

**June 2012**

**Gas Market Events**

**REPORT**



AUSTRALIAN ENERGY  
REGULATOR

## Introduction

Under the National Gas Rules (Gas Rules), the AER is required to identify and publish reports on significant price variations (SPV) in the Victorian Declared Wholesale Gas Market (VGM) and in the Short Term Trading Market (STTM).<sup>1</sup> For the VGM, the AER has already published significant price variation reporting triggers.<sup>2</sup> For the STTM hubs, the AER will soon commence consultation on triggers.

Prices and payments in this report are not published under Gas Rules' SPV requirements. VGM prices and payments the subject of this report did not exceed reporting triggers. This report is published as part of the AER's overall monitoring function to provide details on the high June 2012 prices in the VGM and in the Adelaide, Brisbane and Sydney STTM hubs. This report contains a summary of key price drivers and adds to the analysis already provided in the June 2012 AER gas weekly reports.<sup>3</sup>

As a result of the analysis undertaken in this report, the AER will be making further enquiries into participant demand forecasts, offers and bids. Any compliance issues will be reported in the AER's Quarterly Compliance Report.<sup>4</sup>

Although the information in this report focuses on high prices, it should also be noted that the daily MOS service payment in Sydney for June reached \$73 289, almost double the average daily payment in June 2011. Analysis in the relevant gas weekly reports indicates that this was due to the high prices for MOS increase services on the Eastern Gas Pipeline (EGP).<sup>5</sup> The AER is currently making further enquiries related to MOS volumes on the EGP in June 2012 and will report at a later date.

## Structure of this report

Part 1 of this report focuses on outcomes for June 2012 at the Adelaide, Sydney and Brisbane hubs of the STTM and the Victorian market. Part 2 focuses on individual days in June in the Adelaide and Sydney hubs of the STTM and the Victorian market.

## Summary/assessment

High prices in June 2012 caused the rolling 30 day average daily price to increase from the beginning of June to the end of June by approximately \$2/GJ in Sydney to around \$6.30/GJ, \$1/GJ in Adelaide to around \$5/GJ, \$0.50/GJ in Brisbane to around \$4.55/GJ and \$1.30/GJ in Victoria to around \$5.10/GJ.

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<sup>1</sup> In accordance with rule 355 and rule 498 of the National Gas Rules.

<sup>2</sup> The VGM price variation reporting triggers are—(i) if the *Trade Weighted Market Price* published by AEMO on a gas day is more than three times the average price for the previous 30 days and the *Trade Weighted Market Price* is equal to or greater than \$15/GJ; (ii) if the *Ancillary Payment Amount* published by AEMO on a gas day is an amount payable or receivable which exceeds \$250 000. see [www.aer.gov.au/node/453](http://www.aer.gov.au/node/453).

<sup>3</sup> [www.aer.gov.au/node/451](http://www.aer.gov.au/node/451)

<sup>4</sup> [www.aer.gov.au/node/454](http://www.aer.gov.au/node/454)

<sup>5</sup> 3-9 June; 16-22 June; 23-29 June AER gas weekly, available at <http://www.aer.gov.au/node/451>

The ex ante price in the Sydney STTM hub reached \$17.30/GJ on 23 June, the highest ex ante price in that hub since 1 November 2010 when the price reached \$150/GJ due to a data error. The ex ante price exceeded \$5/GJ on 21 other occasions during June. Adelaide recorded its highest ex ante price since market start of \$6.28/GJ on 13 June. The ex ante price in the Adelaide hub was \$5/GJ or above on 17 other occasions during June. In the VGM, the highest weighted daily price since November 2008 of \$9.95/GJ occurred on 22 June. There were four other days when the daily imbalance price exceeded \$6.50/GJ. Brisbane recorded 6 ex ante prices above \$5.50/GJ during June.

Prices for June 2012 were notably higher than for June 2011 in all markets (the Brisbane hub only commenced in December 2011). Compared to June 2011, the average ex ante price in June 2012 was:

- 69 per cent higher in the Sydney STTM.
- 28 per cent higher in the Adelaide STTM.
- 34 per cent higher in the VGM.

Lower volumes of cheap offers were the most significant driver of high prices. Compared to June 2011, there was a reduction in the volume of gas offered in key price setting bands:

- in Sydney, the average volume of gas offered below \$6/GJ was 10.3 per cent lower.
- in Adelaide the average volume of gas offered below \$4/GJ was 29 per cent lower.
- in the VGM, the average volume of gas offered below \$6/GJ was 16.3 per cent lower.

The large reduction in low price offers in the VGM appears to partially reflect the impact of the Bass Gas outage for June 2012—participants there typically supplied about 60 TJ to the VGM on a daily basis at \$0/GJ in June 2011.

The increased prices were not driven by increased demand. Compared to June 2011, demand actually fell in Adelaide (by 8 per cent) and Sydney (by 4 per cent). Beginning of day (6 am) demand was marginally higher in the VGM (by 7 per cent), but this did not appear to explain the higher prices.

Rebidding of offers was prevalent on high price days in the STTM, causing the ex ante price to be higher than the provisional forecast price on a number of occasions. Rebidding was also prevalent in the VGM. Intra-day rebidding for the 10 am, 2 pm, 6 pm and 10 pm schedules resulted in the average daily difference between the minimum and maximum schedule prices for June 2012 being notably higher than for June 2011. Significant rebidding occurred at Culcairn (which is one of the gas transmission connections between Victoria and NSW) as participants responded to price changes in the VGM in deciding how much gas to export to NSW.

In the Sydney and Brisbane STTMs there were a number of days where demand was poorly forecast. The average ex ante price was 66 cents higher than the ex post price in Sydney, while in Brisbane it was 63 cents higher reflecting over-forecast demand. In the VGM there were also a number of days where beginning of day demand forecasts at 6 am were poor estimates of actual demand.

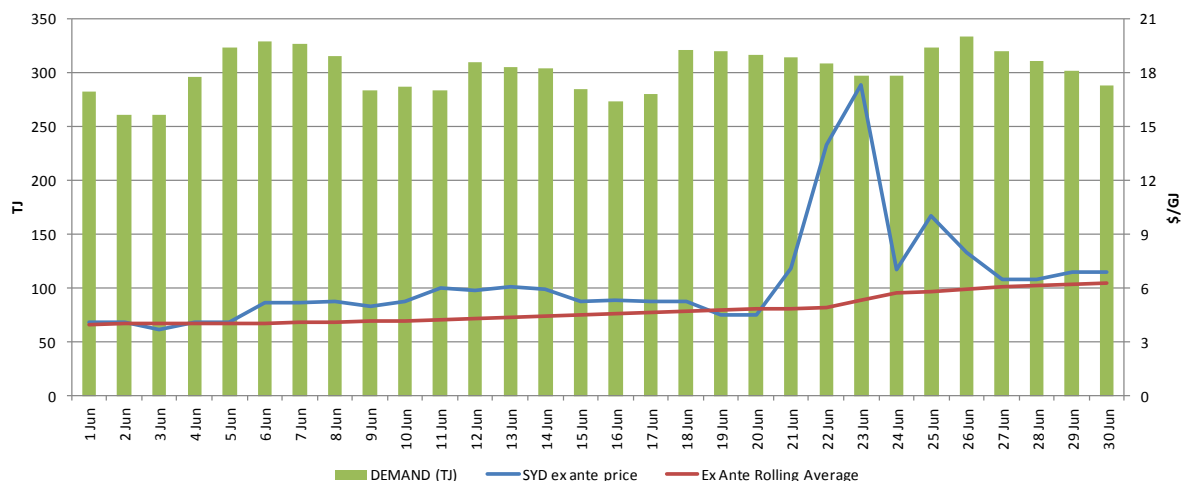
In the VGM there were a number of days where LNG offers were scheduled in the market in price order. This occurred at the same time as high schedule prices (>\$10/GJ).

## Part 1 Outcomes for the month of June

### Sydney hub prices

Figure 1 shows daily ex ante prices and demand for June 2012 along with the rolling 30 day average price.

**Figure 1: Sydney ex ante prices and demand June 2012**



The rolling average price started the month at around \$4/GJ and increased to above \$6/GJ by the end of the month.

Figures 2 and 3 compare key prices and quantities in the Sydney hub for June 2012 to June 2011. As shown in Figure 2 (and graphically in figure 3), the volume of offers at or below \$6/GJ<sup>6</sup> fell by 10 per cent from June 2011 to June 2012.

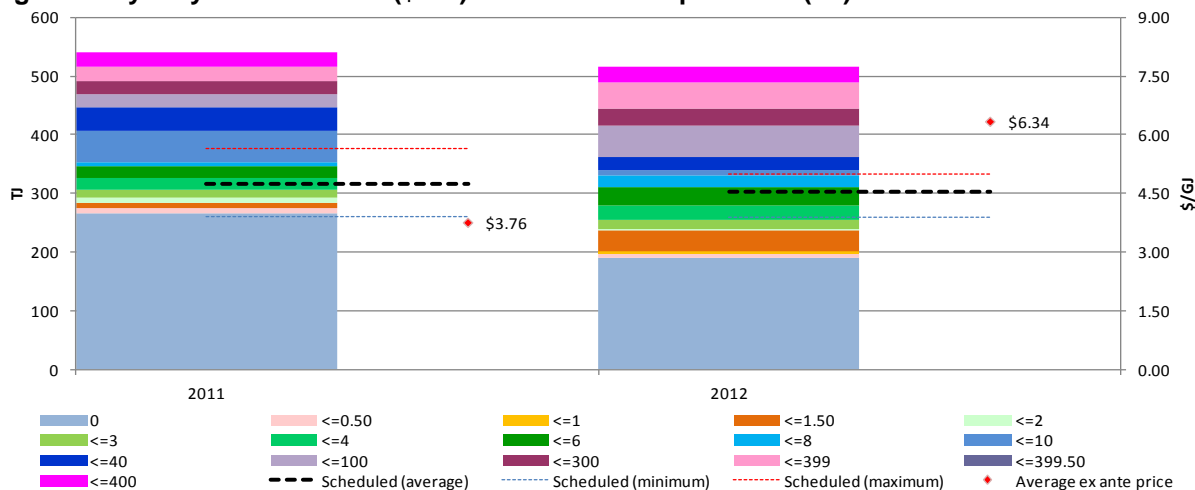
**Figure 2: Sydney average daily key prices and inputs: June 2011 vs. June 2012**

	Offers at or below \$6/GJ (TJ)	Ex ante volume (TJ)	Ex ante Price (\$/GJ)	Absolute imbalance volume (TJ)	Ex post price (\$/GJ) <sup>7</sup>
<b>June 2011</b>	347	317	3.76	5.8	3.58
<b>June 2012</b>	312	304	6.34	9.6	5.68

<sup>6</sup> This offer price band was chosen as it is the closest to the June average ex ante price of \$6.34/GJ.

<sup>7</sup> The ex post price is calculated after the gas day by using the same ex ante offers (and bids) but applying an imbalance amount to reflect what the price would have been had actual demand (determined after the day) been used. For example, if demand was under forecast, an ex post bid will be added to the ex ante market schedule to determine an ex post price that is equal to or higher than the ex ante price. If demand was over forecast, an ex post offer will be added to determine an ex post price that is equal to or less than the ex ante price.

**Figure 3: Sydney ex ante offers (\$/GJ) and scheduled quantities (TJ): June 2011 vs. June 2012**



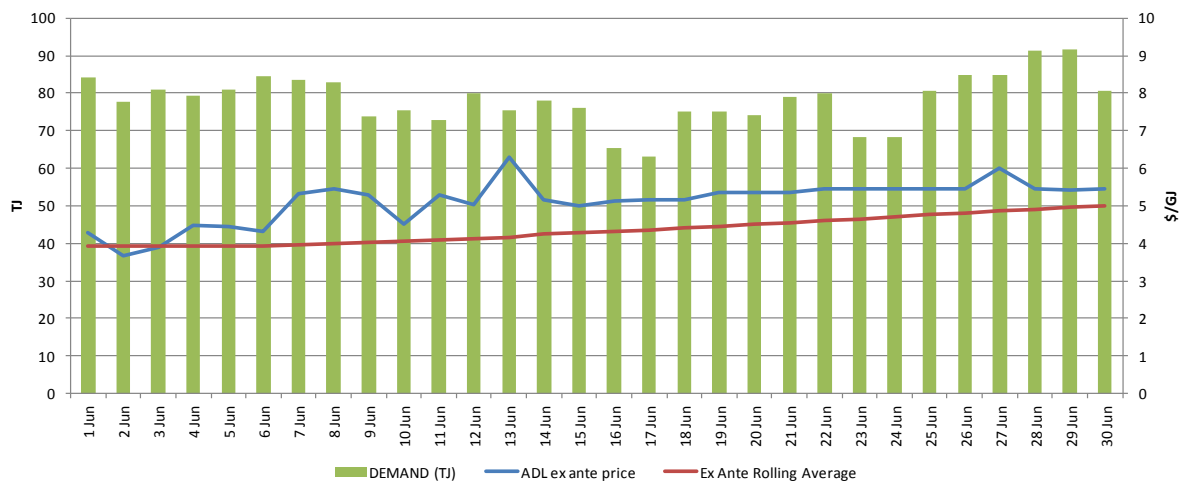
Although the average daily ex ante volume of gas scheduled in June 2012 was lower than in June 2011, at \$6.34/GJ, the average ex ante price was 69 per cent higher. This is reflective of the significant reduction in offers below \$6/GJ.

As shown in figure 2, the average imbalance quantity (in absolute terms) in June 2012 was 10 TJ. As demand was over-forecast on 23 of the 30 days in June, these imbalances were predominantly negative, resulting in the average ex post price being lower than the ex ante price.

### Adelaide hub prices

Figure 4 shows daily ex ante prices and demand for June 2012 along with the rolling 30 day average price.

**Figure 4: Adelaide ex ante prices and demand June 2012**



The rolling average weighted price started the month at around \$4/GJ and increased to around \$5/GJ by the end of the month.

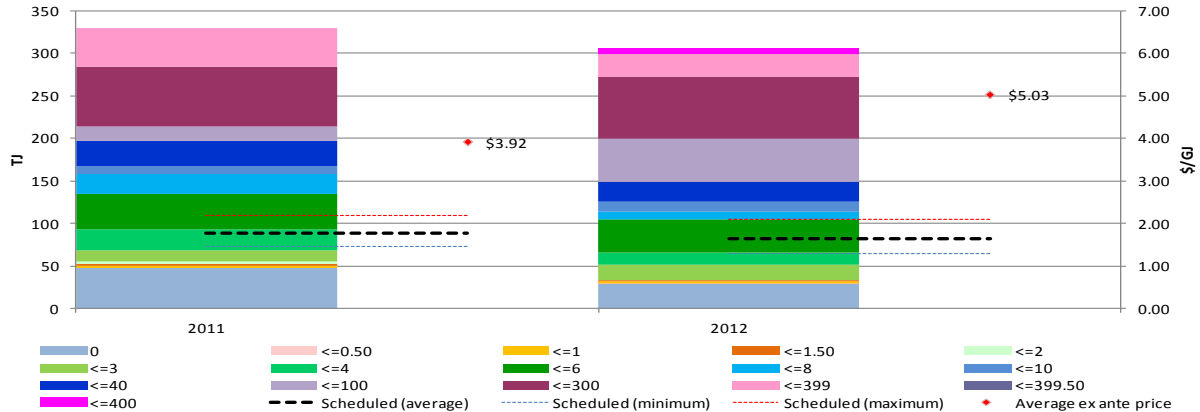
Figures 5 and 6 compare key prices and quantities in the Adelaide hub for June 2012 to June 2011. As shown in Figure 5 (and graphically in figure 6), the volume of offers at or below \$4/GJ<sup>8</sup> fell by almost 30 per cent from June 2011 to June 2012.

<sup>8</sup> This offer price band was chosen as one of the closest to the June average ex ante price of \$5.03/GJ.

**Figure 5: Adelaide average daily key prices and inputs: June 2011 vs. June 2012**

	Offers at or below \$4/GJ (TJ)	Ex ante volume (TJ)	Ex ante price (\$/GJ)	Absolute imbalance volume (TJ)	Ex post price (\$/GJ)
June 2011	93	89	3.92	3.0	3.92
June 2012	66	82	5.03	3.6	5.12

**Figure 6: Adelaide ex ante offers (\$/GJ) and scheduled quantities (TJ): June 2011 vs. June 2012**



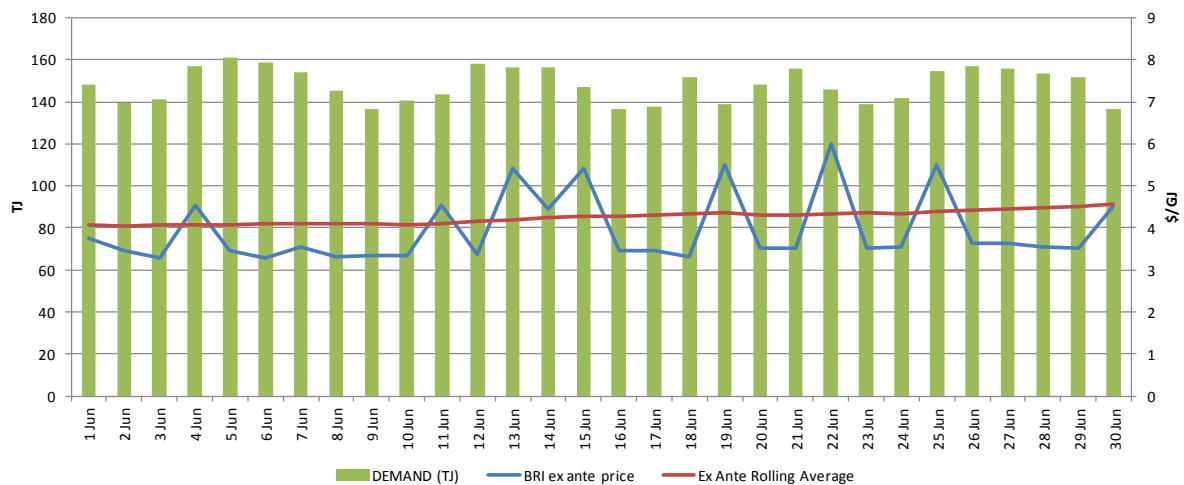
Although the average daily ex ante volume of gas scheduled in June 2012 was lower than in June 2011, at \$5.03/GJ, the average ex ante price was 28 per cent higher. This is reflective of the significant reduction in offers at or below \$4/GJ.

As shown in figure 5, the average imbalance quantity in June 2012 was 3.6 TJ. As demand was under-forecast on 23 of the 30 days in June, these imbalances were predominantly positive, resulting in the average ex post price being higher than the ex ante price.

## Brisbane hub prices

Figure 7 shows daily ex ante prices and demand for June 2012 along with the rolling 30 day average price.

**Figure 7: Brisbane ex ante prices June 2012**

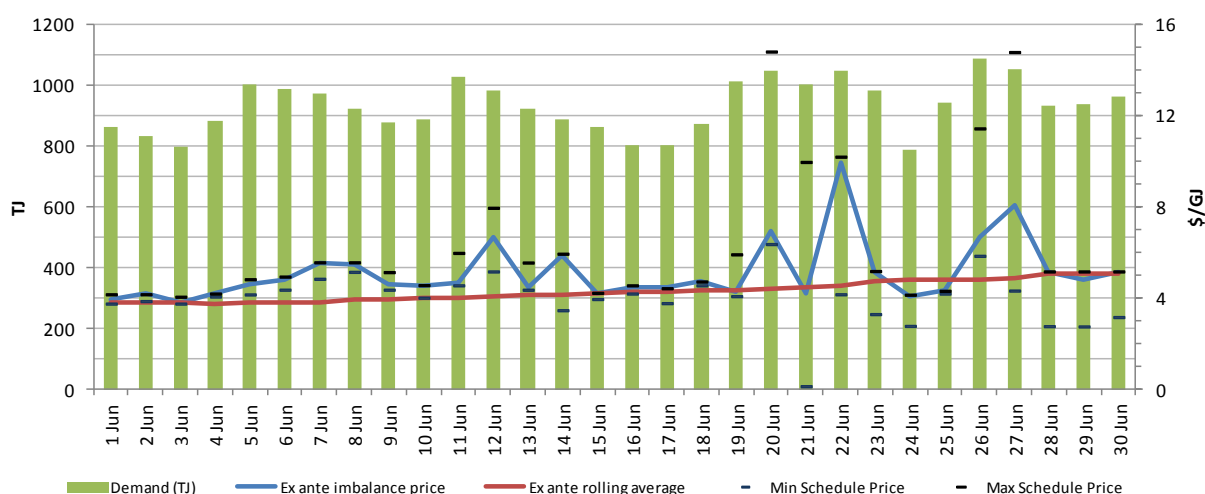


The rolling average weighted price started the month at around \$4/GJ and increased to around \$4.50/GJ by the end of the month.

## Victorian market prices

Figure 8 shows weighted price, rolling average daily price, minimum and maximum daily schedule prices and demand.

**Figure 8: Prices and demand in the Victorian market hub June 2012**



\* rolling average price is the average of the daily weighted imbalance prices measured over the 30 days prior to the gas day

The past 30 day weighted price started the month at around \$3.80/GJ and increased to around \$5.10/GJ by the end of the month. There were significant differences between minimum and maximum schedule prices on many days of the month.

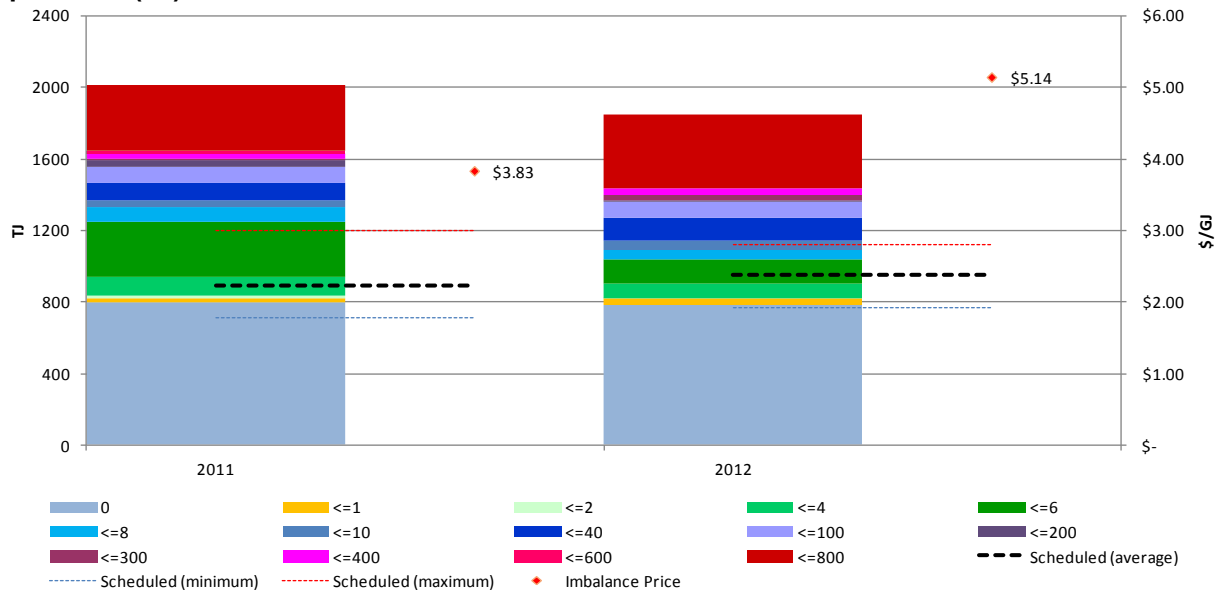
Figures 9 and 10 compare key prices and quantities in the VGM for June 2012 to June 2011. As shown in figure 9 (and graphically in figure 10), the volume of offers at or below \$6/GJ at 6 am fell by 16.3 per cent from June 2011 to June 2012.<sup>9</sup>

**Figure 9: Average daily key prices and inputs**

	6 am Injection bids at or below \$6/GJ (TJ)	6 am demand (TJ)	Weighted daily Price (\$/GJ)	Average difference of min and max schedule price on day (\$/GJ)
<b>June 2011</b>	1244	888	3.83	0.99
<b>June 2012</b>	1041	950	5.14	2.22

<sup>9</sup> This offer price band was chosen as it is the closest to the June average ex ante price of \$5.14/GJ.

**Figure 10: 6 am injection bids (\$/GJ) and minimum, maximum, and average scheduled quantities (TJ)**



The most significant factor in June 2012 prices being higher than June 2011 prices appears to be the reduction in offers at below \$6/GJ, and to a lesser extent the fact that 6 am demand is 11 per cent higher.

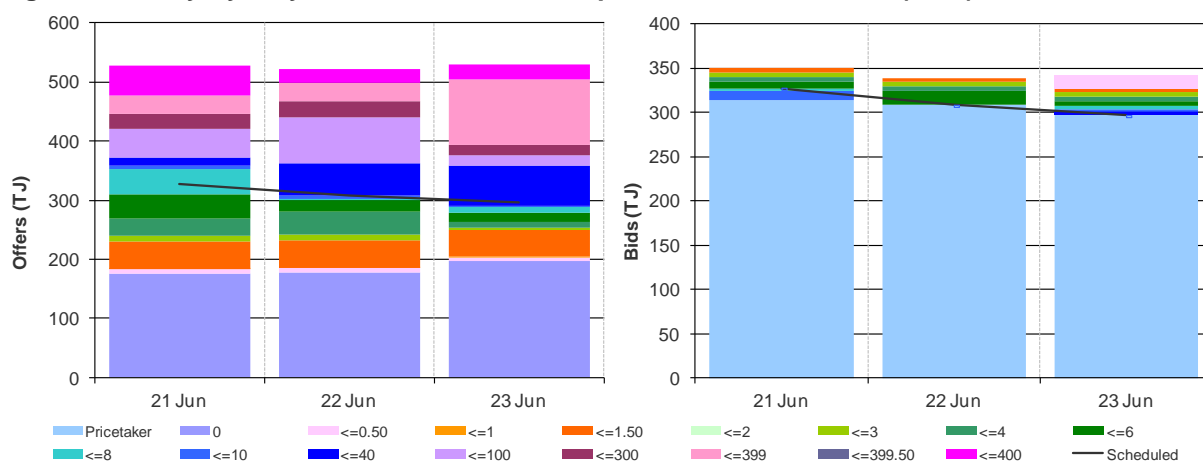
## Part 2 Daily Outcomes

### Sydney hub

#### 21– 23 June

Figure S1 shows offers and bids by price bands for 21 to 23 June. It also shows scheduled demand (the black line). It can be seen how offers and bids contributed to ex ante prices reaching \$7.10/GJ on 21 June, \$13.98/GJ on 22 June and \$17.30/GJ on 23 June.

**Figure S1: Daily Sydney hub offers and bids in price bands 21-23 June (\$/GJ)**



#### 21 June

Figure S2 shows the ex ante price on 21 June was higher than the price forecast in provisional schedules.

**Figure S2: Provisional, ex ante and ex post prices and quantities, 21 June**

	D-3	D-2	Ex ante	Ex post
<b>Price (\$/GJ)</b>	5.20	4.52	7.10	7.10
<b>Quantity (TJ)</b>	312	314	327	+7.1 (Short)

The ex ante price on 21 June was higher than forecast in the provisional schedules (D-3 and D-2) because 13 TJ more gas was scheduled ex ante. The higher ex ante scheduled quantity required more expensive gas offers to be scheduled compared to the D-2 schedule. The cause of the higher ex ante scheduled quantity was an increase in scheduled withdrawal bids to backhaul gas from the Sydney hub.

#### 22 June

Figure S3 shows the ex ante price on 22 June was higher than the price forecast in provisional schedules. The ex ante price on 22 June was higher than the previous day despite demand being lower. The price increase was due to a significant amount of gas priced between \$4/GJ and \$8/GJ being placed in higher offer price bands (as can be seen in figure S1).

**Figure S3: Provisional, ex ante and ex post prices and quantities, 22 June**

	D-3	D-2	Ex ante	Ex post
<b>Price (\$/GJ)</b>	5.00	7.10	13.98	18.30
<b>Quantity (TJ)</b>	305	321	308	+1.6 (Short)



For the ex ante schedule, AGL Wholesale Gas Limited (AGL) removed over 30 TJ priced at under \$6/GJ, and shifted a large quantity into prices above \$10/GJ. One of these bids set the ex ante price at \$13.98/GJ. Other participants, including TRUenergy Pty Ltd (TRUenergy) and Origin Energy Retail Ltd (Origin), rebid, but in smaller volumes than AGL.

On the gas day, the market was short, meaning more gas was allocated (used) than scheduled. Accordingly a market short bid was added to the ex ante bid curve to calculate the ex post price. The resultant ex post price was significantly higher than the ex ante price despite the market being short only 1.6 TJ. The price was ‘pushed up’ by \$4.32/GJ because the next highest priced ex ante offer (after the \$13.98/GJ offer) was \$18.30/GJ.

## 23 June

Figure S4 shows the \$17.30 price on 23 June 2012 was higher than forecast in provisional schedules despite the ex ante scheduled quantity being lower than provisional scheduled amounts.

**Figure S4: Provisional, ex ante and ex post prices and quantities, 23 June**

	D-3 (provisional)	D-2 (provisional)	Ex ante	Ex post
<b>Price (\$/GJ)</b>	7.00	7.00	17.30	9.97
<b>Quantity (TJ)</b>	309	301	296	-10.9 (Long)

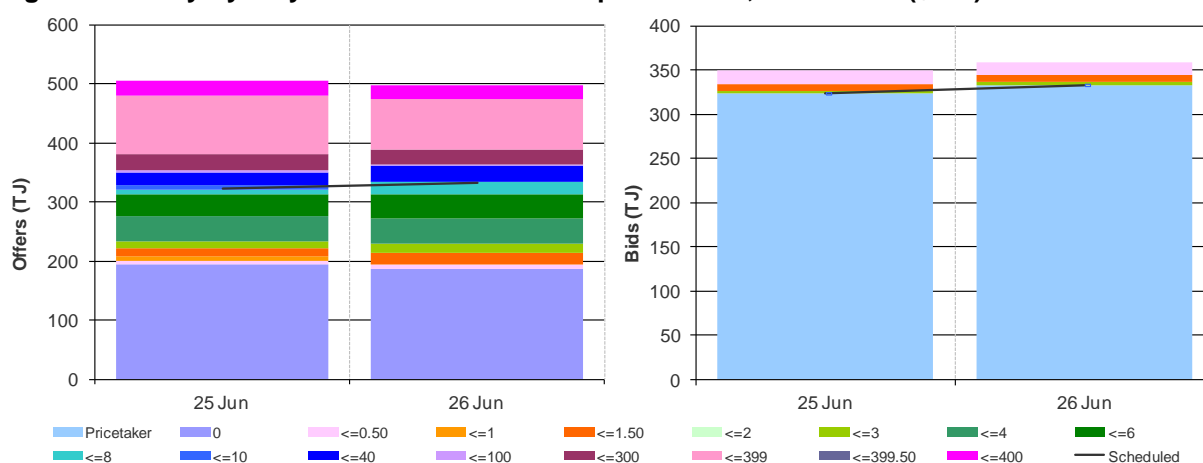
AGL removed volumes of gas offered at lower price bands for the D-2 schedule, including 12 TJ at \$3.23/GJ, and offered 19 TJ into the \$17.30/GJ price band for the ex ante schedule. This offer set the market clearing price.

On the gas day, the market was long, meaning less gas was allocated (used) than scheduled. Accordingly a market long offer was added to the ex ante offer curve to calculate the ex post price. The ex post price was set at \$9.97/GJ (by a TRUenergy offer). The next lowest priced offers below the \$17.30/GJ offer, were 1 TJ at \$13.98/GJ and 1.3 TJ at \$9.97/GJ.

## 25–26 June

Figure 5 shows offers and bids by price bands for 25 to 26 June. It also shows scheduled demand (the black line). It can be seen how offers and bids contributed to ex ante prices reaching \$10/GJ on 25 June and \$8/GJ on 26 June

**Figure S5: Daily Sydney hub offers and bids in price bands, 25-26 June (\$/GJ)**



## 25 June

Figure S6 shows the ex ante price on 25 June was higher than the price forecast in provisional schedules despite the ex ante scheduled quantity being lower than provisional scheduled amounts.

**Figure S6: Provisional, ex ante and ex post prices and quantities, 25 June**

	D-3	D-2	Ex ante	Ex post
Price (\$/GJ)	6.00	7.00	10.00	7.00
Quantity (TJ)	341	329	324	-5.8 (Short)

TRUenergy and Origin reduced the volume of gas offered under \$8/GJ from the D-2 schedule to the ex ante schedule, putting upwards pressure on the ex ante price. One large participant reduced its demand forecast by approximately 25 per cent from the D-2 schedule to the ex ante schedule, which put downwards pressure on the ex ante price. The net effect was that the ex ante price increased to \$10/GJ from \$7/GJ at the D-2 provisional schedule. Both the ex ante price and ex post price were set by AGL offers.

## 26 June

Figure S7 shows that 26 June was the only day in Sydney (of the days analysed in the report) where rebidding pushed prices down for the ex ante schedule.

**Figure S7: Provisional, ex ante and ex post prices and quantities, 26 June**

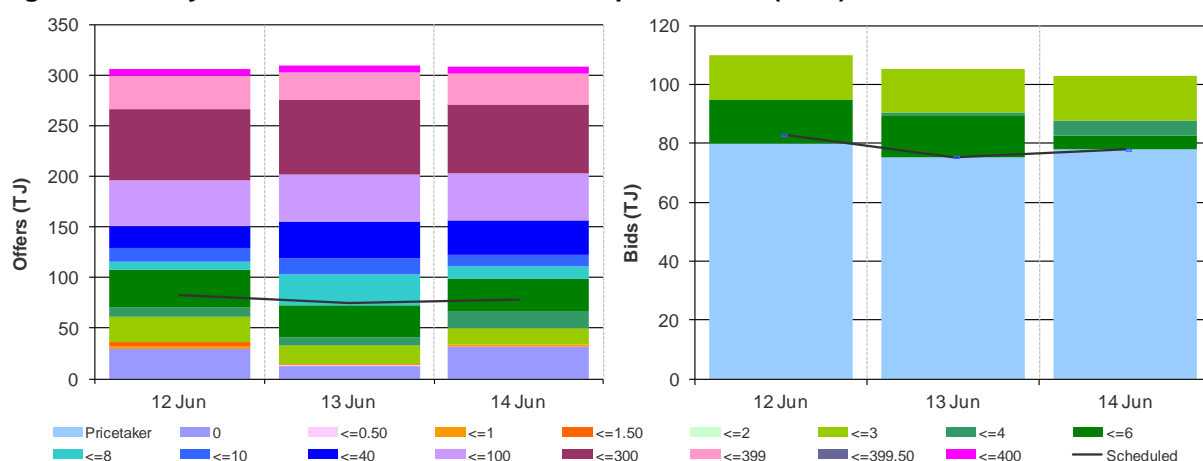
	D-3	D-2	Ex ante	Ex post
Price (\$/GJ)	7.00	10.00	8.00	8.00
Quantity (TJ)	325	326	333	-1.5 (Short)

Rebidding for the ex ante schedule led to additional gas being offered below \$6/GJ and between \$6/GJ and \$8/GJ. Both the ex ante and ex post prices settled at \$8/GJ (an AGL offer). The ex ante scheduled quantity (333 TJ) was the highest for June, however the price was \$9.30/GJ less than the highest ex ante price of \$17.30/GJ on 23 June (when the ex ante scheduled quantity was 296 TJ).

## Adelaide hub

Figure A1 shows offers and bids by price bands for 12 to 14 June. It also shows scheduled demand (the black line). The figure shows how bids and offers contributed to the ex ante price reaching \$6.28/GJ on 13 June.

**Figure A1: Daily Adelaide hub offers and bids in price bands (\$/GJ)**



## 13 June

Prices on Wednesday 13 June were higher than on Tuesday and Thursday (\$5.03/GJ and \$5/GJ). This occurred largely because around 17 TJ less gas was offered in at \$0/GJ on 13 June compared to the surrounding days.

Figure A2 shows the \$6.28/GJ ex ante price on 13 June 2012 was higher than forecast in provisional schedules despite the ex ante scheduled quantity being lower than the D-2 provisional scheduled quantity.

**Figure A2: 13 June provisional, ex ante and ex post prices and quantities**

	D-3	D-2	Ex ante	Ex post
Price (\$/GJ)	4.60	4.77	6.28	6.28
Quantity (TJ)	74	77	75	+6.28 (Short)

Origin and TruEnergy removed approximately 30 TJ of gas priced under \$6/GJ for the D-2 schedule, causing the ex ante price to increase to over \$6/GJ.

## Victorian market

### 20 June

Figure V1 shows key prices and quantities for the 20 June gas day. As shown in figure V1, scheduled demand increased over the day. Prices fell away at 6 pm as withdrawal bids above \$8/GJ were reduced.

**Figure V1: 20 June gas day information**

Schedule	6 am	10 am	2 pm	6 pm	10 pm	Daily weighted price
Price (\$/GJ)	6.40	8.19	14.84	11.50	8.00	6.93
Demand forecasts (TJ)	991.4	1 019.6 (+28.2)	1 059.2 (+39.6)	1 060.8 (+1.5)	1 060.7 (-0.1)	
AEMO override (TJ)*	-	-	17	4.3	4.3	
Change in Injection bids** <=\$8/GJ	N/A	+30.99	+14.06	+12.5	+15	
Change in withdrawal bids** >\$8/GJ	N/A	+14	-	-20.5	14.47	

\*AEMO override is applied to participant's demand forecasts when in accordance with a defined AEMO procedure, the aggregated participant forecasts are considered to be outside a threshold level of accuracy (override is applied based on system security reasons).

\*\* The \$8/GJ threshold has been chosen for both injection bids and withdrawal bids as \$8/GJ is one of the critical pricing points for determining the schedule price—more injection bids below \$8/GJ will put downward pressure on the price; more withdrawal bids above \$8/GJ will put upwards pressure on the price.

Actual demand for the day was **1 048 TJ**<sup>10</sup>.

#### *Demand forecasting*

Demand forecasts submitted by seven of the eight main market participants were between 2.6 per cent and 30 per cent below actual demand for the 6 am schedule. However, one participant over forecast demand by over 6 per cent at the 6 am schedule and continued to increase its demand forecast gradually throughout the day. By 10 pm this participant's demand forecast was over 13 per cent higher than its actual demand.

At the 2 pm schedule, AEMO applied a +17 TJ demand override, increasing scheduled gas beyond participants' forecasts.

#### *Bids and rebids*

Rebids which contributed to intra-day price changes (along with changes in demand) include:

- *For the price increase at the 10 am schedule:* Origin Energy (VIC) Pty Ltd (**Origin**) increased withdrawal bids at Culcairn in price merit order by 14 TJ, adding to system demand.
- *For the price increase at the 2 pm schedule:* Origin moved withdrawal volumes into higher priced bands at Culcairn, while Origin lowered the quantity of \$0/GJ injection bids by 8 TJ at SEAGas.

Limits on the capacity of the South West Pipeline (**SWP**) causing a constraint on hourly gas deliveries to Melbourne from the west also affected bids and rebids.

#### *Liquefied Natural Gas (LNG)*

<sup>10</sup> Actual demand refers to the demand for comparison with market participants demand forecasts

At the 2 pm schedule, 28 TJ of LNG was scheduled into the market. As for all days in June when LNG was scheduled, it was scheduled in merit order (rather than out of merit order to alleviate a system constraint). After the scheduling of LNG at 2 pm, a number of participants revised their LNG bids, some into price bands too high to be scheduled. However, at the 10 pm schedule, one participant lowered its LNG bid price from \$10.07/GJ to \$0/GJ contributing to the lower schedule price at 10 pm.

## 21 June

As shown in figure V2, forecast demand increased during the day before falling away at 10 pm; at the same time as withdrawal bids over \$8/GJ increased through the day putting upwards pressure on the price.

**Figure V2: 21 June gas day information**

Schedule	6 am	10 am	2 pm	6 pm	10 pm	Daily weighted price
Price (\$/GJ)	4.20	4.23	5.20	10	0.17	4.19
Demand forecast (TJ)	1 074.8	1 085.6 (+10.8)	1 091.4 (+5.9)	1 097.7 (+6.3)	1 080 (-17.7)	
AEMO override (TJ)	-	- 4.2	- 4.2	- 4.2	- 22.2	
Change in Injection bids <=\$8/GJ (TJ)	N/A	+2.8	+4.0	+0.7	+6.4	
Change in withdrawal bids >\$8/GJ (TJ)	N/A	+34.7	+10.7	+7.0	0	

Actual demand for the gas day was **1 003.4 TJ**.

### *Demand forecasting*

Participants over forecast demand at 6 am by 72 TJ. One participant over forecast demand for the 6 am schedule by over 8 per cent, and continued to increase its demand forecast gradually throughout the day. By 10 pm its demand forecast was over 15 per cent higher than its actual demand.

AEMO reduced overall system demand by applying a -4.2 TJ demand override at the 10 am, 2 pm, and 6 pm schedules, and increased the override to -22.2 TJ for the 10 pm schedule. The override applied at 10 pm was the main driver of the 17 cent/GJ price at 10 pm.

### *Bids and rebids*

A significantly larger volume of bids under \$4/GJ (1,046 TJ) than the previous day (922 TJ) contributed to the lower 6 am price, despite the 6 am demand forecast being 83 TJ higher than the previous day.

Rebids which contributed to intra-day price changes (along with changes in demand) include:

- *For the price increase at the 6 pm schedule:* Origin rebid 22 TJ of withdrawal bids at Culcairn into higher priced bands. TRUenergy Pty Ltd (**TRUenergy**) rebid withdrawal bids at the Vic Hub into higher prices throughout the day, particularly at the 6 pm schedule when it increased its maximum price from \$21/GJ to \$40/GJ.
- *For the price decrease at the 10 pm schedule:* Aurora Energy Pty Ltd increased its 6 pm \$0/GJ injection bid at Iona by 3 TJ. TRUenergy rebid its lowest injection bid from its 6 pm schedule bid at the Vic Hub of 5 TJ at \$10/GJ to 4.4 TJ at \$0/GJ.

LNG was not scheduled on this gas day.

## 22 June

As shown in figure V3, forecast demand increased slightly during the day, however, injection bids below \$8/GJ also increased putting downward pressure on the price at 10 am.

**Figure V3: 22 June gas day information**

Schedule	6 am	10 am	2 pm	6 pm	10 pm	Daily weighted price
Price (\$/GJ)	10.23	8.00	5.20	5.21	4.20	9.95
Demand forecast (TJ)	1 116.9	1 120 (+3.1)	1 129 (+9)	1 129.2 (+0.2)	1 133.2 (+4.1)	
AEMO override (TJ)	-	-	-	- 5.0	- 1.7	
Change in Injection bids <=\$8/GJ (TJ)	N/A	+20.5	-1.0	+7.3	+11	
Change in withdrawal bids >\$8/GJ (TJ)	N/A	-	+16.1	+17.7	+6.8	

Actual demand for the gas day was **1 049.6 TJ**.

### *Demand forecasting*

Participants over forecast demand at 6 am by 67 TJ. For the 6 am schedule, five of the eight main participants over forecast their demand by between 7 and 13 per cent. AEMO adjusted market participant demand forecasts, by -5.0 TJ at 6 pm and -1.7 TJ at 10 pm.

### *Bids and rebids*

The higher 6 am price (\$10.23/GJ) compared to the previous day (\$4.20/GJ), appears to have been driven by the 42 TJ higher demand forecast.

Rebids which contributed to intra-day price changes (along with changes in demand) include:

- *For the price decrease at the 10 am schedule:* At Iona, 3 participants —Lumo Energy Australia Pty Ltd (**Lumo**), Australian Power and Gas Pty Ltd (**Australian Power and Gas**), and AGL Sales Pty Ltd (**AGL**)—increased their quantity of \$0/GJ injection bids by 10 TJ in total at the 10 am schedule. Similarly TRUenergy increased its \$0/GJ injection bid quantity from around 192 TJ to around 236 TJ at Longford.
- *For the price decrease at the 2 pm schedule:* Origin increased the quantity of its standing \$0/GJ priced injection bid placed at 6 am at Iona from 83 TJ to 101 TJ. Origin and TRUenergy increased the quantity of their \$0/GJ priced injection bids at Longford by 82 TJ in total at the 2 pm schedule.

### *LNG*

Analysis indicates that LNG was injected from 6 am to 2 pm. The 6 am price was set by Lumo's 15 TJ LNG injection bid. Lumo placed a \$0/GJ injection bid for 1.2 TJ for the 10 am schedule. AGL was scheduled to inject 5 TJ of LNG at 6 am and Origin was scheduled to inject 10 TJ of LNG at 6 am. Origin rebid at 10 am, placing 10 TJ at \$0/GJ. Origin also made further LNG \$0/GJ bids throughout the day totalling 3.3 TJ.

## 26 June

Figure V4 shows forecast demand fell significantly from 6 am to 10 am before increasing for the 2 pm, 6 pm and 10 pm schedules.

Figure V4: 26 June gas day information

Schedule	6 am	10 am	2 pm	6 pm	10 pm	Daily weighted price
Price (\$/GJ)	6.58	5.98	5.88	8.01	11.47	6.66
Demand forecast (TJ)	1 109.9	1 017.7 (-92.2)	1 026.7 (+9)	1 055.7 (+29)	1 061.9 (+6.3)	
AEMO override (TJ)	-	- 88.7	- 81.5	- 65.5	- 59.1	
Change in Injection bids <=\$8/GJ (TJ)	N/A	+11.7	-3	+10.8	+6	
Change in withdrawal bids >\$8/GJ (TJ)	N/A	+6	+8.6	+10	-	

Actual gas demand for the day was **1 089.3 TJ**, the highest for June.

#### *Demand forecasting*

The daily forecast demand submitted by participants at the 6 am schedule was 1109.9 TJ, just under 2 per cent higher than the actual demand for the gas day.

AEMO overrode system demand from 10 am, affecting demand forecasts. The demand override of 88.7 TJ put in place for the 10 am schedule fell throughout the day.

#### *Bids and rebids*

The small volumes of injection and withdrawal rebids are reflected in changes to injection and withdrawal bids, as shown in figure V4.

#### *LNG*

Analysis indicates that LNG was scheduled from 6 pm. Lumo was scheduled to inject 110 TJ of LNG at the 6 pm and 10 pm schedules. Origin set the 10 pm price with its \$11.47/GJ LNG injection bid of 5 TJ. LNG injections commenced at around 5 TJ at the 6 pm schedule, and exceeded 18 TJ by the 10 pm schedule.

## 27 June

Figure V5 shows forecast demand fell over the day.

**Figure V5: 27 June gas day information**

Schedule	6 am	10 am	2 pm	6 pm	10 pm	Daily weighted price
Price (\$/GJ)	8.00	14.82	8.00	6.00	4.36	\$8.11
Demand forecast (TJ)	1 134.7	1 122.7 (-11.9)	1 114.6 (-8.1)	1 102.9 (-11.7)	1 100.4 (-2.5)	
AEMO override (TJ)	-	- 4.8	- 4.8	- 4.8	- 4.8	
Change in Injection bids <\$8/GJ (TJ)	N/A	1	15.2	-12.4	1	
Change in withdrawal bids >\$8/GJ (TJ)	N/A	-	-	-5.1	10.1	

Actual demand for the gas day was **1 052.1 TJ**.

### *Demand forecasting*

On the gas day, five of the eight main participants over forecast their 6 am demand by between 7 and 17 per cent. The 6 am demand forecast was a record for the month and over 7 per cent higher than actual demand for the day. AEMO reduced overall system demand from the 10 am schedule onwards by 4.8 TJ.

### *Bids and rebids*

Rebids which contributed to intra-day price changes (along with changes in demand) include:

- *For the price increase at the 10 am schedule:* Origin was scheduled to withdraw 15 TJ of gas at the 6 am schedule at Culcairn at a price of \$8.01/GJ. At 10 am, Origin rebid and increased the price to \$20/GJ.
- *For the price decrease at the 2 pm schedule:* Australian Power and Gas rebid 16 TJ at \$0/GJ at Iona. Lumo rebid 22 TJ at \$0/GJ. Lumo's bids had previously been priced between \$0–\$8/GJ.

### *LNG*

Analysis indicates that LNG was scheduled from 6 am until 6 pm. Alinta bid 1 TJ at \$14.82/GJ, which set the 10 am price and placed a 2 pm injection bid of 247 GJ at \$0/GJ. Lumo was scheduled to inject LNG for the first 3 schedules. At 6 am, it bid 10 TJ at \$6.55/GJ and 5 TJ at \$7.20/GJ. Lumo was scheduled 15 TJ of LNG at 10 am and 2 pm, despite revising its prices slightly.

**Australian Energy Regulator**

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