Gas Market Report

AUSTRALIAN ENERGY REGULATOR

27 January – 2 February 2019

Weekly Summary

Figure 1 shows prices fell across the east coast, most significantly in Brisbane (12 percent). Demand remained relatively unchanged across the states, with larger changes in Victoria (increase of 12 percent) and Sydney (fall of 7 percent).

Overall demand for gas powered electricity generation fell this week, seen at Figure 5.1. While summer weather across the states persisted, temperatures were cooler overall from the previous week which had record maximum temperatures for the month in South Australia and Victoria.

The ACCC published Wallumbilla historic netback prices of $9.77/GJ for January, down from $11.20/GJ in December as Asian LNG spot prices fell.

Interestingly, there were 3 spread products traded between Moomba (MSP) and Wallumbilla (WAL) at around $7/GJ, the first time this product has been traded.

There was continued trade activity on the ASX for Victorian gas futures with 70 contracts traded for the month.

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)**.

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

	Victoria		Sydney		Adelaide		Brisbane	
	Price	Demand	Price	Demand	Price	Demand	Price	Demand
27 Jan - 02 Feb 2019	9.50	343	10.66	250	9.95	30	9.17	123
% change from previous week	-3	-12	-2	7	-4	-5	-12	2
18-19 financial YTD	9.61	561	9.96	247	9.89	60	9.74	80
% change from previous financial YTD	25	-7	20	-1	27	-2	35	-12

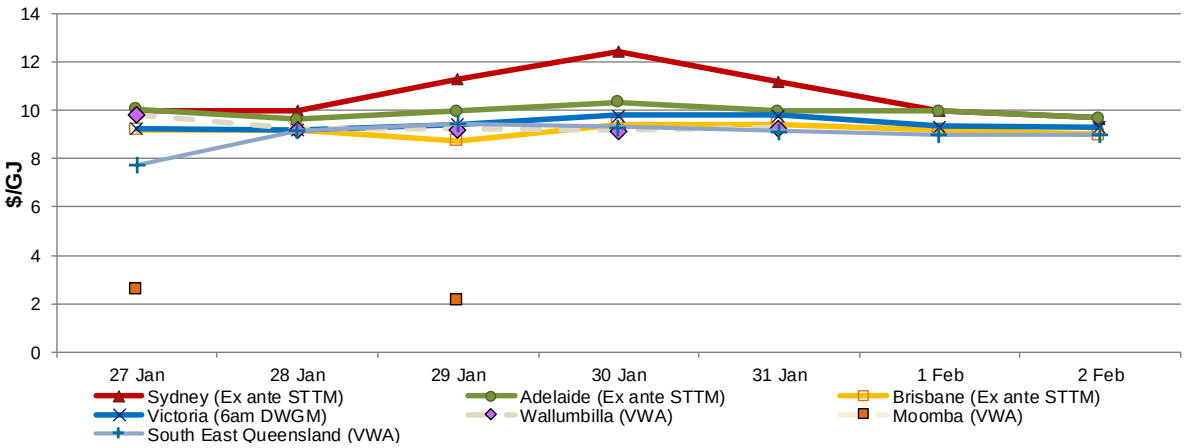
Figure 2 sets out price and demand information for the voluntary Wallumbilla and Moomba Gas Supply Hubs **(GSH)**.

Figure 2: Average prices and total quantity – Gas supply hub ($/GJ, TJ)[2]

	Moomba		South East Queensland		Wallumbilla	
	Price	Quantity	Price	Quantity	Price	Quantity
27 Jan - 02 Feb 2019	2.46	30	9.11	140	9.40	98
% change from previous week	-	-	-5	-7	-6	-14
18-19 financial YTD	7.11	91	9.72	6929	9.78	3855
% change from previous financial YTD	33	658	35	21	29	61

Figure 3 illustrates the daily prices in each gas market, as defined in figures 1 and 2.

Figure 3: Daily gas market prices ($/GJ)



1 Average daily quantities are displayed for each region. The weighted average daily imbalance price applies for Victoria.

2 The prices shown for the GSH in Moomba, South East Queensland and Wallumbilla are volume weighted average (VWA) prices for all products traded across the period. The total quantity contributing to the weighted price is displayed for these GSH. Reported values for Moomba are the aggregate of trades on the Moomba to Adelaide Pipeline (MAP) and the Moomba to Sydney Pipeline (MSP). Historic trades for RBP and SWQP are grouped under WAL, (including in-pipe trades on the RBP).

Figure 4 compares average ancillary market payments (VGM) and balancing gas service payments (STTM) against historical averages.

Figure 4: Average ancillary payments ($000)

	Victoria Ancillary Payments*	Sydney MOS	Adelaide MOS	Brisbane MOS
27 Jan - 02 Feb 2019	-	17.43	2.10	1.21
% change from previous week	-	38	-33	-20
18-19 financial YTD		20.19	4.44	1.18
% change from previous financial YTD		-36	-27	-54

* 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 5 shows the quantity and volume weighted prices of products traded in the Gas Supply Hub locations at Moomba, South East Queensland and Wallumbilla.

Figure 5: Gas supply hub products traded for the current week ($/GJ, TJ)

	Moomba		South East Queensland		Wallumbilla*	
	VWA price	Quantity	VWA price	Quantity	VWA price	Quantity
Balance of day	2.17	10.0	8.97	24.0	9.25	24.0
Daily	2.50	10.0	9.30	41.0	10.40	10.0
Day ahead	2.70	10.0	9.06	68.0	9.30	64.0
Weekly	-	-	9.00	7.0	-	-
Monthly	-	-	-	-	-	-
Total	**2.46**	**30.0**	**9.11**	**140.0**	**9.40**	**98.0**

* includes non-netted (off-market) trades.

Figure 6 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 6: Average daily LNG export pipeline and production flows (TJ)*

	APLNG	GLNG	QCLNG	Total
Production	1066	573	1266	2905
Export Pipeline Flows	1230	1011	1357	3597
% change from previous week (pipeline flows)	-17	14	9	-1
18-19 financial YTD Flows	1408	821	1270	3499

* Production quantities represent flows from facilities operated by APLNG, Santos and QGC. Gas from individual facilities may also supply the domestic market, other LNG projects or storage facilities.

Detailed market analysis

New South Wales

On 31 January, there was a record maximum temperature for the month of close to 40 degrees. **Figure 2.3** shows increased gas demand scheduled for 31 January was met by more gas from the Eastern Gas Pipeline.

Victoria

Figure 1 shows overall prices in Victoria slightly dropped following reduced demand. This corresponds with slightly cooler temperatures overall and the decreased need for gas powered electricity generation (fall by 27 percent), shown at **Figure 5.1**.

While overall temperatures were slightly cooler compared to the previous week, **Figure 1.2** shows higher demand forecasts on 29 and 30 January, with high demand for gas generation on those days.[3] This is associated with warmer temperatures of above 36 degrees in Melbourne on those respective days. Increased Victorian demand on those days was met by large injections from Iona gas storage and towards the end of the week the Eastern Gas Pipeline (via Vic Hub), depicted at **Figure 1.5**. While gas storage levels at Iona fell on average across the week compared to the previous week (393 TJ seen in **Figure 5.1)**, Iona storage levels at the end of the week were higher than in the prior week (16.1 PJ up from 15.8 PJ). On 2 February, Iona's gas storage level was approximately 62 percent full, a 2 percent increase from the storage level reported at the end of December 2018.

There was continued trade activity for Victorian gas futures on the ASX this month with 70 Victorian gas futures products traded, indicating a forward price of between $9.80-11.05/GJ for deliveries in 2019 and 2020. Each contract is denominated by a standardised gas quantity of 100 GJ/day. As of the end of January 2019, there were 497 gas futures contracts kept open for hedging or speculation for quarters in 2019 and 2020.

Queensland and Roma production

Figure 1 shows prices in Brisbane fell by 12 percent, despite a slight increase in gas demand. Corresponding with the fall in price, demand for gas powered electricity generation in Queensland fell by almost 10 percent, depicted at **Figure 5.1**.

There have been a number of record level production at Roma that have continued in January. There have been 18 instances across the month where output has exceeded 4 PJ a day. Of those instances, there have been 4 occasions where Roma production reached record levels, with 4085 TJ being the new record made on 25 January. Ramped up production at Roma corresponds with the continued high number of LNG cargoes exported at Gladstone, detailed below.

Wallumbilla netback price, Moomba trades and Gladstone LNG exports

The ACCC reported Wallumbilla historic netback prices of $9.77/GJ for January 2018 (down from $11.20/GJ in December)[4], which was higher than domestic price levels on the gas supply hub.

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[3] As temperatures exceeded 38 degrees in the CBD, gas usage for GPG in Victoria on 30 January was around 337 TJ, within the top 10 highest levels following records set during the previous week.

[4] The historical LNG netback prices published by the ACCC for any given month are based on Platts' JKM price assessments for LNG deliveries in that month. For example, an historical LNG netback price for September will be based on an average of JKM price assessments in respect of the month of September, which means that the netback price will be based on the JKM as reported between 16 July and 15 August of that year.

Interestingly, there were 3 Moomba trades of 10 TJ for $2.46/GJ this week. These low Moomba prices were linked to spreads valued around $7/GJ between Moomba and Wallumbilla. Further detail on how the low price was set at MSP is provided in section 6 at the end of this weekly report.

LNG export volumes increased notably in January, with 29 cargoes leaving Gladstone (up from 27 cargoes in December). The majority of cargoes from Gladstone are delivered to China, although cargoes may continue on route elsewhere.

Since all three Queensland export projects became fully operational, the average monthly export volume has been 26 cargoes, with the record export volumes occurring in December 2017 at 30 cargoes. Since August 2018, there have been high volumes of export cargoes above the average being shipped from Gladstone.

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

The main drivers[6] 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[7], 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)

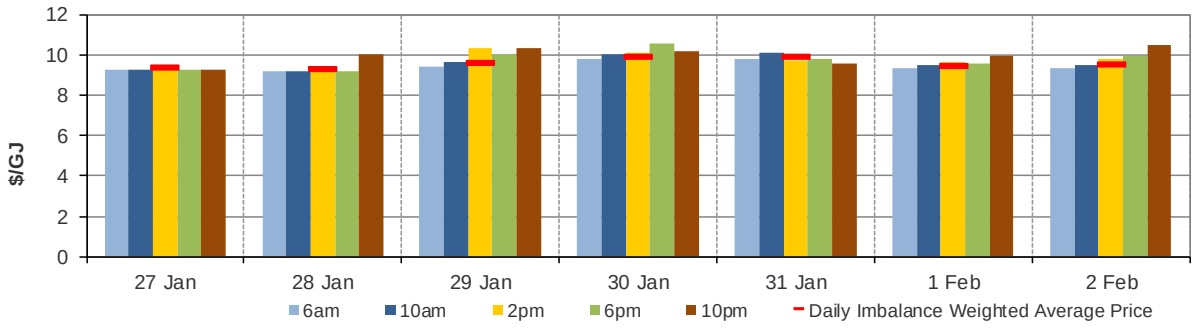
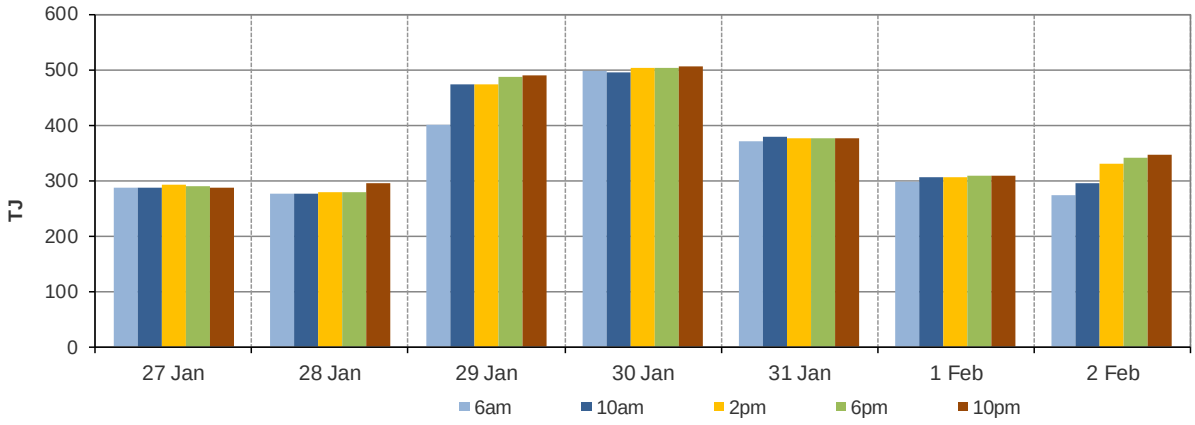


Figure 1.2: Demand forecasts (TJ)



5 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.

6 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.

7 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)

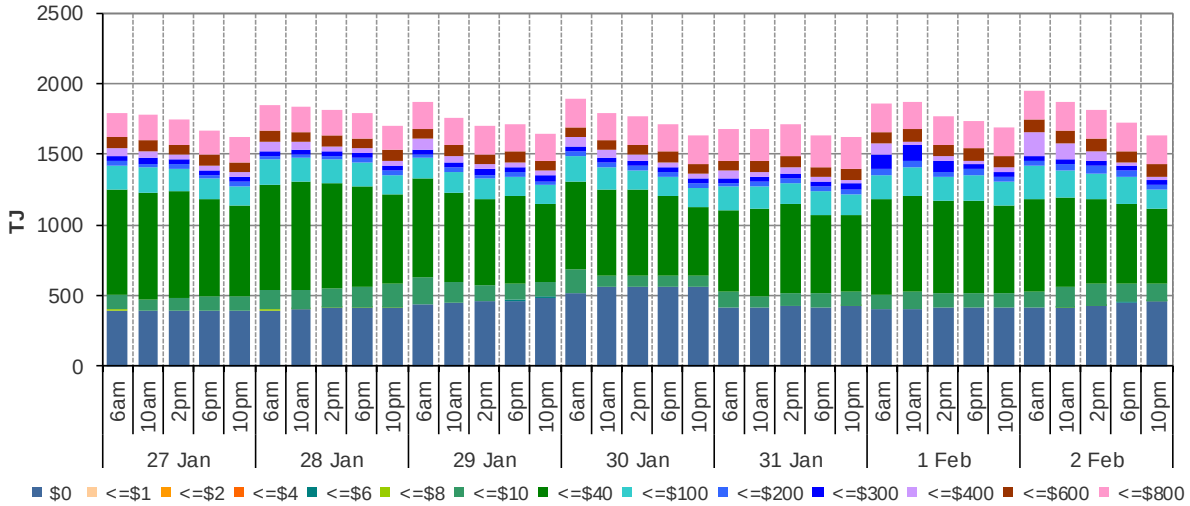


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Figure 1.4: Withdrawal bids by price bands (TJ)

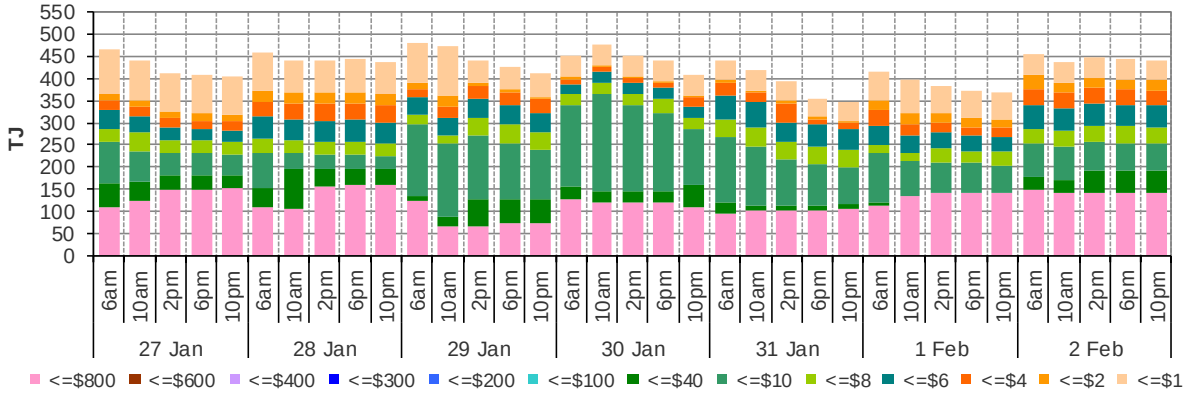
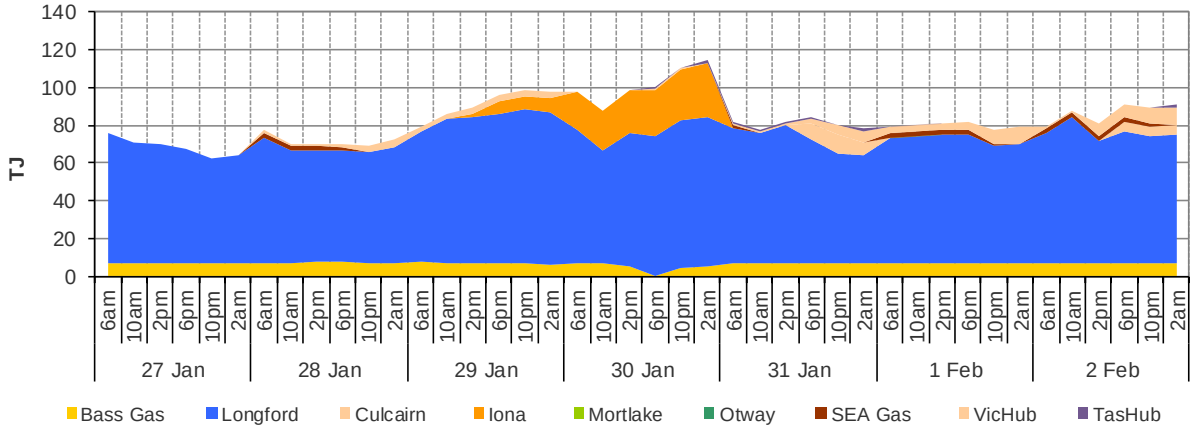


Figure 1.5: Metered Injections by System Injection Point (TJ)



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.[8] 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.

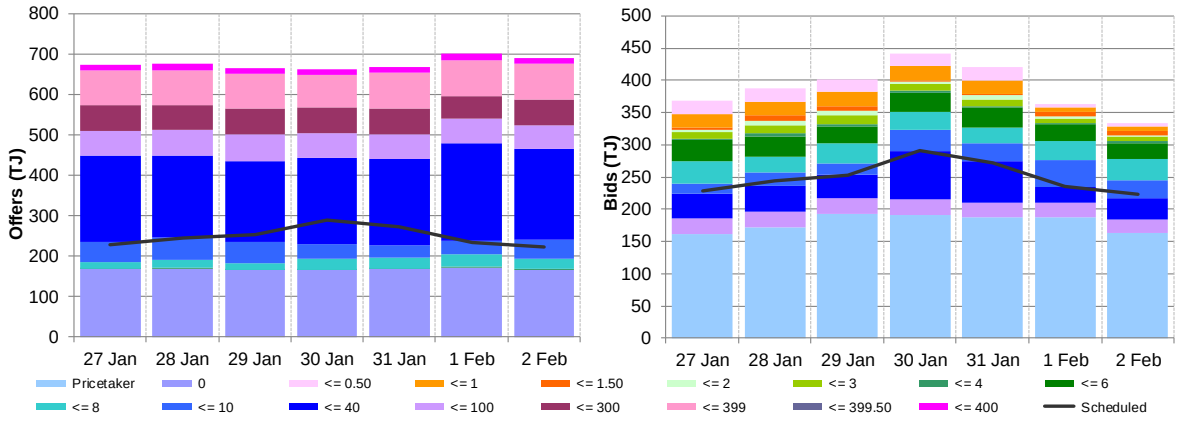
Market Operator Service balancing gas (MOS) payments arise because the amount of gas nominated on pipelines for delivery on a gas day will either exceed or fall short, by some amount, of the amount of gas consumed in the hub. In such circumstances, MOS payments are made to participants for providing a service to park gas on a pipeline or to loan gas from a pipeline to the hub.[9]

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 ($/GJ)	10.00	9.99	11.30	12.44	11.19	9.99	9.68
Ex ante quantity (TJ)	229	245	253	291	272	235	223
Ex post price ($/GJ)	9.56	9.80	11.50	13.00	11.19	10.19	9.89
Ex post quantity (TJ)	212	235	259	302	275	245	232

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



8 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.

9 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)

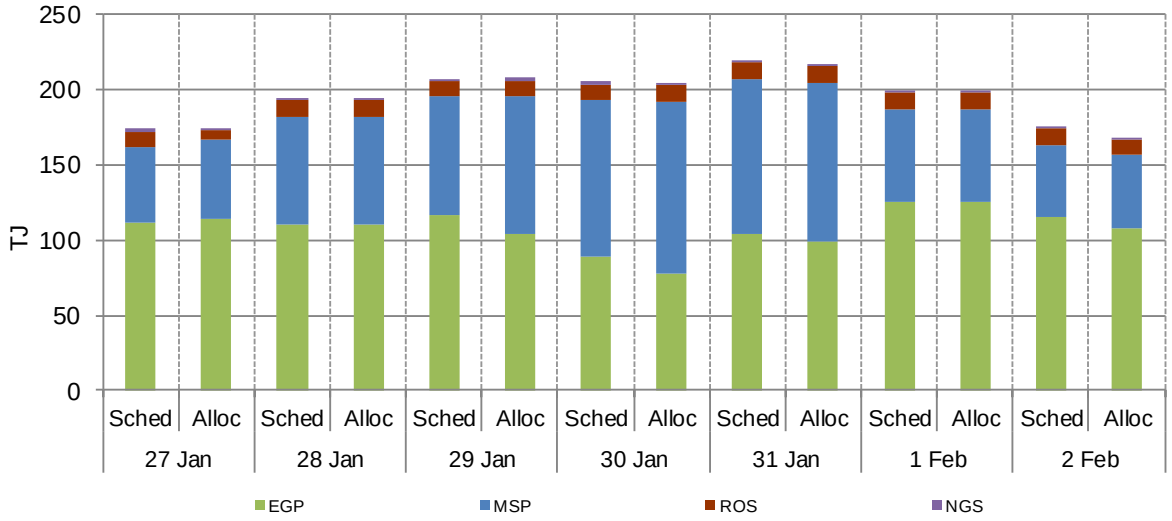
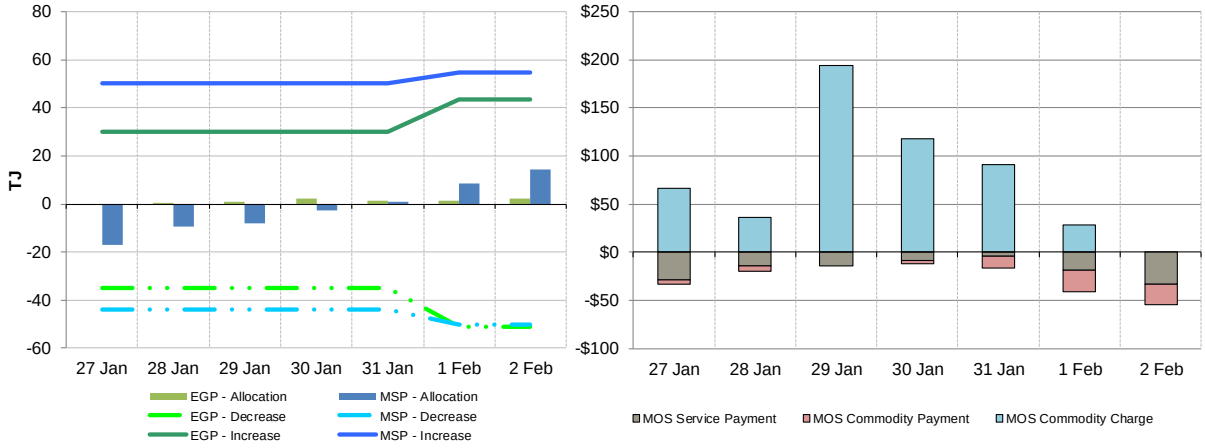


Figure 2.4: SYD MOS allocations (TJ), service payments and commodity payments/charges ($000)[10]



[10] 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 ($/GJ)	10.05	9.62	9.97	10.35	9.98	9.98	9.70
Ex ante quantity (TJ)	26	26	33	33	35	33	24
Ex post price ($/GJ)	9.98	10.39	11.00	11.00	10.14	9.98	10.18
Ex post quantity (TJ)	26	27	41	40	36	34	31

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

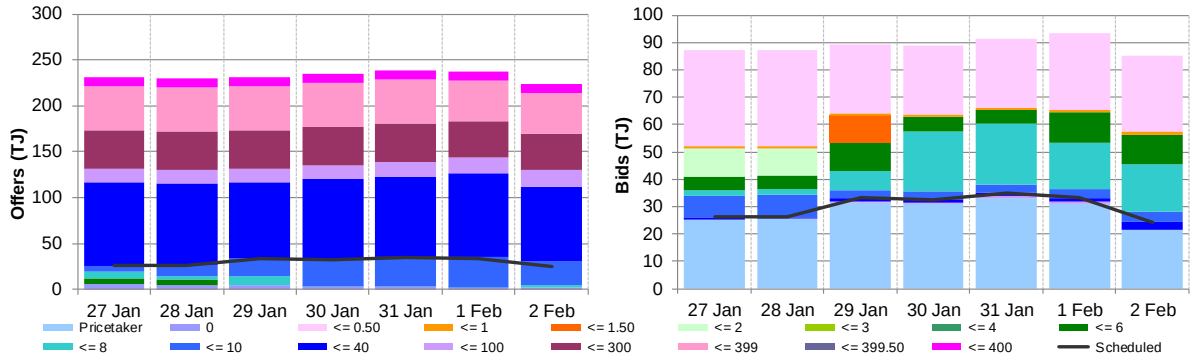


Figure 3.3: ADL net scheduled and allocated gas hub supply (excluding MOS)

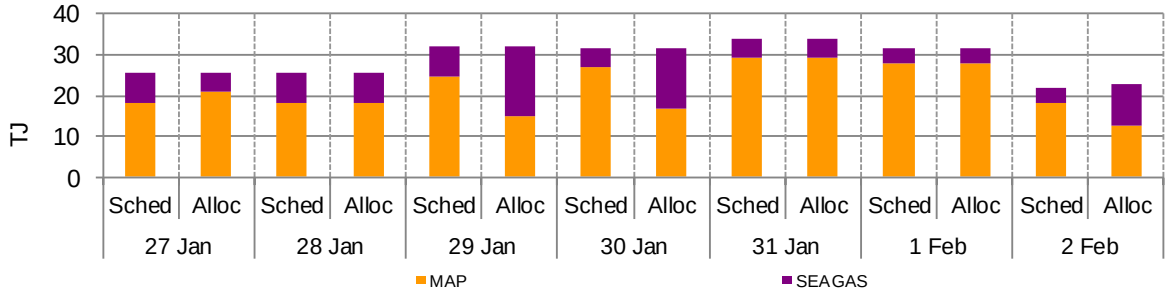
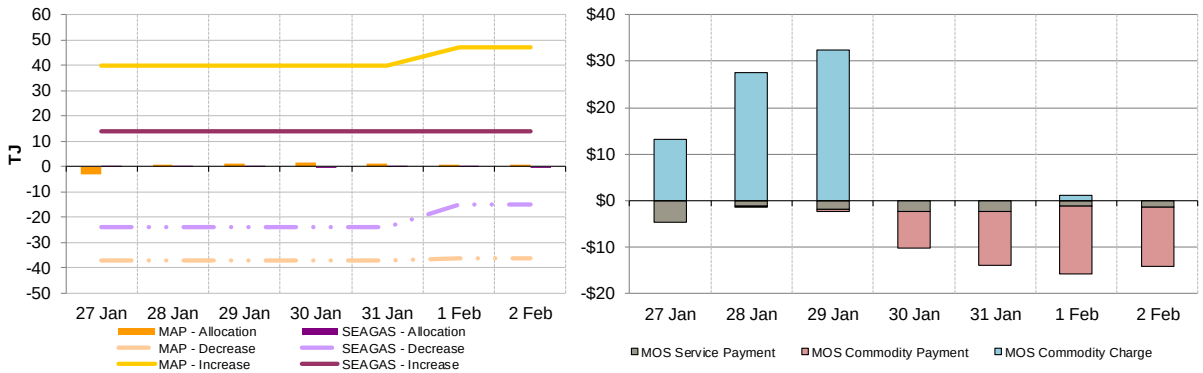


Figure 3.4: ADL MOS allocations (TJ), service payments and commodity payments/charges ($000)



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 ($/GJ)	9.20	9.19	8.75	9.42	9.43	9.19	9.00
Ex ante quantity (TJ)	115	116	131	130	130	127	113
Ex post price ($/GJ)	8.96	8.85	8.75	10.48	9.43	8.89	8.82
Ex post quantity (TJ)	109	112	130	135	130	123	110

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

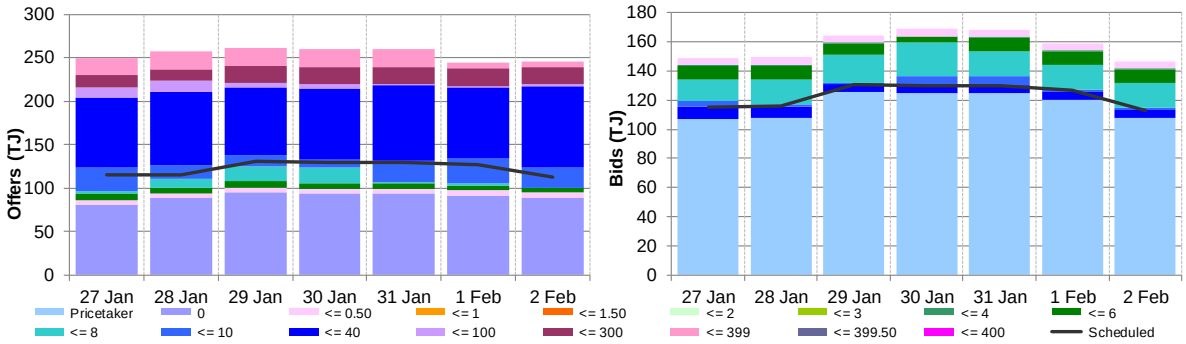


Figure 4.3: BRI net scheduled and allocated gas hub supply (excluding MOS)

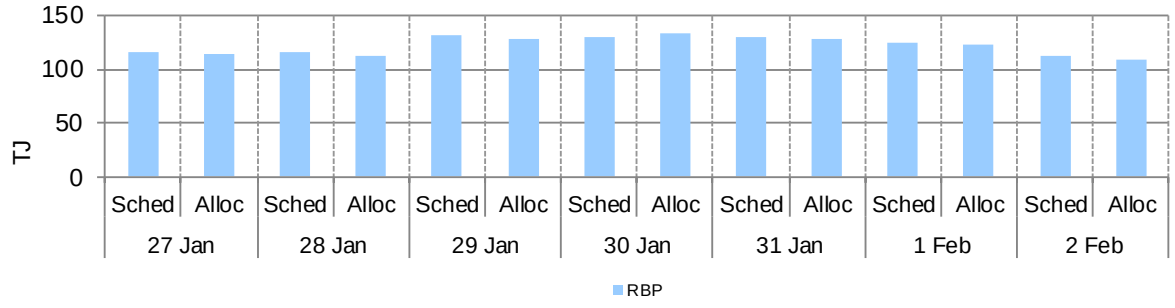
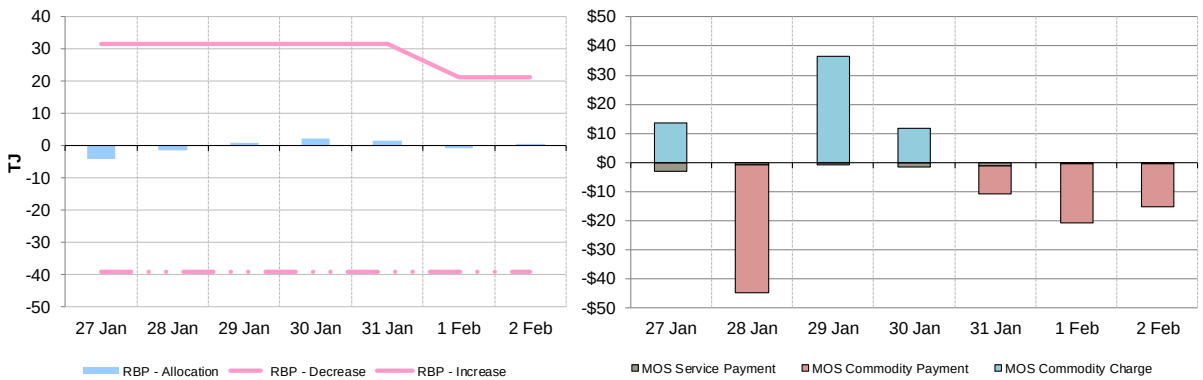


Figure 4.4: BRI MOS allocations (TJ), service payments and commodity payments/charges ($000)



5. National Gas Bulletin Board

Figure 5.1 shows average daily actual flows for the current week[11] from the Bulletin Board (changes from the previous week's average are shown in brackets). Average daily prices[12] 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)[13]

Totals	Current Week	Change (TJ)
Domestic gas flows	1355	(-151)
Export gas flows	3591	(-27)
Gas production	4976	(-212)
GPG gas usage	677	(-150)
Pipelines		
Queensland		
Gladstone		
APLNG	1227	(-262)
GLNG	980	(+96)
QGP	125	(-1)
WGP	1384	(+140)
Mt Isa		
CGP	84	(+4)
Brisbane		
RBP	125	(-3)
South West		
SWQP	38	(+19)
Wallumbilla		
BWP	131	(-10)
CRWP	253	(+66)
DDP	26	(-2)
QGP (WAL)	40	(+0)
RBP (WAL)	28	(0)
SWQP (WAL)	34	(+56)
New South Wales		
MSP	125	(+11)
EGP	144	(-19)
Victoria		
LMP	463	(-1)
SWP	-49	(-94)
South Australia		
MAP	179	(-18)
SEAGas	123	(-34)
Tasmania		
TGP	35	(+3)

Storage (held volume)		
Moomba LDB	23222	(-162)
Iona UGS	15855	(-393)
LNG Storage Dandenong	663	(-6)
Silver Springs	24965	(-93)
Roma UGS	32984	(-95)

11 **Domestic gas flows** are calculated as the total of: **SA** = MAP + SEAGAS; **VIC** = SWP + LMP + (flows towards Victoria on the 'NSW-VIC interconnect'); **NSW/ACT** = EGP + MSP; **TAS** = TGP; **QLD (Brisbane)** = RBP; **QLD (Mt Isa)** = CGP; and **QLD (Gladstone)** = QGP.
Export gas flows are calculated as the total of: the APLNG pipeline; the GLNG pipeline; and the Wallumbilla to Gladstone pipeline.
GPG volumes may include gas usage that does not show up on Bulletin Board pipeline flows.

12 GSH supply is the average daily volume of gas 'traded', while price is a volume weighted average. Optional hub services (for compression and redirection) are shown separately from commodity trades.

13 Net flows are shown for Bulletin Board facilities, as outlined in the user guide.

6. Gas Supply Hub

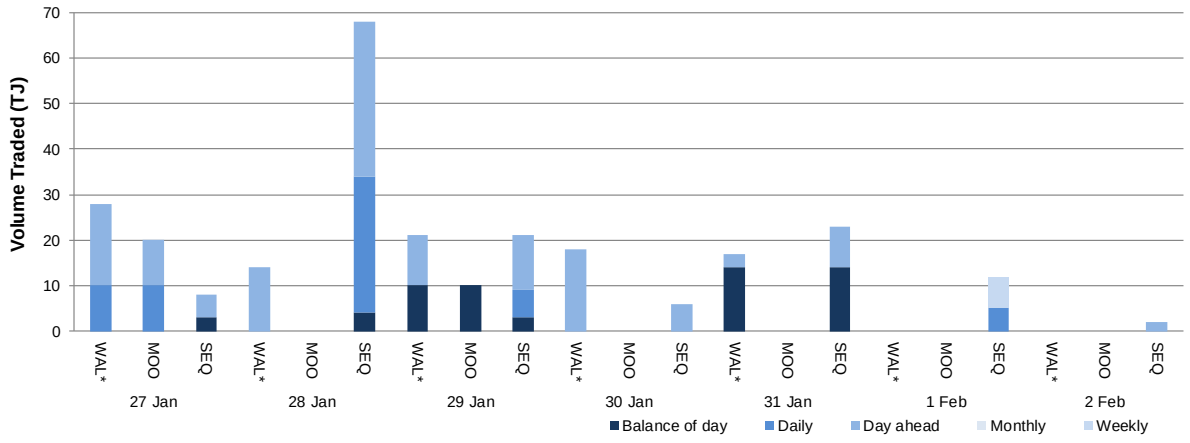
The gas supply hub was established at Wallumbilla in March 2014 to facilitate the voluntary trading of gas between participants, with products listed for sale and purchase at delivery points on three major connecting pipelines. There are separate products for each trading location and delivery period (daily, day-ahead, balance-of-day, weekly and monthly products).[14]

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. From March 2017, Wallumbilla transitioned into an optional hub services model, replacing the three trading locations (QGP, SWQP and RBP) with a single product at Wallumbilla **(WAL)** and an in-pipe RBP trading location at South East Queensland **(SEQ)**.

This week there were 51 trades for 268 TJ of gas at a volume weighted price of $8.47/GJ. These consisted of 3 trades at Moomba (30 TJ at $2.46/GJ), 18 trades at WAL (98 TJ at $9.40/GJ) and 30 trades at SEQ (140 TJ at $9.11/GJ). There were 9 spread products traded this week, with 3 of these for the Moomba to Wallumbilla spread. This was the first time the MSP-WAL spread product has been traded.[15] These were outright spread product trades[16] at $7-7.90/GJ, resulting in the weighted average price at Moomba being set at $2.46/GJ based on the value of the spreads and the reference price at Wallumbilla.

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.[17]

Figure 6.1: GSH traded quantities



Australian Energy Regulator
March 2019

14 Additional information on trading locations and available products is detailed in the user guide.

15 Previous spread trades have all been related to the Wallumbilla to South East Queensland spread product.

16 Outright spread trades involve a spread offer trading directly with a spread bid, rather than being matched with a commodity to create an implied spread. As such, the price at each location (MSP and WAL) is set against the Wallumbilla benchmark price. The WAL benchmark prices on 27 and 29 January were $10.40/GJ and $9.17/GJ respectively.

17 Non-netted (off-market) trades, allowing the selection of specific delivery point at a trading location, are included with other Wallumbilla trades (WAL*).