

6 – 12 March 2016

Weekly summary

Figure 1 shows that prices increased in each gas market this week. This was more pronounced in Sydney and Victoria with increases of 30 per cent and 14 per cent respectively. The increased prices may have been influenced by higher levels of gas usage for electricity generation in Victoria, South Australia, and New South Wales (see figure 5.1 on page 11).

Figure 5.1 also shows that GLNG’s pipeline flows have continued to increase this week, likely due to the conclusion of maintenance.

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)¹

Region	Victoria	Sydney	Adelaide	Brisbane
06 Mar - 12 Mar 2016	5.18	5.12	5.37	5.29
% change from previous week	14	30	5	4
15-16 financial YTD	4.40	4.58	5.13	4.04
% change from previous financial YTD	26	39	41	70

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

¹ The weighted average daily imbalance price applies for Victoria.

Figure 2: Victorian Gas Market

	Price (\$/GJ)	Ancillary payments (\$000)*	BOD forecast demand quantity (TJ)
06 Mar - 12 Mar 2016	5.18	-	376
% change from previous week	14	-	14
15-16 financial YTD	4.40	-	546
% change from previous financial YTD	26	-	5

* 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)
06 Mar - 12 Mar 2016	5.12	4.91	13.53	234	230
% change from previous week	30	57	-61	10	16
15-16 financial YTD	4.58	4.24	30.38	234	228
% change from previous financial YTD	39	28	126	-4	-6

Figure 4: Adelaide STTM

	Ex ante price (\$/GJ)	Ex post price (\$/GJ)	MOS payments (\$000)	Ex ante quantity (TJ)	Ex post quantity (TJ)
06 Mar - 12 Mar 2016	5.37	5.22	23.75	40	39
% change from previous week	5	-6	425	1	-11
15-16 financial YTD	5.13	5.24	8.65	60	61
% change from previous financial YTD	41	48	-38	-2	1

Figure 5: Brisbane STTM

	Ex ante price (\$/GJ)	Ex post price (\$/GJ)	MOS payments (\$000)	Ex ante quantity (TJ)	Ex post quantity (TJ)
06 Mar - 12 Mar 2016	5.29	5.24	1.58	47	47
% change from previous week	4	0	44	4	3
15-16 financial YTD	4.04	4.06	1.57	85	85
% change from previous financial YTD	70	84	3	-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

As illustrated in figure 1.2 on page 5, demand in Victoria increased significantly mid-week. Analysis indicates this may have been driven by higher demand from gas powered generation (GPG). The GPG demand on Tuesday 8 March was influenced by temperatures in Melbourne reaching 38.9 degrees. This also coincided with higher prices in the Victorian gas market, with the Thursday 10 March price reaching \$6.62/GJ on Thursday 10 March. Figure 1.1 on page 5 shows the high schedule prices which occurred over this period.

Figure 6 below illustrates the interaction between recent high temperatures, demand for gas for GPG and high prices in Victoria.

Figure 6: Gas powered generation, gas prices and temperature in Victoria



In Adelaide, counteracting MOS (CMOS) led to higher service costs on a number of days this week. On 10 March, payments were significantly higher than average², reaching \$71 183.

The left side of figure 3.4 on page 9 shows the increase MOS allocations on the Moomba to Adelaide Pipeline (MAP) and decrease allocations on the SEAGas pipeline. Increased service costs from 7–10 March associated with the CMOS are shown on the right side of the chart.

The cause was likely related to demand in the hub being provided on the MAP (despite low nominations by participants – see figure 3.3 on page 9) and limitations on the SEAGas pipeline due to it being pressured out.

AEMO applied pipeline flow direction constraint prices in Adelaide on two occasions this week. Prices of \$2.26/GJ and \$1.28/GJ were applied to the MAP on 9 March and 10 March respectively. This mechanism allows for additional gas supply to be shipped on the pipeline to cater for a higher level of back haul demand outside the hub.³

² Figure 4 on page 2 shows the financial year-to-date average service payment for MOS in Adelaide of \$8 651.

³ The pipeline flow direction constraint price is the additional cost for gas above the ex ante market price where further gas can be economically delivered (based on the bids and offers available on the gas day). This mechanism is explained in more detail in the [Gas Report for the week of 31 August 2014](#).

6 – 12 March 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 price⁴ which is the schedule at which most gas is traded.

The main drivers⁵ 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 forecasts⁶, 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

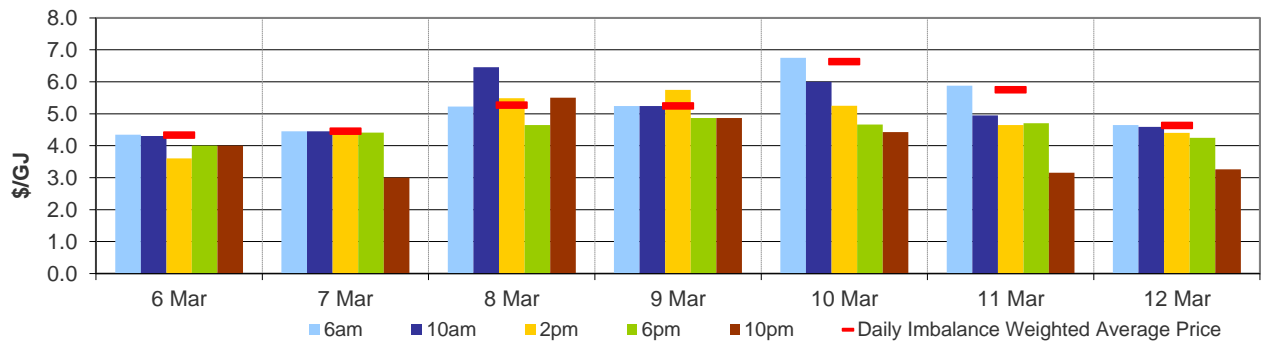
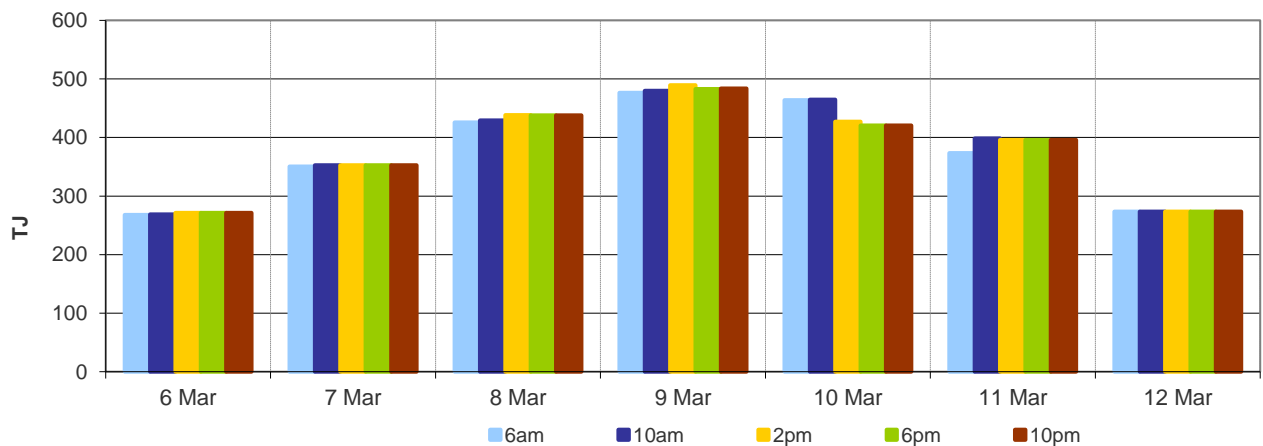


Figure 1.2: Demand forecasts



⁴ 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.

⁵ 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.

⁶ 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

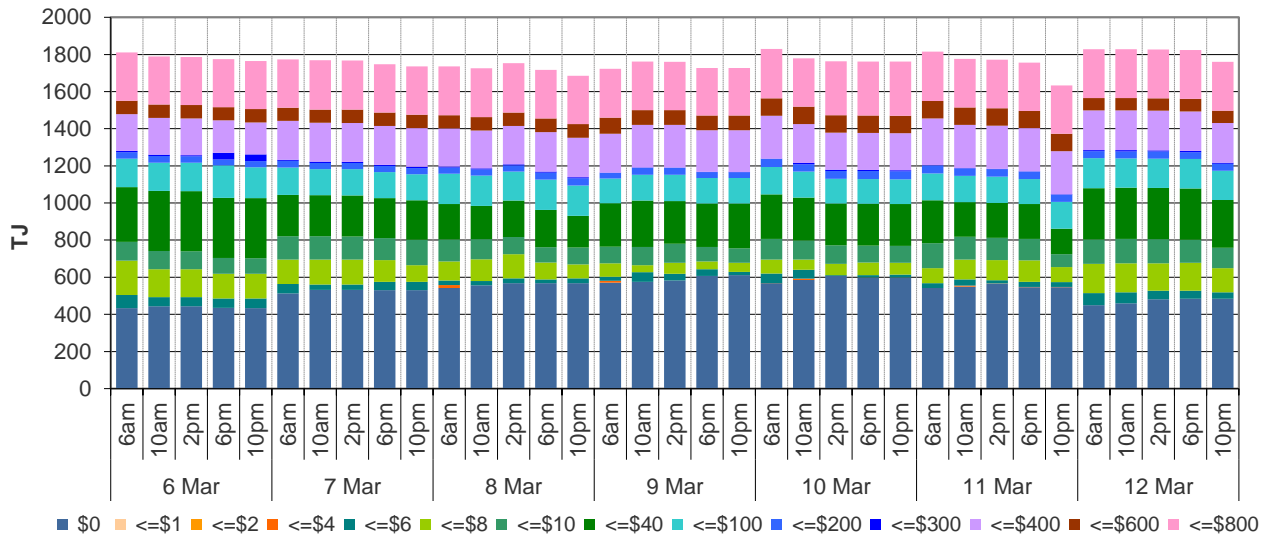


Figure 1.4: Withdrawal bids by price bands

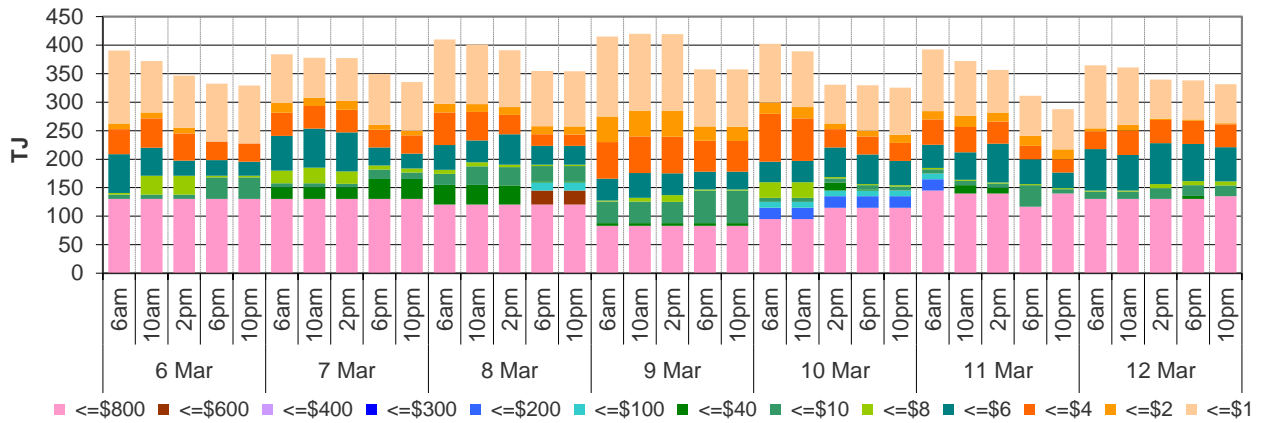
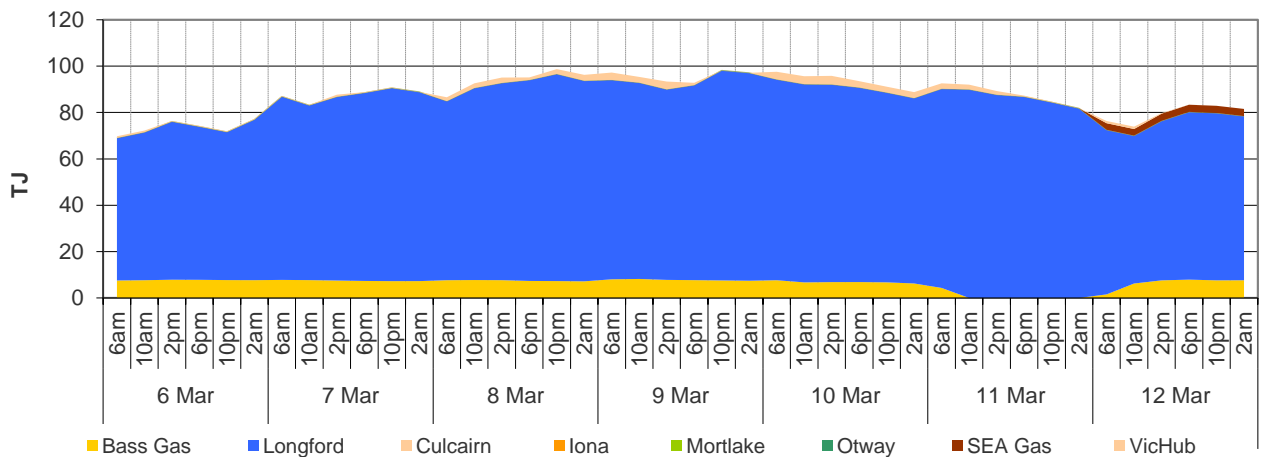


Figure 1.5: Metered Injections by System Injection Point



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.⁷ 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](#).

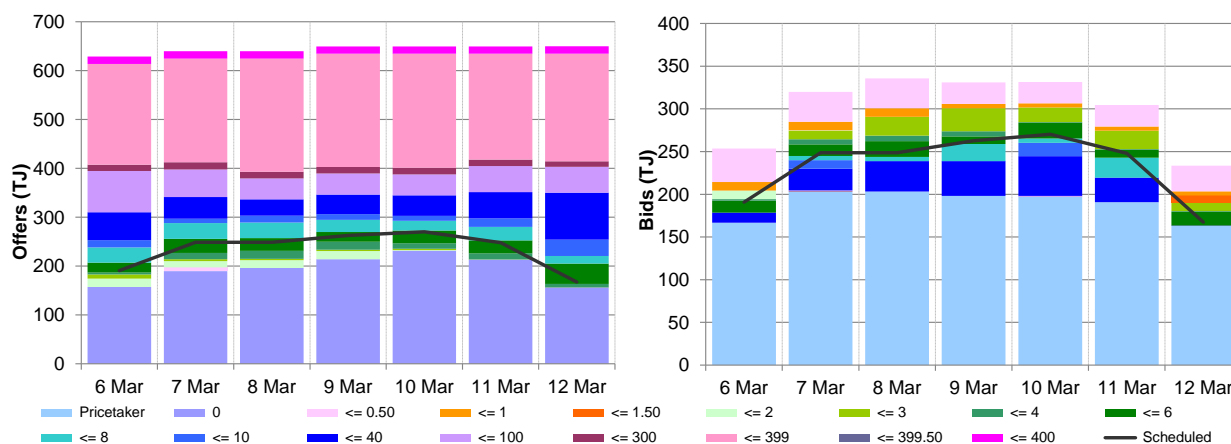
Market Operator Service balancing gas (MOS) payments arise because the amount of gas nominated on pipelines for delivery on a gas day will either exceed or fall short, by some amount, of the amount of gas consumed in the hub. In such circumstances, MOS payments are made to participants for providing a service to park gas on a pipeline or to loan gas from a pipeline to the hub.⁸

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)	4.49	5.30	5.24	4.75	5.98	5.65	4.45
Ex ante quantity (TJ)	191	249	249	263	270	248	167
Ex post price (\$/GJ)	4.50	5.08	4.90	4.75	5.12	5.24	4.75
Ex post quantity (TJ)	197	240	244	263	250	243	172

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



⁷ 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.

⁸ 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)

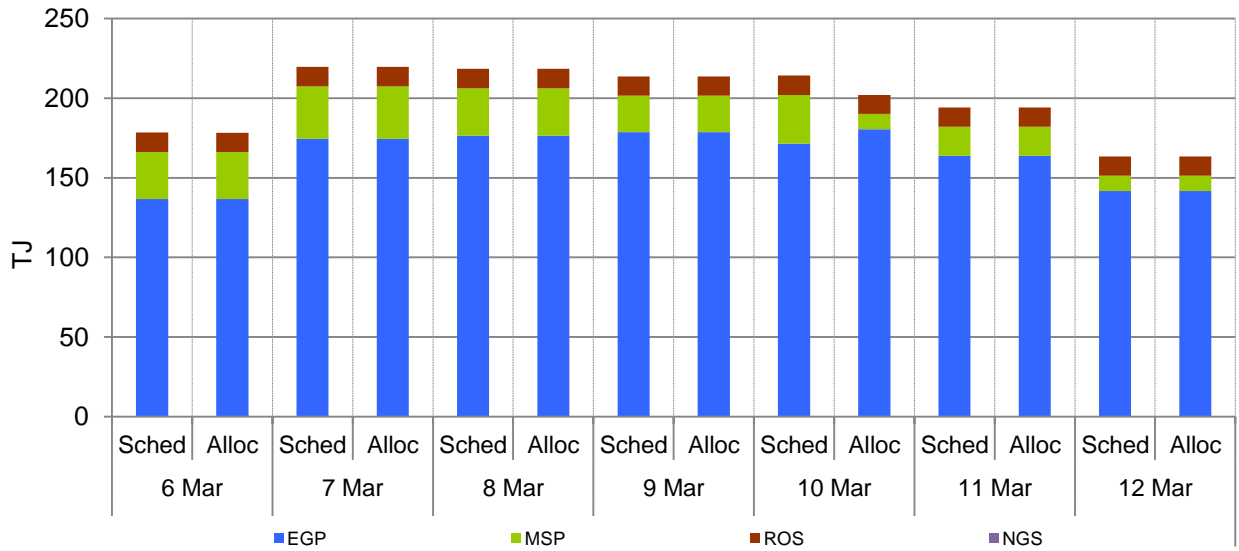
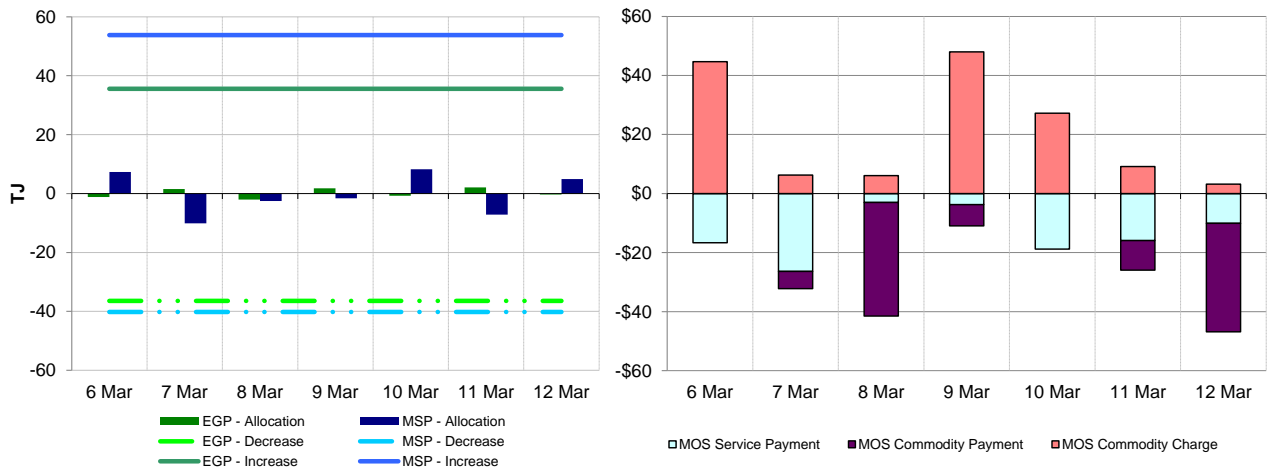


Figure 2.4: SYD MOS allocations (TJ), service payments and commodity payments/charges (\$000)



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)	5.43	6.50	5.25	5.20	5.20	4.75	5.25
Ex ante quantity (TJ)	34	46	42	46	45	38	28
Ex post price (\$/GJ)	5.43	6.29	5.25	4.77	4.77	4.78	5.25
Ex post quantity (TJ)	35	44	43	41	41	39	28

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

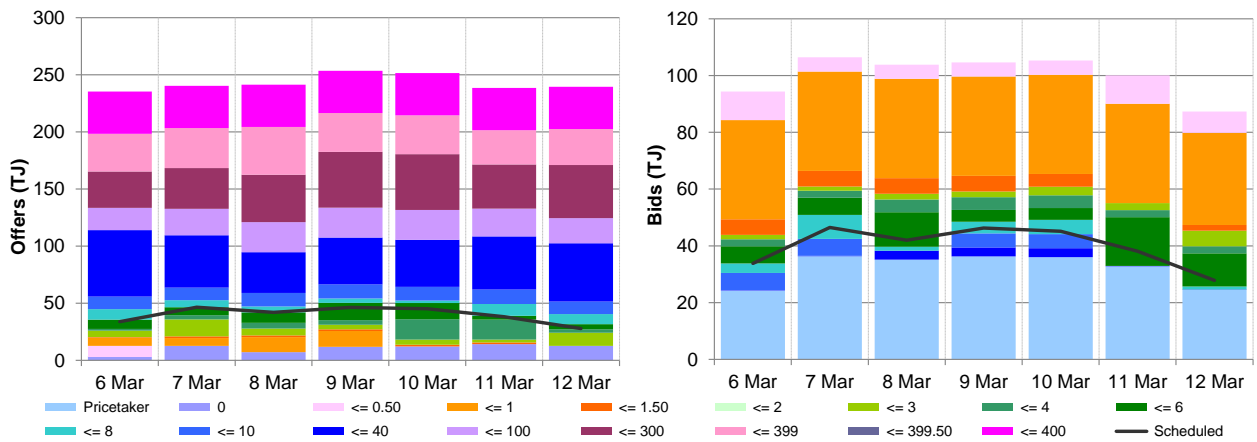


Figure 3.3: ADL net scheduled and allocated gas hub supply (excluding MOS)

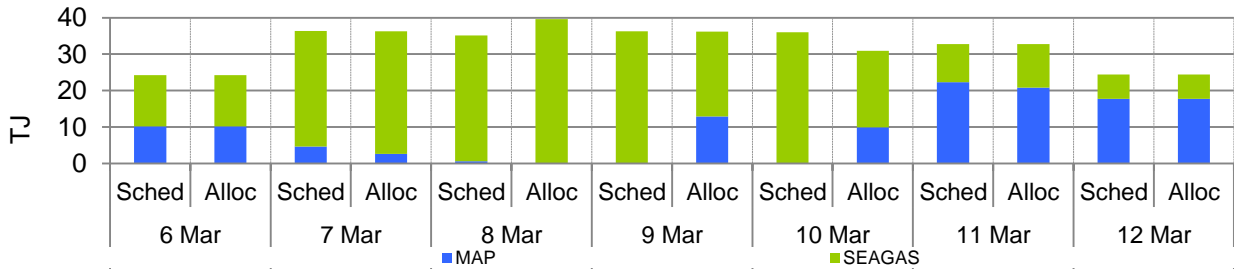
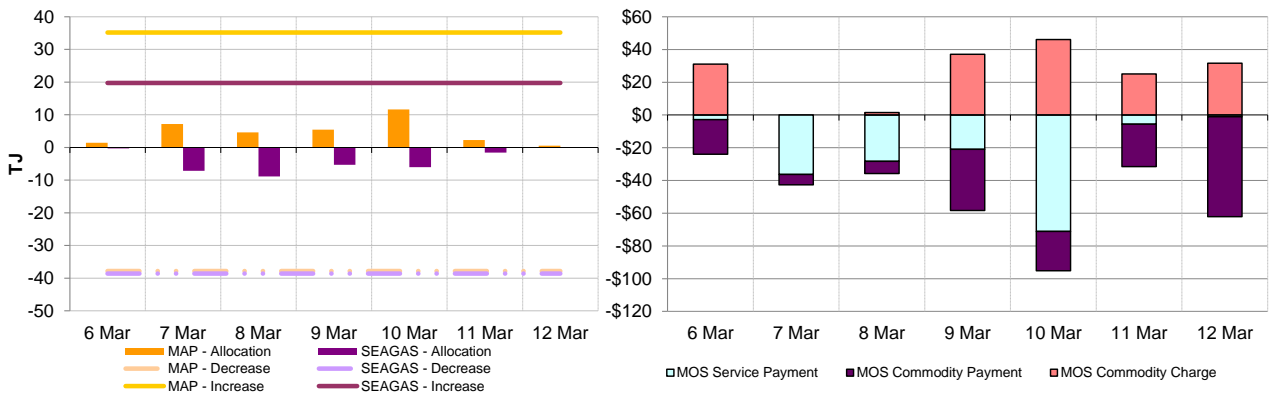


Figure 3.4: ADL MOS allocations (TJ), service payments and commodity payments/charges (\$000)



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)	4.78	5.05	5.67	5.67	6.01	5.02	4.81
Ex ante quantity (TJ)	36	49	56	56	52	48	30
Ex post price (\$/GJ)	4.99	5.23	5.22	5.50	6.01	4.78	4.95
Ex post quantity (TJ)	40	53	52	54	52	47	32

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

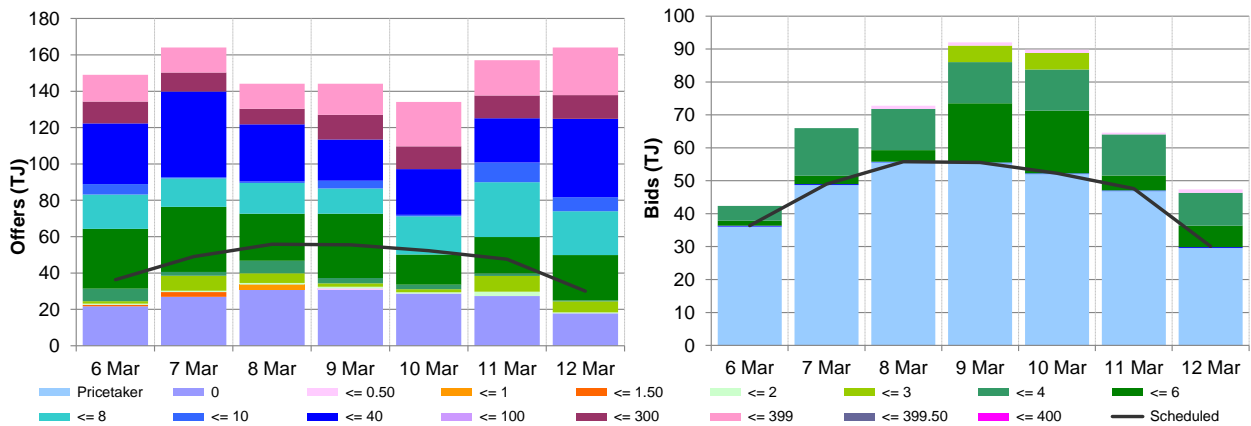


Figure 4.3: BRI net scheduled and allocated gas hub supply (excluding MOS)

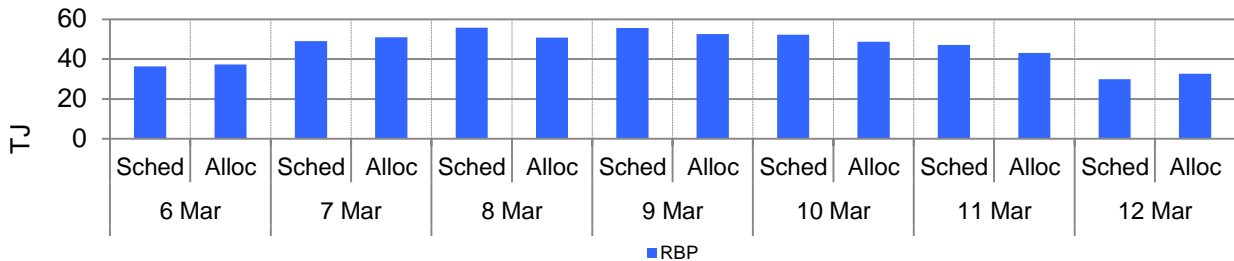
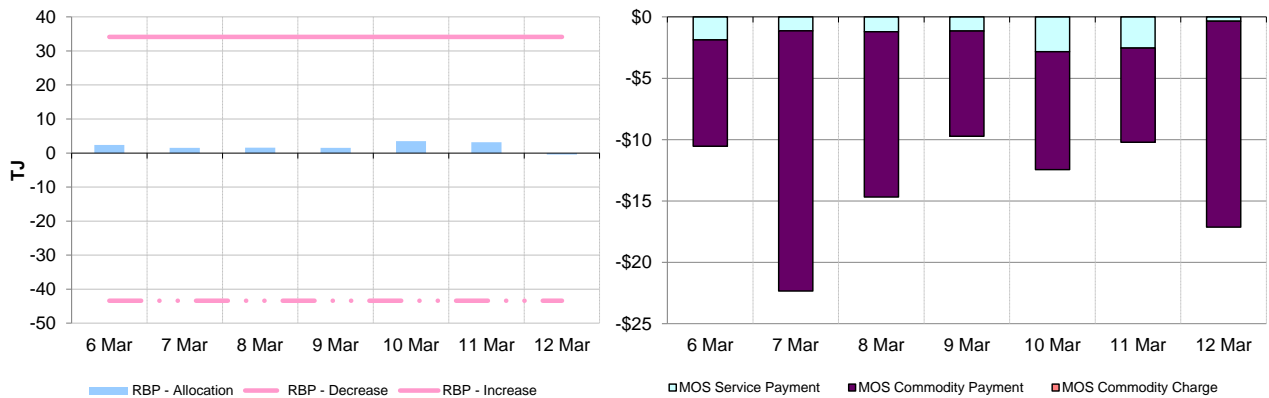


Figure 4.4: BRI MOS allocations (TJ), service payments and commodity payments/charges (\$000)



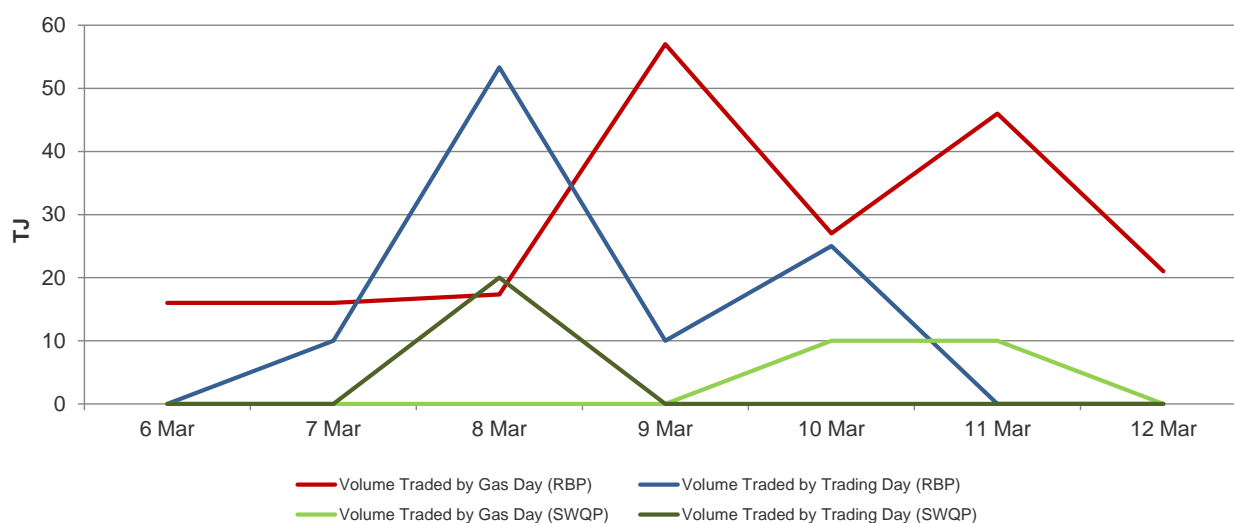
6. Gas Supply Hub

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 market¹¹ 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 17 trades this week for just over 118 TJ of gas at a volume weighted price of \$5.48/GJ. This consisted of 2 daily product trades for 20 TJ on the SWQP valued at \$6/GJ and daily, day-ahead and balance-of-day trades on the RBP valued at \$5.37/GJ.

Figure 6.1 shows volumes traded¹² on each gas day and trading day for the current week.

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



¹¹ 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.

¹² Volumes shown for weekly products include the ‘daily’ volume for each relevant ‘gas day’, and the ‘weekly’ volume for each relevant ‘trading day’.