

## 7 – 13 February 2016

### Weekly summary

Figure 1 shows that compared to the previous week the average daily price was higher in Victoria and lower in the Adelaide and Sydney STTM hubs. The average daily price in the Brisbane STTM hub remained unchanged.

Figure 1 also shows that 15/16 financial year to date average prices are higher than for the previous financial year to date in all markets. This trend is most pronounced in the Brisbane STTM hub, at 75 per cent higher than the previous financial year to date. This reflects the higher prices which have followed the beginning of gas shipments to Curtis Island on the LNG export pipelines. There has likely been a flow on effect on markets to the south as lower gas availability for domestic supply may have put upward pressure on short-term prices. The higher prices are less pronounced in Victoria, which has its own separate supply sources.

Figure 5.1 on page 11 shows that average daily flows on the APLNG pipeline fell by 232 TJ this week. Our analysis shows that from 10 February flows on the pipeline started to fall significantly, remaining below 7 TJ from 11 February.

### Long term statistics and explanatory material

The AER has published an [explanatory note](#) to assist with interpreting the data presented in its weekly gas market reports. The AER also publish a range of [longer term statistics](#) on the performance of the gas sector including gas prices, production, pipeline flows and consumer demand.

### Market overview

Figure 1 sets out the average daily prices (\$/GJ) in the Victorian Declared Wholesale Market (**VGM or Victorian gas market**) and for the Sydney (**SYD**), Adelaide (**ADL**) and Brisbane (**BRI**) Short Term Trading Market hubs (**STTM**) for the current week compared to historical averages.

**Figure 1: Average daily prices – all markets (\$/GJ)<sup>1</sup>**

Region	Victoria	Sydney	Adelaide	Brisbane
07 Feb - 13 Feb 2016	4.04	4.17	4.36	4.57
% change from previous week	10	-4	-7	0
15-16 financial YTD	4.36	4.59	5.15	3.90
% change from previous financial YTD	26	43	43	75

Figure 2 compares average weekly gas prices, ancillary market payments and scheduled injections against historical averages for the Victorian gas market.

<sup>1</sup> The weighted average daily imbalance price applies for Victoria.

**Figure 2: Victorian Gas Market**

	Price (\$/GJ)	Ancillary payments (\$000)*	BOD forecast demand quantity (TJ)
07 Feb - 13 Feb 2016	4.04	-	321
% change from previous week	10	-	-1
15-16 financial YTD	4.36	-	571
% change from previous financial YTD	26	-	6

\* Note: only positive ancillary payments, reflecting system constraints will be shown here.

More detailed analysis on the VGM is provided in section 1.

Figures 3 to 5 show average ex ante and ex post gas prices, Market Operator Service (**MOS**) balancing gas service payments together with the related daily demand quantities against historical averages for the Sydney, Adelaide and Brisbane STTM hubs, respectively.

**Figure 3: Sydney STTM**

	Ex ante price (\$/GJ)	Ex post price (\$/GJ)	MOS payments (\$000)	Ex ante quantity (TJ)	Ex post quantity (TJ)
07 Feb - 13 Feb 2016	4.17	3.25	38.26	207	201
% change from previous week	-4	-17	112	-5	-7
15-16 financial YTD	4.59	4.24	31.26	236	230
% change from previous financial YTD	43	31	125	-5	-8

**Figure 4: Adelaide STTM**

	Ex ante price (\$/GJ)	Ex post price (\$/GJ)	MOS payments (\$000)	Ex ante quantity (TJ)	Ex post quantity (TJ)
07 Feb - 13 Feb 2016	4.36	4.28	2.06	46	47
% change from previous week	-7	-11	1	0	-4
15-16 financial YTD	5.15	5.26	8.43	62	63
% change from previous financial YTD	43	48	-39	-1	2

**Figure 5: Brisbane STTM**

	Ex ante price (\$/GJ)	Ex post price (\$/GJ)	MOS payments (\$000)	Ex ante quantity (TJ)	Ex post quantity (TJ)
07 Feb - 13 Feb 2016	4.57	5.01	2.39	84	88
% change from previous week	0	6	85	5	7
15-16 financial YTD	3.90	3.91	1.63	88	87
% change from previous financial YTD	75	93	10	-39	-39

More detailed analysis of the STTM hubs is found in sections 2 to 4.

Section 5 provides analysis on production and pipeline flows on the National Gas Bulletin Board (**Bulletin Board**), as well as gas powered generation (**GPG**) volumes in each state, and section 6 provides information on the Gas Supply Hub (**GSH**) at Wallumbilla.

## Detailed market analysis

### *MOS in Sydney*

Over forecast demand in the Sydney STTM hub resulted in net decrease MOS requirements. On a number of days this week there was counteracting MOS (increase MOS on one pipeline offsetting decrease MOS on another pipeline), resulting in a larger total MOS requirement (the absolute quantities delivered) than the 'net' quantity (the quantity required to balance supply and demand deviations).

Figure 2.4 on page 8 shows the MOS requirements for the week. Required quantities are shown in the left panel and resulting payments/charges on the right.

On 8 February, the total MOS requirement was 15.1 TJ, with a net decrease MOS requirement of 5.1 TJ. Total MOS comprised 10.1 TJ of decrease MOS from the Eastern Gas pipeline (EGP), and 5 TJ of increase MOS from the Moomba to Sydney pipeline (MSP). The total MOS requirement was higher than the financial year-to-date average of 9.3 TJ and resulted in high service payments of around \$70 500 for the gas day.

Over forecast demand within the hub on 10 February contributed to a decrease MOS requirement of 10.7 TJ which was supplied by both the EGP and the MSP. Figure 2.3 on page 8 shows that the Newcastle Gas Storage facility provided 11.9 TJ on this day (shown by the purple shaded area). This is the fifth time the facility has supplied gas to the hub since it began operation in June 2015.

On 12 February, the total MOS requirement was 19.3 TJ, significantly higher than the financial year-to-date average. As a result, service payments exceeded \$97 400 for the gas day. Figure 2.1 on page 7 shows that the ex post price fell from \$3.56/GJ to \$1.21/GJ. Notably, figure 2.3 shows that there was also close to zero net supply on the MSP on this day, with 23.2 TJ of back haul barely exceeded by scheduled supply. Net supply on the MSP has only fallen to zero on two previous occasions – the 23 January and 6 February 2016 gas days (as reported in the relevant weekly reports). The low level of net supply put downward pressure on the ex post price on the day.

### ***MOS in Brisbane***

On 7 February, demand in Brisbane was under forecast by 8.5 TJ. The requirement for increase MOS on the RBP was mitigated to an extent by additional supply nominations of 4.2 TJ. Figure 4.4 on page 10 shows the remaining requirement of 4.3 TJ was supplied through increase MOS.

On 10 February, demand was under forecast by 7 TJ but was not offset by increased supply. Most of the deviation was, therefore offset by increase MOS. This led to the MOS requirement reaching 6.5 TJ, significantly higher than the financial year-to-date average of 1.9 TJ. The ex post price also increased to \$6.37/GJ, significantly higher than average.

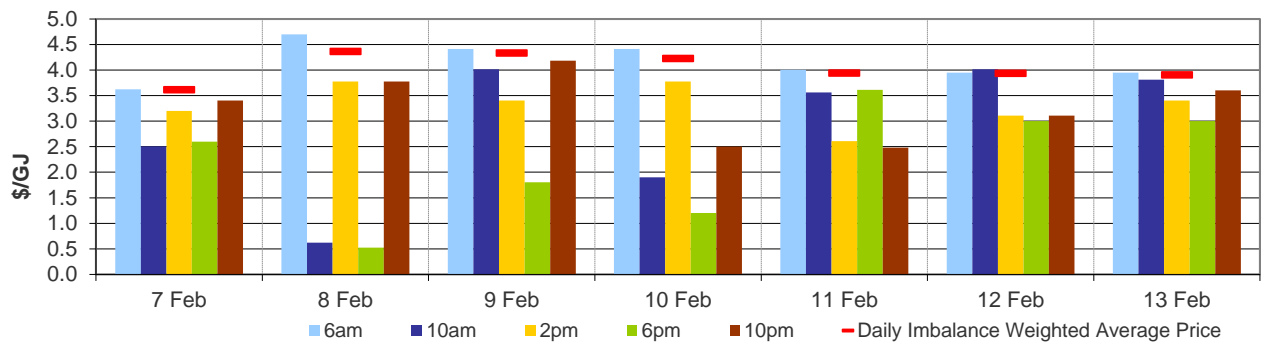
## 7 – 13 February 2016

### 1. Victorian Declared Wholesale Market

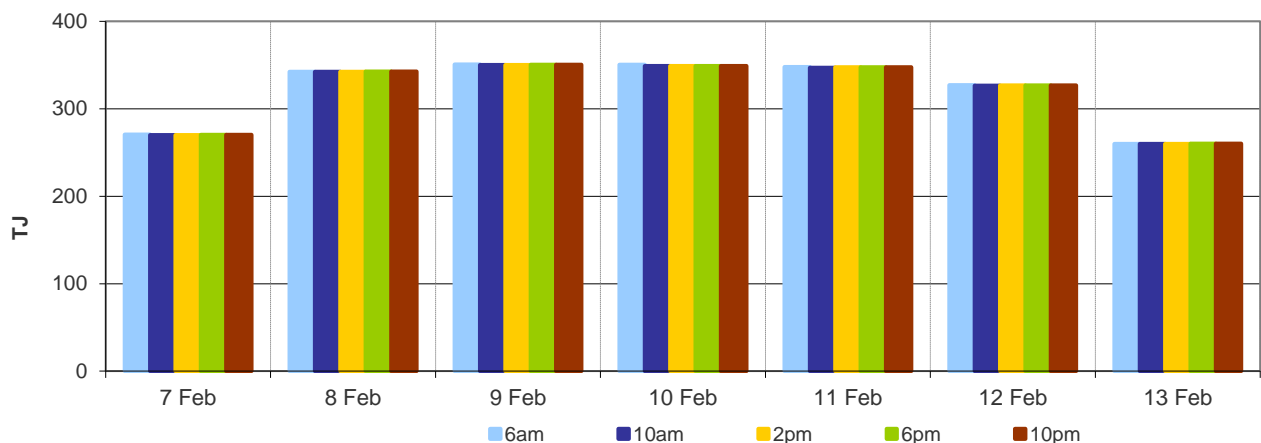
In the Victorian gas market, gas is priced five times daily at 6 am, 10 am, 2 pm, 6 pm and 10 pm. The imbalance weighted price on a gas day tends towards the 6 am price<sup>2</sup> which is the schedule at which most gas is traded.

The main drivers<sup>3</sup> of price are demand forecasts and bids to inject or withdraw gas from the market. Figures 1.1 to 1.4 below show the daily prices, demand forecasts<sup>4</sup>, and injection/withdrawal bids for each of the five pricing schedules. Figure 1.5 provides information on which system injection points were used to deliver gas, in turn indicating the location and relative quantity of gas injection bids cleared through the market.

**Figure 1.1: Prices by schedule**



**Figure 1.2: Demand forecasts**

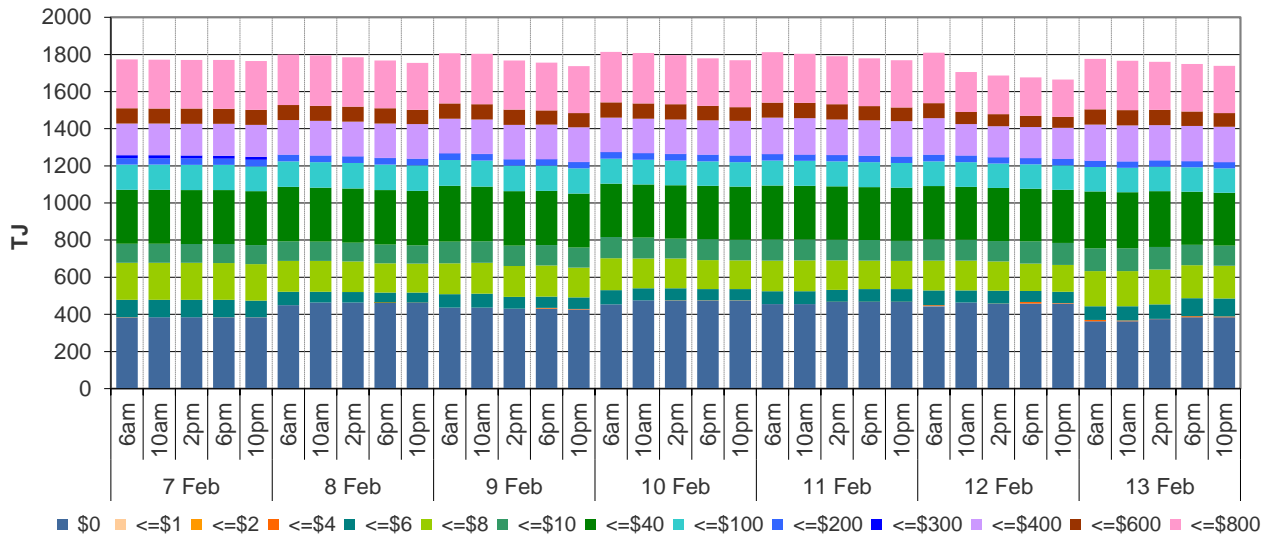


<sup>2</sup> Prices for subsequent schedules are applied only to the differences in scheduled quantities (imbalances) to calculate the weighted price. The 6 am price applies to the entire scheduled quantity in the initial schedule.

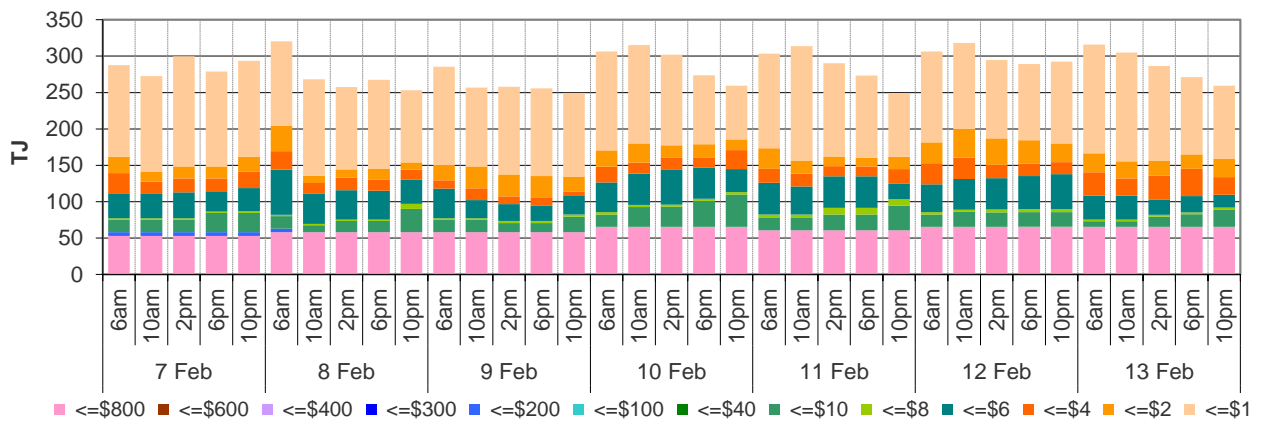
<sup>3</sup> The price might also be affected by transmission or production (contractual) constraints limiting how much gas can be delivered from a locale or System Injection Point (SIP) from time to time.

<sup>4</sup> These are Market Participants' aggregate demand forecasts adjusted for any override as applied by AEMO from time to time. These forecasts must be scheduled and cannot respond to price like withdrawal bids.

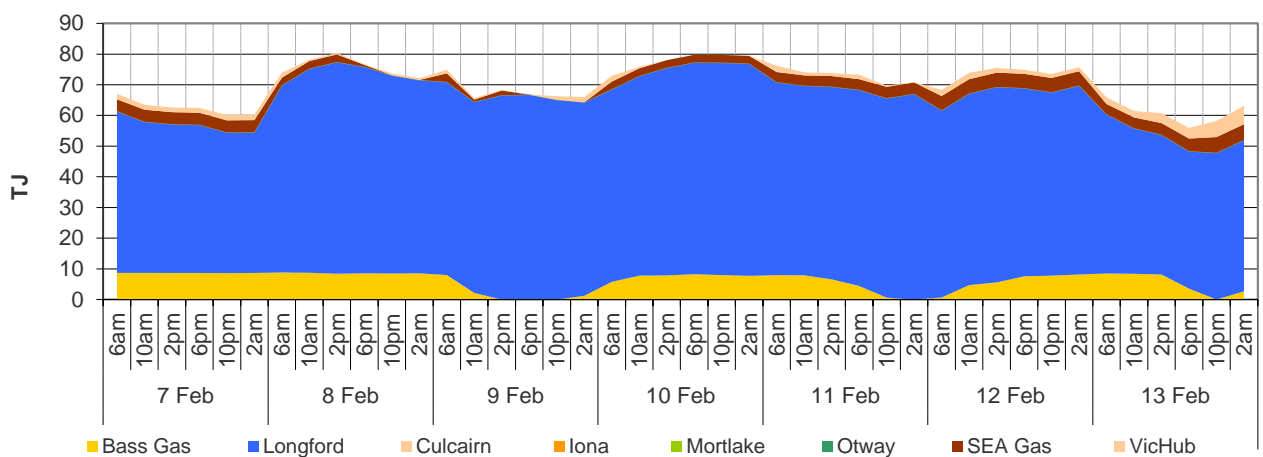
**Figure 1.3: Injection bids by price bands**



**Figure 1.4: Withdrawal bids by price bands**



**Figure 1.5: Metered Injections by System Injection Point**



Note that in figure 1.5, the last 8-hour schedule from 10 pm has been separated into two 4-hour blocks to provide a consistent comparison with earlier scheduled injection volumes.

## 2. Sydney STTM

In each STTM hub, a daily gas price is calculated before the gas day (the ex ante price) and after the gas day (the ex post price). The main drivers of these prices are participant demand forecasts, and offers to inject or bids to withdraw gas traded at the hub.<sup>5</sup> Divergences in ex ante and ex post prices for a gas day may occur due to differences in scheduled (forecast) and allocated (actual) quantities. Pipeline acronyms are defined in the [user guide](#).

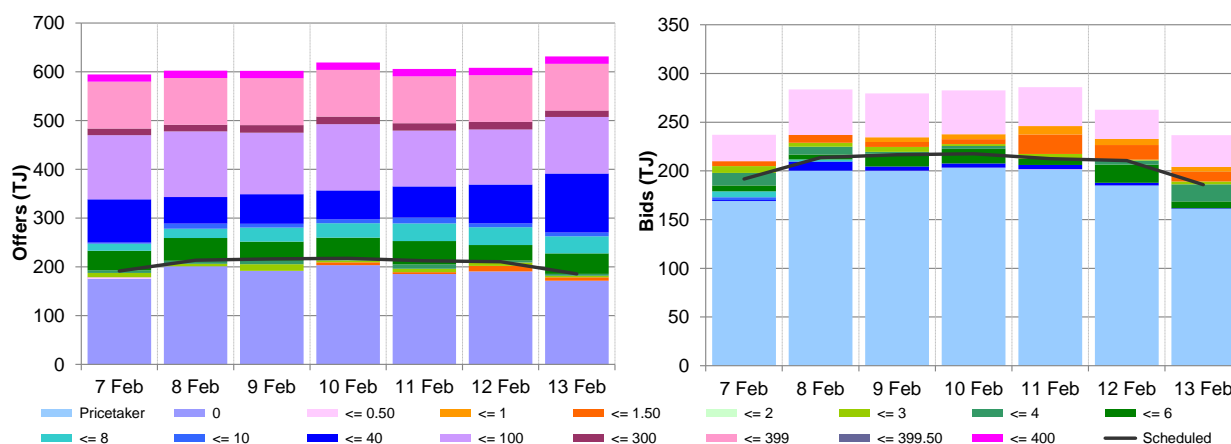
Market Operator Service balancing gas (MOS) payments arise because the amount of gas nominated on pipelines for delivery on a gas day will either exceed or fall short, by some amount, of the amount of gas consumed in the hub. In such circumstances, MOS payments are made to participants for providing a service to park gas on a pipeline or to loan gas from a pipeline to the hub.<sup>6</sup>

Figures 2.1 and 2.2 show daily prices, demand, offers and bids. Figures 2.3 and 2.4 show gas scheduled and allocated on pipelines to supply the hub, indicating the location and relative quantity of gas offers across pipelines and also the amount of MOS allocated for each pipeline.

**Figure 2.1: SYD STTM daily ex ante and ex post prices and quantities**

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Ex ante price (\$/GJ)	3.56	4.70	4.70	4.12	4.94	3.56	3.59
Ex ante quantity (TJ)	192	214	217	218	212	211	186
Ex post price (\$/GJ)	3.56	4.00	4.00	3.56	3.61	1.21	2.80
Ex post quantity (TJ)	188	208	212	207	204	207	179

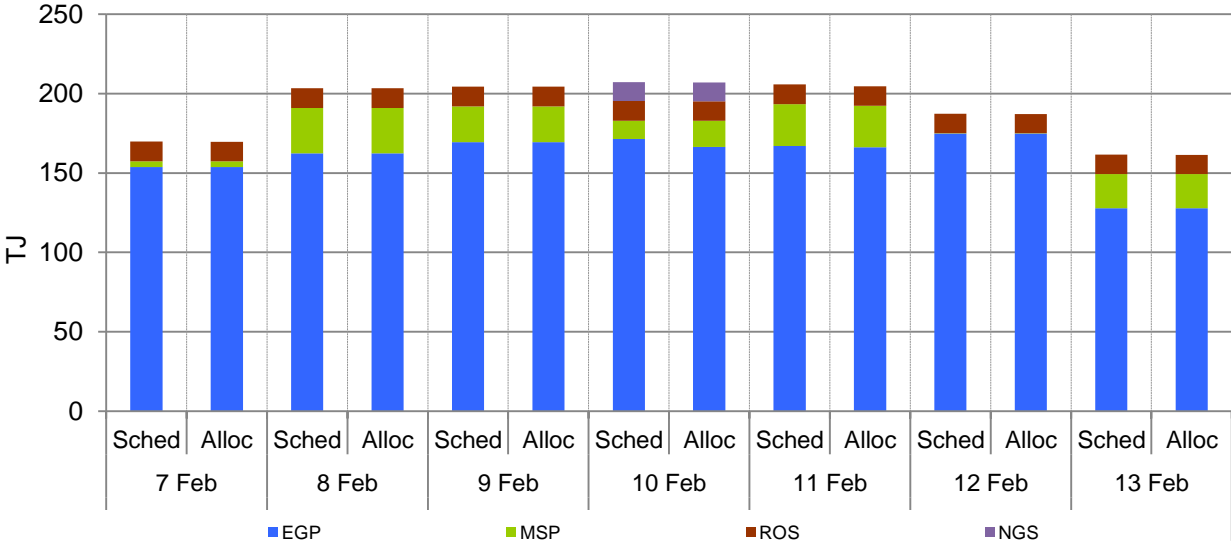
**Figure 2.2: SYD daily hub offers and daily hub bids in price bands (\$/GJ)**



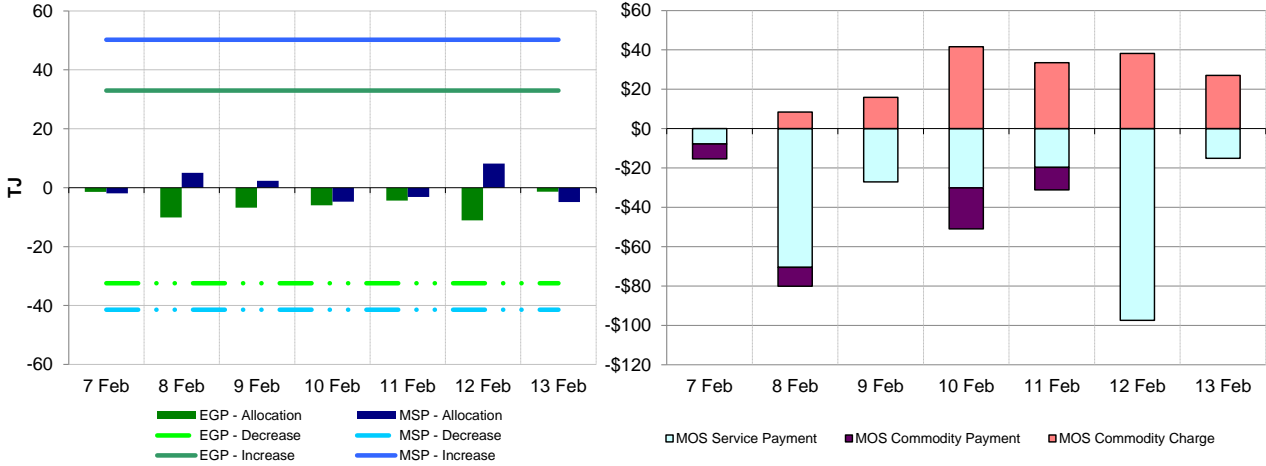
<sup>5</sup> The main driver of the amount of gas scheduled on a gas day is the 'price-taker' bid, which is forecast hub demand that cannot respond to price and which must be delivered, regardless of the price.

<sup>6</sup> MOS service payments involve a payment for a MOS increase service when the actual quantity delivered exceeds final gas nominations for delivery to a hub, and a payment for a MOS decrease service when the actual quantity delivered is less than final nominations. As well as a MOS 'service' payment, as shown in figure 2.4, MOS providers are paid for or pay for the quantity of MOS sold into the market or bought from the market (MOS 'commodity' payments/charges).

**Figure 2.3: SYD net scheduled and allocated gas hub supply (excluding MOS)**



**Figure 2.4: SYD MOS allocations (TJ), service payments and commodity payments/charges (\$000)**





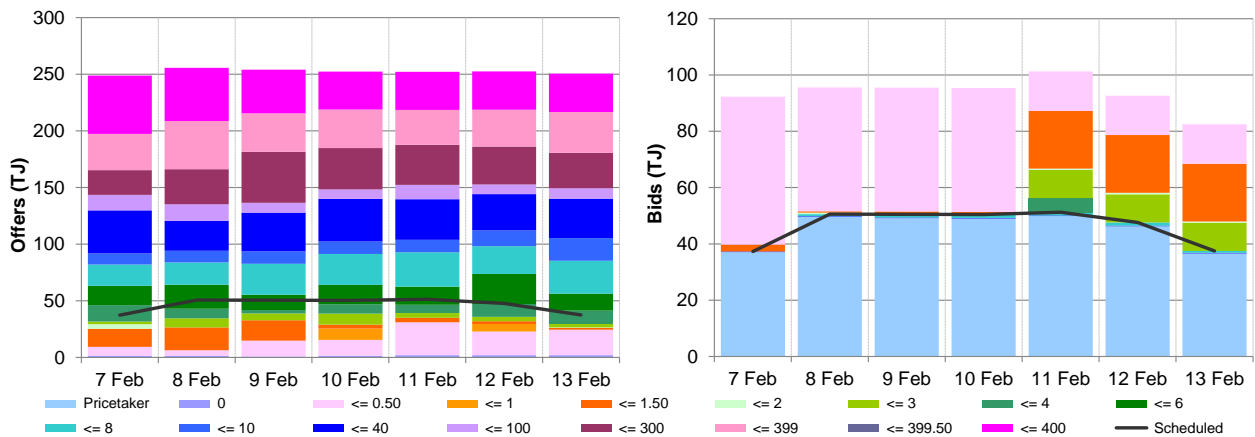
### 3. Adelaide STTM

The Adelaide STTM hub functions in the same way as the Sydney STTM hub. The same data that was presented for the Sydney hub is presented for the Adelaide hub in the figures below.

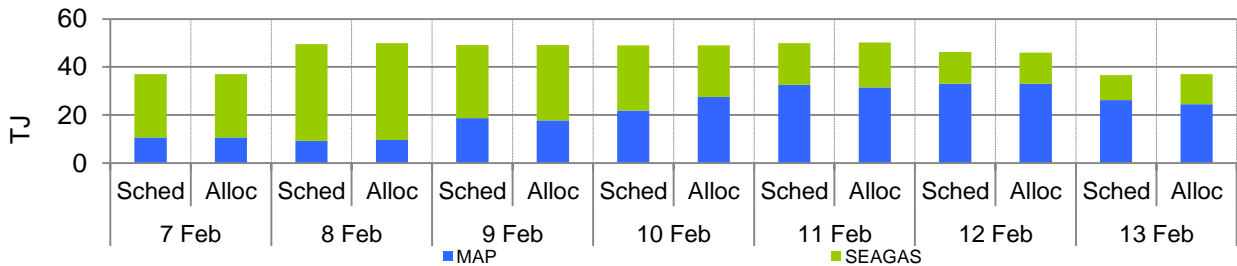
**Figure 3.1: ADL STTM daily ex ante and ex post prices and quantities**

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Ex ante price (\$/GJ)	3.50	4.66	5.36	4.53	4.32	4.29	3.87
Ex ante quantity (TJ)	37	51	50	50	51	48	37
Ex post price (\$/GJ)	3.55	4.66	5.36	4.53	4.32	3.70	3.87
Ex post quantity (TJ)	39	51	51	51	51	47	40

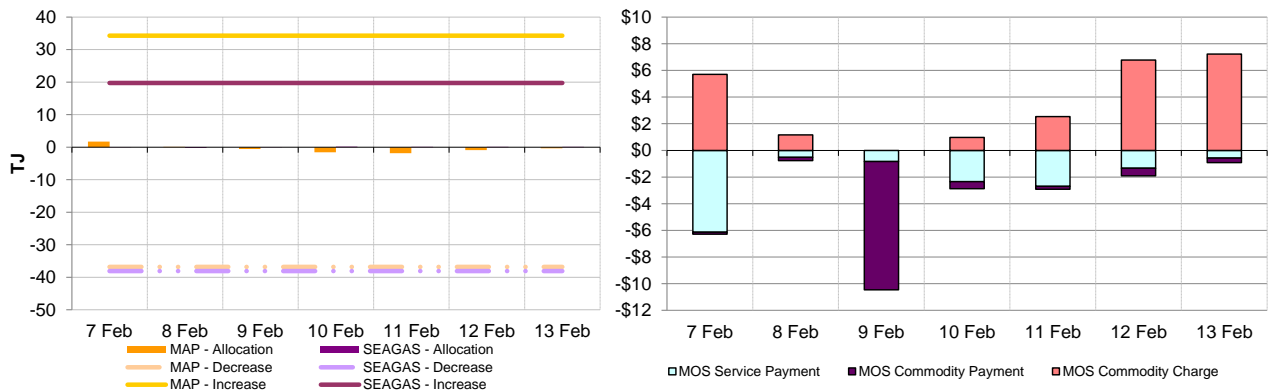
**Figure 3.2: ADL daily hub offers and daily hub bids in price bands (\$/GJ)**



**Figure 3.3: ADL net scheduled and allocated gas hub supply (excluding MOS)**



**Figure 3.4: ADL MOS allocations (TJ), service payments and commodity payments/charges (\$000)**



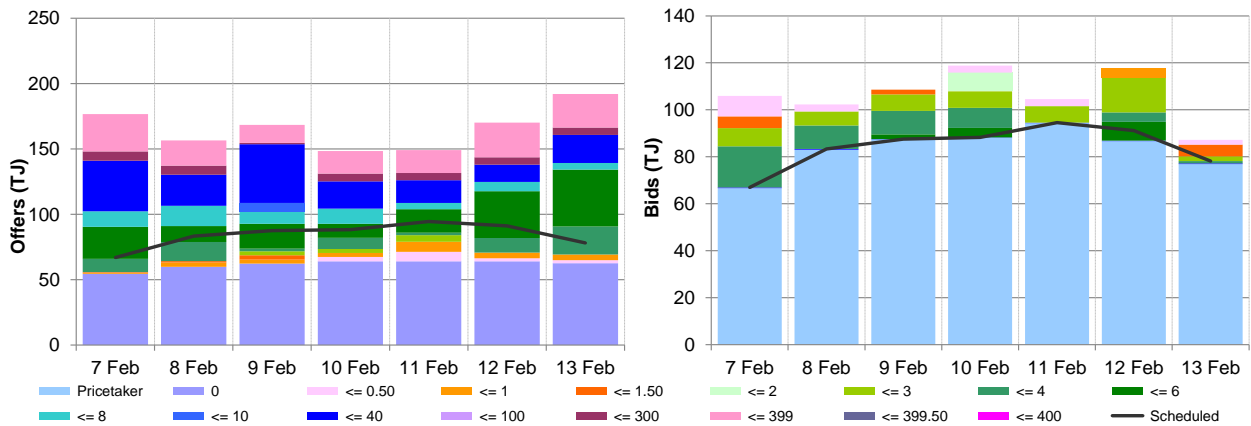
## 4. Brisbane STTM

The Brisbane STTM hub functions in the same way as the Sydney STTM hub. The same data that was presented for the Sydney hub is presented for the Brisbane hub in the figures below.

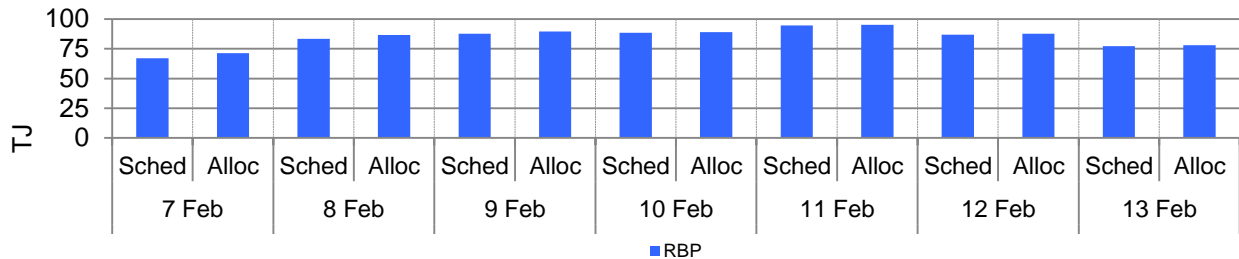
**Figure 4.1: BRI STTM daily ex ante and ex post prices and quantities**

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Ex ante price (\$/GJ)	4.19	4.40	5.50	5.45	4.25	4.51	3.65
Ex ante quantity (TJ)	67	83	88	88	95	91	78
Ex post price (\$/GJ)	5.45	5.00	5.50	6.37	4.39	4.51	3.85
Ex post quantity (TJ)	75	87	89	95	96	94	82

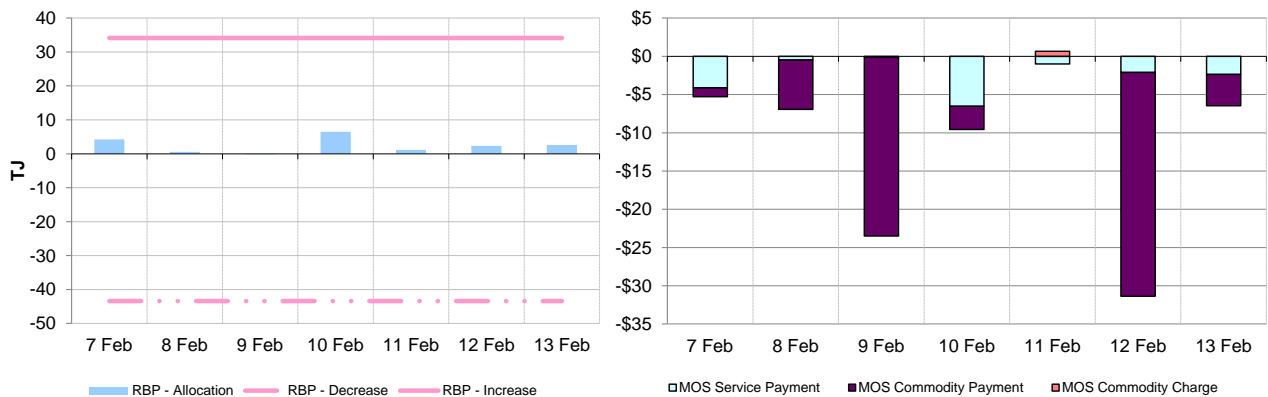
**Figure 4.2: BRI daily hub offers and daily hub bids in price bands (\$/GJ)**



**Figure 4.3: BRI net scheduled and allocated gas hub supply (excluding MOS)**



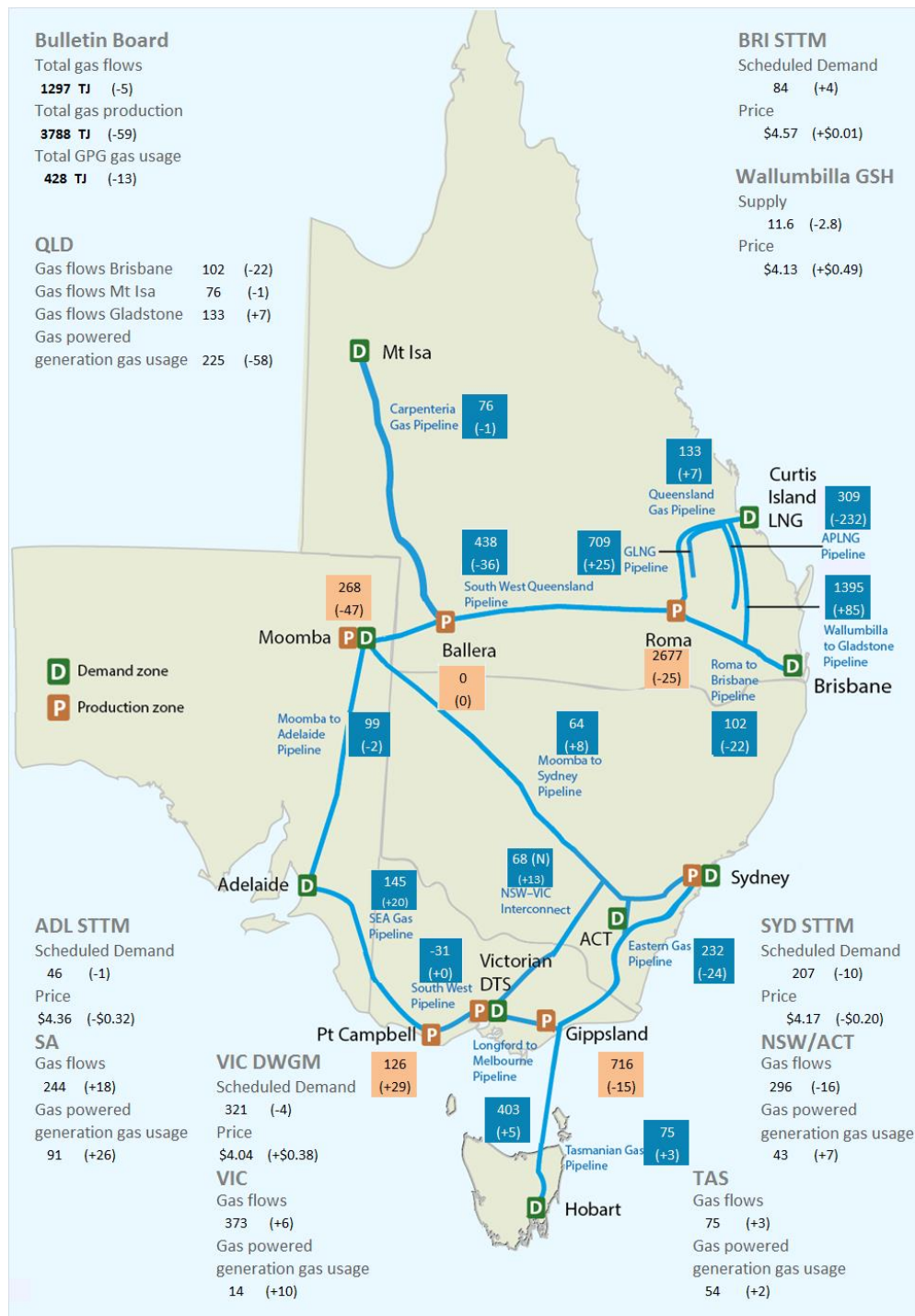
**Figure 4.4: BRI MOS allocations (TJ), service payments and commodity payments/charges (\$000)**



## 5. National Gas Bulletin Board

Figure 5.1 shows average daily actual flows for the current week in the aqua boxes<sup>7</sup> from the Bulletin Board (changes from the previous week's average are shown in brackets). Gas powered generation (GPG) gas usage is also shown in each region in the aqua boxes. The orange boxes provide average daily scheduled volumes and prices<sup>8</sup> for each gas market.

**Figure 5.1: Gas market data (\$/GJ, TJ/day); Production, Consumption and Pipeline flows (TJ)**



<sup>7</sup> Regional Gas Flows: **SA** = MAP + SEAGAS, **VIC** = SWP + LMP – negative(NSW-VIC), **NSW/ACT** = EGP + MSP, **TAS** = TGP, **QLD (Brisbane)** = RBP, **QLD (Mt Isa)** = CGP, **QLD (Gladstone)** = QGP  
GPG volumes may include gas usage that does not show up on Bulletin Board pipeline flows.

<sup>8</sup> From October 2014, production flows reported for the Roma region include quantities of gas for LNG export trains.  
Wallumbilla supply is the average daily volume of gas 'traded', while price is a volume weighted average.

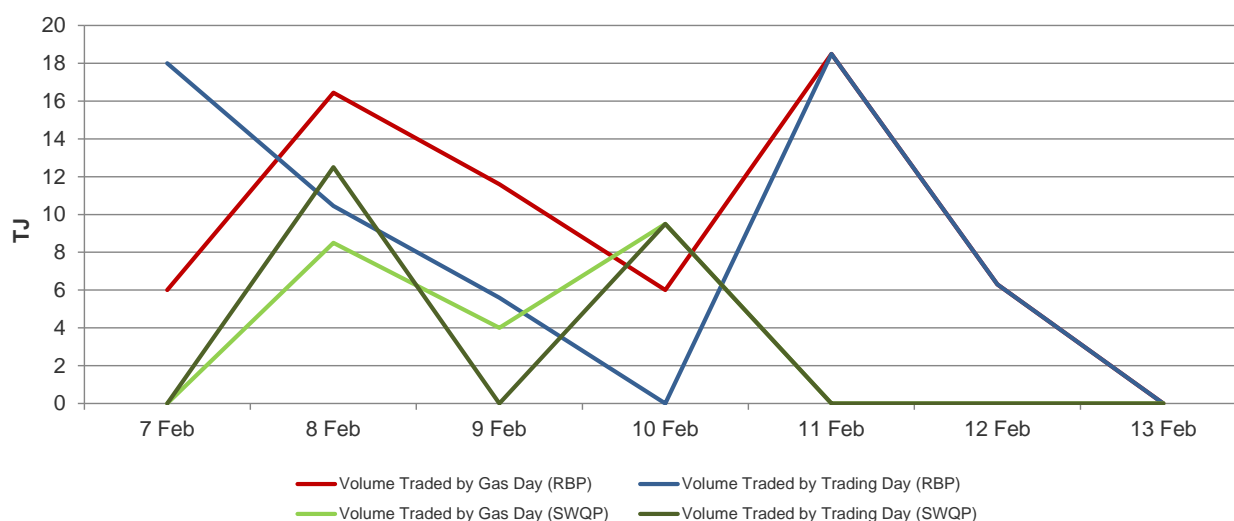
## 6. Gas Supply Hub

The Gas Supply Hub (**GSH**) was established for the trading of gas at Wallumbilla because it is located in close proximity to significant gas supply sources and demand locations and is a major transit point between Queensland and the gas markets on Australia’s east coast. The GSH is a voluntary market<sup>9</sup> for the supply of gas traded between separate participants, with products listed for sale and purchase at delivery points on three major connecting pipelines at Wallumbilla – the Queensland Gas Pipeline (**QGP**), the South West Queensland Pipeline (**SWQP**) and the Roma to Brisbane Pipeline (**RBP**). There are separate products for each pipeline (each pipeline is considered a trading location, and each has a number of delivery points) and delivery period (daily, day-ahead, balance-of-day and weekly).

There were 13 trades at a volume weighted price of \$4.13/GJ. This consisted of 7 balance-of-day, 2 daily, and 1 day-ahead trade on the RBP for 58.9 TJ (\$4.02/GJ), and 2 balance-of-day and 1 day-ahead trade on the SWQP for 22 TJ (\$4.42/GJ).

Figure 6.1 shows volumes traded<sup>10</sup> on each gas day and trading day for the current week.

**Figure 6.1: Volume Traded (by Gas Day and by Trading Day)**



<sup>9</sup> Market trade is facilitated through an electronic trading platform, with standardised terms and conditions and a market settlement facility for the short-term trading of physical gas and related products. The market is designed to complement existing bilateral gas supply arrangements and gas transportation agreements, through the placement of anonymous offers (to sell) or bids (to buy) at specified quantity and price increments, which are automatically matched on the exchange to form transactions.

<sup>10</sup> Volumes shown for weekly products include the ‘daily’ volume for each relevant ‘gas day’, and the ‘weekly’ volume for each relevant ‘trading day’.