taken from the (D-1) ex ante schedule

^^ STTM Users also submit price-taker bids to satisfy customer demand, which are not included in this table

Source: <http://www.aemo.com.au> INT 651, 659, 668

NOTE: This figure includes both market trial data (until 31 August) and live data

MAP=Moomba to Adelaide Pipeline, SEAGAS=SEA gas pipeline, ADL-NET=Adelaide Hub

### Ex ante and Ex post Market Prices

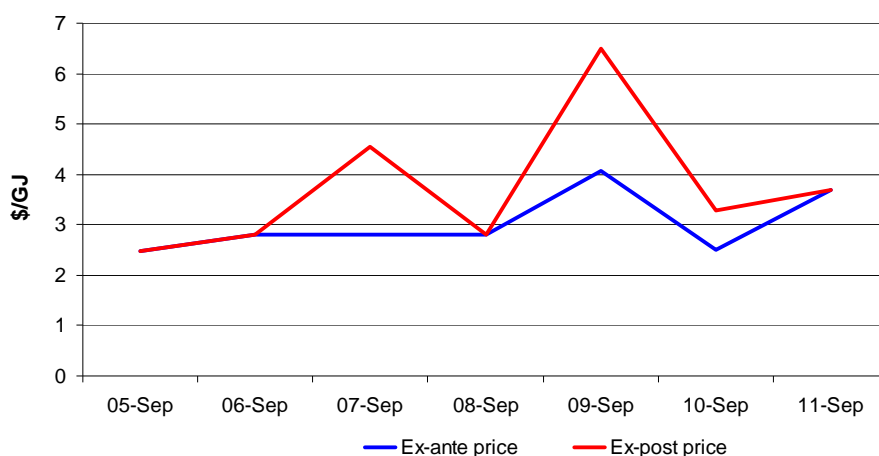
Figures S3 and S4 show ex ante and ex post prices at the Sydney and Adelaide Hubs. Differences between the ex ante and ex post price may arise where there are significant differences between price taker bids (demand forecasts) for the hub and actual demand in the hub. When this occurs, this leads to more or less gas being scheduled in the ex post market and a divergence between the ex ante and ex post prices.

**Figure S3: Ex ante vs Ex post Price - Sydney Hub (\$/GJ)^**

	5 Sep - 11 Sep	29 Aug - 4 Sep	Financial YTD*
Ex ante price (\$/GJ)	3.02	4.40	N/A
Ex post price (\$/GJ)	3.73	4.33	N/A

\* Financial Year to date figures will be included from October 2010

NOTE: This figure includes both market trial data (until 31 August) and live data



Source: <http://www.aemo.com.au> INT 651, 657

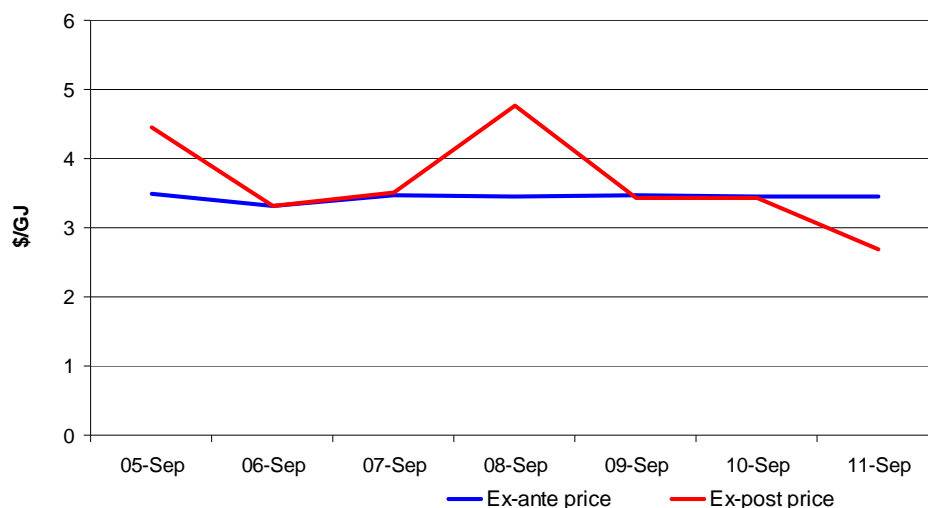
NOTE: This figure includes both market trial data (until 31 August) and live data

**Figure S4: Ex ante vs Ex post Price - Adelaide Hub (\$/GJ)**

	5 Sep - 11 Sep	29 Aug - 4 Sep	2010-11 Financial YTD*
<b>Ex ante price</b>	3.45	3.98	N/A
<b>Ex post price</b>	3.66	4.32	N/A

\* Financial Year to date figures will be included from October 2010

NOTE: This figure includes both market trial data (until 31 August) and live data



Source: <http://www.aemo.com.au> INT 651, 657

NOTE: The STTM weekly figure includes both market trial data (until 31 August) and live data

## Scheduled gas

“Firm” and “non-firm” gas is scheduled to the STTM hubs. Firm capacity describes a facility contract that has the highest haulage priority. Non-firm (as available) capacity refers to facility contracts with lower order priority.

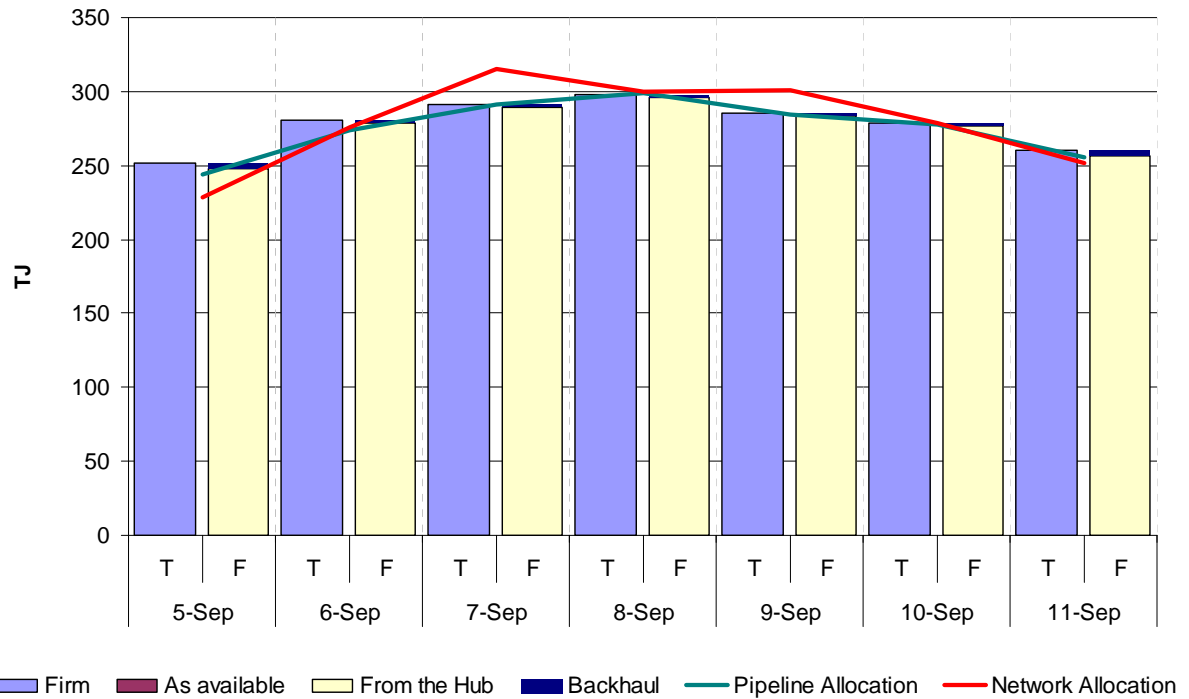
Gas can also be scheduled from the STTM hubs. This happens when Shippers “backhaul” gas from the hub or Users bid to take gas from the hub (including price taker bids).

Figures S5 and S6 show scheduled versus allocated gas at each hub. To understand the figures, the quantities of firm and non-firm gas scheduled via offers to the hub are indicated by the columns marked “T” (or **to** the hub). Firm offers are indicated by light purple shading and as available gas is indicated by maroon shading. Bids to take gas from the hub are indicated by columns marked “F” (or **from** the hub). User bids are indicated by light yellow shading and backhaul is indicated by dark blue shading.

The red line shows network (or in other words hub or demand side) allocations and the green line shows pipeline allocations. Allocations show actual gas flows for the day based on pipeline and network metered data.

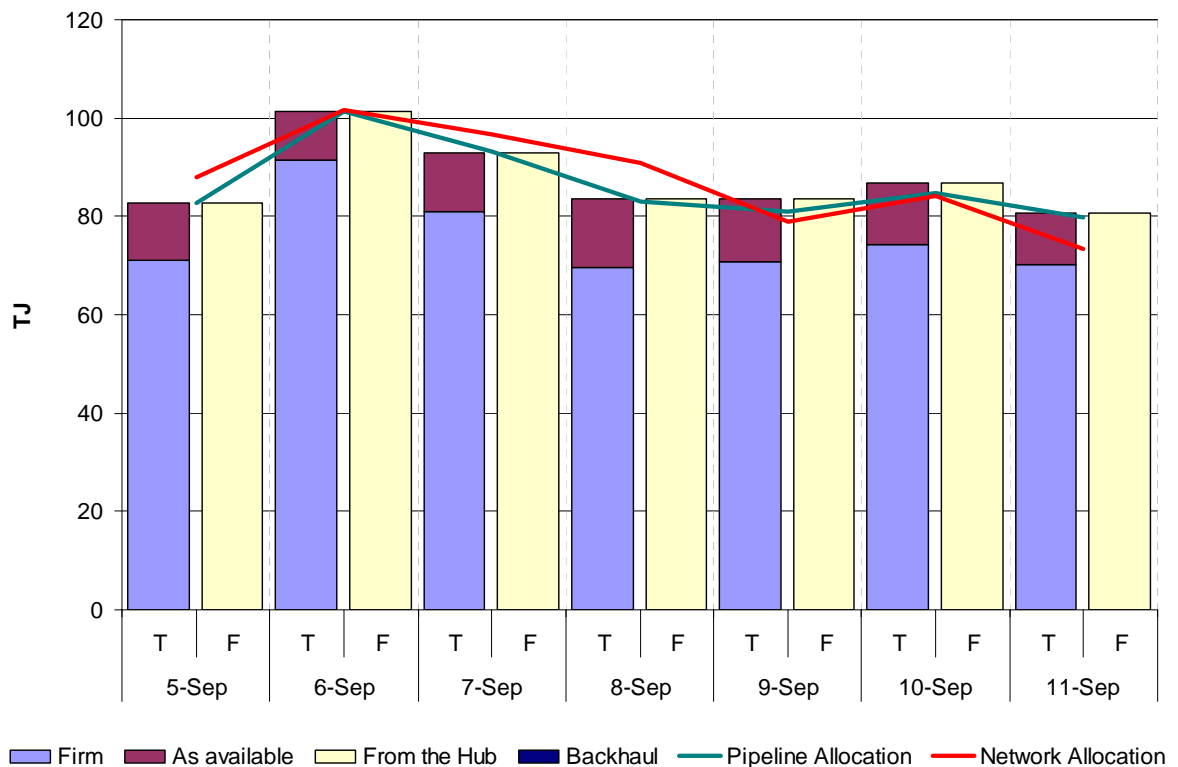
By comparing the level of the red line to the columns marked “F”, it can be shown whether demand (allocation) was higher than scheduled. Similarly, comparing the green line to the columns marked “T” shows how the actual flow of gas (allocation) compared to what was scheduled.

**Figure S5: Allocated vs scheduled ex ante quantity - Sydney Hub (TJ)^**



Source: <http://www.aemo.com.au> INT 651, 652, 658 and 664 (MOS allocations removed)

**Figure S6: Allocated vs scheduled ex ante quantity - Adelaide Hub (TJ)**



Source: <http://www.aemo.com.au> INT 651, 652, 658 and 664 (MOS allocations removed)

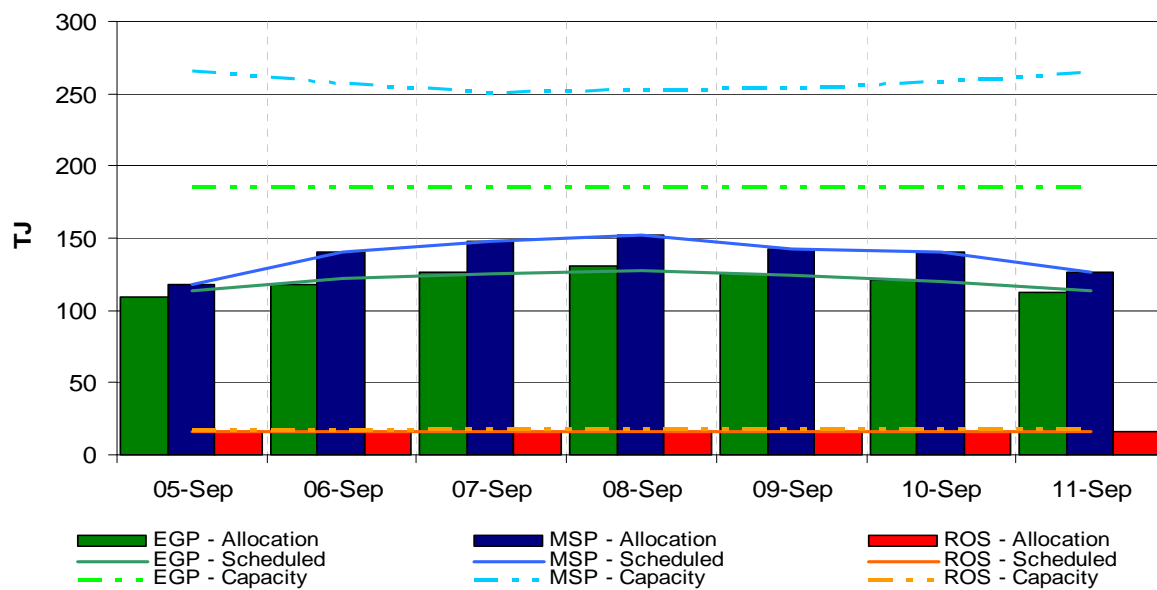
## Pipeline Facility Allocations

A number of pipelines supply the Adelaide and Sydney hubs. Figures S7 and S8 show, for each hub, the allocation (or actual flow) of gas to each of the pipeline facilities supplying the hub, the quantity of gas scheduled (ex ante) on the pipeline and the capacity of the pipeline.

For a gas day, the pipeline operator delivers gas to the hub, and users withdraw gas from the hub. However, the quantities delivered to or withdrawn from the hub may not, and generally will not, match with the ex ante schedules. In addition, during the day, as gas requirements become better known, and if permitted by their contracts, shippers may renominate quantities (“intraday nominations”) with their pipeline operators.

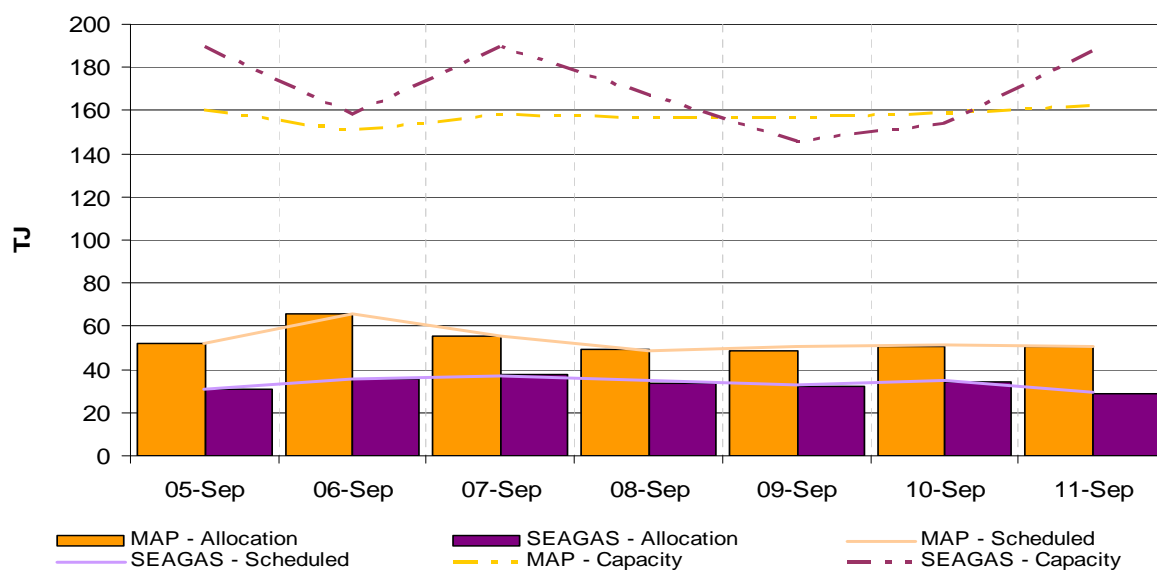
Differences between the amount of gas scheduled and what was actually allocated can result in variations between the ex ante and ex post price, as the ex post price is related to the offers actually allocated while ex ante is related to the offers scheduled.

**Figure S7: Allocated vs scheduled pipeline quantities - Sydney Hub (TJ)**



Source: <http://www.aemo.com.au> INT 652, 653, 658 and 664 (MOS allocations removed)  
EGP=Eastern Gas Pipeline, MSP=Moomba to Sydney Pipeline, ROS=Rosalind Park production facility

**Figure S8: Allocated vs scheduled pipeline quantities - Adelaide Hub (TJ)**



Source: <http://www.aemo.com.au> INT 652, 653, 658 and 664 (MOS allocations removed)  
MAP=Moomba to Adelaide Pipeline, SEAGAS=SEA gas pipeline

## Offers and Bids

Trading Participants submit offers to sell gas into an STTM hub and withdrawal bids to take gas from a hub.

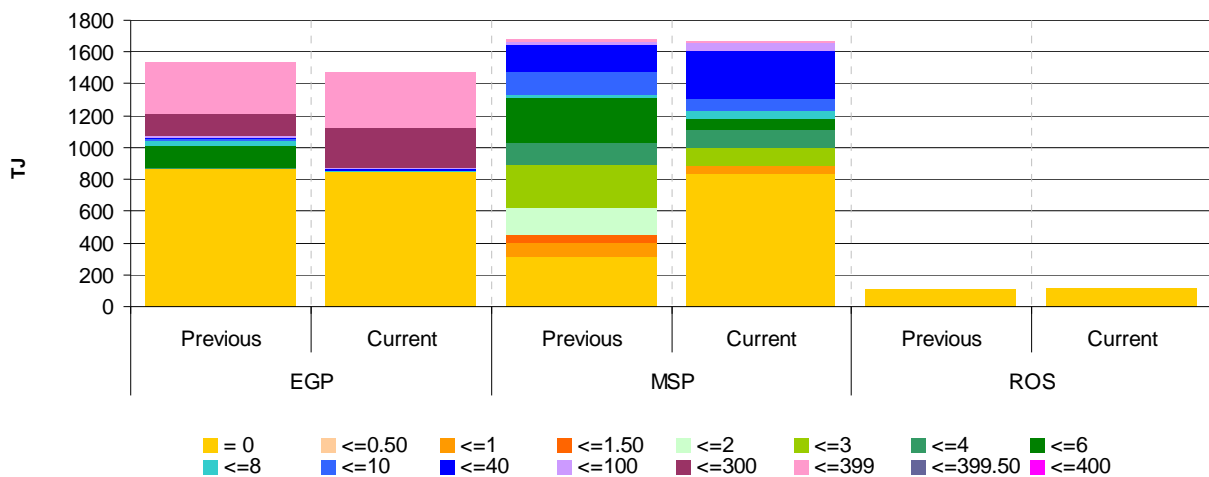
Figures S9 and S11 show for the Sydney and Adelaide hubs respectively, total offers within various price bands for the current week compared to the previous week for each of the pipeline facilities.

Figures S10 and S12 show for the Sydney and Adelaide hubs respectively, total bids within various price bands for the current week compared to the previous week for each of the pipeline facilities and the hubs themselves (NETSYD1 and NETADL1).

These figures also include information on price-taker bids. A price-taker bid is a bid for a quantity of gas that the user will accept at any price. Only STTM users are able to place price-taker bids, that is, to purchase gas at any price. These bids (which represent customer demand forecasts) must be submitted on a daily basis. Price-taker bid data is read against the right-hand-side axis.

Because scheduling is price-driven, offers for lower-priced gas are scheduled ahead of offers for higher-priced gas and bids for higher-priced gas are scheduled ahead of bids for lower-priced gas.

**Figure S9: Total weekly Sydney hub offers (TJ) within price bands (\$/GJ)**



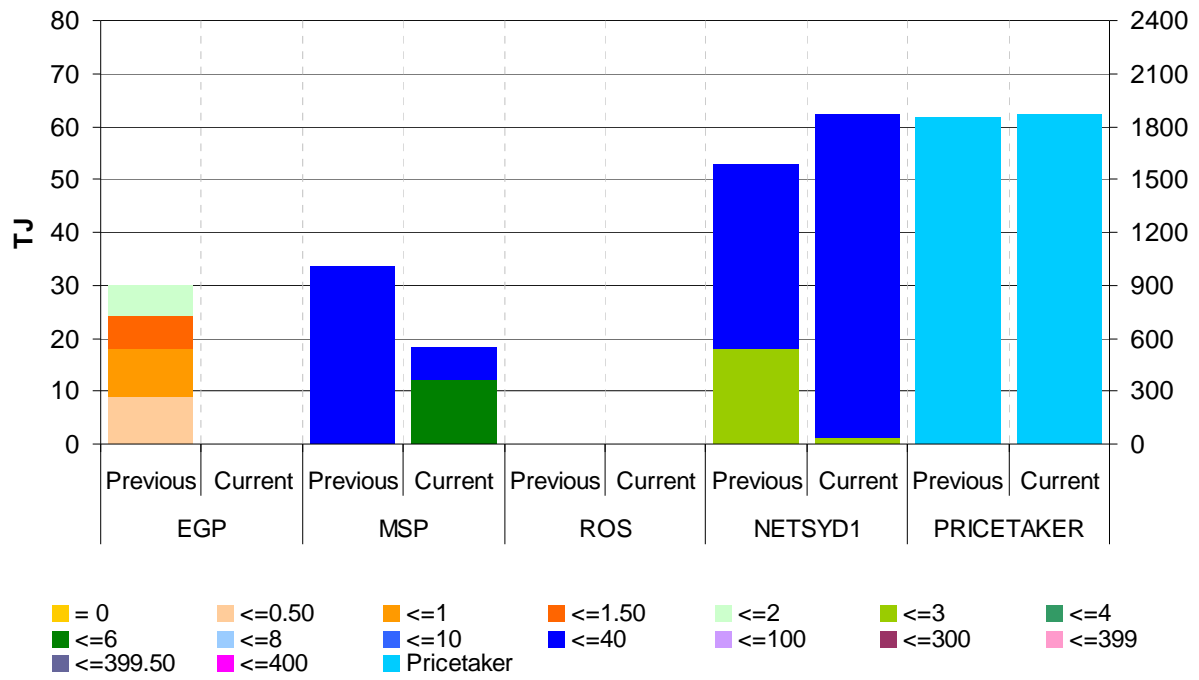
Source: <http://www.aemo.com.au> INT 652, 659

EGP=Eastern Gas Pipeline, MSP=Moomba to Sydney Pipeline, ROS=Rosalind Park Production facility

**NOTE:** This figure includes both market trial data (until 31 August) and live data



**Figure S10: Total weekly Sydney hub bids (TJ) within price bands (\$/GJ)**

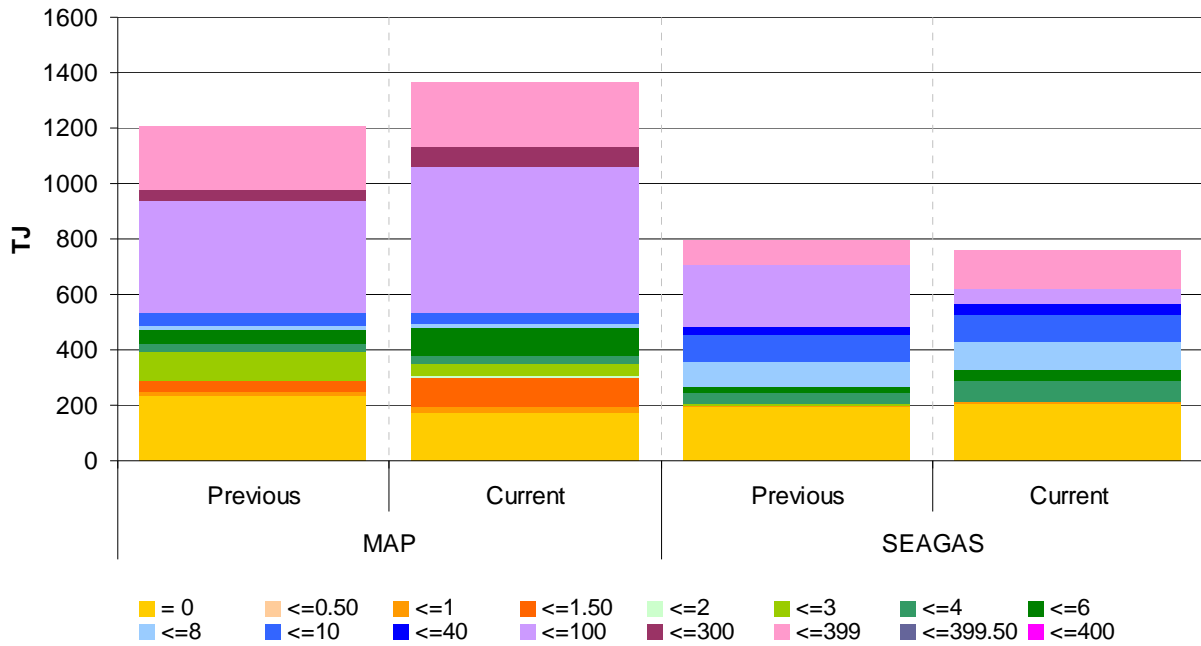


Source: <http://www.aemo.com.au> INT 652, 659

EGP=Eastern Gas Pipeline, MSP=Moomba to Sydney Pipeline, ROS=Rosalind Park Production facility, NETSYD1=Sydney Hub

**NOTE:** This figure includes both market trial data (until 31 August) and live data

**Figure S11: Total weekly Adelaide hub offers (TJ) within price bands (\$/GJ)**

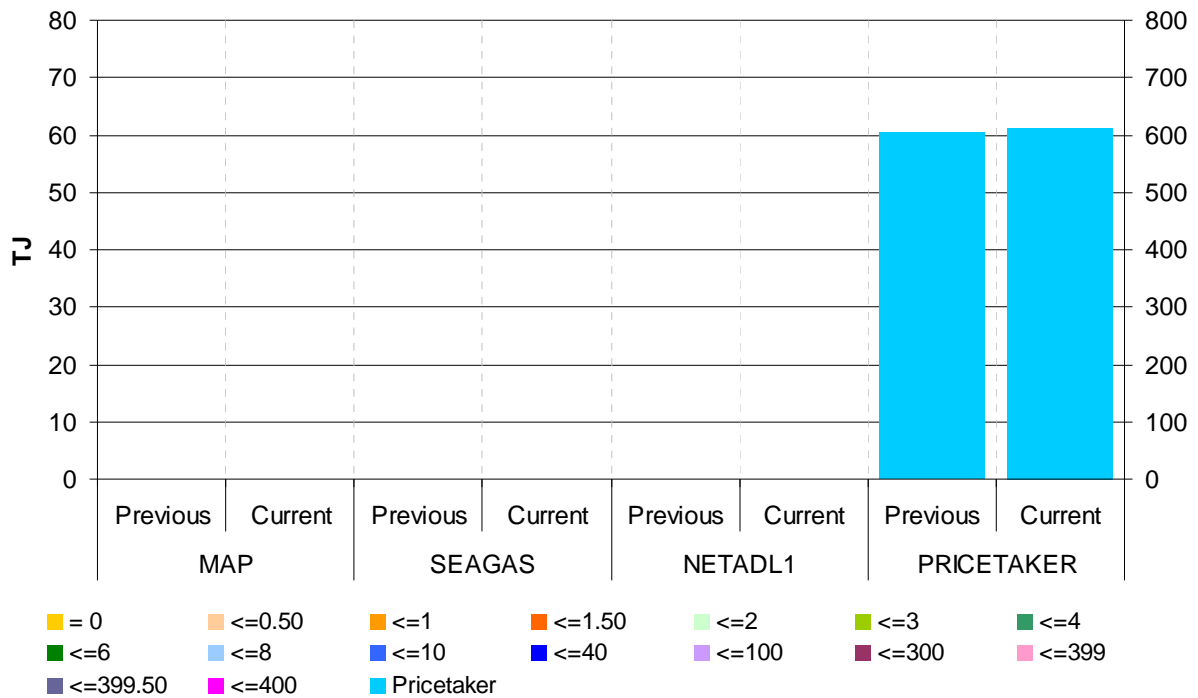


Source: <http://www.aemo.com.au> INT 652, 659

MAP=Moomba to Adelaide Pipeline, SEAGAS=SEA gas pipeline

NOTE: This figure includes both market trial data (until 31 August) and live data

**Figure S12: Total weekly Adelaide hub bids (TJ) within price bands (\$/GJ)**



Source: <http://www.aemo.com.au> INT 652, 659

MAP=Moomba to Adelaide Pipeline, SEAGAS=SEA gas pipeline, NETADL1=Adelaide Hub

NOTE: This figure includes both market trial data (until 31 August) and live data

## Re-offers and re-bids

In the STTM, offers and bids must first be submitted three days before the gas day (D-3), leading to an initial provisional price and schedule for the gas day. Re-offers and re-bids are then allowed for the D-2 schedule and finally for the D-1 “ex ante” schedule.

Re-offers and re-bids can lead to significant changes between D-3 and D-2 provisional prices and the ex ante price. Figures S13, S14, S15 and S16 show the participants that made inter-day re-offers and re-bids at the hubs for the different pipeline facilities.

**Figure S13: Inter-day resubmission of offers at Sydney Hub**

Pipeline	Schedule	Sun	Mon	Tue	Wed	Thu	Fri	Sat
EGP	D-3 to D-2	BluSc OneStl(NSW) SANTOS TRU	EA SANTOS		TRU	EA SANTOS TRU	TRU	AGL(ESM) AGL(WG) TRU
	D-2 to D-1	EA SANTOS		BluSc EA OneStl(NSW) SANTOS TRU	BluSc Delta EA SANTOS	BluSc EA	BluSc EA SANTOS	EA SANTOS
MSP	D-3 to D-2	AGL(ESM) Origin TRU	AGL(ESM) EA Origin	AGL(ESM) Origin	AGL(ESM) EA Origin TRU	AGL(ESM) Origin TRU	AGL(ESM) Origin TRU	AGL(ESM) AGL(WG) Origin TRU
	D-2 to D-1	AGL(ESM) EA Origin TRU	AGL(ESM) Origin	AGL(ESM) EA Origin TRU	AGL(ESM) Origin TRU	AGL(ESM) Origin TRU	AGL(ESM) Origin TRU	AGL(ESM) EA Origin TRU
ROS	D-3 to D-2				AGL(ESM)		AGL(ESM)	AGL(ESM)
	D-2 to D-1			AGL(ESM)		AGL(ESM)		

Source: <http://www.acmo.com.au> INT 659

BluSc= BlueScope Steel | Country= Country Energy | Origin=Origin Energy Retail Ltd | TRU= TRUenergy Pty Ltd | AGL(WG)= AGL Wholesale Gas Limited | EA=EnergyAustralia | OneStl(NSW)= OneSteel NSW Pty Ltd | SANTOS= Santos Direct Pty Ltd | AGL(ESM)= AGL Energy Sales & Marketing Pty Ltd |

**Figure S14: Inter-day resubmission of bids at Sydney Hub**

Pipeline	Schedule	Sun	Mon	Tue	Wed	Thu	Fri	Sat
EGP	D-3 to D-2							
	D-2 to D-1							
MSP	D-3 to D-2				Country			
	D-2 to D-1			Country	Country	Country	Country	Country
NETS-YD1	D-3 to D-2							
	D-2 to D-1							
ROS	D-3 to D-2							
	D-2 to D-1							Country

Source: <http://www.acmo.com.au> INT 659

Country= Country Energy

**Figure S15: Inter-day resubmission of offers at Adelaide Hub**

Pipeline	Schedule	Sun	Mon	Tue	Wed	Thu	Fri	Sat
MAP	D-3 to D-2	ABC AGL(SA) AGL(WGSA) Origin Simply	ABC AGL(SA) AGL(WGSA) Origin	ABC AGL(WGSA) Origin Simply	ABC AGL(WGSA) Origin Simply	ABC AGL(WGSA) Origin Simply	ABC Origin Simply	ABC AGL(WGSA) Origin Simply TRU
	D-2 to D-1	ABC AGL(SA) AGL(WGSA) Origin Simply TRU	AGL(WGSA) Origin Simply	ABC AGL(WGSA) Origin Simply	ABC AGL(WGSA) Origin Simply	ABC AGL(WGSA) Origin Simply	ABC AGL(WGSA) Origin Simply	ABC AGL(SA) AGL(WGSA) Origin Simply
SEA-GAS	D-3 to D-2	Origin Simply TRU	Origin Simply	Origin Simply TRU	ABC AGL(WGSA) Origin Simply TRU	ABC AGL(WGSA) Origin Simply TRU	Simply TRU	AGL(WGSA) Origin Simply TRU
	D-2 to D-1	Origin Simply TRU	Origin TRU	ABC AGL(WGSA) Origin Simply TRU	ABC AGL(WGSA) Origin Simply TRU	Simply TRU	Origin Simply TRU	Origin TRU

Source: <http://www.aemo.com.au> INT 659

ABC= Adelaide Brighton Cement Ltd | AGL(WGSA)= AGL Wholesale Gas (SA) Pty Ltd | Origin=Origin Energy Retail Ltd | Simply= Simply Energy | TRU= TRUenergy Pty Ltd | AGL(SA)= AGL South Australia Pty Limited |

**Figure S16 – Inter-day resubmission of bids at Adelaide Hub**

There were no inter-day resubmissions of bids at the Adelaide Hub this week.

### Market Operator Service

The Market Operator Service (MOS) is a daily mechanism for allocating balancing gas provided by pipelines to maintain pressures at receipt points. This balancing gas is the difference between what was scheduled by a pipeline operator (the pipeline schedule) and the actual quantities of gas that flowed on a pipeline on the day.

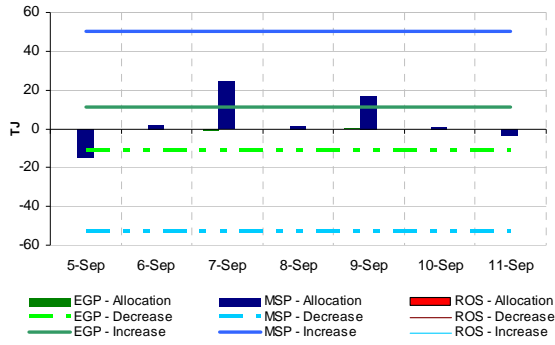
MOS offers are made by participants who have contracts with pipeline facilities to “park” gas (on the pipeline) or “loan” gas (from the pipeline). Based on these contracts, two types of MOS are offered: increase offers to increase flows on a pipeline to a hub; and decrease offers to decrease flows on a pipeline to a hub. Where a pipeline deviation<sup>1</sup> occurs on a gas day and there is a requirement (or an “allocation”) from a MOS provider (either an increase or decrease offer), the MOS provider is charged or paid according to their MOS offer price.

AEMO pays or charges the MOS provider for the MOS gas allocation on the gas day at the ex ante market price two days after the gas day, which covers the cost of restoring its inventory of MOS gas (called the MOS commodity payment or charge). The MOS provider can then choose to submit bids or offers for the gas it needs to replace or run down its MOS gas allocation on the gas day.

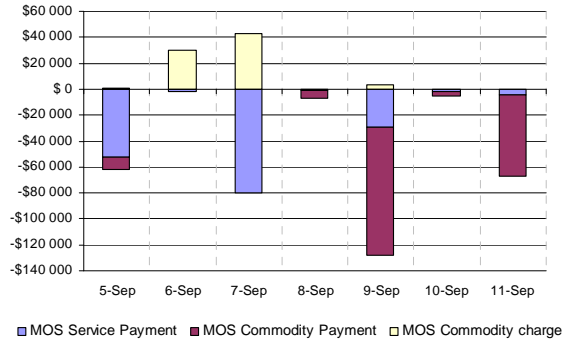
Figure S17a and S18a show quantities of MOS allocated on a daily basis compared to total MOS increase and decrease offers (from potential providers) on each pipeline at each hub. MOS allocations are shown by the columns in these figures, whereas total MOS increase and decrease offers on each pipeline are shown by horizontal lines (as indicated in the legend). Figures S17b and S18b show MOS service payments and MOS commodity payments or charges. Payments fall below the horizontal axis and charges are displayed above the axis.

<sup>1</sup> Deviations occur when the gas flowed on pipelines into hubs on a gas day differ from the modified market schedule, or when gas taken out of the hub is different to the schedule.

**Figure S17a – Sydney MOS allocations**



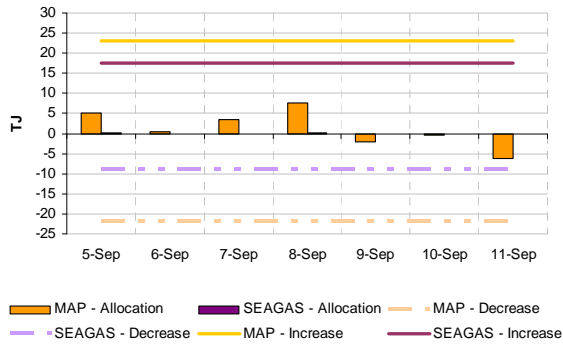
**Figure S17b Sydney MOS payments / Charges**



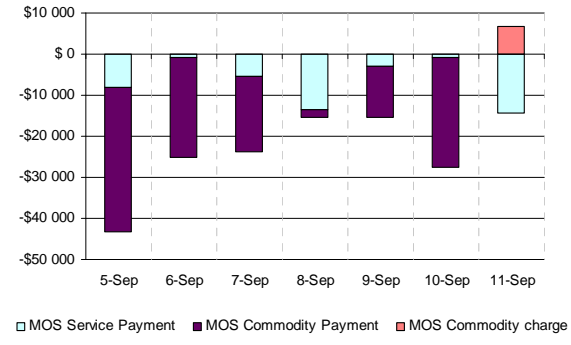
Source: <http://www.aemo.com.au> 663, 664,665

EGP=Eastern Gas Pipeline, MSP=Moomba to Sydney Pipeline, ROS=Rosalind Park Production facility

**Figure S18a – Adelaide MOS allocations**



**Figure S18b Adelaide MOS payments / Charges**



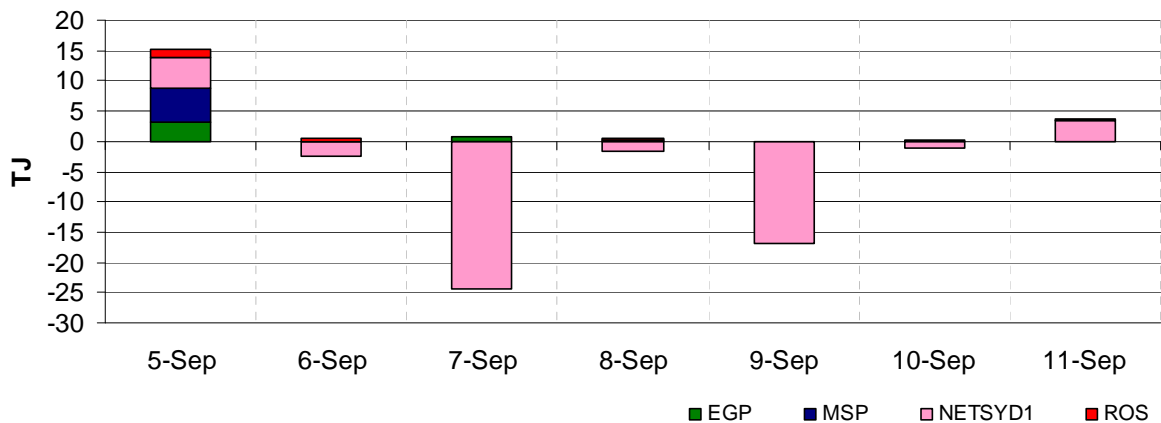
MAP=Moomba to Adelaide Pipeline, SEAGAS=SEA gas pipeline

**Deviations**

Deviations occur when the gas flowed on pipelines into hubs on a gas day differ from the modified market schedule, or when gas taken out of the hub is different to the schedule.

The most likely reason for deviations is where participants incorrectly forecast the demand of customers within the hub. As discussed previously, figures S5 and S6 show allocated quantities versus scheduled. Where they differ, there is a deviation. Net deviations may lead to requirements for MOS services. Figures S19 and S20 show net deviations at the STTM hubs.

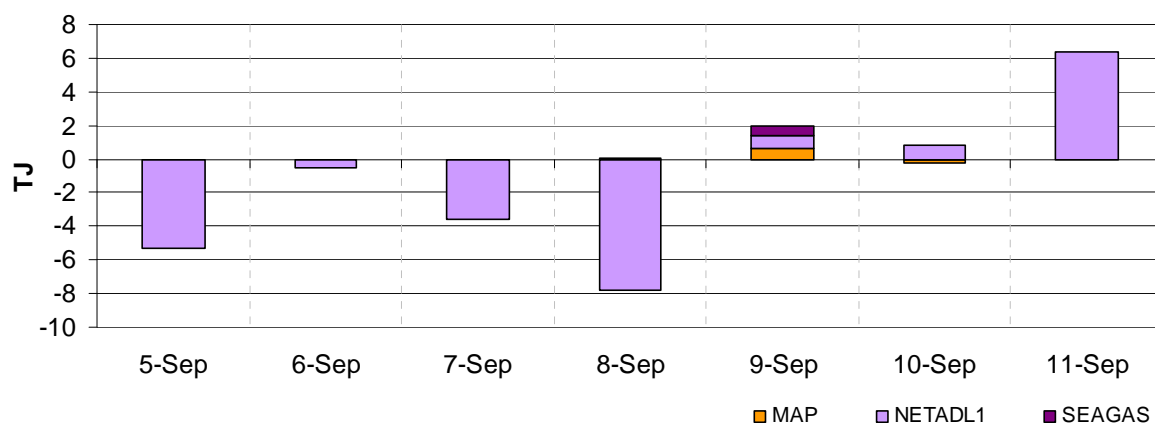
**Figure S19 Net Deviations – Sydney Hub**



Source: <http://www.aemo.com.au> INT652

NOTE: This figure includes both market trial data (until 31 August) and live data

**Figure S20 Net Deviations – Adelaide Hub**



Source: <http://www.aemo.com.au> INT652

### Market Schedule Variations

When a shipper deviates from the ex ante schedule, it can submit a “market schedule variation” to AEMO. The variation must be matched by an opposite variation from either another shipper or a user. Market schedule variations allow shippers to adjust their schedules in line with their pipeline allocations and so avoid deviation charges. A variation can include flows from the hub, which must also be matched with variation of flows to the hub.

Variations that cause a change in withdrawals at the hub attract a variation charge (but no deviation charge), which is designed to encourage more accurate day-ahead forecasting. The variation charge has a sliding scale such that the bigger the variation, the bigger the charge. However, variations that do not change the demand at the hub are exempt.

Figures S21 and S22 show market schedule variation quantities and charges at the STTM Hubs.

**Figure S21 Average Daily Market Variations - Sydney Hub**

	5 Sep - 11 Sep	29 Aug - 4 Sep	2010-11 Financial YTD
Quantity (TJ)	4.8	2	N/A
Charges (\$)	94	77	N/A

Source: <http://www.aemo.com.au> INT663

NOTE: This figure includes both market trial data (until 31 August) and live data

**Figure S22 Average Daily Market Variations - Adelaide Hub**

	5 Sep - 11 Sep	29 Aug - 4 Sep	2010-11 Financial YTD
Quantity (TJ)	1.2	1.2	N/A
Charges (\$)	24	21	N/A

Source: <http://www.aemo.com.au> INT663

NOTE: This figure includes both market trial data (until 31 August) and live data

# APPENDIX

Figures A1 and A2 display the daily gas flows from each pipeline and production/storage facility in the National Gas Market over the current week. The nameplate capacity or MDQ (Maximum Daily Quantity) for each facility are also provided, along with the proportion of MDQ used on average over the current week and the year to date at each facility. Flow data not provided by bulletin board polling time is indicated by N/A.

**Figure A1: Daily flows (TJ) for pipeline facilities**

Demand zone and pipeline facility	Sun	Mon	Tue	Wed	Thu	Fri	Sat	MDQ (TJ)	YTD average capacity usage (%)	Current week average daily flows	Current YTD average daily flows*	Previous YTD average daily flows**
<b>QLD</b>												
Carpentaria Pipeline	92	93	93	93	99	97	N/A	117	79	94	92	90
QLD Gas Pipeline	107	122	118	123	111	119	118	142	71	117	101	68
Roma to Brisbane Pipeline	171	199	200	200	198	193	169	219	86	190	187	148
South West QLD Pipeline	103	125	90	112	102	102	108	181	74	106	133	161
<b>NSW/ACT</b>												
Eastern Gas Pipeline	199	219	223	227	227	224	205	268	85	218	227	203
Moomba to Sydney Pipeline	176	224	253	232	236	224	185	420	64	219	270	282
NSW-VIC Interconnect <sup>^</sup>	0	4	12	5	22	6	5	92	6	8	5	-31
<b>VIC</b>												
Longford to Melbourne	632	758	701	684	593	682	554	1030	72	658	747	613
South West Pipeline	97	154	131	141	72	116	128	347	48	120	166	201
<b>SA</b>												
Moomba to Adelaide Pipeline	146	165	148	146	129	131	124	253	56	141	141	129
SEA Gas Pipeline	136	220	226	201	218	219	182	314	58	200	182	154
<b>TAS</b>												
Tasmanian Gas Pipeline	N/A	50	50	50	49	49	47	129	38	49	49	25

\*Average daily estimated gas consumption measured from 1 July 2010 to the current week (inclusive)

\*\*Average daily estimated gas consumption measured from 1 July 2009 to the equivalent week in 2009 (inclusive)

<sup>^</sup>Negative figure represents a reverse flow of gas along the pipeline

Source: Natural Gas Market Bulletin Board <http://www.gasbb.com.au>

Notes: Operational ranges for each pipeline facility range from a minimum of 20 per cent to a maximum of 120 per cent of the respective MDQs. The exceptions are the South West Queensland Pipeline and the NSW-VIC Interconnect which have operational ranges 40 per cent to 120 per cent and 0 to 120 per cent of MDQ respectively.

**Figure A2: Daily flows (TJ) for production / storage facilities compared to operational ranges and use of production/storage capacity**

Production zone production / storage facility	Sun	Mon	Tue	Wed	Thu	Fri	Sat	MDQ (TJ)	YTD average capacity usage* (%)	Current week average daily flows	Current YTD average daily flows*	Previous YTD average daily flows**
<b>Roma (QLD)</b>												
Berwyndale South	106	107	108	95	95	98	107	140	71	102	99	82
Fairview	122	123	124	125	126	127	128	130	94	125	122	109
Kenya Gas Plant	60	60	60	60	69	68	70	160	38	64	61	25
Kincora	0	0	10	10	0	0	0	25	18	3	5	1
Kogan North	10	10	10	10	10	10	10	12	80	10	10	7
Peat	11	11	11	11	11	11	11	15	69	11	10	11
Rolleston	10	11	12	11	11	11	12	30	38	11	11	11
Scotia	29	29	29	29	29	29	25	29	96	29	28	14
Spring Gully	56	58	55	56	58	58	54	69	78	56	54	53
Strathblane	56	58	55	56	58	58	54	69	78	56	54	53
Taloona	34	35	33	34	35	35	32	42	77	34	32	32
Wallumbilla	10	10	10	10	10	9	9	20	47	10	9	9
Yellowbank	12	13	11	13	12	9	12	30	43	12	13	15
Talinga	26	36	27	42	38	27	27	81	69	32	56	
<b>Moomba (SA/QLD)</b>												
Moomba Gas Plant	259	316	329	340	319	312	267	430	82	306	351	362
Ballera	45	24	39	19	34	34	44	150	8	34	12	1
<b>Eastern (VIC)</b>												
Orbost Gas Plant	0	1	0	0	0	0	0	100	0	0	0	0
Lang Lang Gas Plant	51	51	51	51	52	51	51	70	71	51	50	57
Longford Gas Plant	808	967	938	917	825	920	N/A	1145	87	896	991	796
LNG Storage Dandenong	0	0	0	0	0	0	0	158	0	0	0	0
<b>Otway Basin (VIC)</b>												
Minerva Gas Plant	24	68	68	68	68	68	68	94	86	62	81	77
Otway Gas Plant	88	178	181	177	168	170	119	206	69	154	141	143
Iona Underground Gas Storage	116	123	118	102	53	92	87	440	29	99	127	134

\*Average daily estimated gas consumption measured from 1 July 2010 to the current week (inclusive)

\*\*Average daily estimated gas consumption measured from 1 July 2009 to the equivalent week in 2009 (inclusive)

Notes: Operational ranges for each production and storage facility range from minimum of 0 per cent to a maximum of 120 per cent of the respective MDQs. The exception is the Longford Gas Plant which has a minimum operational range of 20 per cent to 120 per cent of its MDQ.



Figure A3 provides the average minimum and maximum temperatures for each of the demand regions for the current week. The average temperatures for the previous week are also provided. (Note: only the demand regions where temperature is a driver of gas demand are included).

**Figure A3: Average daily temperatures (°C) at each demand region**

Average daily temperatures (°C)		QLD (Brisbane)	NSW (Sydney)	ACT (Canberra)	VIC (Melbourne)	SA (Adelaide)	TAS (Hobart)
<b>5 September – 11 September</b>	Average min.	15.1	11.2	3.7	8.4	9.4	5.9
	Average max.	24.7	19.9	14.5	16.7	16.9	15.0
<b>29 August – 4 September</b>	Average min.	13.1	12.9	4.7	8.6	10.0	5.4
	Average max.	25.1	19.7	15.2	16.0	17.3	14.4

Source: <http://www.bom.gov.au/climate/dwo>

Figure A4 shows the market prices at each of the scheduling intervals on each day during the current week. The imbalance weighted average prices for each gas day are also provided.

**Figure A4: Daily Victorian gas market prices (\$/GJ) at each scheduling interval**

<b>5 September – 11 September</b>	Scheduling Interval					Daily Imbalance Weighted Average Price
	6am	10am	2pm	6pm	10pm	
<b>Sun</b>	1.00	1.00	0.41	0.20	1.00	0.96
<b>Mon</b>	2.87	2.89	0.10	0.51	3.30	2.79
<b>Tue</b>	1.09	3.13	2.13	0.69	0.23	1.13
<b>Wed</b>	2.86	3.08	2.86	0.68	1.13	2.82
<b>Thu</b>	0.33	0.23	0.02	0.01	0.00	0.32
<b>Fri</b>	0.30	0.27	0.71	0.28	2.67	0.32
<b>Sat</b>	1.12	1.17	1.50	0.51	0.46	1.12

Source: <http://www.aemo.com.au> (INT 041).

Figure A5 compares the market participants and market operator demand forecasts and each of the scheduling intervals on each gas day during the current week. Total actual demand for each gas day is also provided, along with the total demand override (if any) from AEMO.

**Figure A5: Daily demand forecasts (TJ) and daily demand overrides (TJ)**

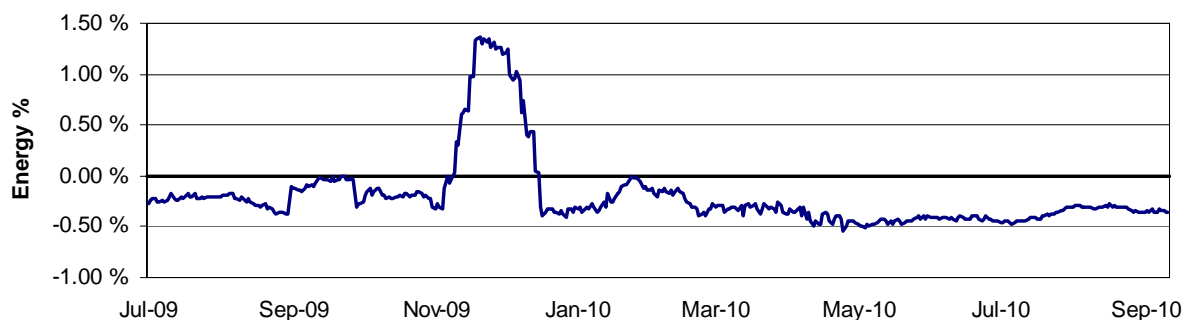
Gas Day	Demand Forecasts (TJ)	Schedule					Total Demand Override (TJ)
		1	2	3	4	5	
5-Sep	MP:	756	749	746	742	746	0
	AEMO:	712	736	723	711	712	
	MP as % of AEMO	106	102	103	104	105	
6-Sep	MP:	929	925	912	917	918	0
	AEMO:	938	915	921	909	905	
	MP as % of AEMO	99	101	99	101	101	
7-Sep	MP:	846	855	862	864	862	2
	AEMO:	904	906	877	862	830	
	MP as % of AEMO	94	94	98	100	104	
8-Sep	MP:	814	812	817	819	819	0
	AEMO:	799	803	785	785	785	
	MP as % of AEMO	102	101	104	104	104	
9-Sep	MP:	769	753	751	744	745	0
	AEMO:	777	767	752	723	663	
	MP as % of AEMO	99	98	100	103	112	
10-Sep	MP:	816	813	817	812	815	-12
	AEMO:	789	785	791	776	802	
	MP as % of AEMO	103	104	103	105	102	
11-Sep	MP:	677	671	674	670	672	0
	AEMO:	713	708	706	707	660	
	MP as % of AEMO	95	95	95	95	102	

Source: <http://www.aemo.com.au> (INT 108, INT 126, INT 153)

Figures A6 to A8 present information that was previously published by AEMO in its monthly Victorian Gas Market Reports.

Figure A6 shows “unaccounted for gas” as a percentage of the gas used on a 28-day rolling average basis. A positive “unaccounted for gas” indicates more gas purchased than sold, and negative indicates more gas is purchased from a supplier than sold to customers. The difference may be caused by measurement errors, leakages, pressure regulation, construction activities, theft or damage to the pipeline system. The increased quantity over November 2009 was related to pigging substitutions.

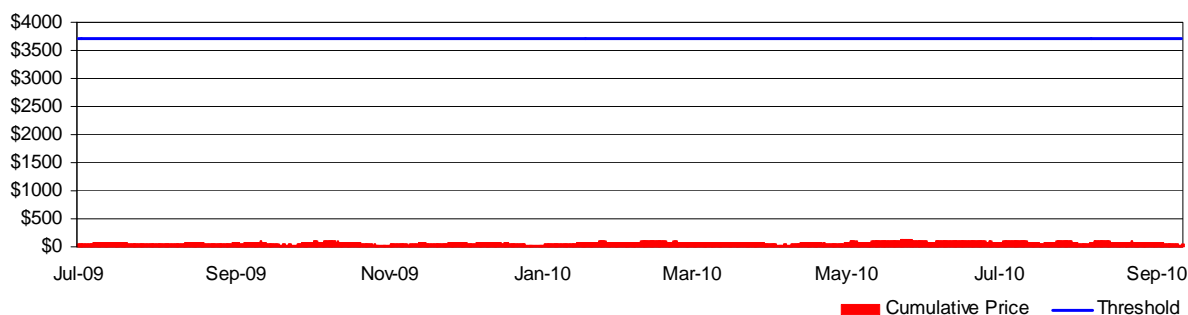
**Figure A6: Unaccounted for Gas – 28 Day Rolling Average**



Source: <http://www.aemo.com.au> (INT 312)

Figure A7 shows the cumulative weekly price and the cumulative price threshold (CPT), which is set at \$3700. The cumulative price is measured over a rolling weekly period, (35 scheduling intervals). When the cumulative price breaches the CPT, an administered price cap (APC) is applied to the market at \$40/GJ. AEMO may declare the end of an administered price period subsequent to the cumulative price falling below the threshold.

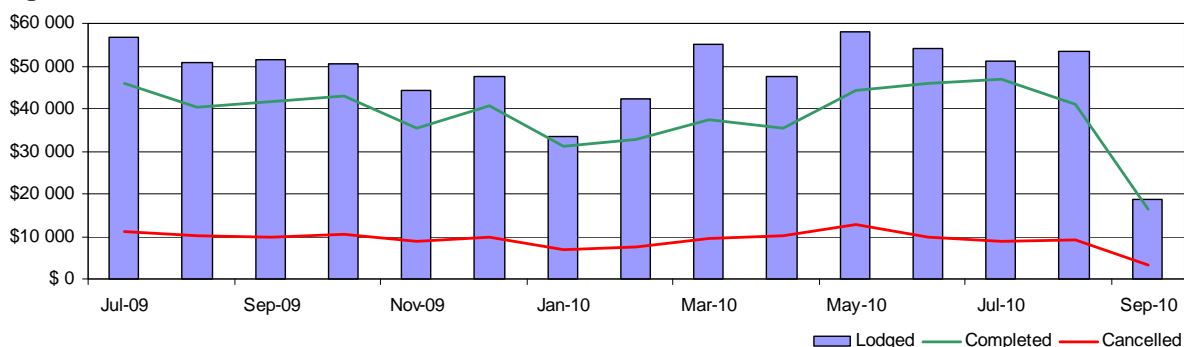
**Figure A7: Cumulative Price and Threshold**



Source: <http://www.aemo.com.au> (INT 199)

Figure A8 shows the monthly (and current month to date) retail customer transfers lodged, completed or cancelled in the Victorian gas market.

**Figure A8: Customer Transfers**



Source: <http://www.aemo.com.au> (INT 311)