

Introduction

This report is published as part of the AER's overall monitoring function to provide details on the high August 2012 prices in the Victorian Gas Market (VGM) and in the Adelaide, Brisbane and Sydney STTM hubs. This report contains a summary of key price drivers and compliments the analysis already provided in the August 2012 AER gas weekly reports.¹

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).² For the VGM, the AER has already published significant price variation reporting triggers.³ 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. Instead the report is published as part of the AER's general monitoring role.

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 identified will be reported in the AER's Quarterly Compliance Report.⁴

The AER has published similar reports for the months of June and July 2012.

Summary

This report provides an overview of the month of August in the Sydney, Brisbane, and Adelaide STTM hubs and the Victorian Declared Wholesale Gas Market (VGM). In all markets (except for Sydney) the rolling 30 day average price by the end of August was lower than it was at the end of July as instances of high prices declined.

In August, the highest gas prices were in Sydney where the average ex post price was \$8.25/GJ, over 21 per cent higher than the average ex ante price of \$6.79/GJ. In Sydney, demand was under-forecast on 25 of the 31 days. This report analyses 6 days in Sydney where the ex post price was greater than \$10/GJ. On 4 of the days analysed, the ex post price was over \$5/GJ higher than the ex ante price.

As for June and July, on a year to year basis, average prices for August 2012 were significantly higher than for August 2011 in all markets.⁵ Compared to August 2011, the average ex ante price in August 2012 was:

- 98 per cent higher in Sydney

¹ www.aer.gov.au/node/451

² Rule 355 and rule 498 of the National Gas Rules.

³ www.aer.gov.au/node/453.

⁴ www.aer.gov.au/node/454

⁵ There is no August 2011 comparison for the Brisbane STTM as it commenced in December 2011.

- 60 per cent higher in Adelaide
- 42 per cent higher in the VGM.

Compared to August 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 11 per cent lower.
- in Adelaide the average volume of gas offered below \$6/GJ was 17 per cent lower.
- in the VGM the average volume of gas offered below \$4/GJ was 0.5 per cent lower.

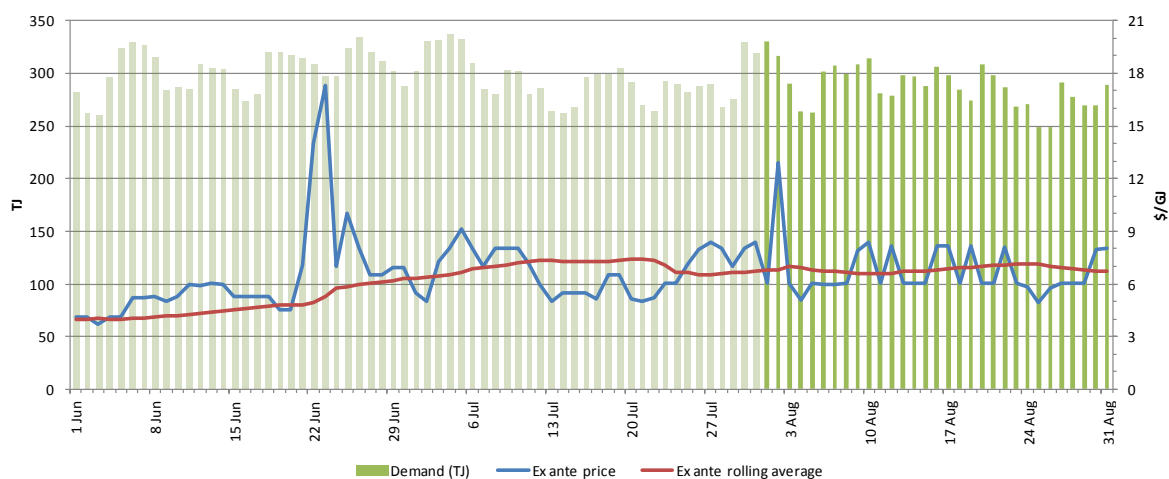
While demand was higher in August 2012 compared to August 2011, the lower volumes of gas being offered at lower prices was a significant factor in contributing to the high August 2012 prices.

Part 1 Outcomes for the month of August

Sydney hub prices

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

Figure 1: Sydney ex ante prices and demand, winter 2012



The rolling average ex ante price started August at around \$6.80/GJ and settled around the same level by the end of the month (\$6.75/GJ).

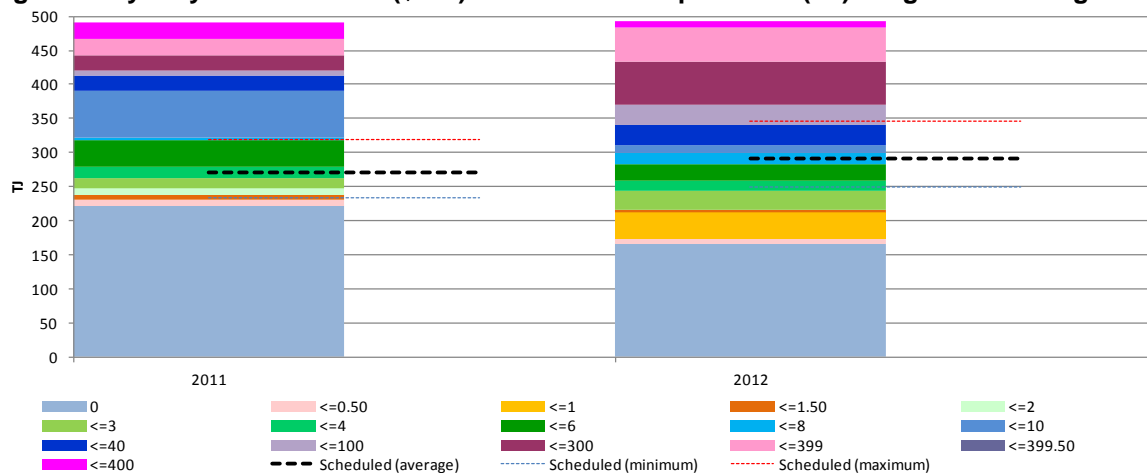
Figures 3 and 4 compare key prices and quantities in the Sydney hub for August 2012 with August 2011. As shown in Figure 3 (and graphically in figure 4), the volume of offers at or below \$6/GJ⁶ fell by 12 per cent from August 2011 to August 2012.

Figure 3: Sydney average daily key prices and inputs: August 2011 vs. August 2012

	Offers at or below \$6/GJ (TJ)	Ex ante Volume (TJ)	Ex ante price(\$/GJ)	Absolute imbalance volume (TJ)	Ex post price (\$/GJ)*
Aug 2011	319	270	3.43	10.2	2.86
Aug 2012	282	291	6.79	9.0	8.25

⁶ This offer price band was chosen as it is the closest to the August average ex ante price of \$6.79/GJ.

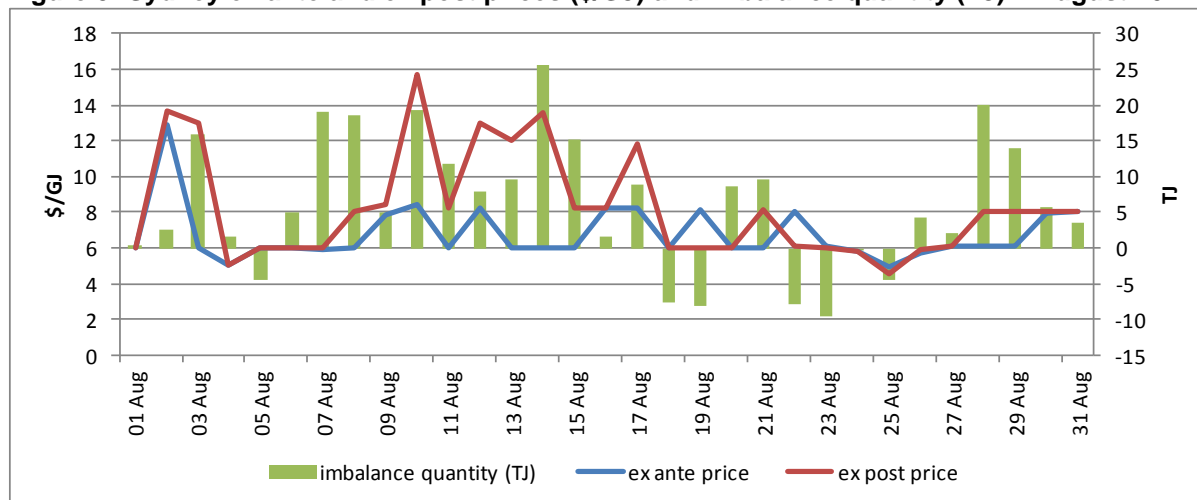
Figure 4: Sydney ex ante offers (\$/GJ) and scheduled quantities (TJ): Aug 2011 vs. Aug 2012



The reduction in offers priced under \$6/GJ (in comparison to the same period in 2011) combined with increased demand resulted in prices in August 2012 being 98 per cent higher than in August 2011.

Figure 5 below illustrates the ex ante and ex post prices in the Sydney STTM hub for the month of August 2012. It also shows the hub imbalance quantity—positive where demand was under-forecast and negative where demand was over forecast.

Figure 5: Sydney ex ante and ex post prices (\$/GJ) and imbalance quantity (TJ) – August 2012

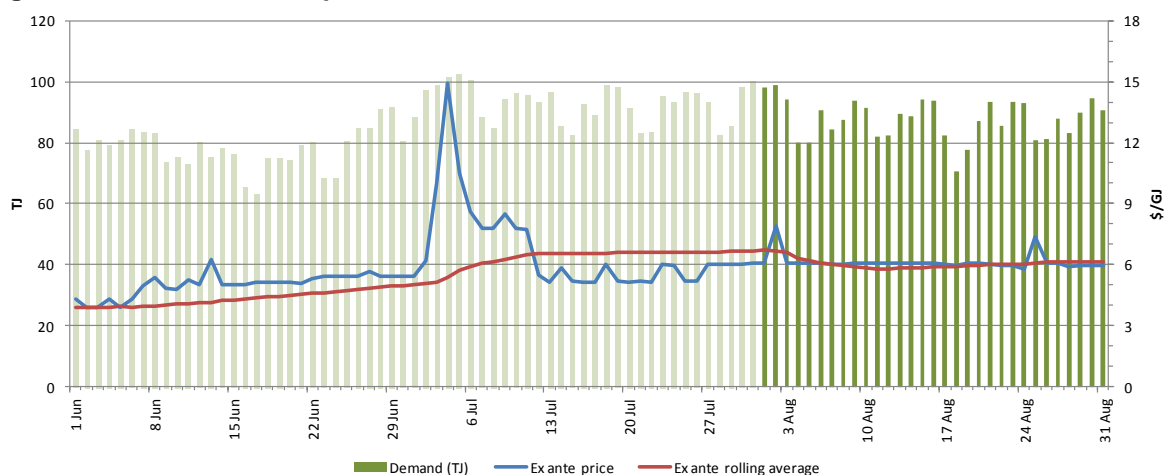


On 25 of 31 days there was a positive imbalance. The days of highest positive imbalances resulted in the largest differences between ex ante and ex post prices. However, even for days of small positive imbalances such as 13 August (see section 2) there was a large difference between the ex ante and ex post price. Conversely, on the few days where there were negative imbalances, there was no (or little) difference between the ex ante and ex post price.

Adelaide hub prices

Figure 6 shows daily ex ante prices and demand for June, July and August 2012 along with the rolling 30 day average price.

Figure 6: Adelaide ex ante prices and demand, winter 2012



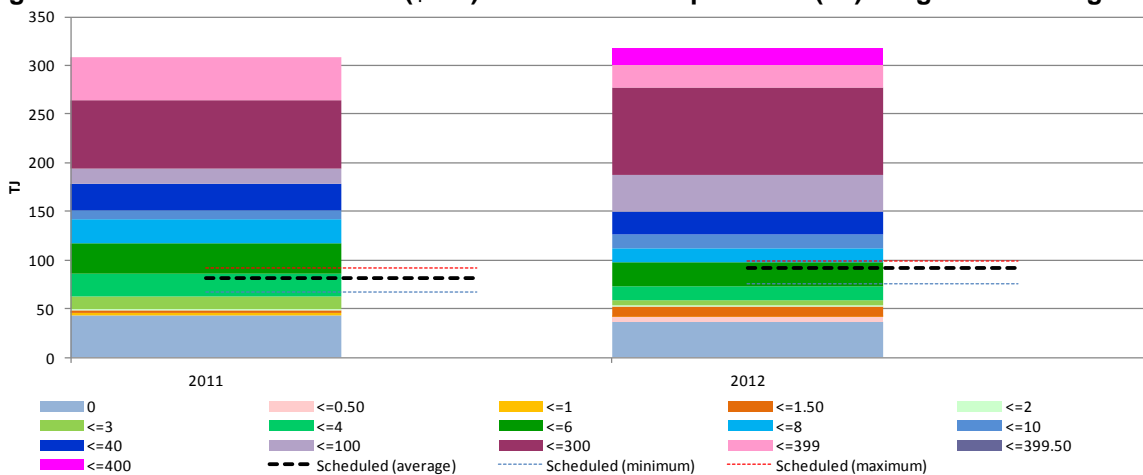
The rolling average ex ante price started August at around \$6.70/GJ and settled just below \$6.15/GJ by the end of the month.

Figures 7 and 8 compare key prices and quantities in the Adelaide hub for August 2012 to August 2011. As shown in Figure 7 (and graphically in figure 8), the volume of offers at or below \$6/GJ⁷ fell by 17 per cent from August 2011 to August 2012.

Figure 7: Adelaide average daily key prices and inputs: July 2011 vs. July 2012

	Offers at or below \$6/GJ (TJ)	Ex ante volume (TJ)	Ex ante price (\$/GJ)	Absolute imbalance volume (TJ)	Ex post price (\$/GJ)*
August 2011	117	81	3.83	3.0	3.83
August 2012	97	92	6.12	3.6	6.10

Figure 8: Adelaide ex ante offers (\$/GJ) and scheduled quantities (TJ): Aug 2011 vs. Aug 2012



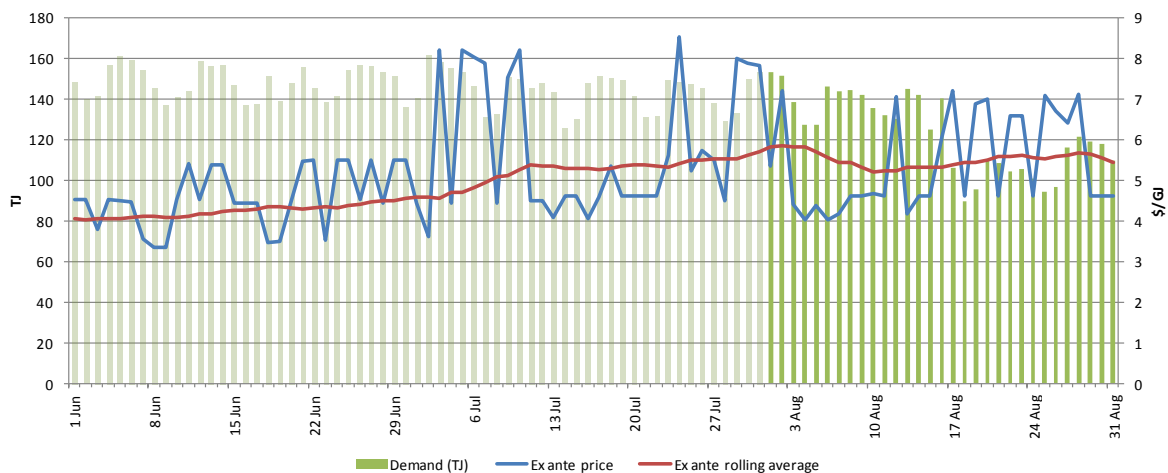
The reduction in offers priced under \$6/GJ (in comparison to the same period in 2011) combined with increased demand resulted in prices in August 2012 being 60 per cent higher than in August 2011.

Brisbane hub prices

Figure 9 shows daily ex ante prices and demand for June, July and August 2012 along with the rolling 30 day average price.

⁷ This offer price band was chosen as it is the closest to the August average ex ante price of \$6.12/GJ.

Figure 9: Brisbane ex ante prices and demand for, winter 2012



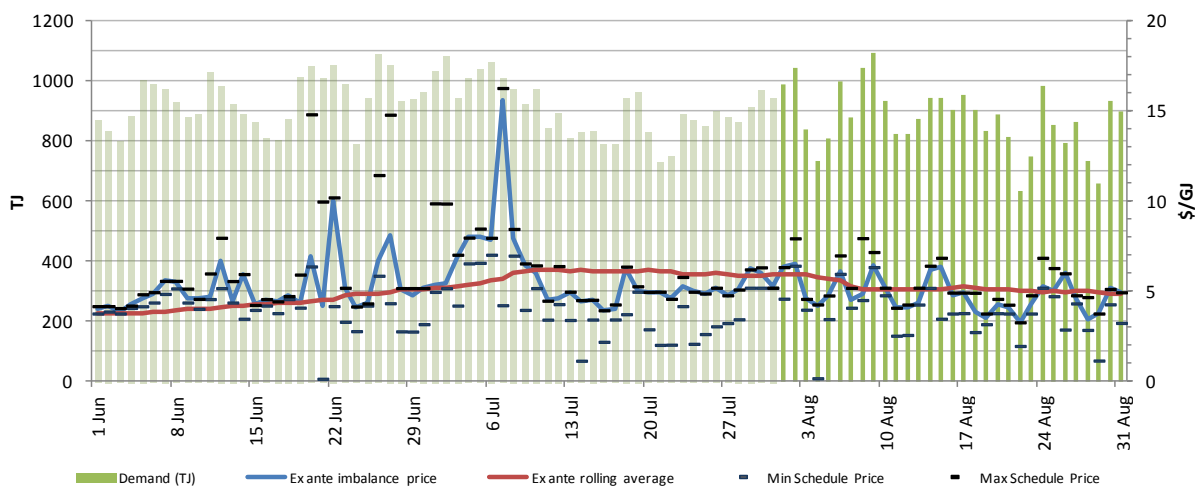
The rolling average ex ante price started August above \$5.80/GJ and settled just below \$5.45/GJ by the end of the month.

Brisbane gas prices in August were fairly volatile, as shown in figure 9. The AER assessed the gas offers on the gas days which resulted in the highest and lowest prices. This analysis indicates there is often a lack of gas offers around the \$4.50–6.50/GJ price range. This causes the sharp jumps in ex ante prices illustrated in figure 9 above.

Victorian market prices

Figure 11 shows weighted price, rolling average daily price, minimum and maximum daily schedule prices and demand for the VGM.

Figure 11: Prices and demand in the Victorian market, August 2012

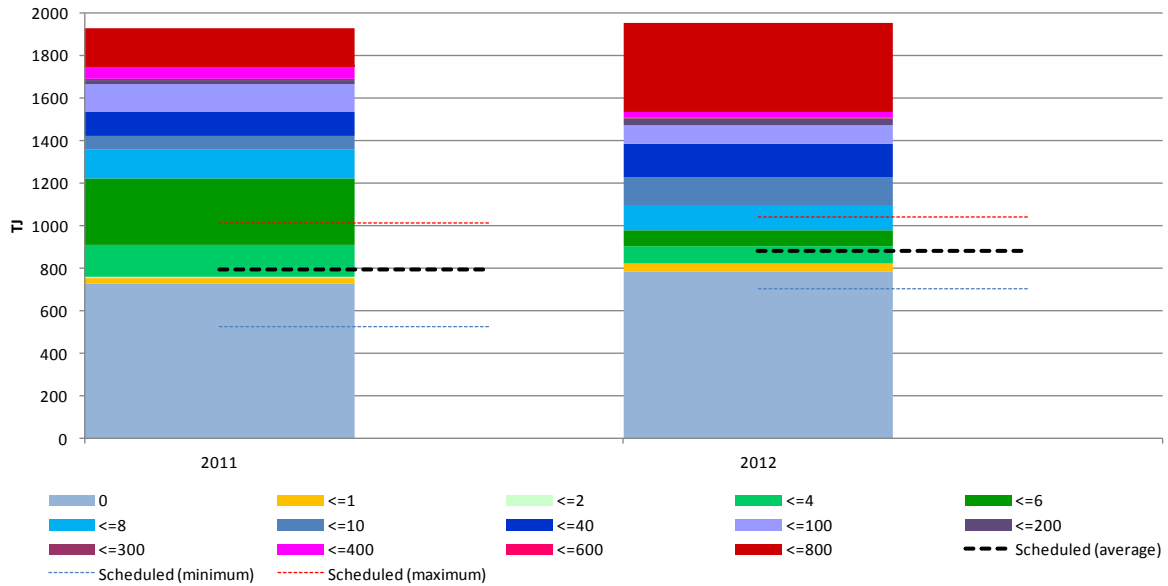


Figures 12 and 13 compare key prices and quantities in the VGM for August 2012 to August 2011. As shown in figure 12 (and graphically in figure 13), the volume of offers at or below \$4/GJ at 6 am did not change significantly from August 2011 to August 2012.

Figure 12: Average daily key prices and inputs

	6 am Injection bids at or below \$4/GJ (TJ)	6 am demand (TJ)	Weighted daily price (\$/GJ)	Average difference of min and max schedule price on day (\$/GJ)
August 2011	911	796	3.39	1.23
August 2012	907	880	4.81	1.53

Figure 13: 6 am injection bids (\$/GJ) and minimum, maximum, and average scheduled quantities (TJ)



With increased demand, prices in August 2012 were 42 % higher than in August 2011.

Part 2 Daily outcomes

Sydney hub

2 August

The high ex ante and ex post prices on 2 August (see figure S1 below) were influenced by a shift in gas offers into higher price bands, coupled with demand being slightly higher than forecast.

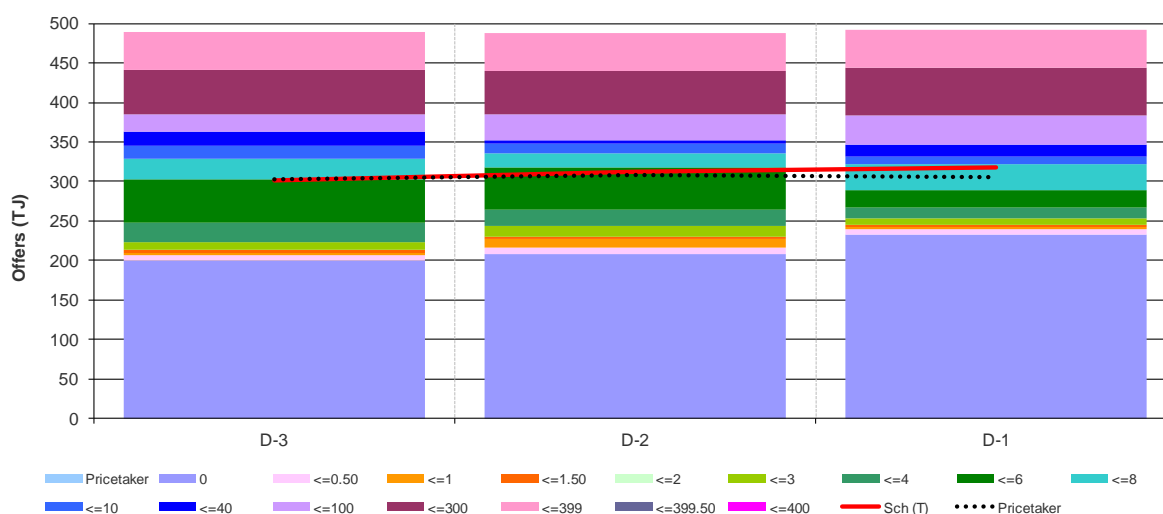
Figure S1: 2 August provisional, ex ante and ex post prices and quantities

	D-3	D-2	Ex ante	Ex post
Price (\$/GJ)	6.02	6.01	12.90	13.68
Quantity (TJ)	313.7	324.2	331.4	+2.67 (S)

Throughout this report, the accuracy of individual participants' demand forecasts is measured by comparing the quantities of their ex ante price taker bids to their share of actual hub demand.

On this gas day, all three of the major participants⁸ forecast their demand fairly accurately relative to other high price days.⁹ Rather than demand forecasting inaccuracy, it was changes to gas offers for the ex ante scheduled that largely caused high ex ante price as illustrated in figure S2 below.

Figure S2: 2 August provisional and ex ante schedule offers



There was a reduction in lower priced gas offers:

- Gas offers between 0.50/GJ and \$1/GJ dropped by around 10 TJ as TRUenergy removed its 9 TJ offer priced between 0.50/GJ and \$1/GJ.

⁸ Major participants in the Sydney hub whose demand regularly exceeds 10% of forecast demand in the hub are AGL, Origin and TRUenergy.

⁹ The increase in the quantity scheduled from the D-2 to the ex ante schedule was largely a result of a 15 TJ backhaul bid on the Eastern Gas Pipeline (EGP) being scheduled.

- Gas offers between \$2/GJ and \$6/GJ declined by around 45 TJ as AGL's 40 TJ offer priced between \$4/GJ and \$6/GJ was cut by 30 TJ.

Higher priced gas offers increased:

- Gas offers between \$6/GJ and \$8/GJ increased by around 16 TJ as AGL increased its 6 TJ offer priced between \$6/GJ and \$8/GJ to 21 TJ.
- Gas offers between \$10/GJ and \$40/GJ increased by 13 TJ as Origin and TRUenergy offered 6 TJ and 3 TJ respectively in this price range (they had no offers in this range for the D-2 schedule). AGL also increased its offer from 3 to 7 TJ.

These changes to gas offers, coupled with slightly increased demand, caused the higher ex ante price of \$12.90/GJ. The ex post price was slightly higher still as the market was short 2.67 TJ.

3 August

The high ex post price shown on 3 August (see figure S3 below) was caused by the three major participants under forecasting their demand and, as shown in figure S4 and S5 below, a scarcity of gas volumes priced above \$6 and below \$40/GJ.

Figure S3: 3 August provisional, ex ante and ex post prices and quantities

	D-3	D-2	Ex ante	Ex post
Price (\$/GJ)	6.02	6.02	6.05	13.00
Quantity (TJ)	304	305.7	304.6	+15.98 (S)

The three major participants each under forecast demand by around 5 per cent. Two of the three participants submitted demand forecasts that were fairly consistent throughout the provisional and ex ante schedules. The other participant's demand forecasts for the provisional schedules were significantly more accurate than its ex ante demand forecast. In fact, because it under forecast its demand in the ex ante schedule by nearly 10 TJ, it was largely responsible for the 15.98 TJ imbalance on the day which then caused the large ex post price of \$13/GJ.

There were some changes to the gas offers throughout the provisional schedules and the ex ante schedule as shown in figure S4 however their influence on the ex ante prices was minimal.

Figure S4: 3 August provisional and ex ante schedule offers

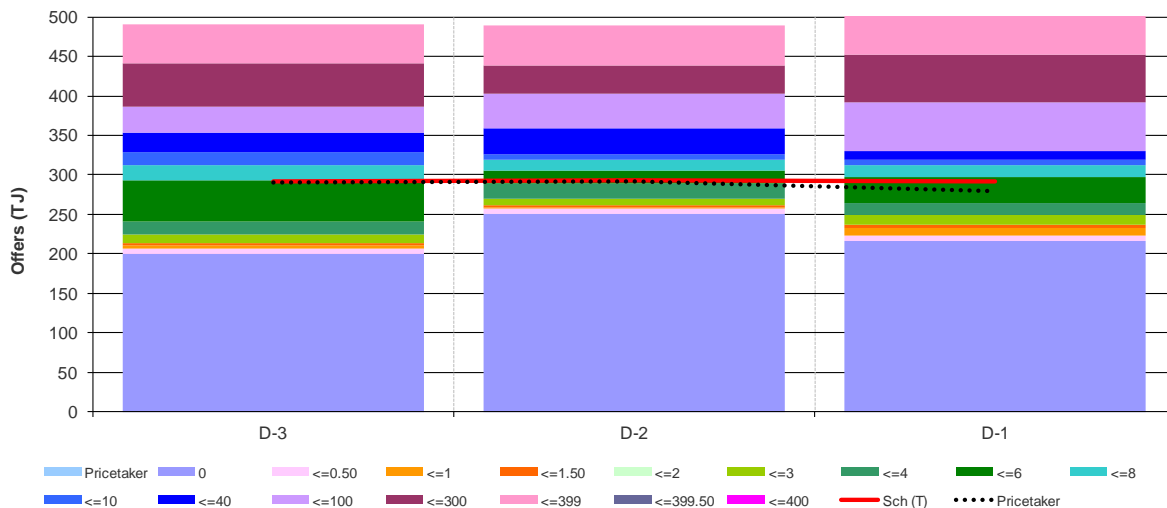
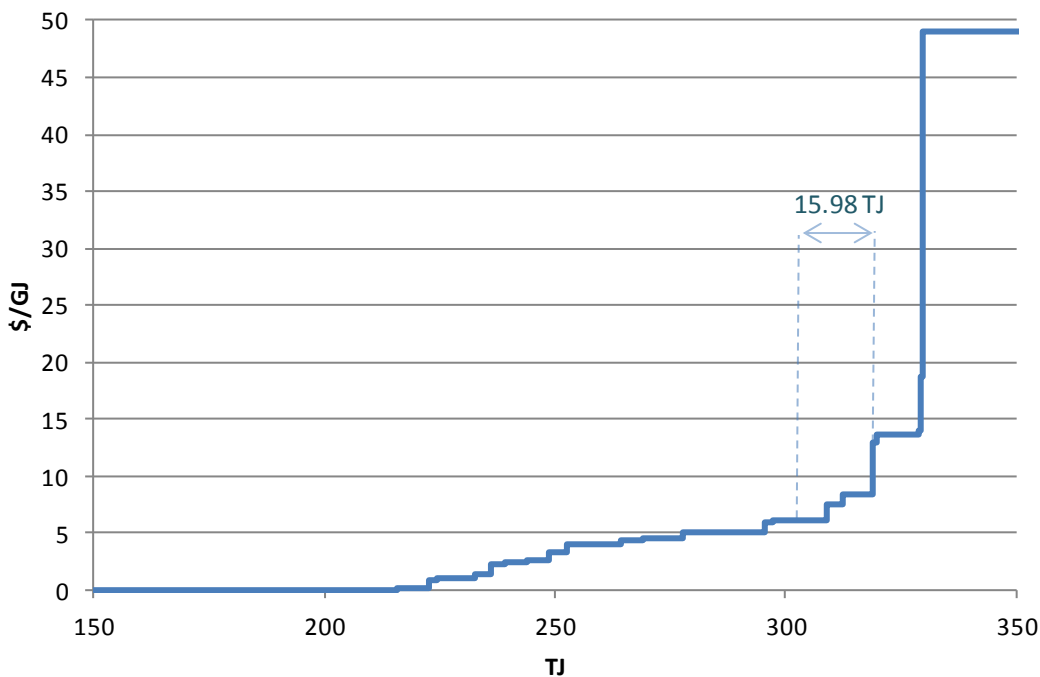


Figure S5 below shows the supply curve for the Sydney hub on the 3 August gas day and illustrates why the ex post price was much higher than the ex ante price.

Figure S5: Offer curve for the Sydney hub from ex ante market schedule, 3 August 2012



Around 310 TJ of gas was offered at or below around \$6/GJ. This explains why the ex ante price—which was calculated based on a scheduled quantity of 304.6 TJ of gas—was \$6.05/GJ. However, figure S5 shows that the prices of gas offers increase significantly once the total quantity of gas goes beyond this level. In other words, while the first 310 TJ of gas is offered at or below \$6/GJ, the next 20 TJ of gas was priced between \$6/GJ and nearly \$49/GJ. This explains why the ex post price—which was calculated based on 320.58 TJ, with an imbalance of 16 TJ (shown in the figure) in the hub on the day—reached \$13/GJ.

10 August

The higher ex ante price on 10 August (see figure S6 below), which was higher than forecast in provisional schedules, was caused by a reduction in low priced gas offers. The significant imbalance of 19 TJ, caused by under forecasting of demand, pushed the ex post price higher. This was the highest price for August.

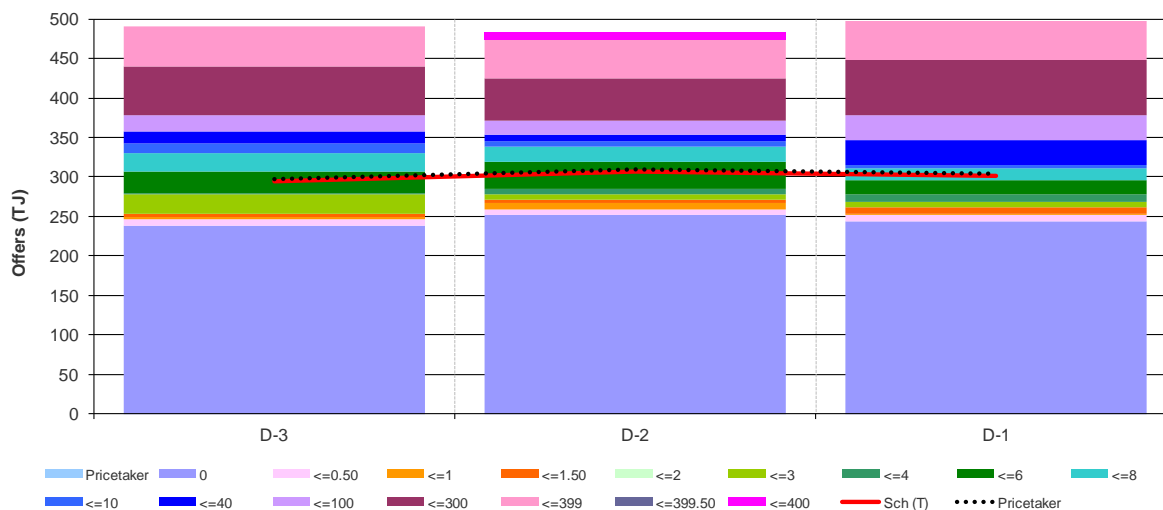
Figure S6: 10 August provisional, ex ante and ex post prices and quantities

	D-3	D-2	Ex ante	Ex post
Price (\$/GJ)	5.98	6.05	8.40	15.68
Quantity (TJ)	306.2	319.3	313.7	+19.13 (S)

Forecasting throughout the provisional and ex ante schedules was fairly consistent. All three of the major participants under forecast their demand on the gas day by around 5–7 per cent.

As shown in figure S7, Trading Participants changed their gas offers in the ex ante schedule which influenced the higher ex ante and ex post price.

Figure S7: 10 August provisional and ex ante schedule offers



A strong influence on the higher ex ante and ex post prices was a reduction in lower priced gas offers. There was a decline in \$0/GJ gas offers, which fell around 8TJ. Gas offers priced between \$0.50/GJ and \$1/GJ fell around 6 TJ. Significantly, gas priced between \$4/GJ and \$6/GJ dropped 16 TJ.

AGL and TRUenergy lowered their gas offers in the \$4/GJ–6/GJ range by 10 TJ and 6TJ respectively.

12 August

For August 2012, there was some rebidding of gas in the ex ante schedule, which resulted in a reduction of \$0/GJ priced gas. This rebidding resulted in the higher ex ante price shown in figure S8 below. The ex post price was pushed up further due to the 7.84 TJ imbalance and because only small volumes of gas were offered in between \$6 and \$10/GJ.

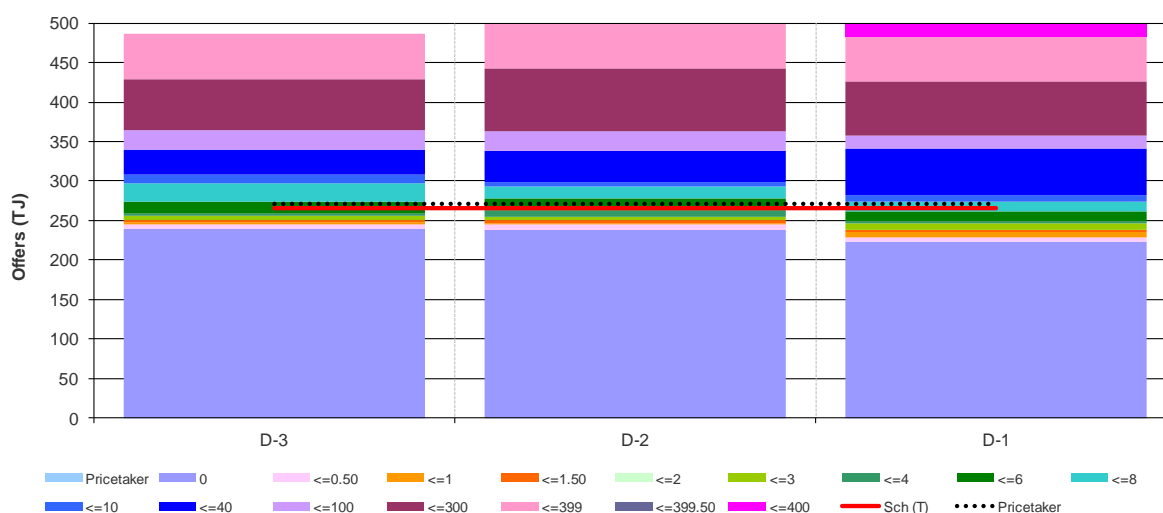
Figure S8: 12 August provisional, ex ante and ex post prices and quantities

	D-3	D-2	Ex ante	Ex post
Price (\$/GJ)	6.05	5.90	8.20	12.98
Quantity (TJ)	278.3	278.4	279.2	+7.84 (S)

The three major participants forecast their demand accurately for this gas day relative to the other high price days. Demand forecasts were consistent throughout the provisional and ex ante schedules.

As shown in figure S9 below, Trading Participants changed their gas offers for the ex ante schedule. The changes were the main driver behind the high ex ante price.

Figure S9: 12 August provisional and ex ante schedule offers



The most significant change to gas offers was a 16 TJ decline in \$0/GJ priced gas by AGL. At the same time AGL also increased its gas offers priced between \$10–40/GJ by 13 TJ.

13 August

The 13 August gas day was similar to the 12 August gas day. Again, demand forecasts were fairly accurate. As shown in figure S10, the ex post price was \$11.98/GJ compared to the \$6.05/GJ ex ante price. There was a 9.69 TJ imbalance and limited volumes of gas were offered in between \$6 and \$10/GJ for the ex ante schedule resulting in the difference between the ex ante and ex post price.

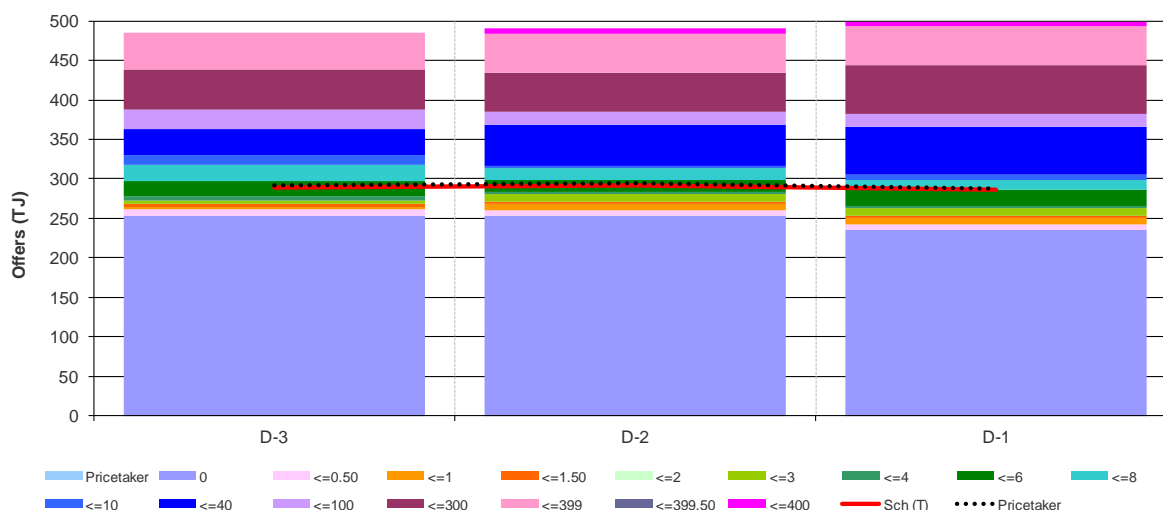
Figure S10: 13 August provisional, ex ante and ex post prices and quantities

	D-3	D-2	Ex ante	Ex post
Price (\$/GJ)	6.05	6.05	6.05	11.98
Quantity (TJ)	302.5	305.2	298.5	+9.69 (S)

The three major participants forecast their demand fairly accurately for this gas day. One participant over forecast by 4 per cent, and the other two participants under forecast by 5 and 3 per cent respectively. Demand forecasts were fairly consistent throughout the provisional and ex ante schedules

As shown in figure S11 below, Trading Participants changed their gas offers for the ex ante schedule.

Figure S11: 13 August provisional and ex ante schedule offers



The most significant change to gas offers was an 18 TJ reduction in \$0/GJ priced gas caused by a rebid by AGL. AGL reduced its D-2 offer from 193 TJ to 175 TJ. At the same time, AGL rebid 13 TJ of extra gas offers in the \$100–300/GJ price band, although this had no effect on the price.

14 August

For August 14 (see figure S12 below), the gas price was at \$6.05/GJ for the provisional and ex ante schedules. The three major participants under forecast demand resulting in a 25.64 TJ imbalance and there was a resultant \$13.60/GJ ex post price. This was the highest imbalance of the month for Sydney.

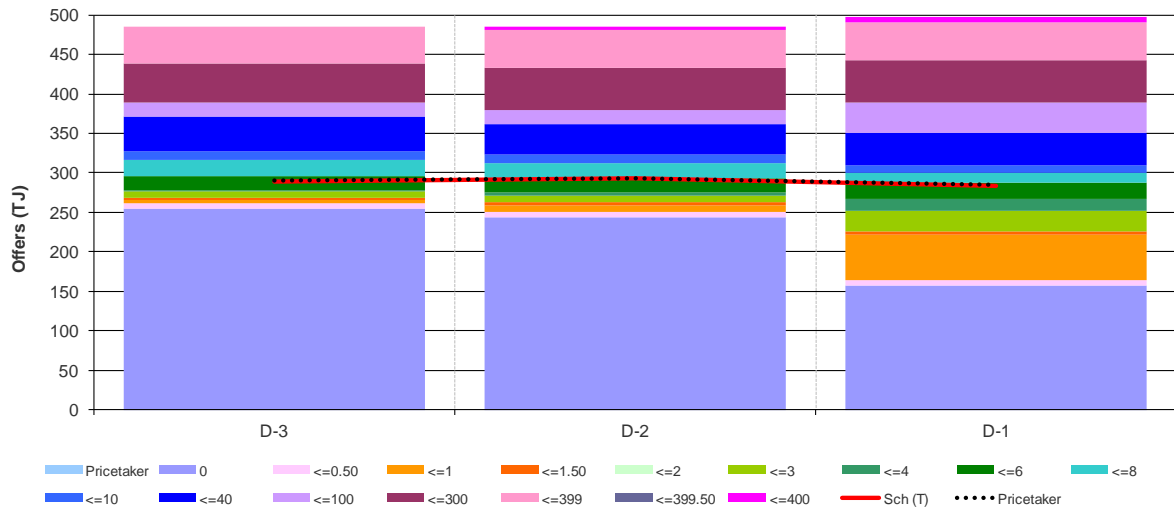
Figure S12: 14 August provisional, ex ante and ex post prices and quantities

	D-3	D-2	Ex ante	Ex post
Price (\$/GJ)	6.05	6.05	6.05	13.60
Quantity (TJ)	301.7	305.1	296.7	+25.64 (S)

Demand forecasts were fairly consistent throughout the provisional and ex ante schedules. All three of the major participants under forecast their demand; by 3, 7, and 9 per cent respectively.

As shown in figure S13, Trading Participants changed their gas offers significantly for the ex ante schedule.

Figure S13: 14 August provisional and ex ante schedule offers



However, as most of the changes occurred by shifting gas offers from \$0/GJ to around \$1/GJ-
-\$1.50/GJ, the changes had no impact on the ex ante price.