

21 – 27 February 2016

Weekly summary

Prices rose in all markets this week with Adelaide and Sydney recording the largest increases. Prices in Brisbane fell below \$4/GJ towards the end of the week in line with a significant decrease in demand.¹ The decreased demand in the Brisbane market is related to a participant outage, sending demand in the hub to its lowest level since market start. During the week, an outage at GLNG led to reduced flows on its LNG export pipeline.²

Flows on the Moomba to Sydney Pipeline reversed briefly mid-week, flowing south from Moomba for the first time since mid-January.³

On 24 February, a record 157 TJ of gas was traded on the RBP in the Wallumbilla Gas Supply Hub. The majority of this volume was traded through three weekly product trades.

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)⁴

Region	Victoria	Sydney	Adelaide	Brisbane
21 Feb - 27 Feb 2016	4.93	4.95	5.38	5.71
% change from previous week	17	30	31	20
15-16 financial YTD	4.38	4.58	5.13	3.98
% change from previous financial YTD	26	40	42	72

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

¹ See figures 4.1, 4.2, and 4.3 on page 9.

² See figure 5.1 on page 11.

³ This coincided with a significant decrease in deliveries from Moomba into Queensland on the QSN Link.

⁴ The weighted average daily imbalance price applies for Victoria.

Figure 2: Victorian Gas Market

	Price (\$/GJ)	Ancillary payments (\$000)*	BOD forecast demand quantity (TJ)
21 Feb - 27 Feb 2016	4.93	0	341
% change from previous week	17	0	0
15-16 financial YTD	4.38	0	558
% change from previous financial YTD	26	0	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)
21 Feb - 27 Feb 2016	4.95	4.77	22.65	225	216
% change from previous week	30	20	4	9	5
15-16 financial YTD	4.58	4.25	30.73	235	229
% change from previous financial YTD	40	29	127	-4	-7

Figure 4: Adelaide STTM

	Ex ante price (\$/GJ)	Ex post price (\$/GJ)	MOS payments (\$000)	Ex ante quantity (TJ)	Ex post quantity (TJ)
21 Feb - 27 Feb 2016	5.38	5.61	9.75	44	44
% change from previous week	31	40	154	-4	-1
15-16 financial YTD	5.13	5.23	8.33	61	62
% change from previous financial YTD	42	48	-41	-1	1

Figure 5: Brisbane STTM

	Ex ante price (\$/GJ)	Ex post price (\$/GJ)	MOS payments (\$000)	Ex ante quantity (TJ)	Ex post quantity (TJ)
21 Feb - 27 Feb 2016	5.71	5.60	0.40	65	64
% change from previous week	20	15	-57	-25	-27
15-16 financial YTD	3.98	3.99	1.57	87	87
% change from previous financial YTD	72	88	9	-39	-38

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

On a number of days this week counteracting MOS occurred in the Sydney STTM (increase MOS on the Eastern Gas Pipeline (EGP) at the same time as decrease MOS on the Moomba to Sydney Pipeline (MSP)). This resulted in a higher than average total MOS requirement of 12.4 TJ on 22 February. The net requirement (the increase MOS quantity less the decrease MOS quantity) was only 4.6 TJ on the day. On 26 February, over forecast demand led to a net decrease MOS requirement of 11 TJ, which was largely supplied by services on the MSP.

Figure 2.4 on page 7 shows the MOS requirements for the week. Required quantities are shown in the left panel and resulting payments/charges on the right.

Gas Powered Generation (GPG) in southern states

Figure 5.1 shows increased GPG occurring in Sydney, Adelaide and Victoria this week.

In Adelaide, the higher GPG was driven by high temperatures. The temperature in Adelaide reached a maximum of 39.5 degrees on Monday 22 February, which drove GPG gas usage above 220 TJ and resulted in the STTM price reaching \$7.66/GJ.⁵ The net MOS requirement to balance over forecast demand on the day was halved by a reduction in net supply, yet there was still a large total MOS requirement on the day. Renominations to reduce supply, and increase back haul, on the MAP may have influenced the higher amount of counteracting MOS shown in figure 3.4 on page 8.

Prices in Sydney increased in line with the higher GPG gas usage on a number of days. While there was also warm weather in the region across the week, around 30 degrees, this appeared to have little influence on the higher level of GPG.

In Victoria, while the temperature did reach close to 40 degrees during the week, higher GPG levels appeared to be driven more by interstate electricity demand. The impact on Victorian gas prices was minimal.

GPG gas usage in Tasmania and flows on the Tasmanian Gas Pipeline remain high with the outage of the Basslink electricity interconnector.

⁵ Lower priced offers in the provisional schedule were shifted into higher prices for the ex ante schedule on this day, leading to the price rising from \$4.70/GJ in the D-2 provisional schedule.

21 – 27 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 price⁶ which is the schedule at which most gas is traded.

The main drivers⁷ 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 forecasts⁸, 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

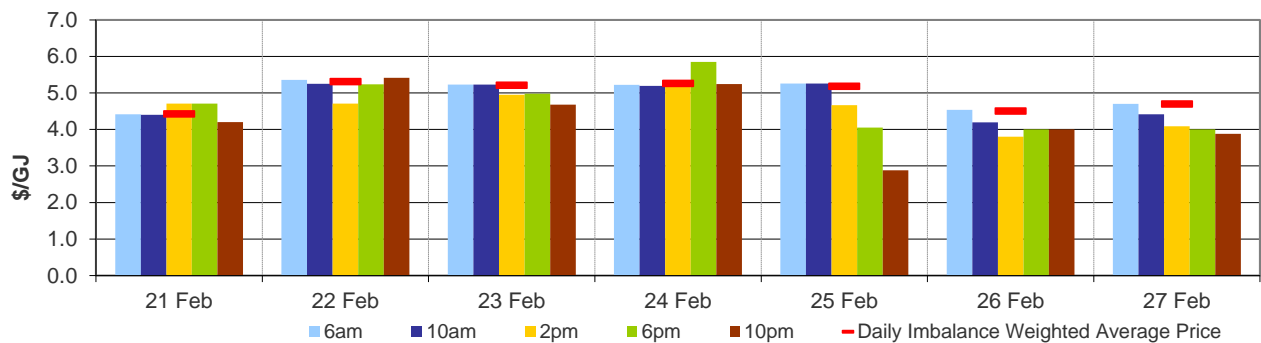
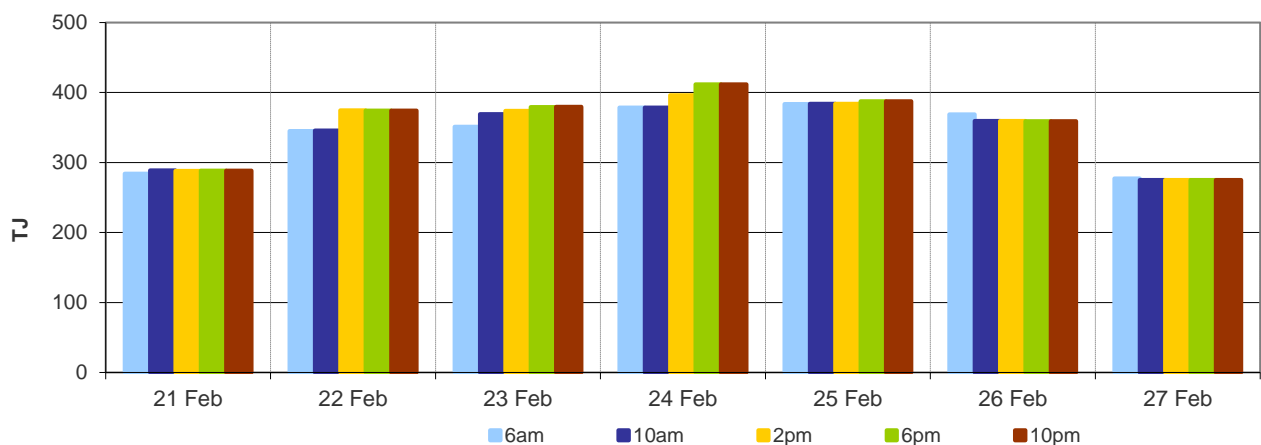


Figure 1.2: Demand forecasts



⁶ 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.

⁷ 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.

⁸ 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

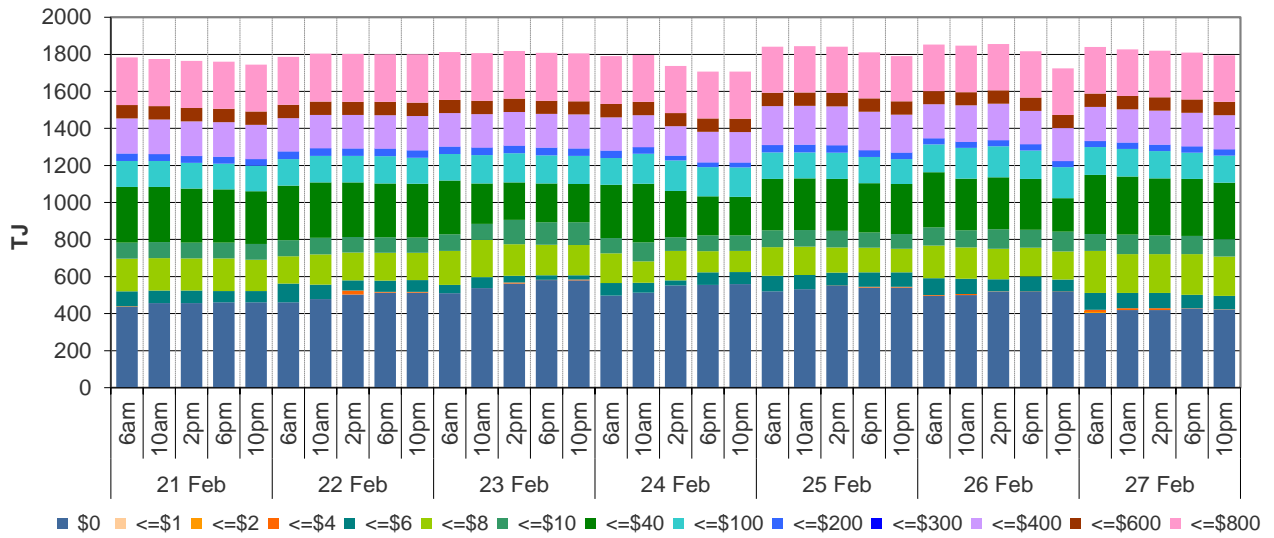


Figure 1.4: Withdrawal bids by price bands

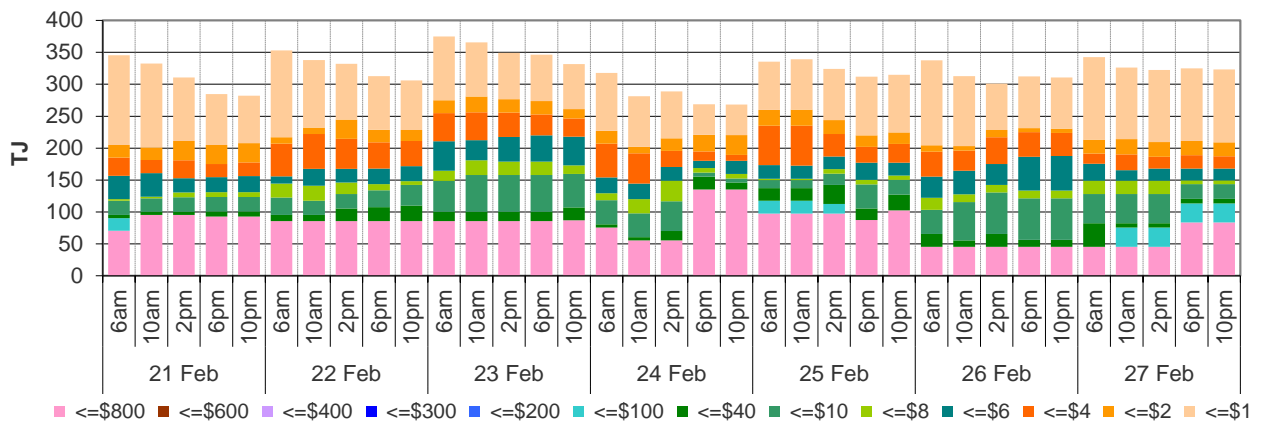
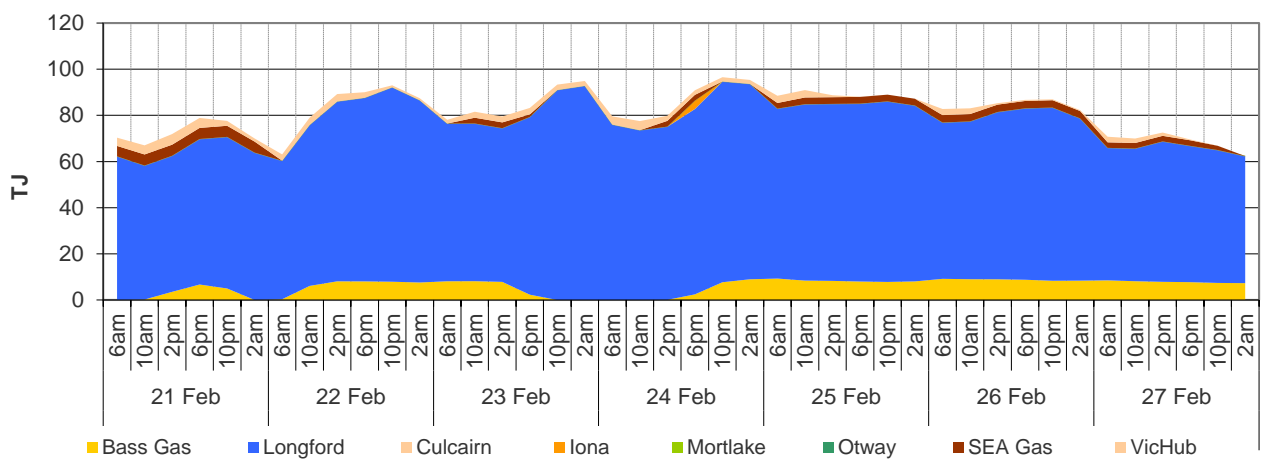


Figure 1.5: Metered Injections by System Injection Point



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.⁹ 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](#).

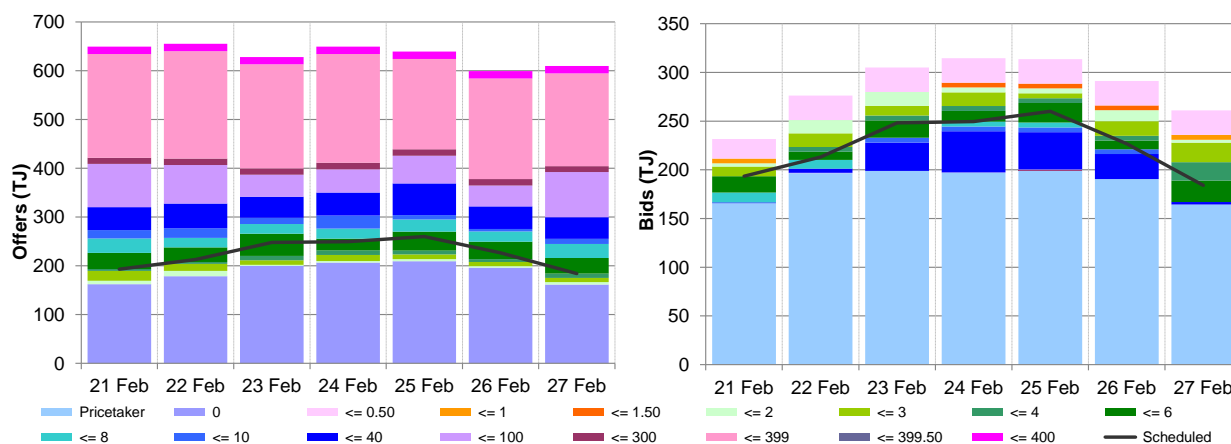
Market Operator Service balancing gas (MOS) payments arise because the amount of gas nominated on pipelines for delivery on a gas day will either exceed or fall short, by some amount, of the amount of gas consumed in the hub. In such circumstances, MOS payments are made to participants for providing a service to park gas on a pipeline or to loan gas from a pipeline to the hub.¹⁰

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	5.22	5.22	5.64	5.64	5.19	4.20
Ex ante quantity (TJ)	193	213	248	250	260	227	184
Ex post price (\$/GJ)	3.56	5.05	5.20	5.22	5.30	5.15	3.94
Ex post quantity (TJ)	193	209	236	242	242	216	176

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



⁹ 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.

¹⁰ 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)

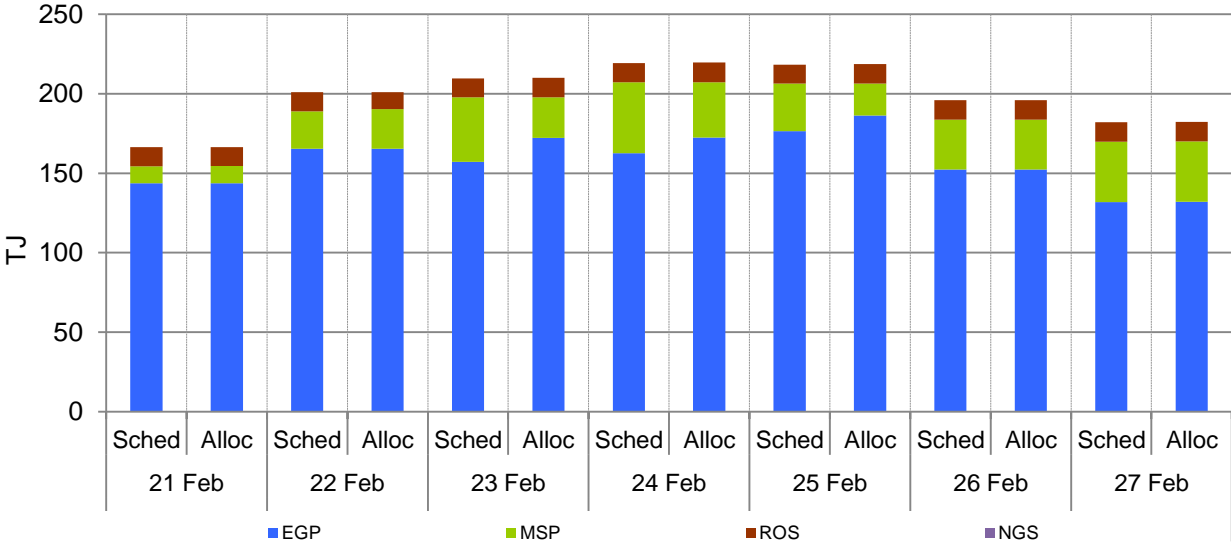
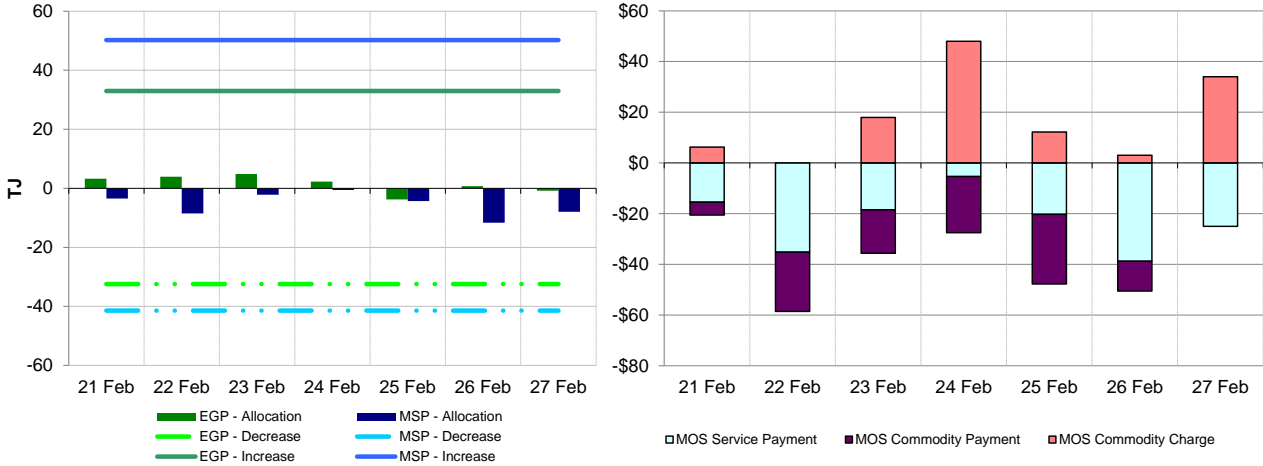


Figure 2.4: SYD MOS allocations (TJ), service payments and commodity payments/charges (\$000)



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)	3.85	7.66	6.12	4.82	4.81	5.23	5.17
Ex ante quantity (TJ)	29	43	45	48	52	49	39
Ex post price (\$/GJ)	5.15	7.52	6.10	5.24	4.81	5.23	5.19
Ex post quantity (TJ)	32	41	43	53	51	49	41

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

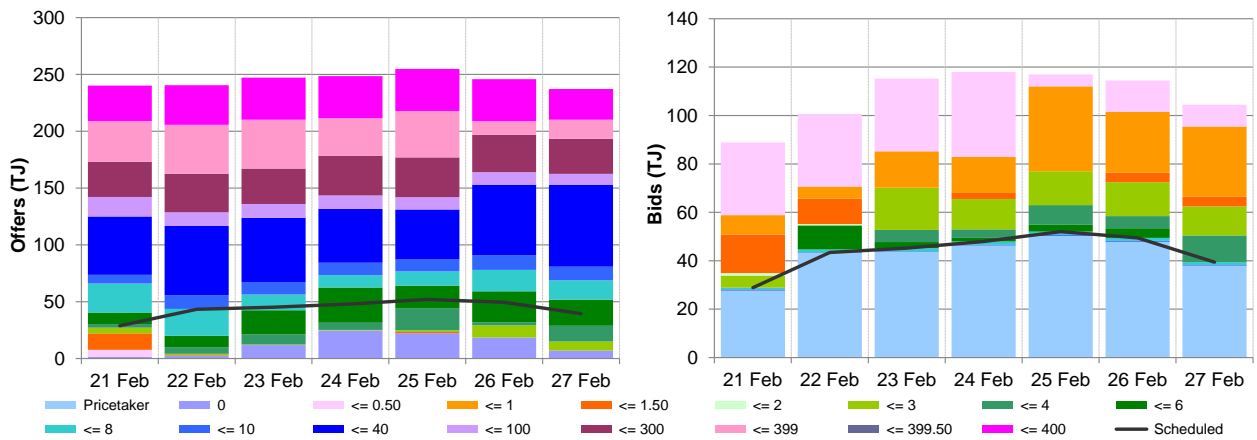


Figure 3.3: ADL net scheduled and allocated gas hub supply (excluding MOS)

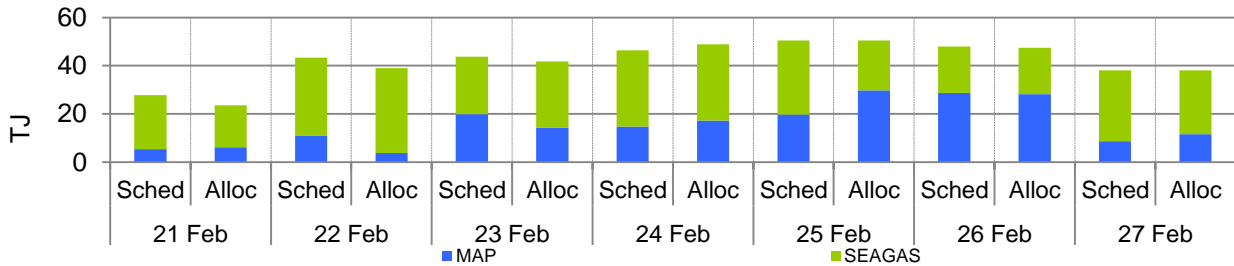
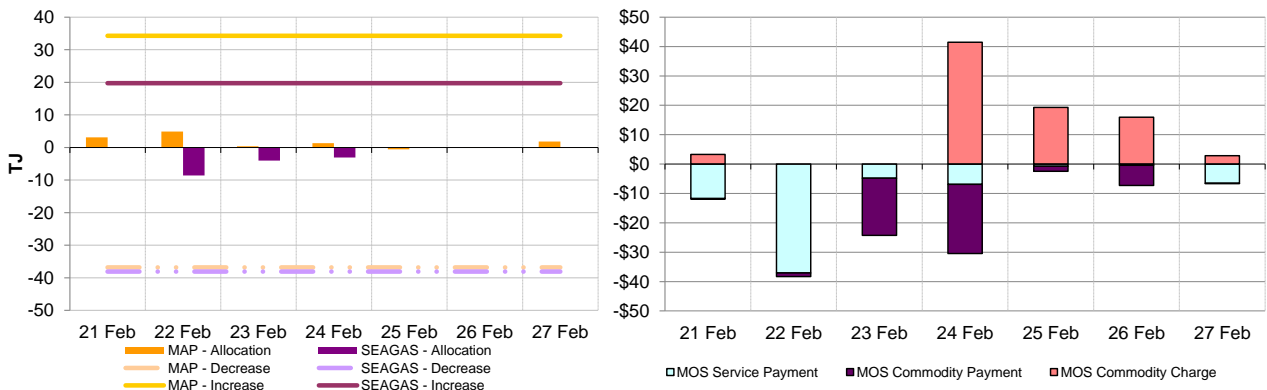


Figure 3.4: ADL MOS allocations (TJ), service payments and commodity payments/charges (\$000)



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)	5.50	5.80	6.84	6.50	5.61	4.99	4.73
Ex ante quantity (TJ)	77	85	83	78	56	44	32
Ex post price (\$/GJ)	5.50	5.98	6.84	5.52	5.61	4.99	4.73
Ex post quantity (TJ)	76	85	84	74	52	44	32

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

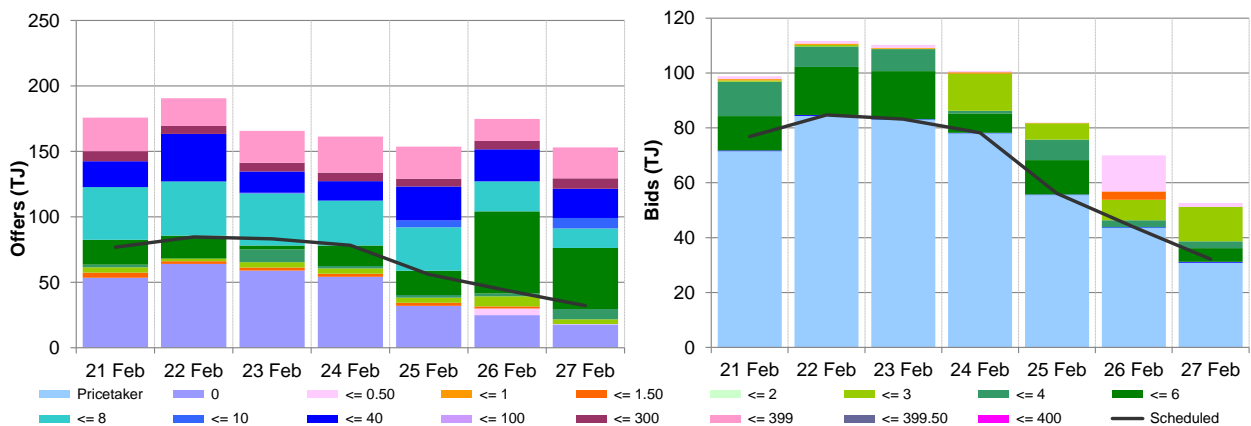


Figure 4.3: BRI net scheduled and allocated gas hub supply (excluding MOS)

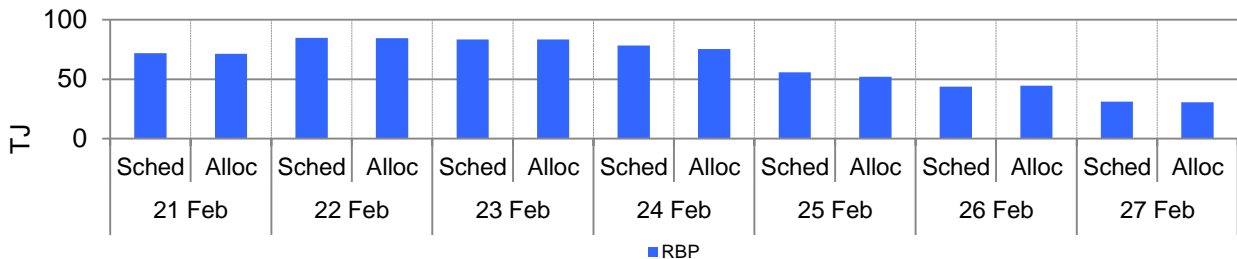
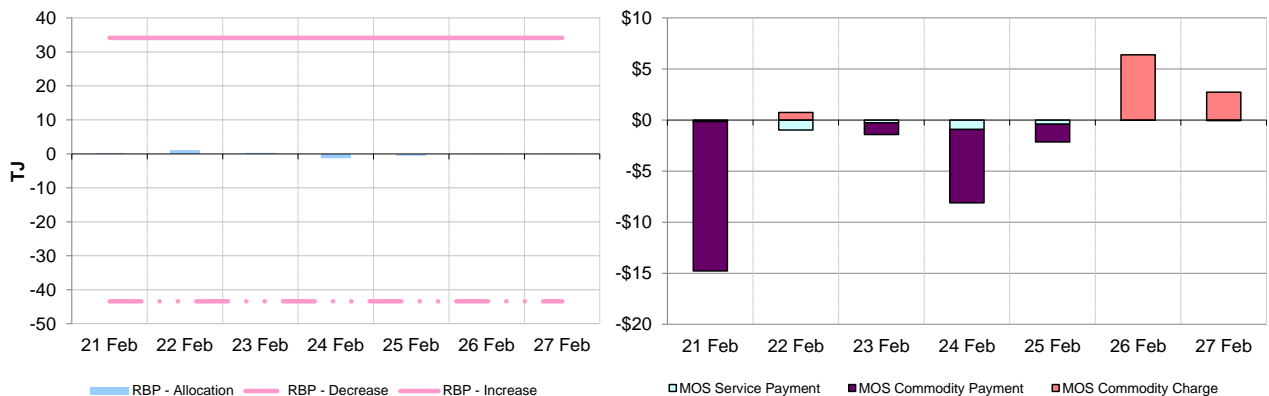


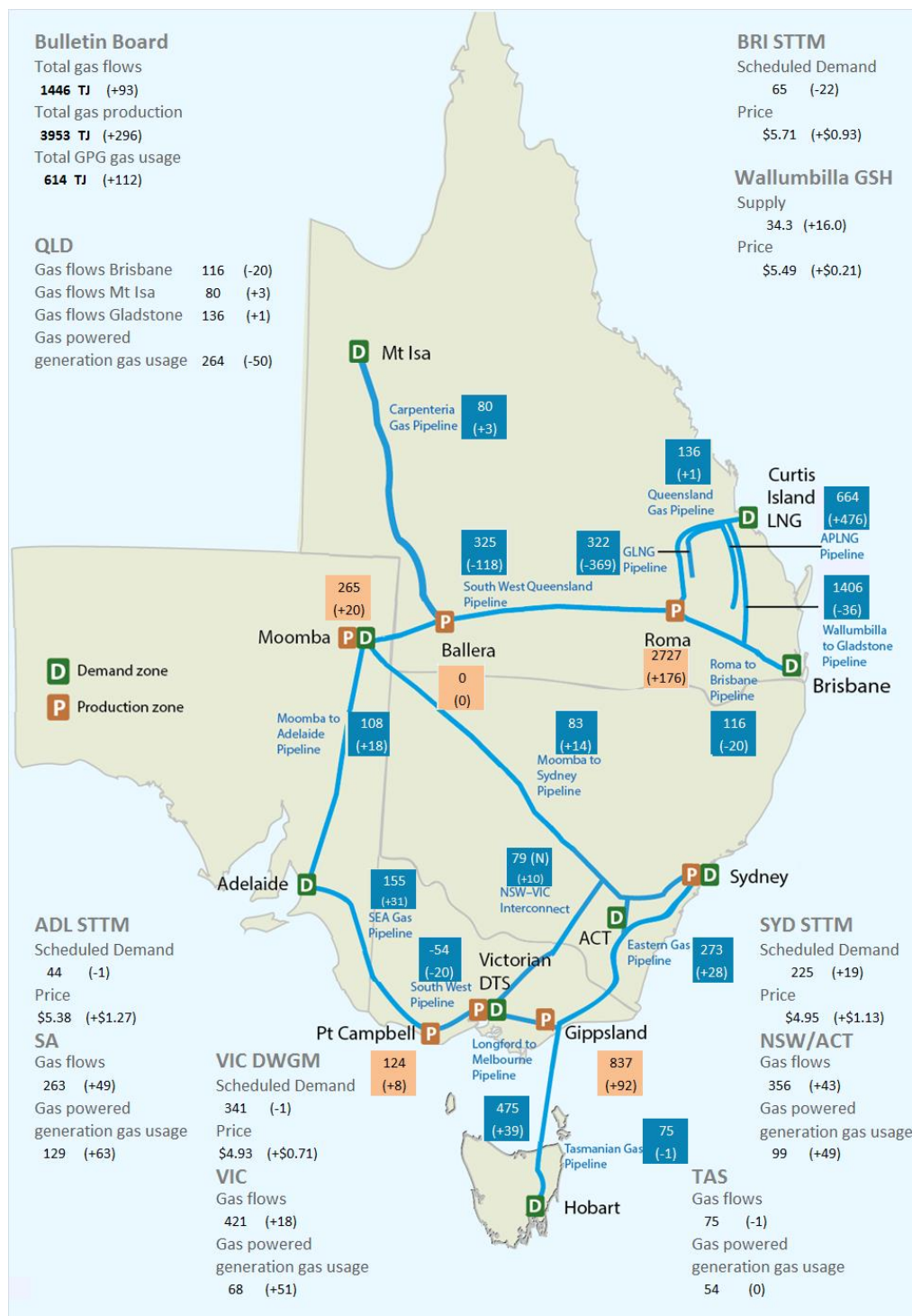
Figure 4.4: BRI MOS allocations (TJ), service payments and commodity payments/charges (\$000)



5. National Gas Bulletin Board

Figure 5.1 shows average daily actual flows for the current week¹¹ from the Bulletin Board (changes from the previous week's average are shown in brackets). Average daily scheduled volumes and prices¹² are provided for gas markets and gas powered generation for each region.

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



¹¹ Gas flows shown under regional headings: **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.

¹² Roma included export LNG production from October 2014 and LNG pipeline flows are shown from October 2015.
 Wallumbilla supply is the average daily volume of gas 'traded', while price is a volume weighted average.

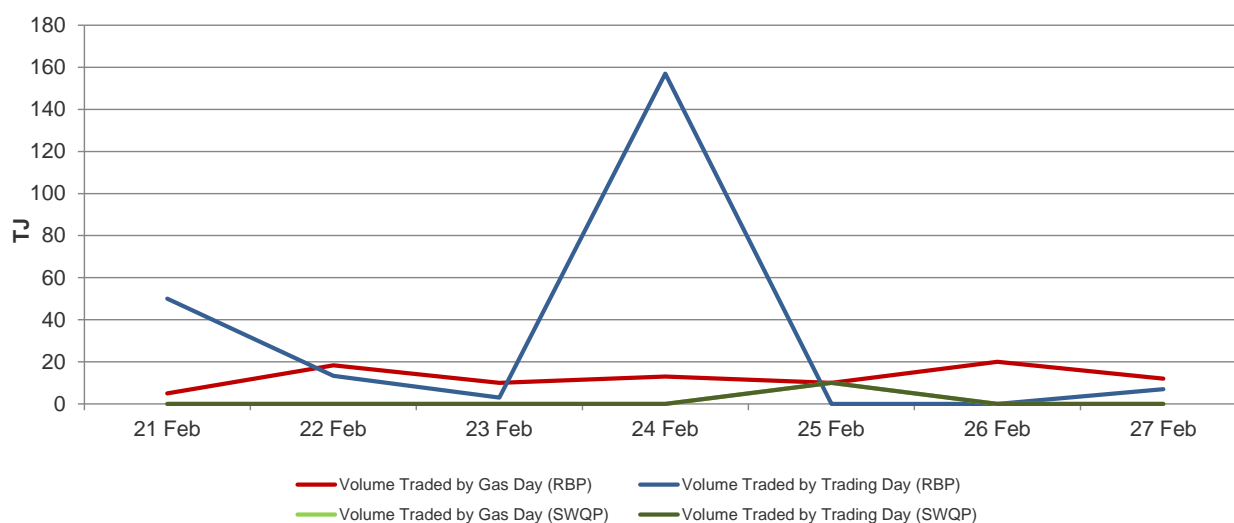
6. Gas Supply Hub

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 market¹³ 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 15 trades on the RBP at a volume weighted price of \$5.49/GJ. This consisted of 3 balance-of-day, 7 daily, 2 day-ahead, and 3 weekly trades for a combined 230 TJ. There was one balance-of-day trade on the SWQP for 10 TJ at a price of \$3.75/GJ.

Figure 6.1 shows volumes traded¹⁴ on each gas day and trading day for the current week.

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



¹³ 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.

¹⁴ Volumes shown for weekly products include the ‘daily’ volume for each relevant ‘gas day’, and the ‘weekly’ volume for each relevant ‘trading day’.