

30 December – 5 January 2019

Weekly Summary

Figure 1 shows prices remained largely unchanged across the east coast, despite an overall increase in gas demand associated with warmer summer weather. There were notable increases in gas demand in Brisbane (50 percent) and Sydney (10 per cent). Corresponding to this, gas demand for electricity generation increased significantly in Queensland (117 percent) and New South Wales (169 percent).

There have been a number of record levels of production at Roma in December where output has exceeded 4 PJ a day. This corresponds with the continued high number of LNG cargoes being exported at Gladstone this month.

The ACCC published Wallumbilla netback prices of \$11.20/GJ for December, down slightly from \$12.50/GJ in November. This occurred as high LNG spot prices close to \$12/GJ persisted across international markets.

Victorian gas futures traded on the ASX have continued to gain traction in December with 462 open interest contracts available for speculation and hedging. This marks the continual development of the market as there were no futures contracts traded this time last year and there was very little activity on ASX Victorian gas futures prior to April 2018.

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 publishes 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
30 Dec - 05 Jan 2019	9.40	274	9.62	191	9.67	42	9.40	107
% change from previous week	-1	5	2	10	-4	9	-4	50
18-19 financial YTD	9.61	592	9.86	249	9.84	64	9.74	73
% change from previous financial YTD	29	-7	22	-2	28	-2	38	-15

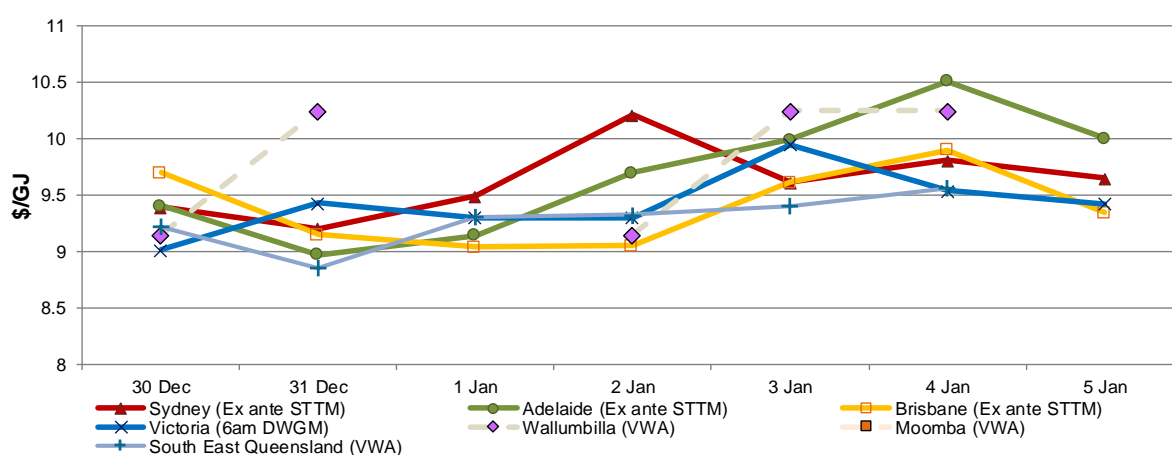
Figure 2 sets out price and demand information for the voluntary Wallumbilla and Moomba Gas Supply Hubs (GSH).

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

	Moomba		South East Queensland		Wallumbilla	
	Price	Quantity	Price	Quantity	Price	Quantity
30 Dec - 05 Jan 2019	-	-	9.35	169	9.57	419
% change from previous week	-	-	0	132	5	598
18-19 financial YTD	9.40	61	9.74	6317	9.78	3345
% change from previous financial YTD	76	408	38	24	32	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
30 Dec - 05 Jan 2019	-	19.39	6.65	2.39
% change from previous week	-	90	85	173
18-19 financial YTD		21.19	4.60	1.16
% change from previous financial YTD		-36	-28	-56

* 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	-	-	9.19	23.0	-	-
Daily	-	-	9.40	80.0	10.04	156.0
Day ahead	-	-	9.35	66.0	9.83	53.0
Weekly	-	-	-	-	9.15	210.0
Monthly	-	-	-	-	-	-
Total	-	-	9.35	169.0	9.57	419.0

* 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	1492	892	1734	4118
Export Pipeline Flows	1591	892	1305	3789
% change from previous week (pipeline flows)	-1	8	-4	0
18-19 financial YTD Flows	1400	811	1267	3477

* 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

Figure 5.1, shows demand for gas powered electricity generation increased in New South Wales (169 percent). This was associated with warmer summer weather above 30 degrees across the week and the higher demand for cooling. On 5 January, more gas units were turned on for electricity generation as temperatures reached close to 38 degrees.

Victoria

Similarly, there were warmer temperatures in Melbourne towards the end of the week (42 degree maximum temperature on 4 January). Corresponding with this increased demand for cooling, several gas units for electricity generation were turned on. **Figure 1.5** shows higher Victorian demand was partly met by large injections from Longford and Mortlake.

As shown in **Figure 5.1**, Iona storage levels increased by 1155 TJ across the week. On 5 January, Iona storage level was at 15 863 TJ being approximately 60 percent full (26 PJ nameplate rating). During these shoulder periods, the filling of Iona storage facility is typical ahead of winter where gas supply from Iona is relied upon to meet Victorian demand.

There were 44 Victorian gas futures products traded throughout December, indicating a forward price of between \$10.30-11.14/GJ for deliveries in 2019. Each contract is denominated by a standardised gas quantity of 100 GJ/day. As of the end of December 2018, there were 462 gas futures contracts kept open for hedging or speculation. This marks a continued development from the 449 open contracts recorded at the end of November. In comparison with last year, there were no open contracts recorded at the end of December. Activity on ASX Victorian gas futures only gained traction in August 2018, with 68 contracts being traded that month for quarters in 2018 and 2019.

Queensland and Roma Production

Figure 1 shows a 50 percent increase in Brisbane gas demand. Corresponding with this, demand for gas powered electricity generation more than doubled in Queensland (see figure 5.1) following warmer summer weather above 30 degrees throughout the week.

There have been a number of record level production days at Roma in December. Since early December, there have been numerous occasions where output has exceeded 4 PJ a day.³ Ramped up production at Roma corresponds with the continued high number of LNG cargoes exported at Gladstone, detailed below.

Wallumbilla netback prices and Gladstone LNG exports

The ACCC reported Wallumbilla netback prices of \$11.20/GJ for December 2018 which was higher than domestic prices in short-term markets. LNG export volumes fell slightly in December, alongside lower international LNG prices, with 27 cargoes leaving Gladstone (down from 28 cargoes in November). 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.

³ As at 18 February 2019, there had been almost 30 occasions where daily production at Roma exceeded 4 PJ.

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.

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

Figure 1.1: Prices by schedule (\$/GJ)

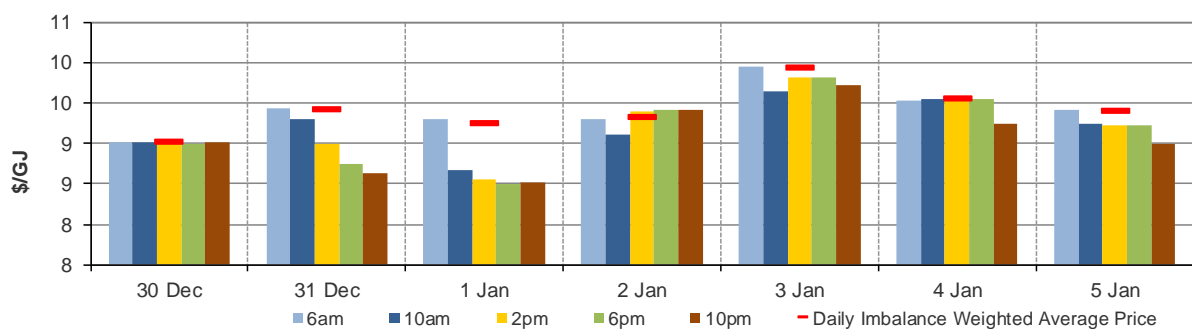
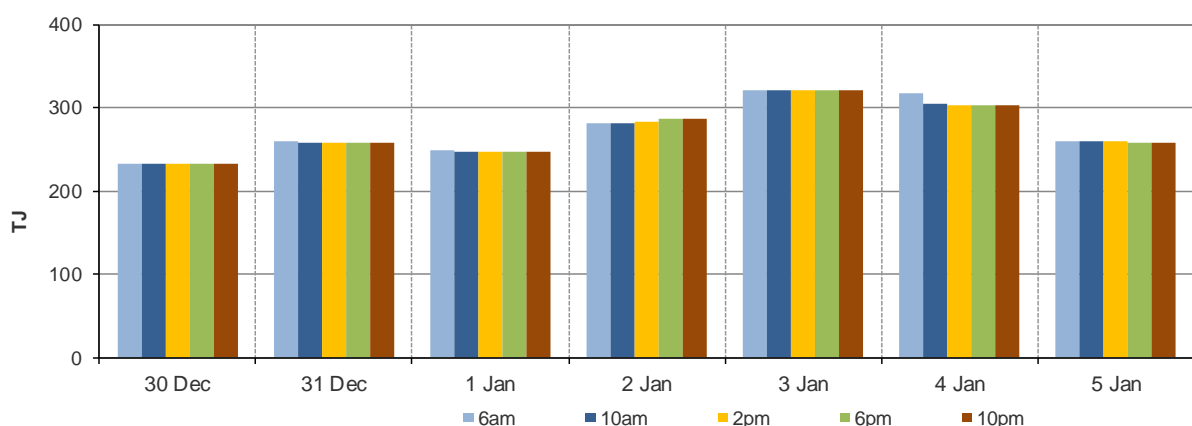


Figure 1.2: Demand forecasts (TJ)



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 (TJ)

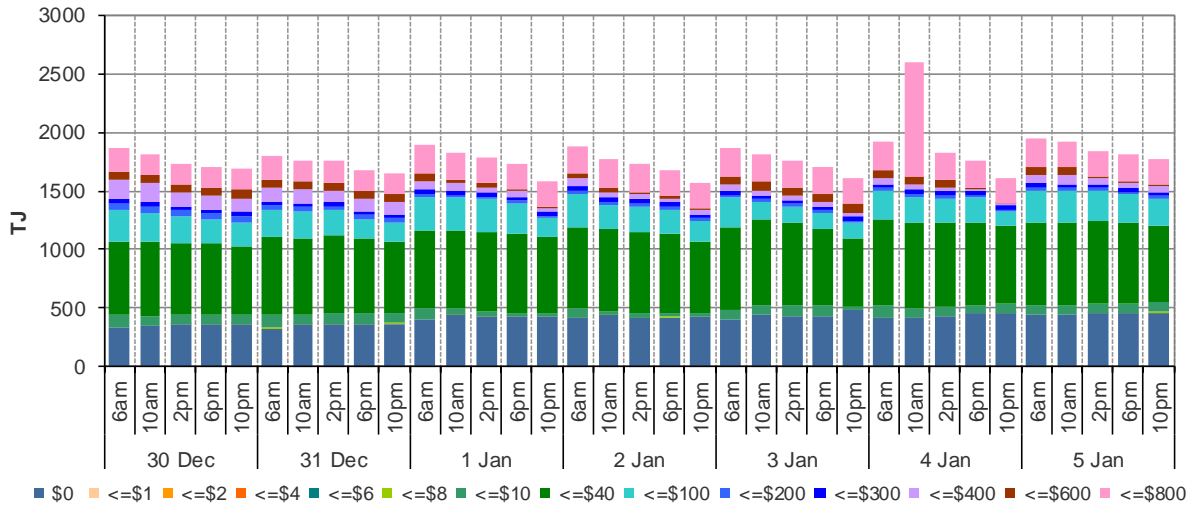


Figure 1.4: Withdrawal bids by price bands (TJ)

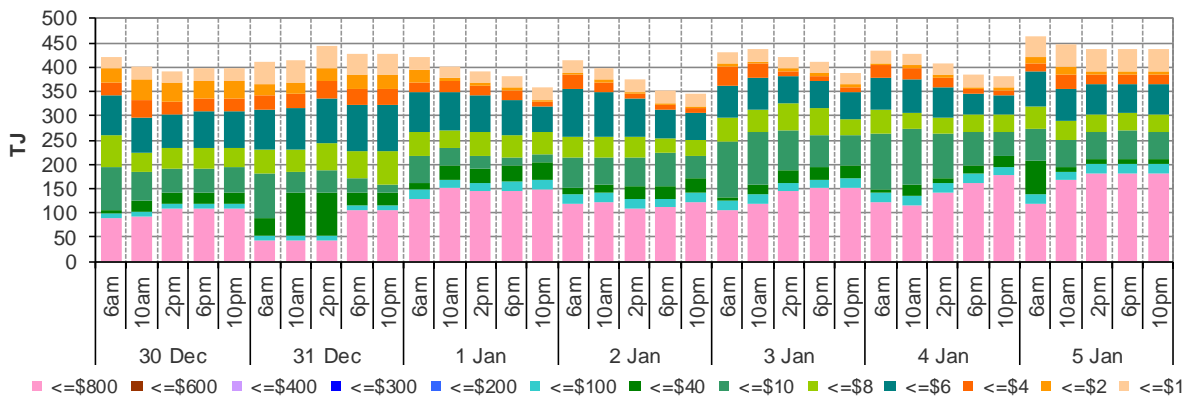
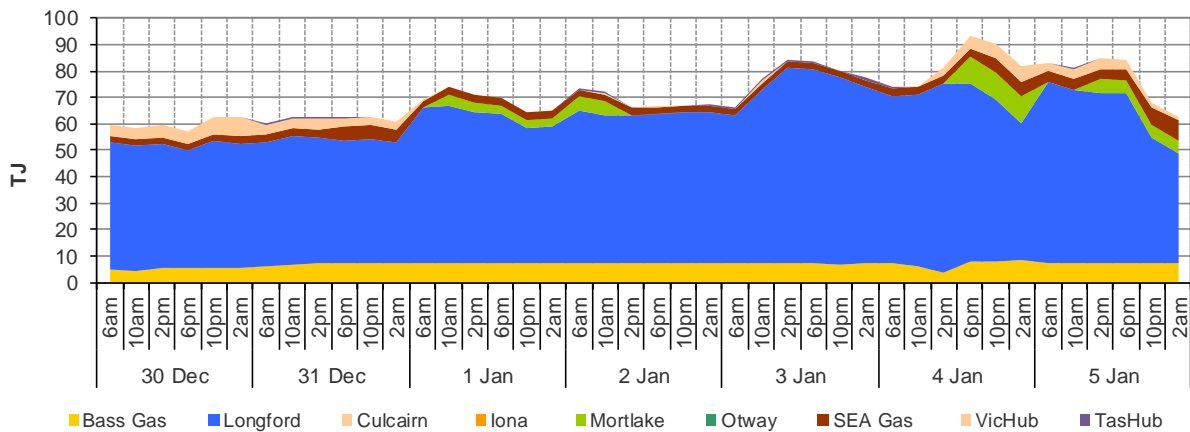


Figure 1.5: Metered Injections by System Injection Point (TJ)



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.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](#).

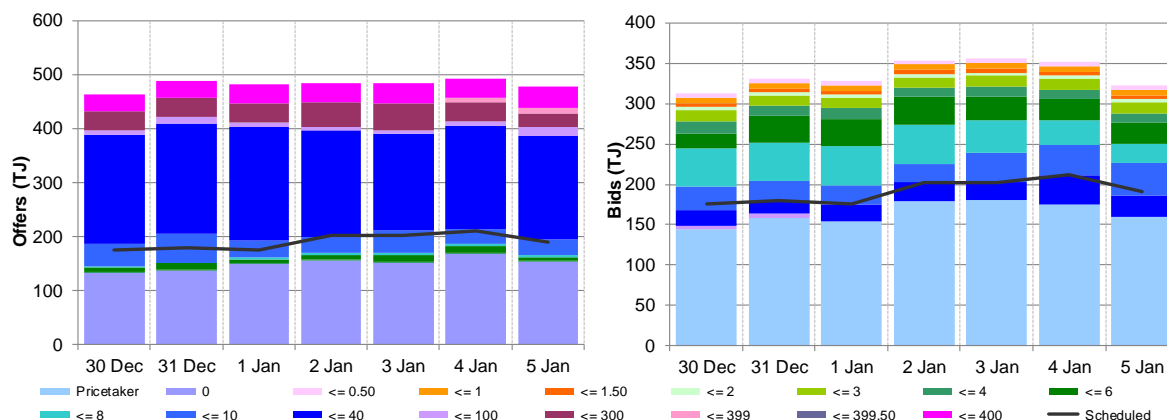
Market Operator Service balancing gas (MOS) payments arise because the amount of gas nominated on pipelines for delivery on a gas day will either exceed or fall short, by some amount, of the amount of gas consumed in the hub. In such circumstances, MOS payments are made to participants for providing 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)	9.39	9.20	9.49	10.21	9.61	9.81	9.65
Ex ante quantity (TJ)	175	180	175	202	203	211	191
Ex post price (\$/GJ)	9.39	9.06	8.76	9.53	9.43	9.67	9.45
Ex post quantity (TJ)	171	170	161	192	190	205	183

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)

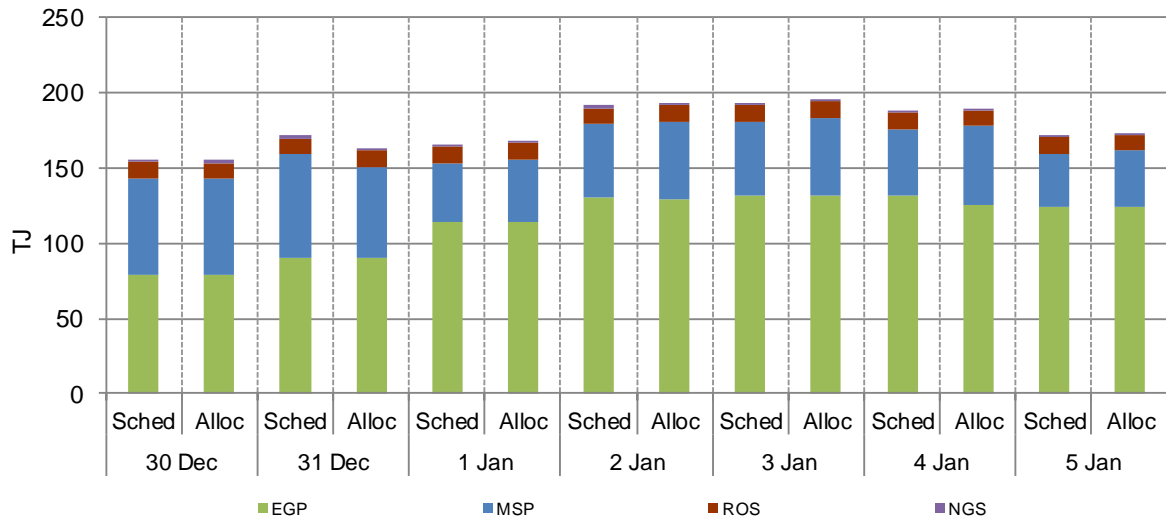
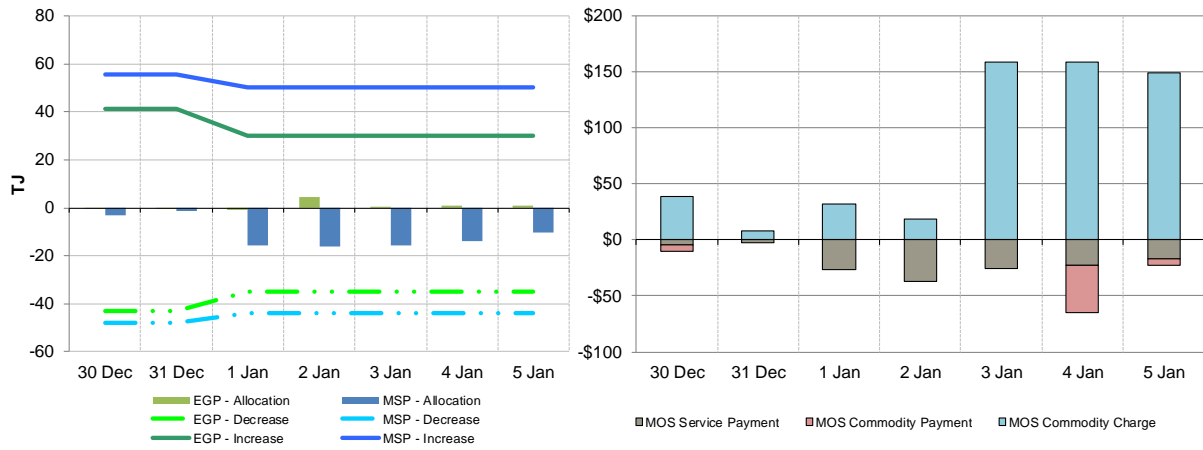


Figure 2.4: SYD MOS allocations (TJ), service payments and commodity payments/charges (\$000)⁹



⁹ 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)	9.40	8.97	9.14	9.70	9.99	10.51	10.00
Ex ante quantity (TJ)	39	0	42	46	43	44	41
Ex post price (\$/GJ)	9.15	0.00	8.94	9.52	9.60	10.51	10.00
Ex post quantity (TJ)	36	0	37	44	42	44	39

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

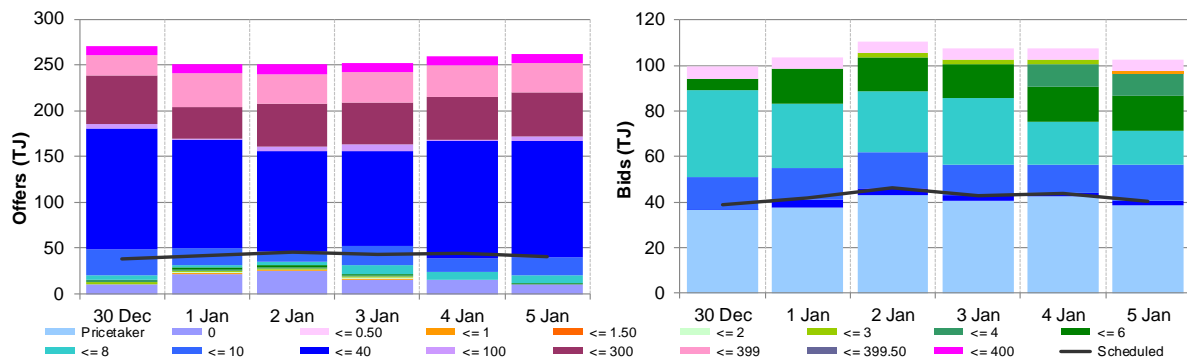


Figure 3.3: ADL net scheduled and allocated gas hub supply (excluding MOS)

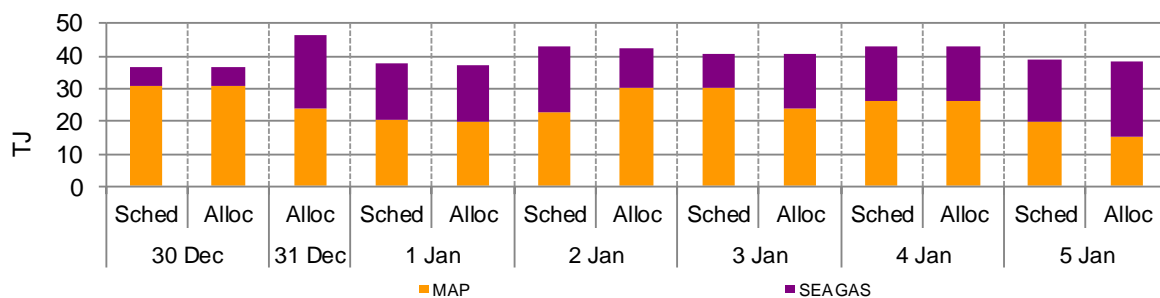
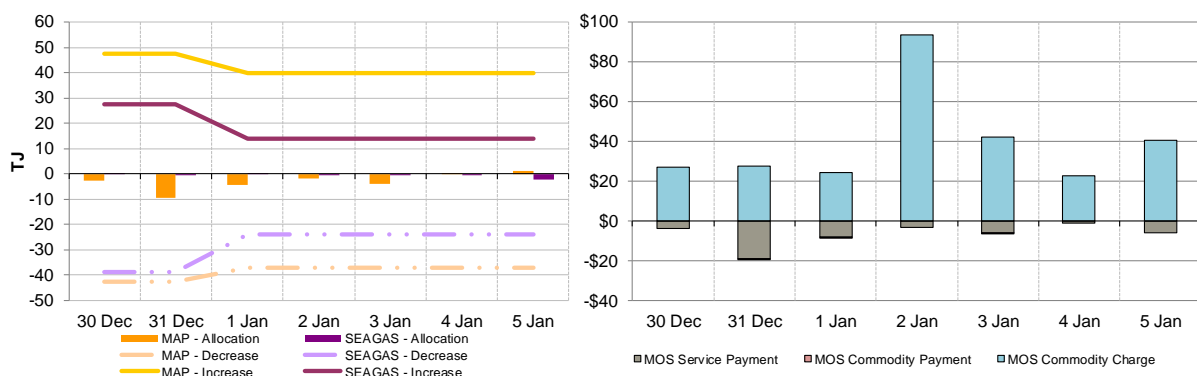


Figure 3.4: ADL MOS allocations (TJ), service payments and commodity payments/charges (\$000)



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)	9.70	9.15	9.04	9.05	9.61	9.90	9.34
Ex ante quantity (TJ)	68	98	106	125	126	123	105
Ex post price (\$/GJ)	9.35	9.05	8.26	8.80	9.61	9.53	9.31
Ex post quantity (TJ)	66	95	98	117	122	119	100

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

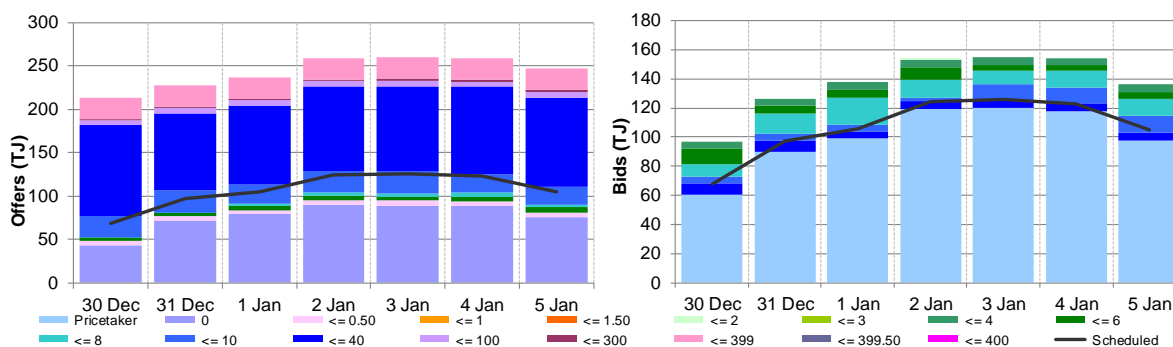


Figure 4.3: BRI net scheduled and allocated gas hub supply (excluding MOS)

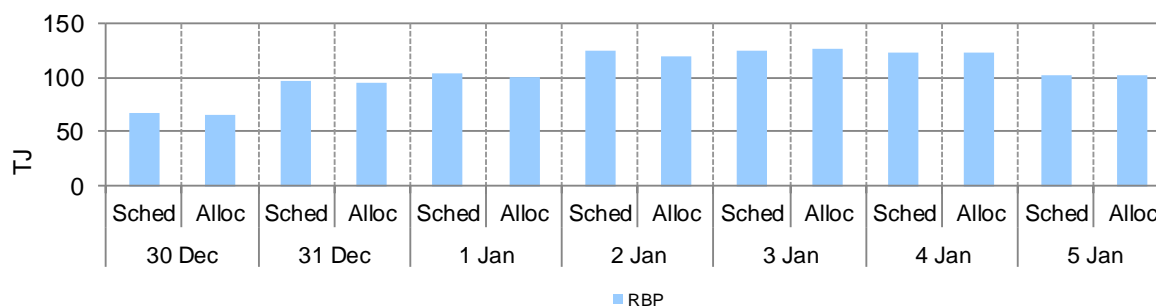
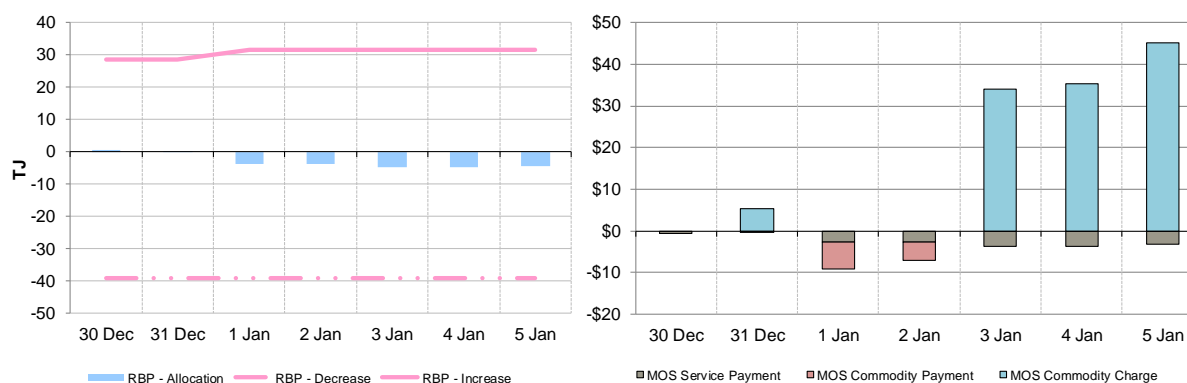


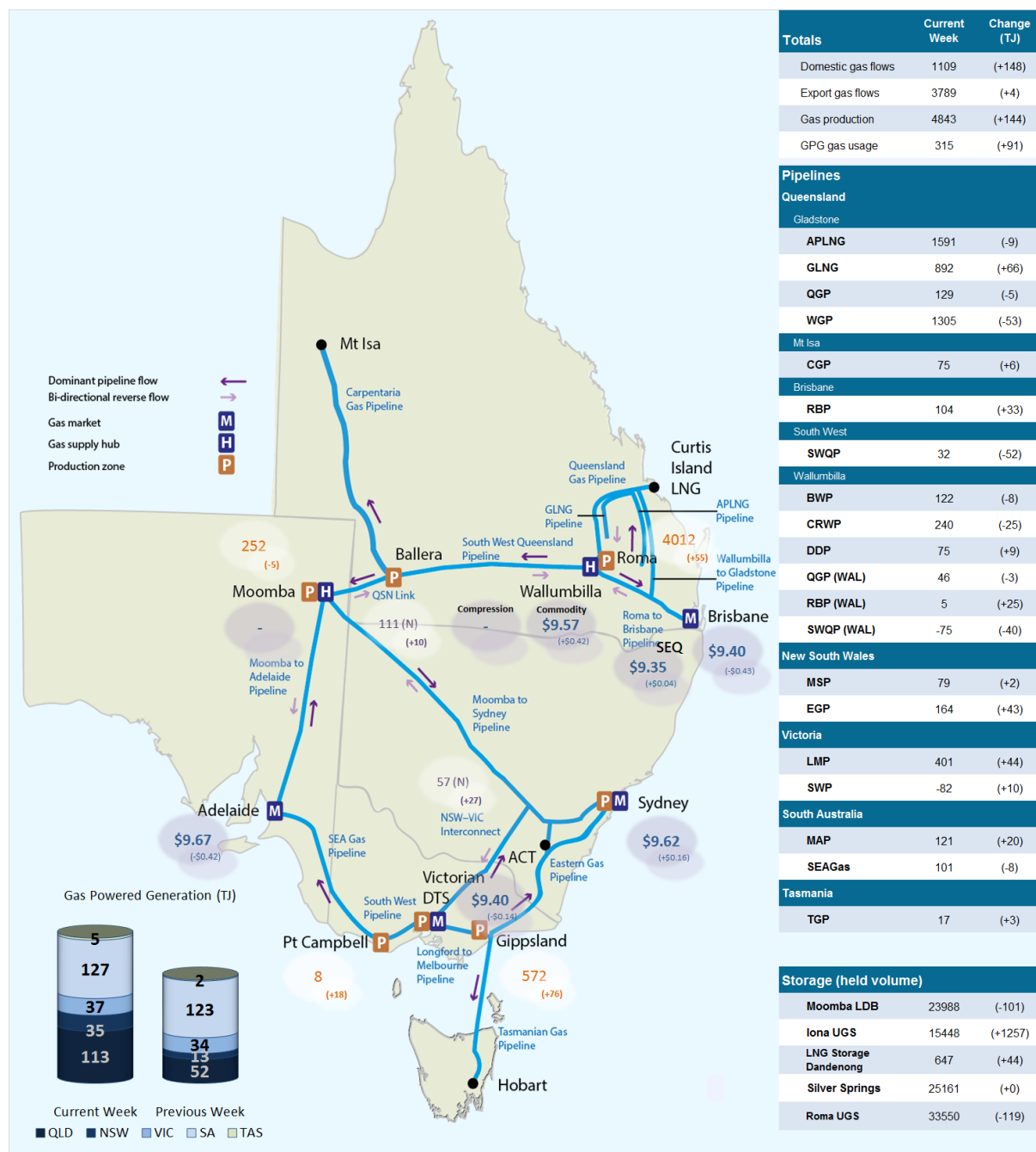
Figure 4.4: BRI MOS allocations (TJ), service payments and commodity payments/charges (\$000)



5. National Gas Bulletin Board

Figure 5.1 shows average daily actual flows for the current week¹⁰ from the Bulletin Board (changes from the previous week's average are shown in brackets). Average daily prices¹¹ 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)¹²



¹⁰ 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.

¹¹ 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.

¹² Net flows are shown for Bulletin Board facilities, as outlined in the [user guide](#).

6. Gas Supply Hub

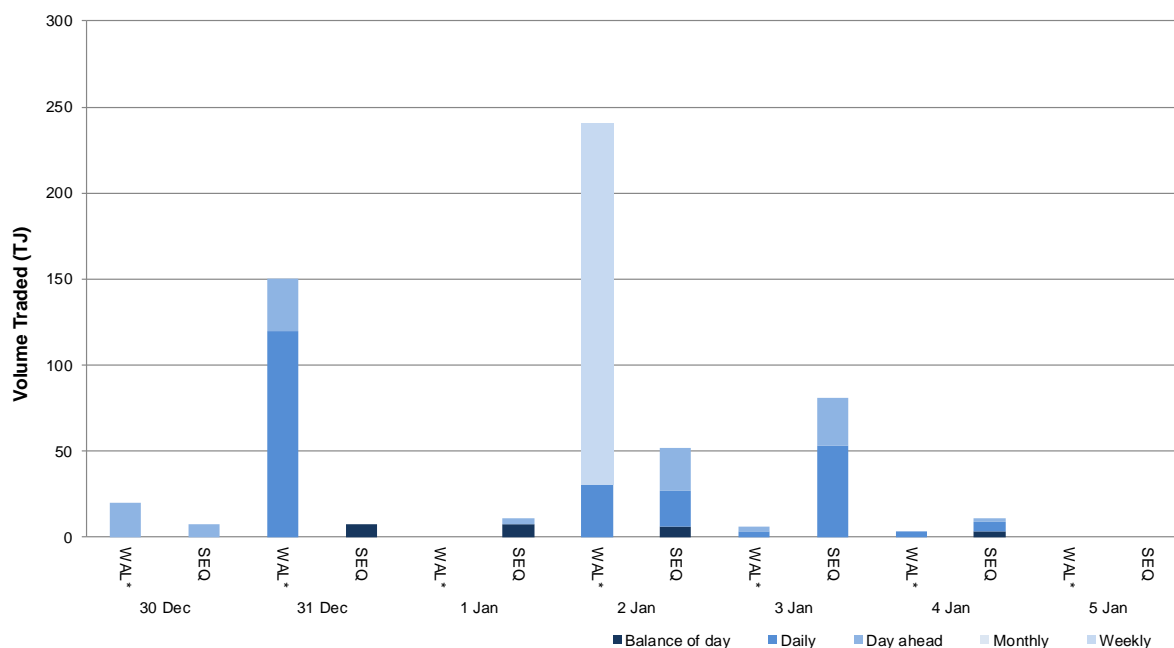
The gas supply hub was established at Wallumbilla in March 2014 to facilitate the voluntary trading of gas between participants, with products listed for sale and purchase at delivery points on three major connecting pipelines. There are separate products for each trading location and delivery period (daily, day-ahead, balance-of-day, weekly and monthly products).¹³

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 52 trades for 588 TJ of gas at a volume weighted price of \$9.51/GJ. These consisted of 11 trades at WAL (419 TJ at \$9.57/GJ) and 41 trades at SEQ (169 TJ at \$9.35/GJ). There were three spread products traded this week.

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.¹⁴

Figure 6.1: GSH traded quantities



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¹³ Additional information on trading locations and available products is detailed in the [user guide](#).

¹⁴ Non-netted (off-market) trades, allowing the selection of specific delivery point at a trading location, are included with other Wallumbilla trades (WAL*).