Gas Market Report

AUSTRALIAN ENERGY REGULATOR

24 – 30 January 2016

Weekly summary

Figure 1 shows average prices were lower than for the previous week in all markets, with the largest falls recorded in the Adelaide and Brisbane STTM hubs.

Cooler weather in Adelaide led to a reduction in gas powered generation (as shown in figure 5.1 on page 10) and a fall in average gas prices in Adelaide. Figure 3.1 on page 8 shows that prices in Adelaide fell below $5/GJ from Tuesday.

Analysis on the fall in average price in the Brisbane STTM hub is contained in Detailed Market Analysis.

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
24 Jan - 30 Jan 2016	4.21	3.75	4.91	3.59
% change from previous week	-7	-14	-32	-26
15-16 financial YTD	4.40	4.61	5.19	3.85
% change from previous financial YTD	26	43	45	71

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)
24 Jan - 30 Jan 2016	4.21	-	319
% change from previous week	-7	-	0
15-16 financial YTD	4.40	-	587
% 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)
24 Jan - 30 Jan 2016	3.75	3.22	26.84	205	198
% change from previous week	-14	-9	-67	-5	-5
15-16 financial YTD	4.61	4.28	31.46	238	232
% change from previous financial YTD	43	30	131	-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)
24 Jan - 30 Jan 2016	4.91	4.75	11.68	43	41
% change from previous week	-32	-36	17	-1	-9
15-16 financial YTD	5.19	5.30	8.84	63	64
% change from previous financial YTD	45	50	-36	0	2

Figure 5: Brisbane STTM

	Ex ante price ($/GJ)	Ex post price ($/GJ)	MOS payments ($000)	Ex ante quantity (TJ)	Ex post quantity (TJ)
24 Jan - 30 Jan 2016	3.59	3.50	2.27	80	79
% change from previous week	-26	-32	2	-2	-5
15-16 financial YTD	3.85	3.85	1.62	88	88
% change from previous financial YTD	71	86	8	-40	-40

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.

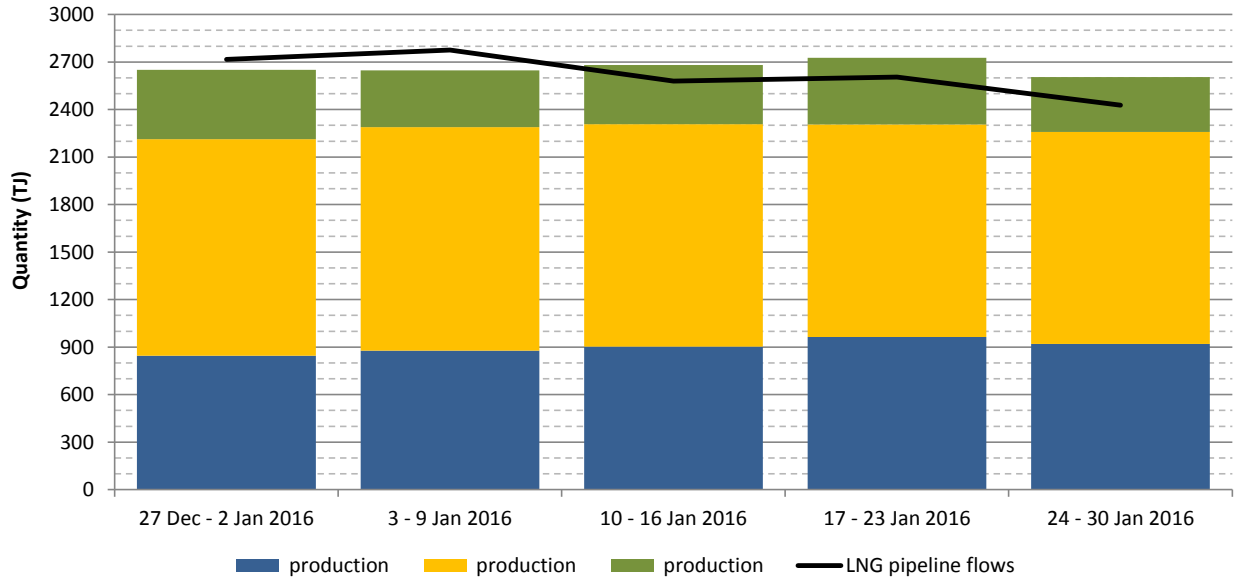
Detailed market analysis

Lower prices in the Brisbane STTM hub

As shown in Figure 1, the average weekly price in Brisbane was significantly lower than the previous week. This may be related to the significant decrease in deliveries to Curtis Island on the LNG export pipelines. Figure 6 shows that while production at Roma has decreased, the reduction in average LNG pipeline flows (shown by the black line) has been more marked over the month of January, reducing from 2775 TJ/day for the week ending 9 January to 2427 TJ/day over the current week.

Negative flows represent gas transported towards Queensland through the Moomba zone, with more gas received from the zone than that delivered on both pipelines. The QSN link is the 'Queensland to South Australia/New South Wales' section of the South West Queensland Pipeline (SWQP) which connects norther and southern Australian gas market on the east coast. Negative flows through the Moomba zone on the SWQP and Moomba to Sydney Pipeline (MSP) set new record daily average levels for the current week. The QSN Link and MSP Moomba flows averaged -276 TJ/day and -48 TJ/day respectively this week, also having the effect of supressing prices in Brisbane.

Figure 6: Average daily LNG production and pipeline flows



MOS in the STTMs

Figure 2.4 shows MOS requirements in Sydney due to over forecasting of 12 TJ on 24 January and 20.2 TJ on 25 January. This led to service payments of up to $89 332. The lower demand on the 25th also resulted in the ex post price falling by $1.11 to $2.90/GJ.

In Adelaide, overrun MOS was allocated on the Moomba to Adelaide Pipeline (MAP) for the 25 January gas day despite the total MOS decrease requirement on the pipeline being only 5.867 TJ. Figure 3.4 shows a significant cost of $58 522 for decrease MOS on the MAP for the 29 January gas day, despite a requirement of only 4.8 TJ.

Figure 4.4 shows MOS requirements in Brisbane due to over forecasting of 6.8 TJ on 25 January.

Higher flows on the Tasmanian Gas Pipeline

With the Basslink interconnector still out of service, GPG levels in Tasmania were high again this week (see Figure 5).

24 – 30 January 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[2] which is the schedule at which most gas is traded.

The main drivers[3] 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[4], 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

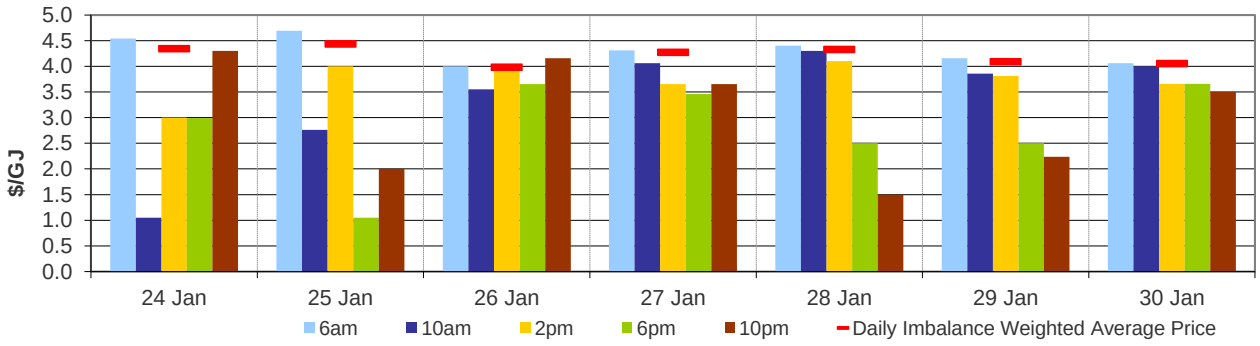
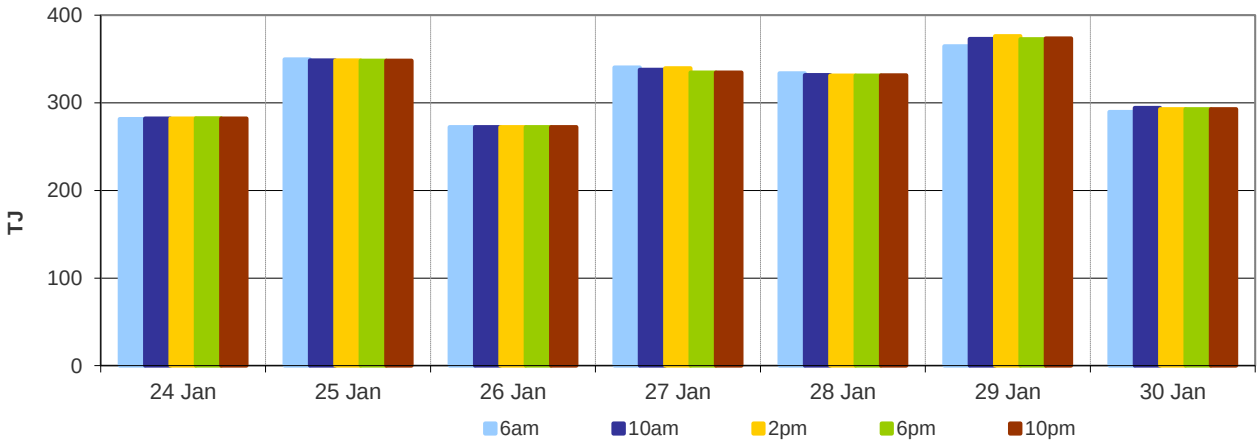


Figure 1.2: Demand forecasts



2 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.

3 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.

4 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

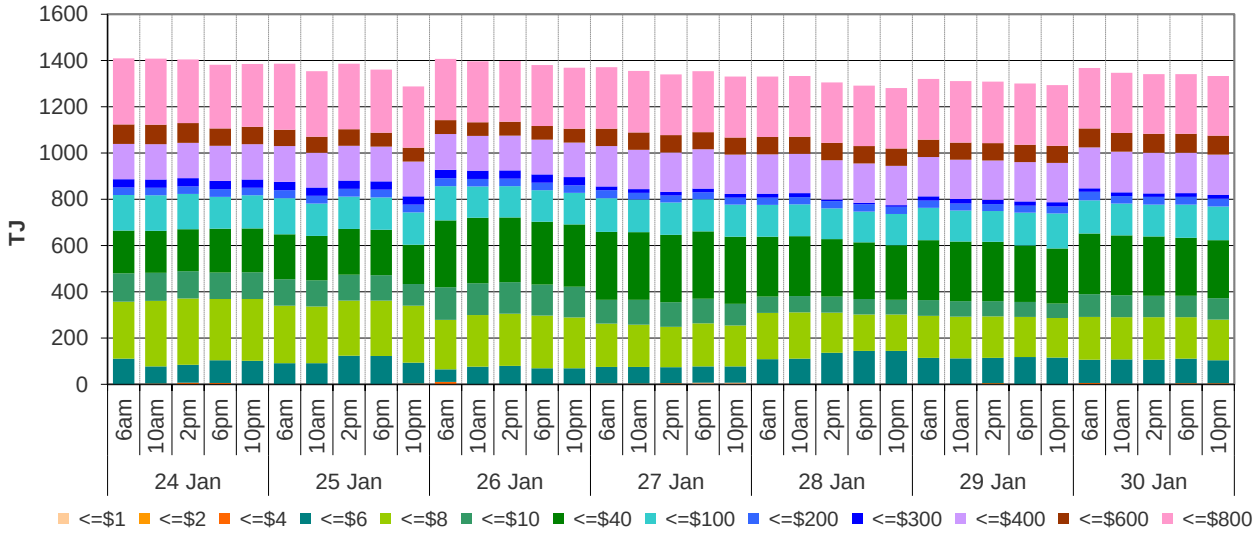


Figure 1.4: Withdrawal bids by price bands

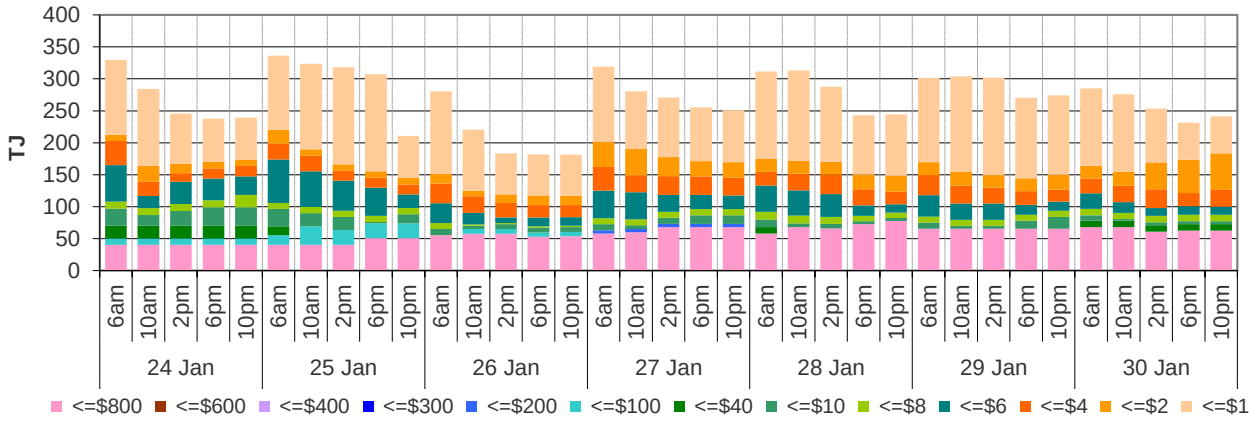
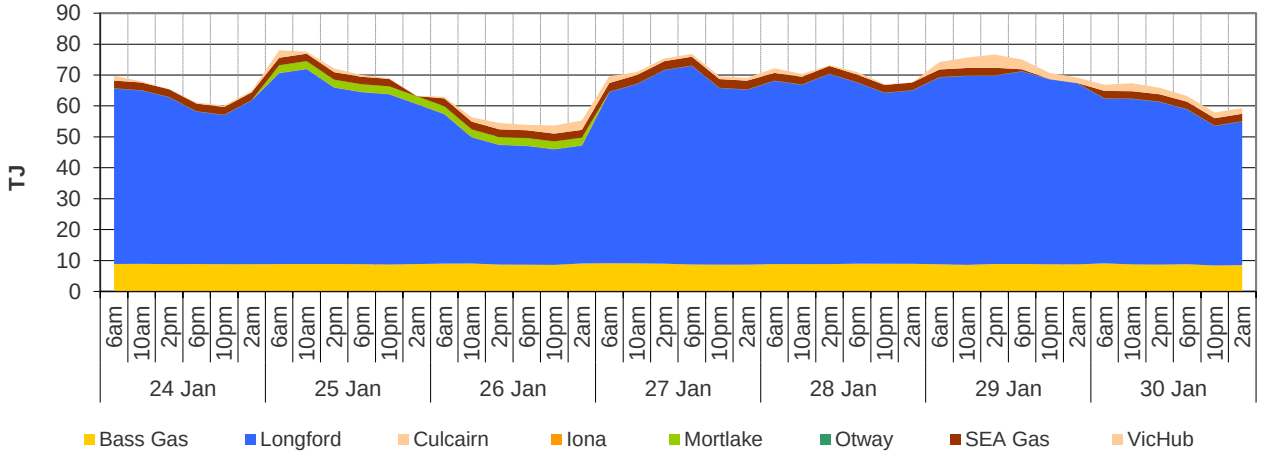


Figure 1.5: Metered Injections by System Injection Point



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.[5] 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.

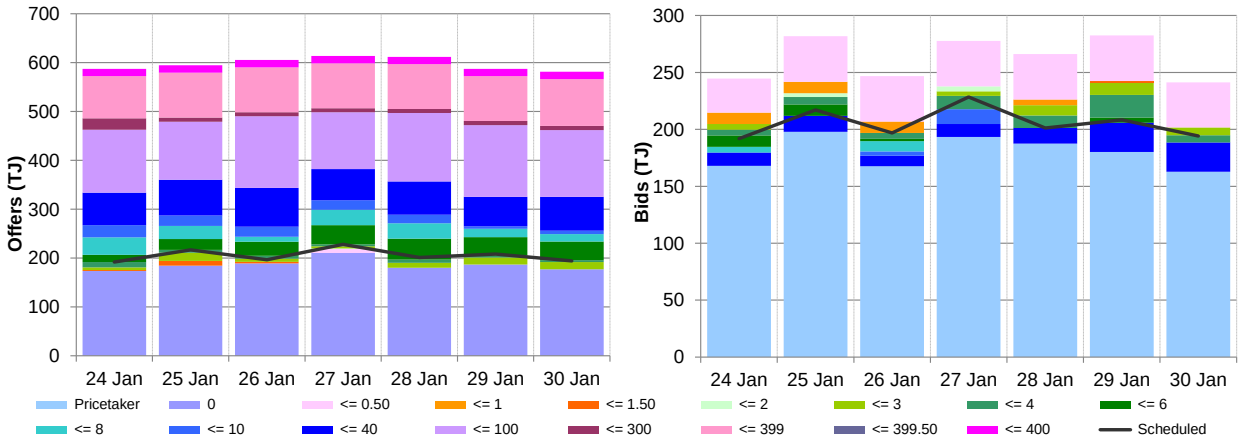
Market Operator Service balancing gas (MOS) payments arise because the amount of gas nominated on pipelines for delivery on a gas day will either exceed or fall short, by some amount, of the amount of gas consumed in the hub. In such circumstances, MOS payments are made to participants for providing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

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 ($/GJ)	4.01	4.01	2.90	3.53	4.25	4.05	3.52
Ex ante quantity (TJ)	192	217	197	228	201	208	194
Ex post price ($/GJ)	3.53	2.90	1.00	2.99	4.05	4.24	3.80
Ex post quantity (TJ)	180	189	189	220	198	214	197

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



5 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.

6 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)

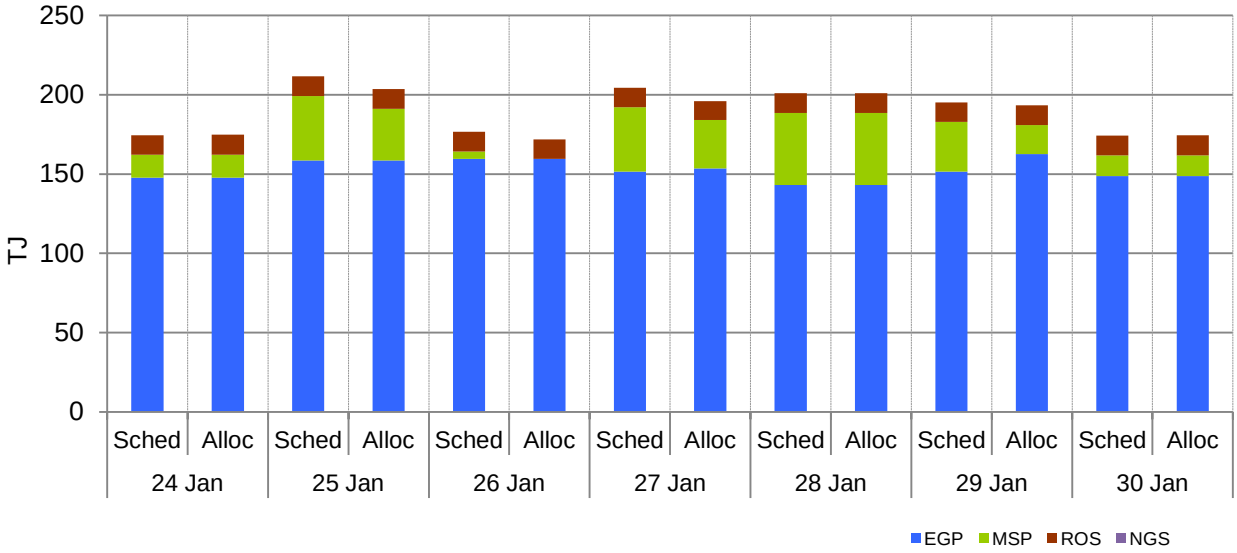
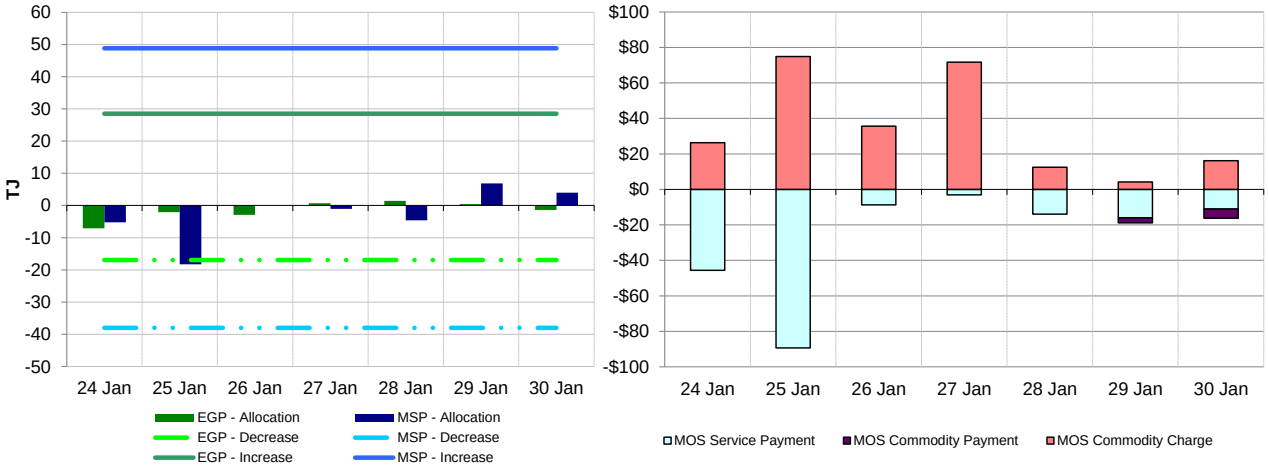


Figure 2.4: SYD MOS allocations (TJ), service payments and commodity payments/charges ($000)



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 ($/GJ)	6.59	5.03	4.92	4.70	4.65	4.33	4.12
Ex ante quantity (TJ)	38	49	37	47	48	49	36
Ex post price ($/GJ)	6.36	4.92	4.92	4.70	4.82	3.40	4.12
Ex post quantity (TJ)	36	40	37	47	51	40	38

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

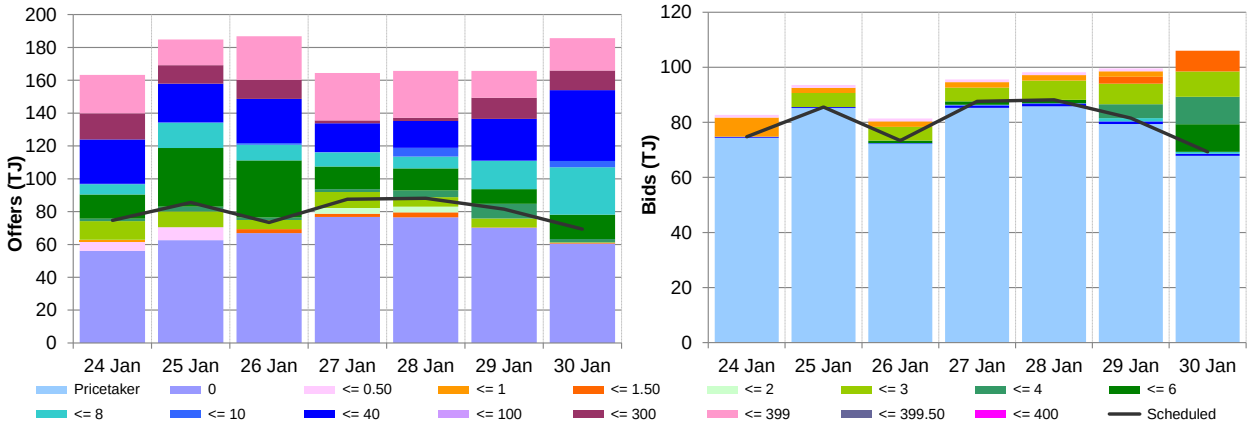


Figure 3.3: ADL net scheduled and allocated gas hub supply (excluding MOS)

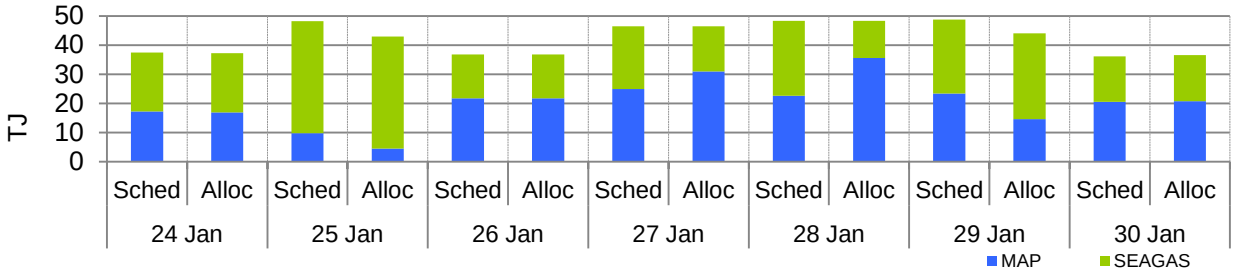
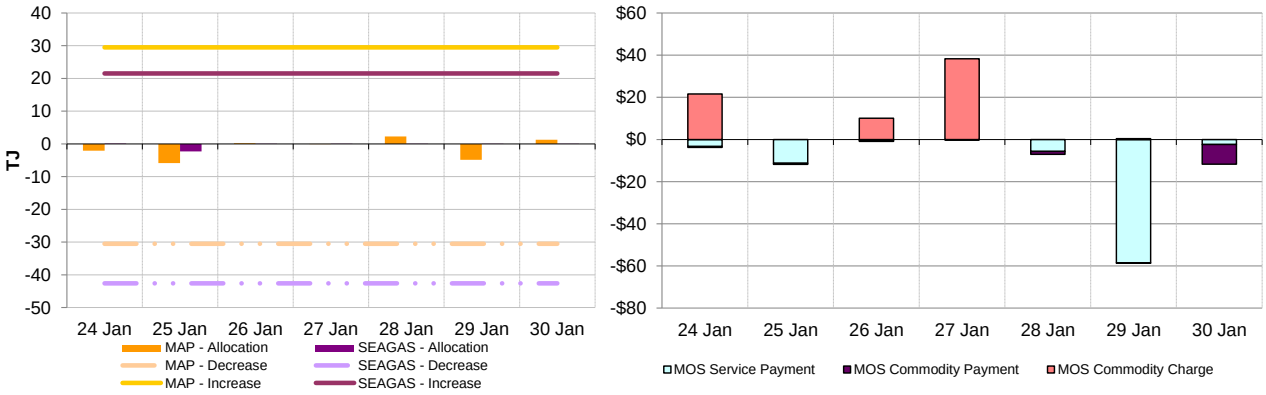


Figure 3.4: ADL MOS allocations (TJ), service payments and commodity payments/charges ($000)



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 ($/GJ)	3.90	4.73	2.21	2.21	2.21	3.85	6.00
Ex ante quantity (TJ)	75	86	73	88	88	82	69
Ex post price ($/GJ)	2.90	2.80	4.50	2.21	2.21	3.85	6.00
Ex post quantity (TJ)	73	79	77	86	88	81	71

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

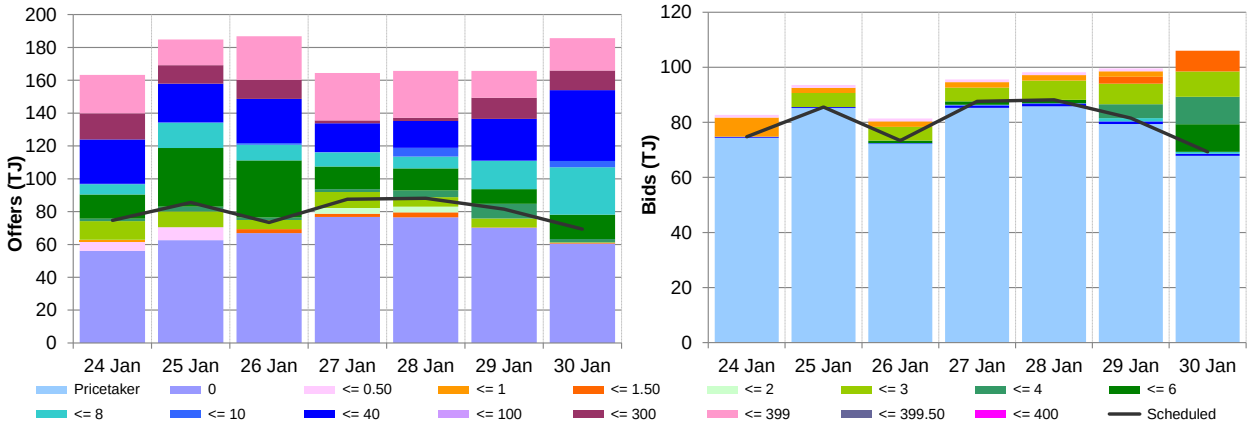


Figure 4.3: BRI net scheduled and allocated gas hub supply (excluding MOS)

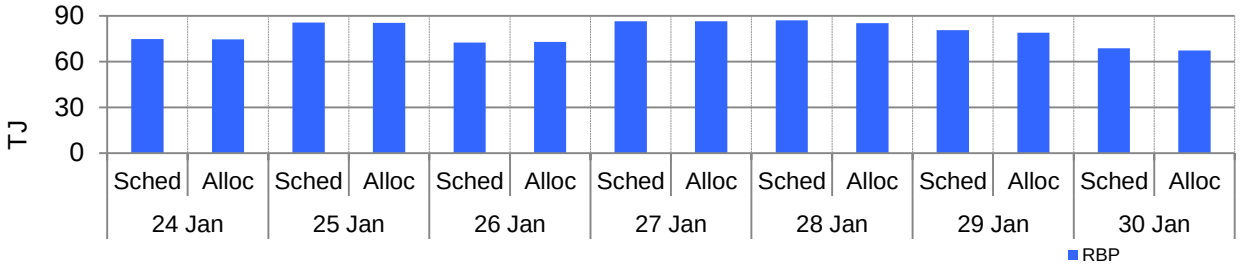
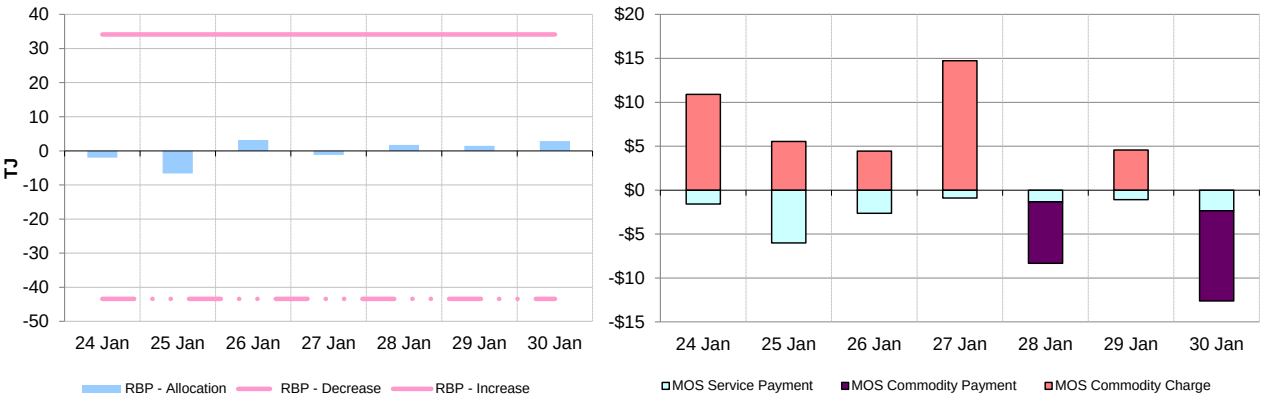


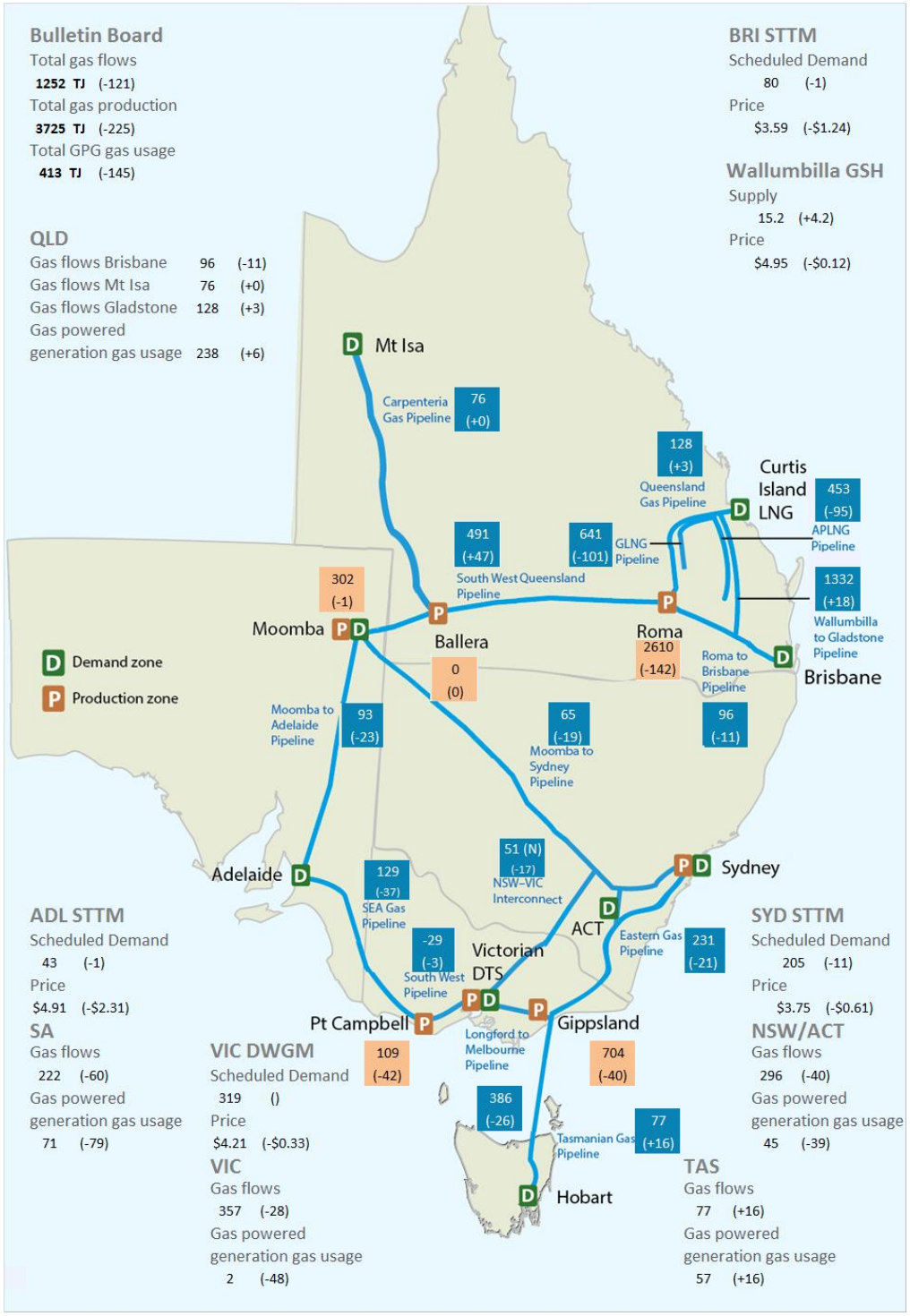
Figure 4.4: BRI MOS allocations (TJ), service payments and commodity payments/charges ($000)



5. National Gas Bulletin Board

Figure 5.1 shows average daily actual flows for the current week[7] from the Bulletin Board (changes from the previous week's average are shown in brackets). Average daily scheduled volumes and prices[8] 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)



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7 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.
Roma included export LNG production from October 2014 and LNG pipeline flows are shown from October 2015.

8 Wallumbilla supply is the average daily volume of gas 'traded', while price is a volume weighted average.

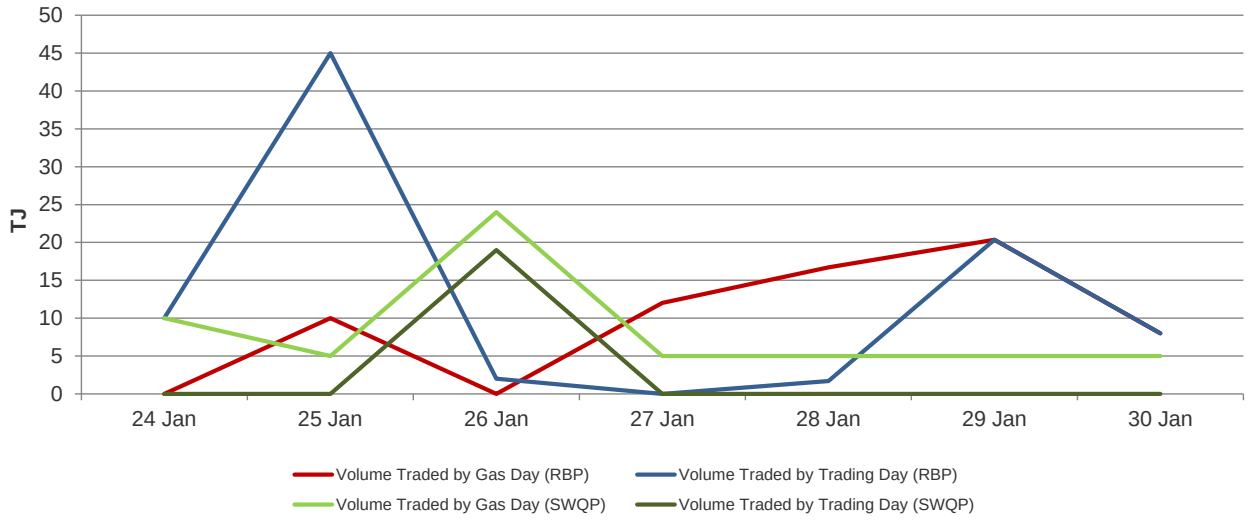
6. Gas Supply Hub

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[9] 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 11 trades this week at a volume weighted price of $4.95/GJ, with 87 TJ traded on the RBP ($5.09/GJ) and 19 TJ traded on the SWQP ($4.30/GJ). RBP trades consisted of daily day-ahead and balance-of-day products, while the trade on SWQP was balance-of-day.

Figure 6.1 shows volumes traded[10] on each gas day and trading day for the current week.

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



9 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.

10 Volumes shown for weekly products include the 'daily' volume for each relevant 'gas day', and the 'weekly' volume for each relevant 'trading day'.