Gas Market Report

12 – 18 March 2017

Weekly Summary

Average prices decreased across all regions compared to the previous week on generally lower demand. The largest falls were in Victoria (21 per cent from the previous week) and the price falls in Brisbane and Wallumbilla mark the fourth consecutive week of retreat in those regions, with Wallumbilla recording a 36 per cent reduction in demand. Prices were highest in Sydney with gas trading above provisional forecast on most days but declining below $10/GJ in the latter half of the week.

Gas used for generation increased during the week due to demand from Queensland and New South Wales. Queensland continues to be the largest user of GPG accounting for 46 per cent of total demand.

Gas stored at Iona increase by 759 TJ, which is a positive sign for system security over winter, assuming storages continue after a two week outage planned for the latter half of this month.

In Sydney, MOS service costs exceeded $50 000 on three occasions due to a combination of over forecasting and counteracting MOS (CMOS[1]) allocations.

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) for the current week, and demand levels, compared to historical averages. Regions shown include 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)**. Price and demand information is also shown for the voluntary Wallumbilla and Moomba Gas Supply Hubs **(GSH)**.

---

[1]   Increase MOS allocations on the EGP offsetting decrease MOS allocation on the MSP in excess of the net forecasting error quantity within the distribution network.

Figure 1: Average daily prices and demand – all markets ($/GJ, TJ)[2]

	Victoria		Sydney		Adelaide		Brisbane		Wallumbilla		Moomba	
	Price	Demand	Price	Demand	Price	Demand	Price	Demand	Price	Quantity	Price	Quantity
12 Mar - 18 Mar 2017	8.05	295	10.3	216	9.16	41	7.49	83	8.06	74	-	-
% change from previous week	-21	-6	-15	3	-11	-16	-13	-2	-8	-36	-	-
16-17 financial YTD	8.27	527	8.25	241	8.72	61	8.22	84	8.38	6345	-	-
% change from previous financial YTD	88	-3	80	3	70	3	102	0	115	0	-	-

Figure 2 illustrates the daily prices in each gas market, as defined in figure 1.

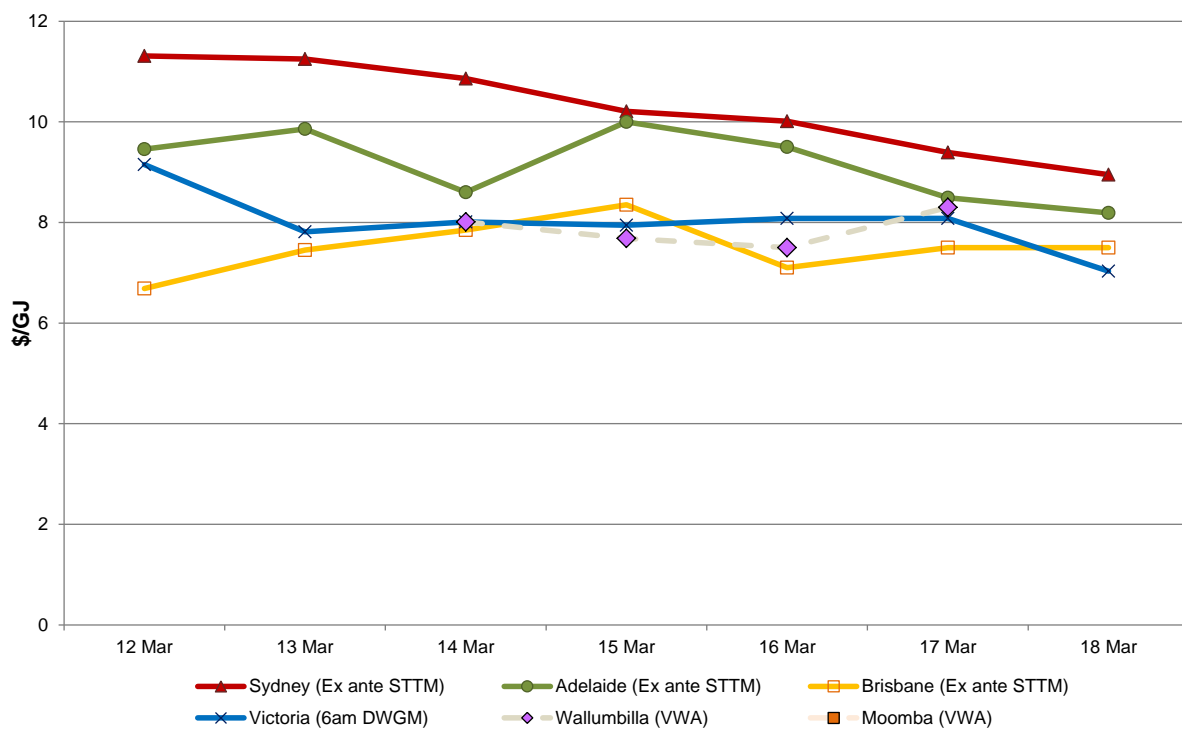## Figure 2: Daily gas market prices ($/GJ)

Figure 3 compares average ancillary market payments (VGM) and balancing gas service payments (STTM) against historical averages.

Figure 3: Average ancillary payments ($000)

	Victoria Ancillary Payments*	Sydney MOS	Adelaide MOS	Brisbane MOS
12 Mar - 18 Mar 2017	-	36.72	7.78	1.29
% change from previous week	-	159	-54	-25

---

[2]   Average daily quantities are displayed for each region, with the exception of Gas Supply Hubs (GSH). The weighted average daily imbalance price applies for Victoria. The prices shown for the GSH in Wallumbilla and Moomba are volume weighted average prices for all products traded across the period. The total quantity contributing to the weighted price is displayed for these GSH.

	Victoria Ancillary Payments*	Sydney MOS	Adelaide MOS	Brisbane MOS
16-17 financial YTD		52.39	20.68	1.61
% change from previous financial YTD		74	143	3

* Ancillary payments reflect the compensation costs for any additional injections offered at a price higher than the market price. Note: only positive ancillary payments, reflecting system constraints will be shown here.

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

Figure 4 shows the quantity and volume weighted prices of products traded in the Gas Supply Hub locations at Wallumbilla and Moomba.

Figure 4: Gas supply hub products traded for the current week ($/GJ, TJ)*

	RBP		SWQP		MAP		MSP		QGP	
	VWA price	Quantity	VWA price	Quantity	VWA price	Quantity	VWA price	Quantity	VWA price	Quantity
Balance of day	7.99	27.8	8.05	8.5	-	-	-	-	-	-
Daily	8.50	2.0	8.28	4.0	-	-	-	-	-	-
Day ahead	7.86	13.0	8.00	5.0	-	-	-	-	-	-
Weekly	8.30	14.0	-	-	-	-	-	-	-	-
Monthly	-	-	-	-	-	-	-	-	-	-

* Non-netted products are not shown here. For information about these products, refer to figure 6.1.

Figure 5 shows Bulletin Board pipeline flows for the three LNG export pipeline facilities and the production output at related production facilities in the Roma region.

Figure 5: LNG export pipeline and production flows (TJ)*
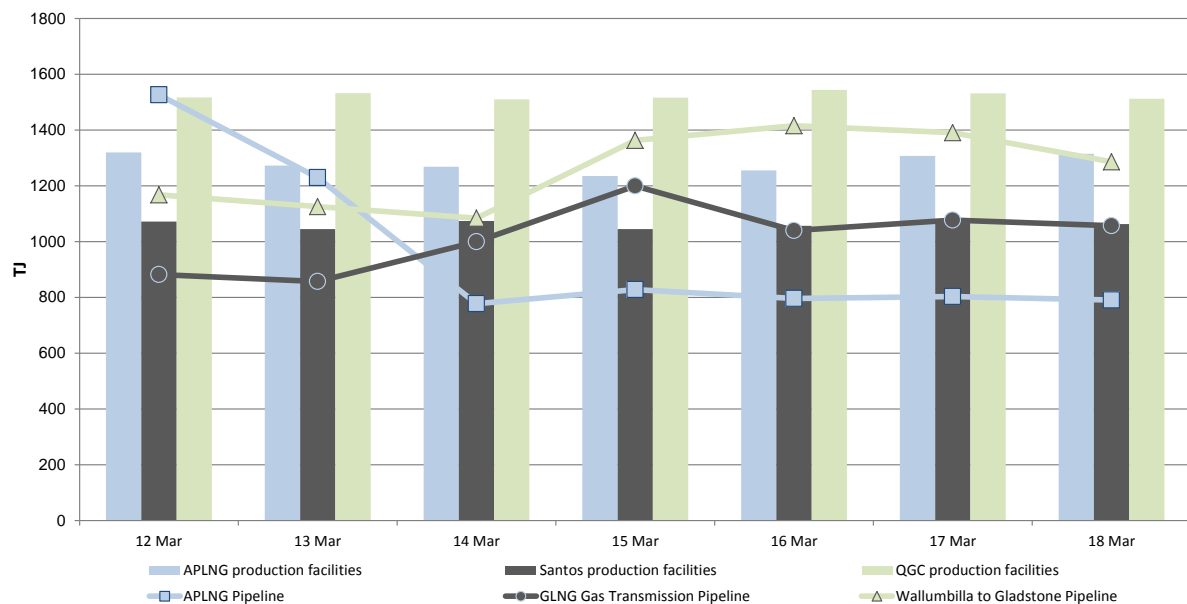
* Production quantities represent flows from facilities operated by APLNG, Santos and QGC in the Roma region. Gas from individual facilities may also supply the domestic market, other LNG projects or storage facilities.

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[3] which is the schedule at which most gas is traded.

The main drivers[4] 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[5], 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.

Ancillary payments for gas injected above the market price are shown above in figure 3.

Figure 1.1:   Prices by schedule ($/GJ)
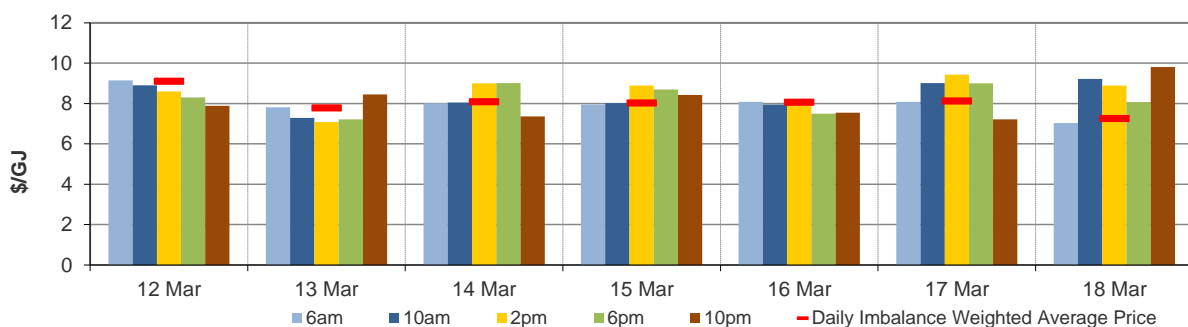

Figure 1.2:   Demand forecasts (TJ)

---
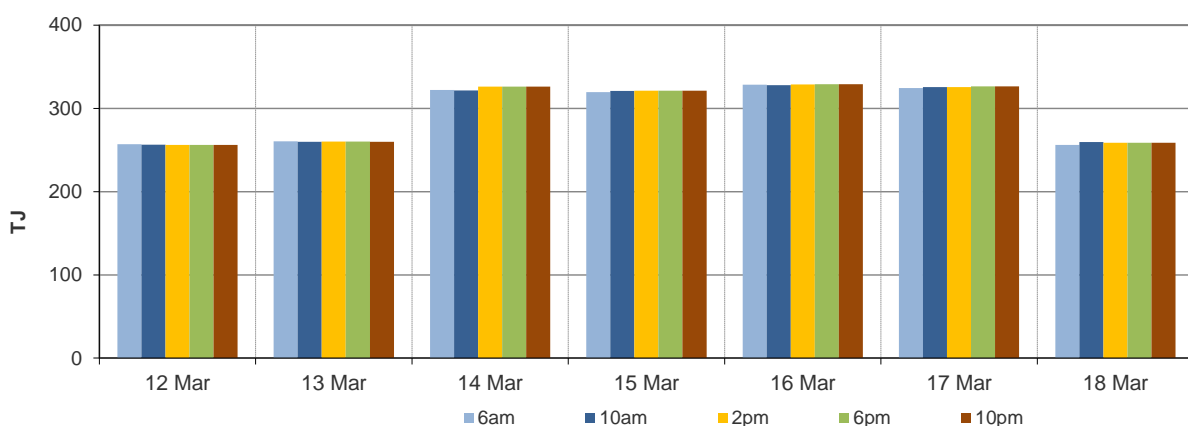
[3]   Prices for subsequent schedules are applied only to the differences in scheduled quantities (imbalances) to calculate the weighted price. The 6 am price applies to the entire scheduled quantity in the initial schedule.
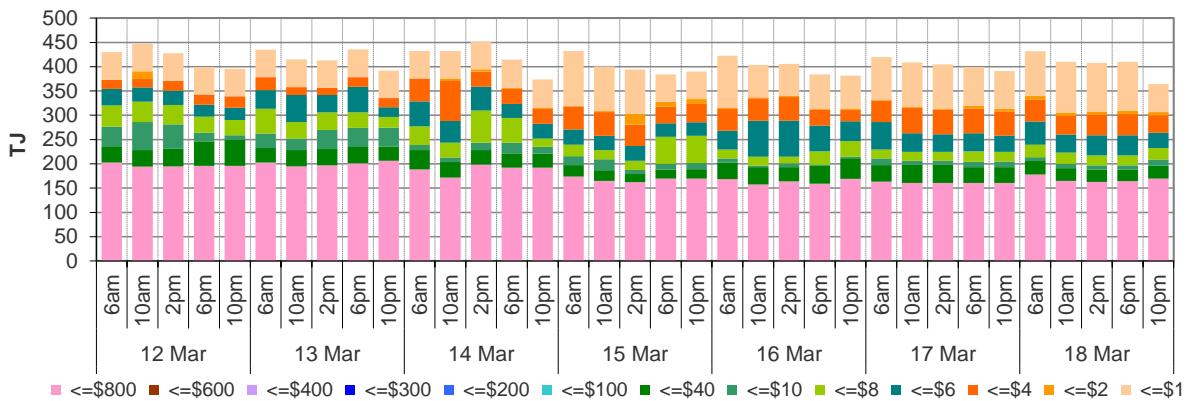
[4]   The price might also be affected by transmission or production (contractual) constraints limiting how much gas can be delivered from a locale or System Injection Point (SIP) from time to time.

[5]   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.
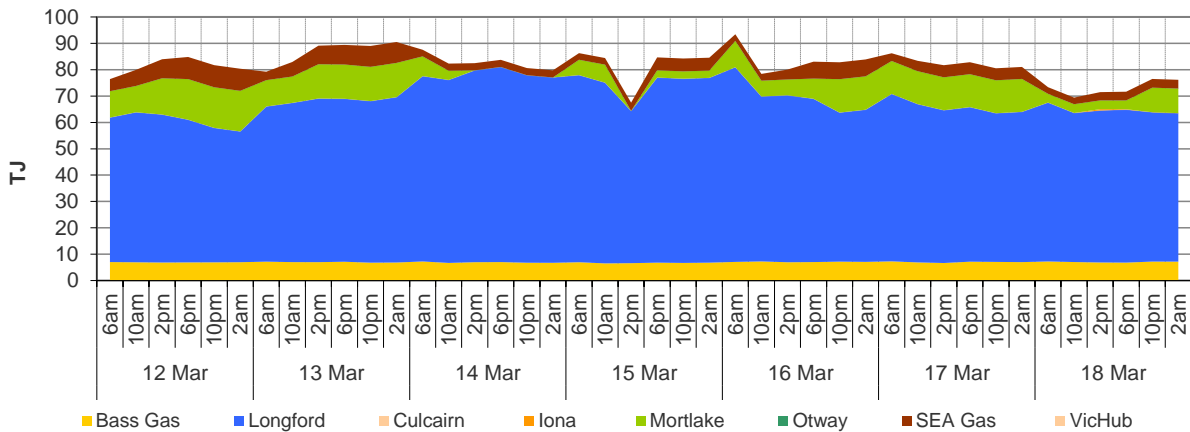
Figure 1.3: Injection bids by price bands (TJ)

Legend: $0, <=$1, <=$2, <=$4, <=$6, <=$8, <=$10, <=$40, <=$100, <=$200, <=$300, <=$400, <=$600, <=$800
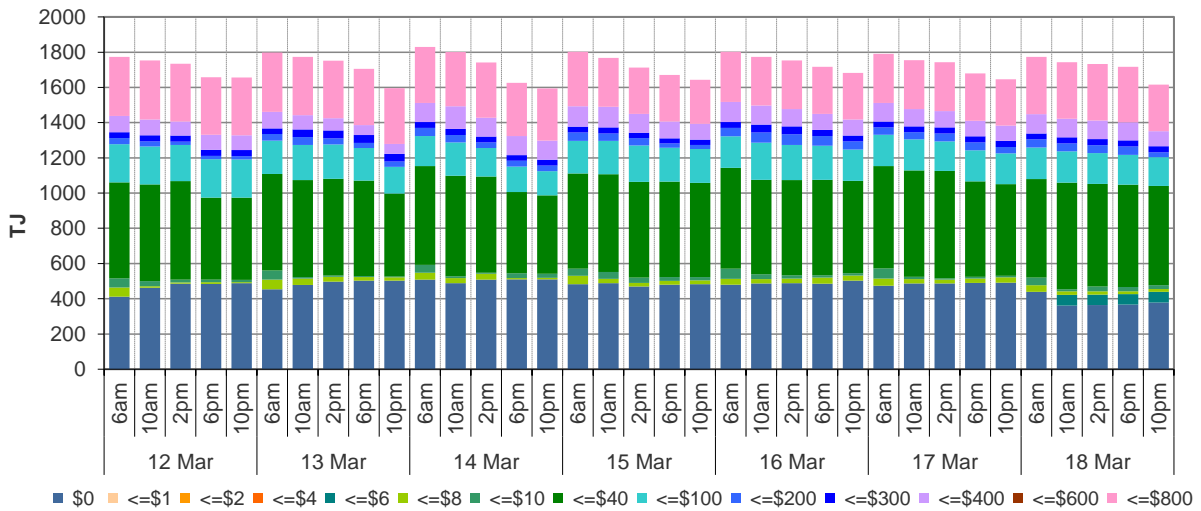
Figure 1.4: Withdrawal bids by price bands (TJ)

Legend: <=$800, <=$600, <=$400, <=$300, <=$200, <=$100, <=$40, <=$10, <=$8, <=$6, <=$4, <=$2, <=$1

Figure 1.5: Metered Injections by System Injection Point (TJ)

Legend: Bass Gas, Longford, Culcairn, Iona, Mortlake, Otway, SEA Gas, VicHub

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.[6] 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.[7]

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 ($/GJ)	11.31	11.25	10.86	10.21	10.01	9.39	8.95
Ex ante quantity (TJ)	178	201	222	234	232	233	210
Ex post price ($/GJ)	11.50	10.90	10.71	10.00	9.99	9.30	9.09
Ex post quantity (TJ)	186	196	213	227	226	231	213

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

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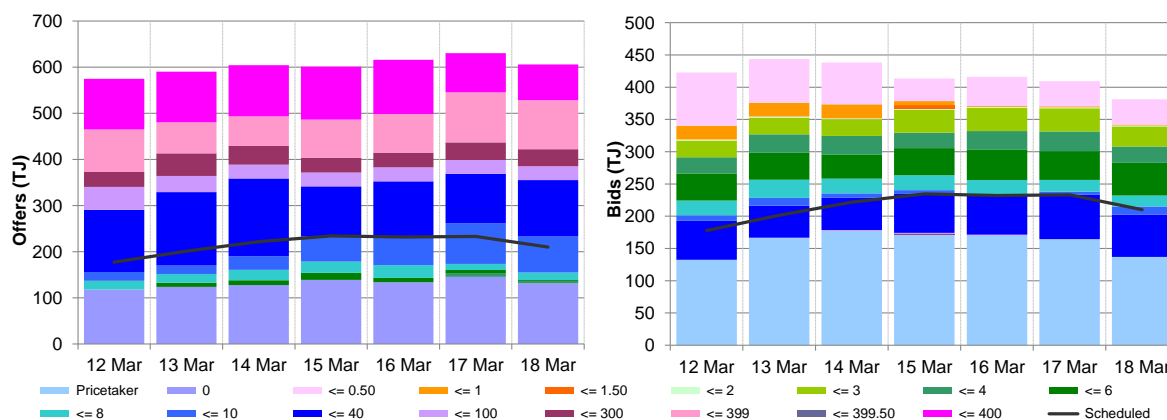
[6]   The main driver of the amount of gas scheduled on a gas day is the 'price-taker' bid, which is forecast hub demand that cannot respond to price and which must be delivered, regardless of the price.

[7]   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)
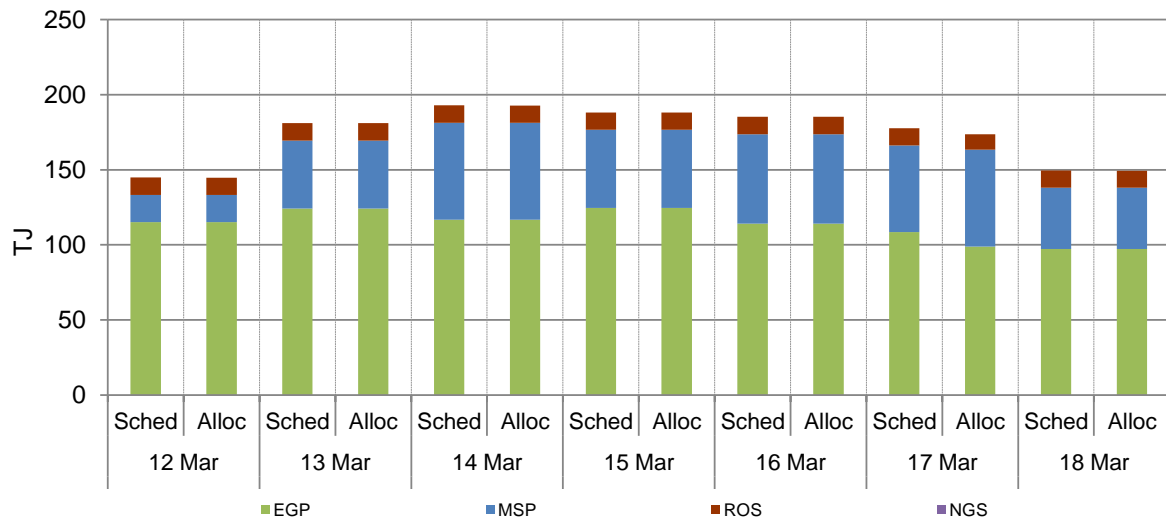
Figure 2.4: SYD MOS allocations (TJ), service payments and commodity payments/charges ($000)[8]

---
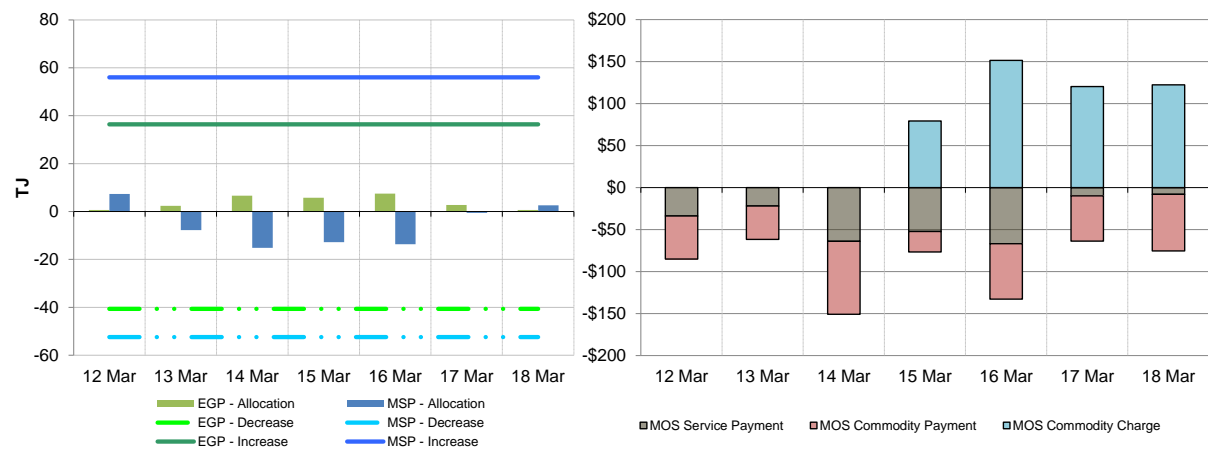
[8]   The commodity cost of MOS illustrated on the right of the figure represents the commodity quantity at the D+2 ex ante price. Commodity payments and charges for a given gas day relate to quantities traded two days earlier. That is, the commodity cost for services provided on Sunday will appear in the chart for Tuesday, when the D+2 price is set. In contrast, service payments are shown alongside the day they occurred.
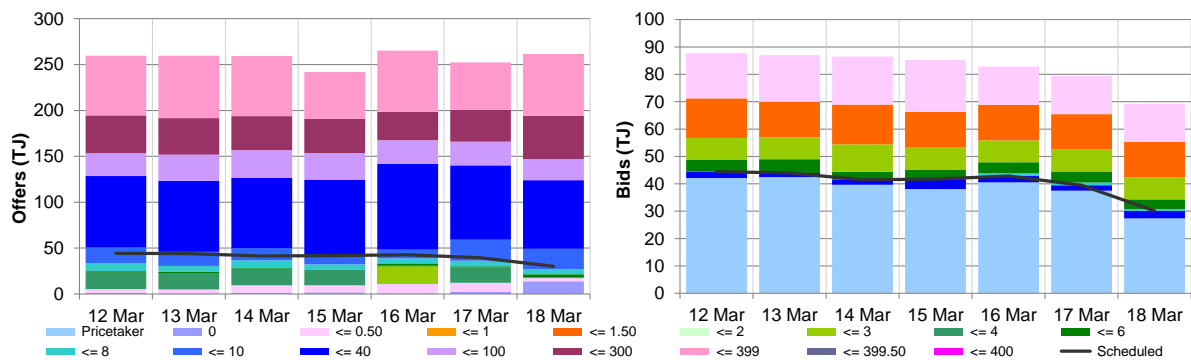
3. Adelaide STTM

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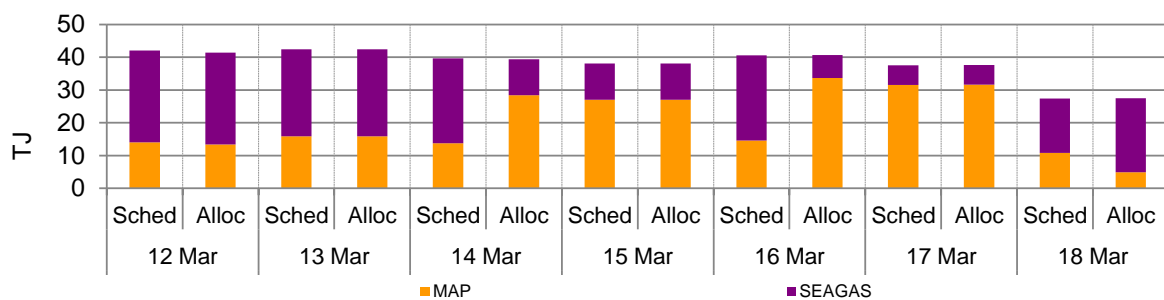
Figure 3.1: ADL STTM daily ex ante and ex post prices and quantities

|	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Ex ante price ($/GJ)	9.46	9.86	8.60	10.00	9.50	8.49	8.19
Ex ante quantity (TJ)	44	44	41	42	43	39	30
Ex post price ($/GJ)	8.74	9.41	8.49	9.89	9.01	8.49	8.19
Ex post quantity (TJ)	38	42	38	40	42	38	37

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)

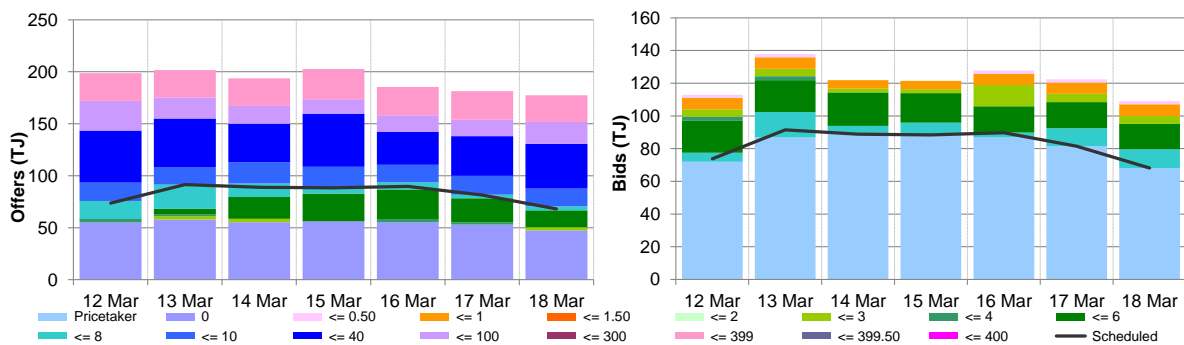## Figure 3.4: ADL MOS allocations (TJ), service payments and commodity payments/charges ($000)
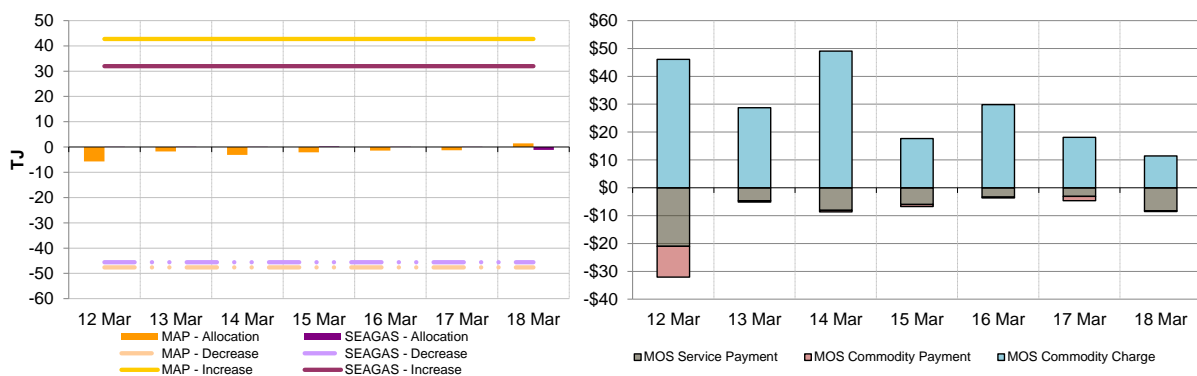
4. Brisbane STTM

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 ($/GJ)	6.69	7.45	7.85	8.35	7.10	7.50	7.50
Ex ante quantity (TJ)	74	91	89	88	90	81	68
Ex post price ($/GJ)	6.69	7.45	7.85	8.48	5.28	7.45	7.15
Ex post quantity (TJ)	73	91	89	90	85	78	63

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

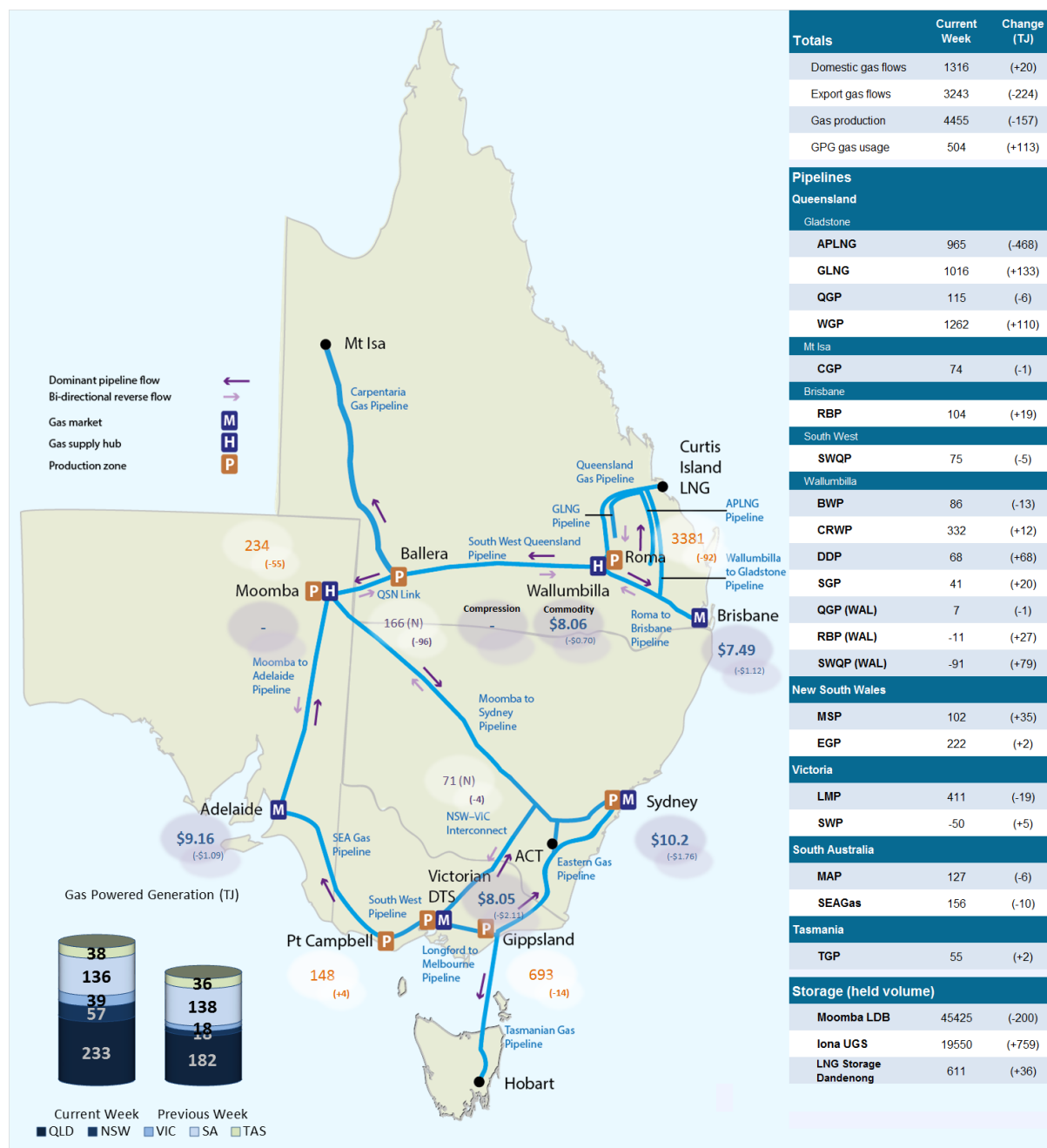## Figure 4.3: BRI net scheduled and allocated gas hub supply (excluding MOS)
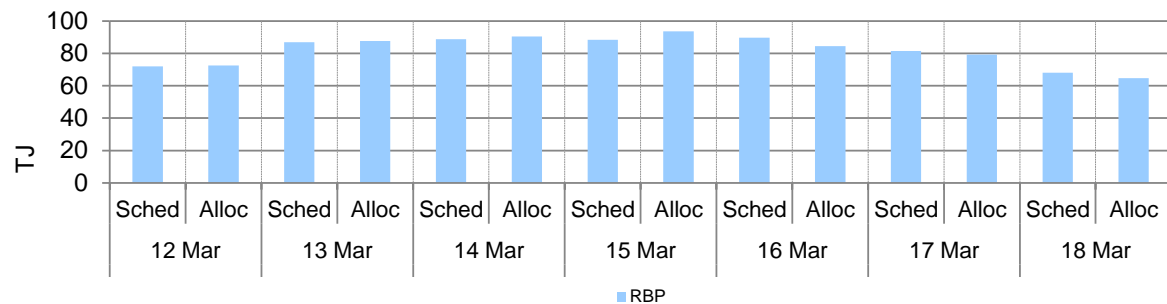
Figure 4.4: BRI MOS allocations (TJ), service payments and commodity payments/charges ($000)
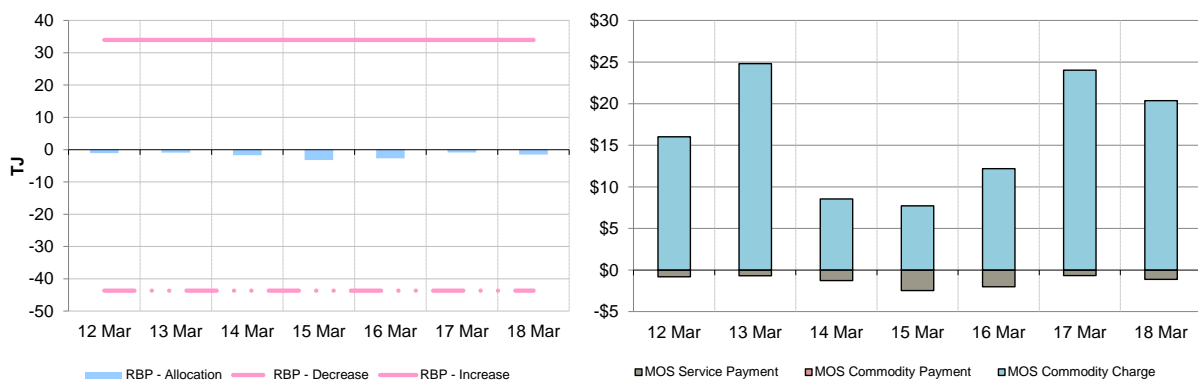
5. National Gas Bulletin Board

Figure 5.1 shows average daily actual flows for the current week[9] from the Bulletin Board (changes from the previous week's average are shown in brackets). Average daily prices[10] are provided for gas markets and gas supply hubs. Average daily quantities are provided for gas powered generation for each region.

Figure 5.1:   Gas market data ($/GJ, TJ); Bulletin Board flows (TJ)[11]

| Totals	Current Week	Change (TJ)
Domestic gas flows	1316	(+20)
Export gas flows	3243	(-224)
Gas production	4455	(-157)
GPG gas usage	504	(+113)
Pipelines		
Queensland		
Gladstone		
APLNG	965	(-468)
GLNG	1016	(+133)
QGP	115	(-6)
WGP	1262	(+110)
Mt Isa		
CGP	74	(-1)
Brisbane		
RBP	104	(+19)
South West		
SWQP	75	(-5)
Wallumbilla		
BWP	86	(-13)
CRWP	332	(+12)
DDP	68	(+68)
SGP	41	(+20)
QGP (WAL)	7	(-1)
RBP (WAL)	-11	(+27)
SWQP (WAL)	-91	(+79)
New South Wales		
MSP	102	(+35)
EGP	222	(+2)
Victoria		
LMP	411	(-19)
SWP	-50	(+5)
South Australia		
MAP	127	(-6)
SEAGas	156	(-10)
Tasmania		
TGP	55	(+2)
Storage (held volume)		
Moomba LDB	45425	(-200)
Iona UGS	19550	(+759)
LNG Storage Dandenong	611	(+36)

---

6. Gas Supply Hub

The gas supply hub was established at Wallumbilla in March 2014 to facilitate the voluntary trading of gas between participants, with products listed for sale and purchase at delivery points on three major connecting pipelines at Wallumbilla – the **QGP**, the **SWQP** and the **RBP**. There are separate products for each pipeline (trading location) and delivery period (daily, day-ahead, balance-of-day, weekly and monthly products).[12]

The Moomba hub commenced operation from June 2016 to further facilitate trading on the **MAP** and **MSP**, with trading between the two hubs on the SWQP via a spread product (representing the price differential between the hubs). From October 2016, the addition of a Wallumbilla Compression Product was introduced to facilitate the supply hub's transition from three different trading locations into one.

This week in the Wallumbilla hub there were 18 trades for 74.3 TJ of gas at a volume weighted price of $8.06/GJ. Balance of day, daily, day ahead and weekly products traded on the RBP (56.8 TJ, $8.05/GJ) while balance of day, daily and day ahead products traded on the SWQP (17.5 TJ, $8.09/GJ).

Figure 6.1 shows the quantity of gas traded by product type for each trading day on pipeline trading locations in the Wallumbilla and Moomba Gas Supply Hubs.[13]

Figure 6.1:   GSH traded quantities
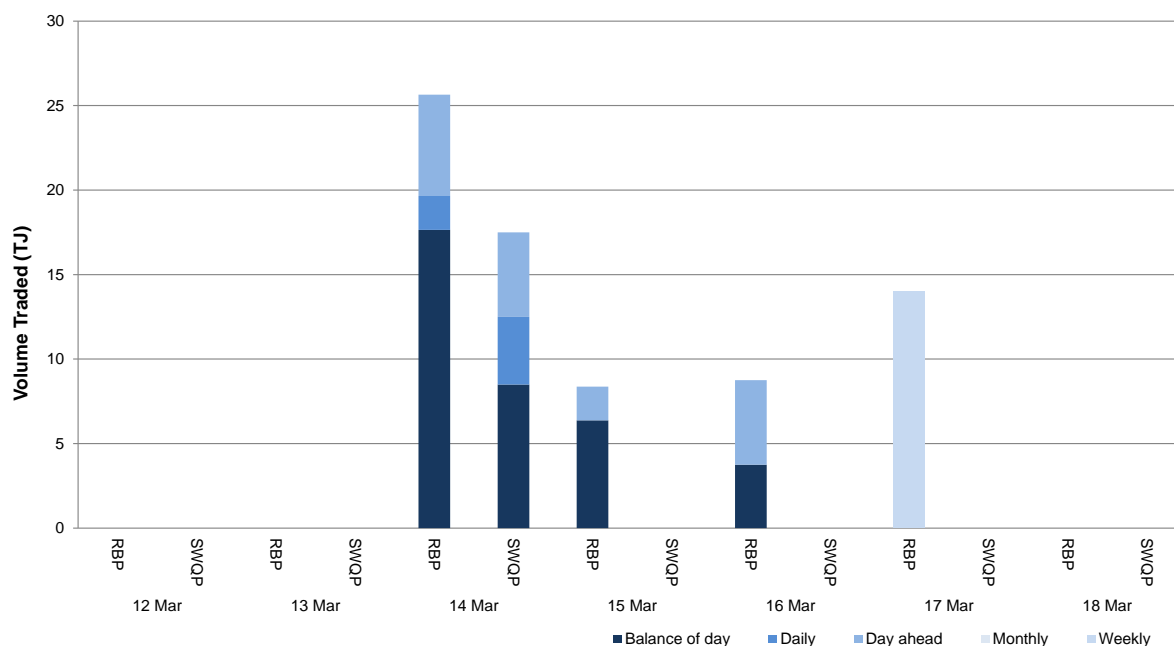
Australian Energy Regulator
April 2017

---

[12]   Additional information on trading locations and available products is detailed in the user guide.

[13]   Non-netted (off-market) trades, allowing the selection of specific delivery point at a trading location, are denoted as WAL*.