

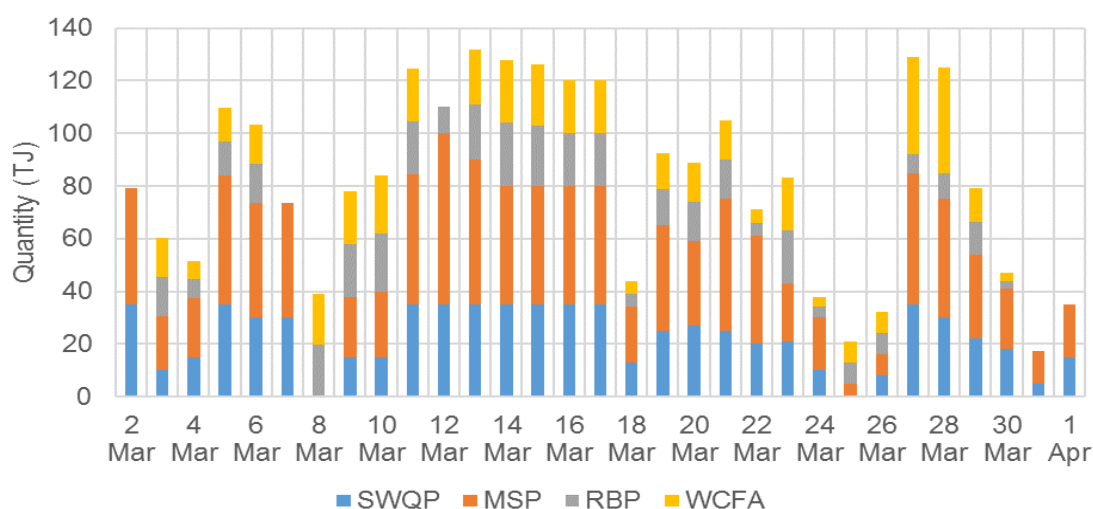
24 – 30 March 2019

Weekly Summary

Prices continue to rise across the east coast gas market, with the biggest gains this week seen at the Wallumbilla trading hub (**Figure 2**) and in the Victorian gas market (**Figure 1**), with average price increases of 10 percent and 6 percent respectively. Wallumbilla has now seen its price increase by around \$1/GJ since the beginning of March. Increased gas demand for Melbourne led to a 29 percent increase in the average demand in Victoria while there was a 55 percent decrease in demand at the Wallumbilla trading hub.

2.55 PJ of capacity has been won on the Day Ahead Capacity Auction (DAA) across March, an average of 82 TJ/day. Gas was purchased on every day that the auction was available, with 13 March recording the largest traded capacity of 132 TJ. The auction was used to transport gas cheaply to the southern states, with most trades occurring at \$0/GJ.¹ This took advantage of the spot price differences between the Wallumbilla hub and SSTM's in the south, which typically had prices \$2/GJ higher. The daily quantities won on each pipeline are provided in the summary figure below.

Summary Figure: DAA results by gas day²



Despite falling Asian LNG spot prices as reported by the ACCC³, production and export numbers remain high, with production levels at Roma back above 4 PJ in the last week and the number of LNG cargoes shipped rising at Gladstone from 26 cargoes in February (28 days) to 29 cargoes in March (31 days).

¹ This represents the cost of capacity won through the auction. Additional cost pass through provisions also apply to recoup administrative costs related to traded capacity.

² Quantities shown are the sum of auction products allocated on the facilities and do not necessarily represent the physical volumes of gas actually flowed for each gas day. Facilities included are the South West Queensland Pipeline (SWQP), Moomba to Sydney Pipeline (MSP), Roma to Brisbane Pipeline (RBP) and Wallumbilla Compression Facility A (WCFA).

³ <https://www.accc.gov.au/regulated-infrastructure/energy/gas-inquiry-2017-2020/lng-netback-price-series>

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)⁴

	Victoria		Sydney		Adelaide		Brisbane	
	Price	Demand	Price	Demand	Price	Demand	Price	Demand
24 Mar - 30 Mar 2019	10.62	398	10.59	214	10.59	50	9.93	104
% change from previous week	6	29	1	-5	2	9	1	-6
18-19 financial YTD	9.65	513	9.98	244	9.98	57	9.65	88
% change from previous financial YTD	21	-6	18	-1	24	-3	34	-8

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)⁵

	Moomba		South East Queensland		Wallumbilla	
	Price	Quantity	Price	Quantity	Price	Quantity
24 Mar - 30 Mar 2019	-	-	9.34	71	9.35	151
% change from previous week	-	-	3	-81	10	-55
18-19 financial YTD	7.11	91	9.51	9243	9.45	5976
% change from previous financial YTD	33	658	31	28	24	100

⁴ Average daily quantities are displayed for each region. The weighted average daily imbalance price applies for Victoria.

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

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

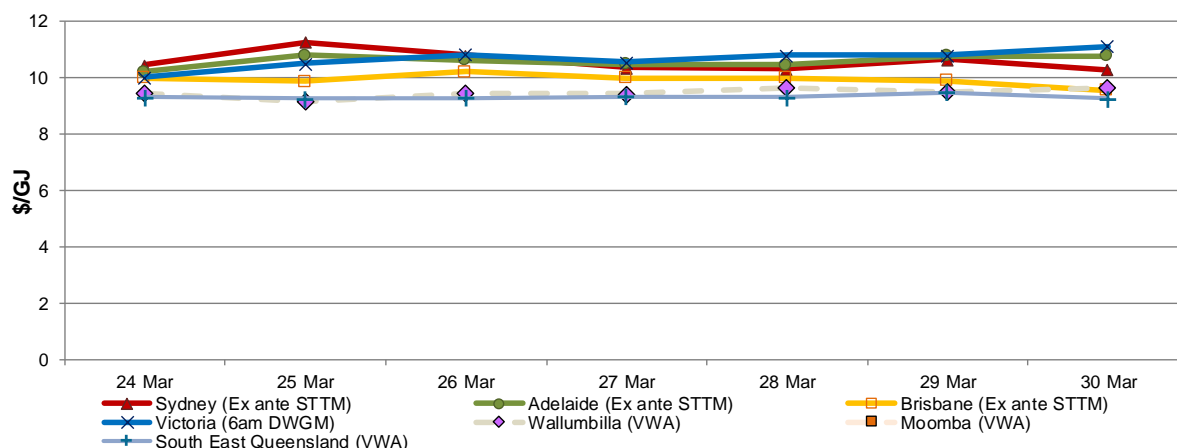


Figure 4 compares average ancillary market payments (VGM) and balancing gas service payments (STTM) against historical averages.

Figure 4: Average ancillary payments (\$000)

	Victoria Ancillary Payments*	Sydney MOS	Adelaide MOS	Brisbane MOS
24 Mar - 30 Mar 2019	-	11.84	2.35	0.43
% change from previous week	-	-29	-20	-50
18-19 financial YTD		18.40	4.00	1.12
% change from previous financial YTD		-38	-28	-52

* 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	-	-	9.31	23.0	9.40	5.0
Daily	-	-	9.38	30.0	9.43	50.0
Day ahead	-	-	9.30	18.0	9.49	61.0
Weekly	-	-	-	-	9.00	35.0
Monthly	-	-	-	-	-	-
Total	-	-	9.34	71.0	9.35	151.0

* 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	1489	901	1748	4138
Export Pipeline Flows	1551	922	1269	3742
% change from previous week (pipeline flows)	0	1	12	4
18-19 financial YTD Flows	1422	832	1275	3530

* 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

Victoria

Demand spiked in Victoria on 30 March due to the wintery conditions that hit Melbourne, with one of the coldest March days in four years. This contributed heavily to the 29 percent increase in average demand for gas across Victoria, with demand forecasts reaching 580 TJ at 10 pm on 30 March (**Figure 1.2**). The increased demand drove the spot price average higher across the state, with a 6 percent increase on last week's average price (**Figure 1**).

Gas continues to be withdrawn from Iona, with gas levels decreasing on average this week by 292 TJ (**Figure 5.1**) with less gas being stored at Iona at the end of the week compared to the week prior (18.1 PJ down from 18.3 PJ). This is likely to continue to occur until maintenance work at Longford is completed, which is currently reducing the daily injections that the gas plant is able to supply.

Victorian gas futures trade activity on the ASX picked up again in March after subdued trading through the beginning of 2019. 107 Victorian gas futures products were traded, indicating a forward price of between \$10.35-10.95/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 March 2019, there were 445 gas futures contracts kept open for hedging or speculation for quarters in 2019 and 2020.

Wallumbilla netback price and Gladstone LNG exports

The ACCC published Wallumbilla historic netback prices of \$9.19/GJ for March⁶ which continues the decline of the netback series due to falling prices at the Asian LNG spot markets. Further decreases are expected in the near future with the current April forecast sitting at just \$6.89/GJ.

Gladstone Port Corporation information received by the AER indicates that LNG export volumes increased from the previous month (26 Cargoes in February), with 29 cargoes leaving Gladstone, although it should be noted that February is 3 days shorter. The lower Asian LNG spot price does not seem to have reduced the number of cargoes leaving for Asia. The majority of cargoes from Gladstone were reported as leaving for China, although some cargoes may change route once out to sea. 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.

Gas Powered Generation (GPG)

GPG numbers decreased across the east coast due to the milder temperatures that were seen across the board. South Australia was responsible for much of the decrease, where gas required for generation fell from 213 TJ in the prior week to 126 TJ (**Figure 5.1**). In total the amount of gas required for GPG decreased from 511 TJ to 354 TJ across the NEM.

⁶ 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.

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 price⁷ which is the schedule at which most gas is traded.

The main drivers⁸ 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 forecasts⁹, 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)

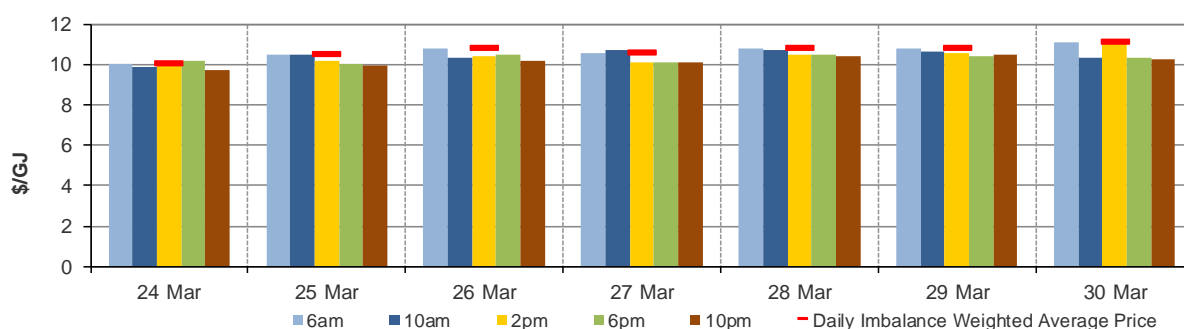
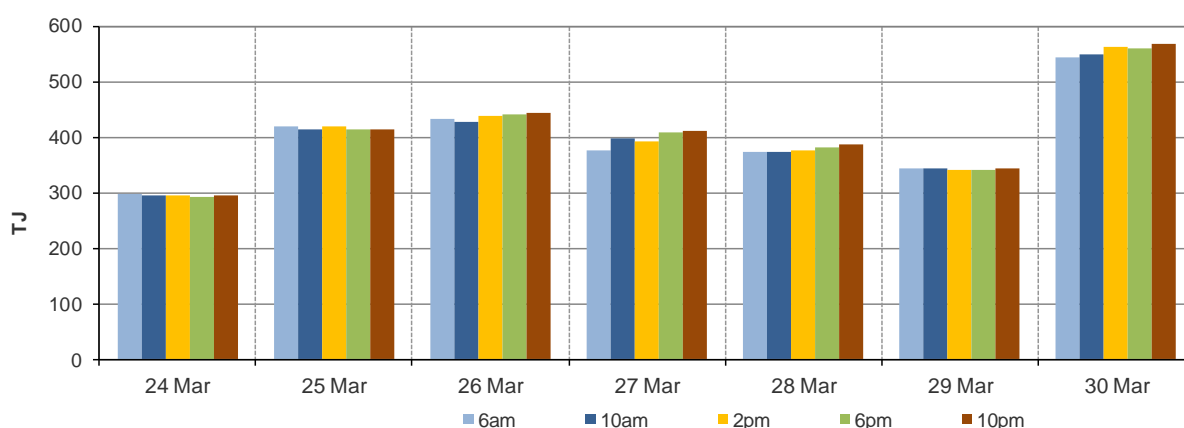


Figure 1.2: Demand forecasts (TJ)



⁷ 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.

⁸ 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.

⁹ 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)

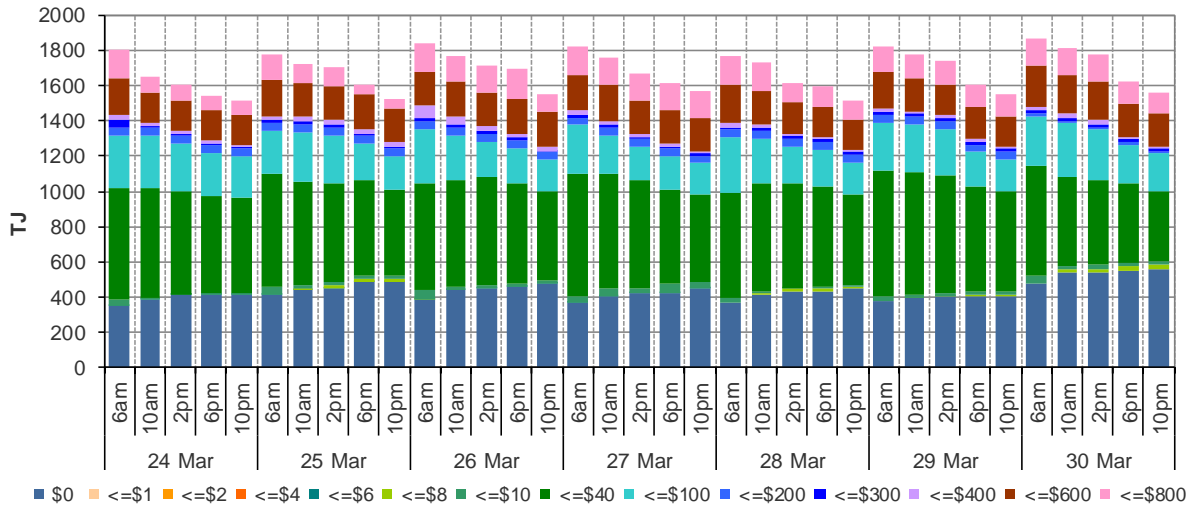


Figure 1.4: Withdrawal bids by price bands (TJ)

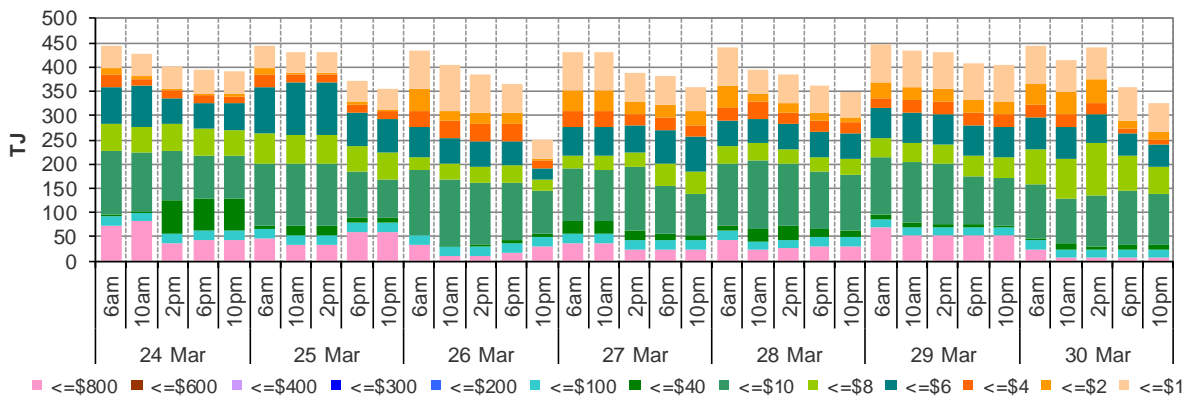
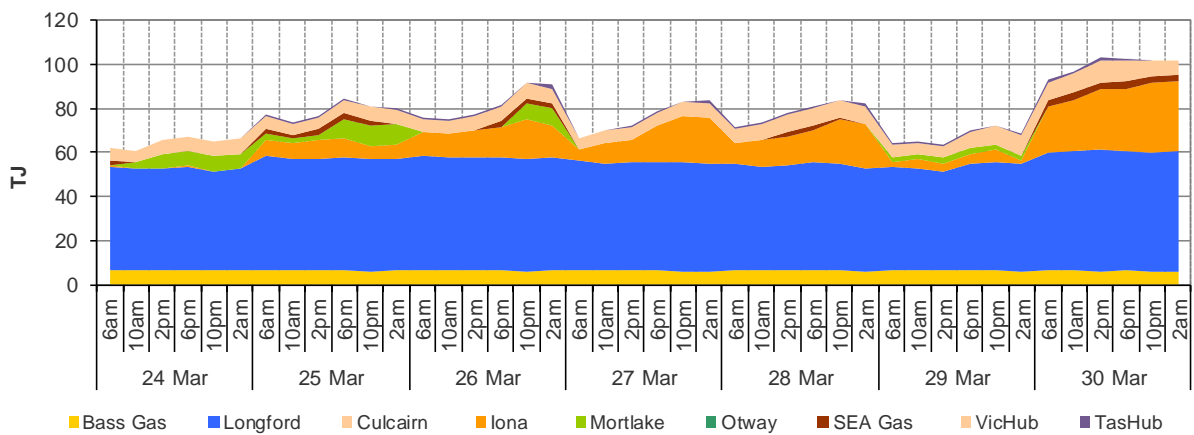


Figure 1.5: Metered Injections by System Injection Point (TJ)



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.¹⁰ 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](#).

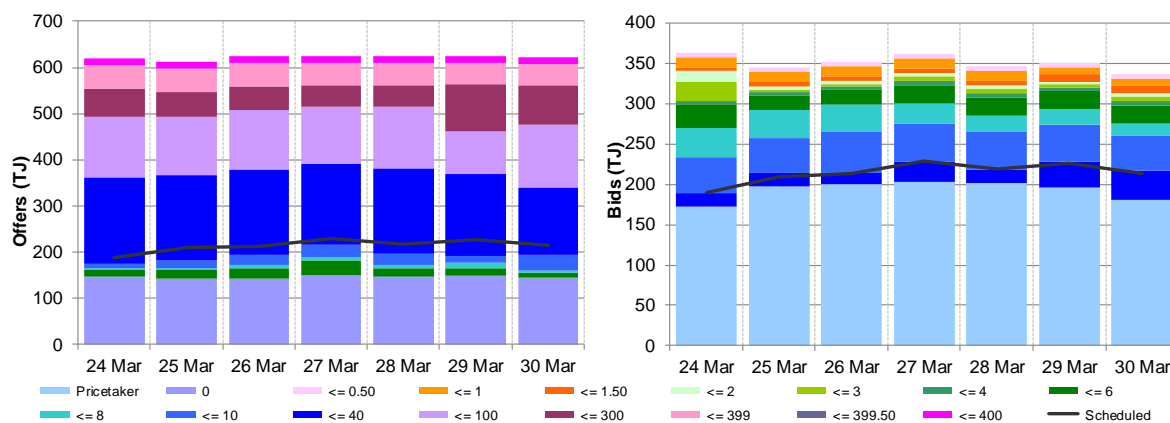
Market Operator Service balancing gas (MOS) payments arise because the amount of gas nominated on pipelines for delivery on a gas day will either exceed or fall short, by some amount, of the amount of gas consumed in the hub. In such circumstances, MOS payments are made to participants for providing a service to park gas on a pipeline or to loan gas from a pipeline to the hub.¹¹

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)	10.45	11.25	10.80	10.36	10.30	10.65	10.29
Ex ante quantity (TJ)	189	210	213	229	218	227	214
Ex post price (\$/GJ)	10.71	11.25	10.85	10.21	10.30	10.35	10.50
Ex post quantity (TJ)	193	212	223	223	219	224	224

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



¹⁰ 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.

¹¹ 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)

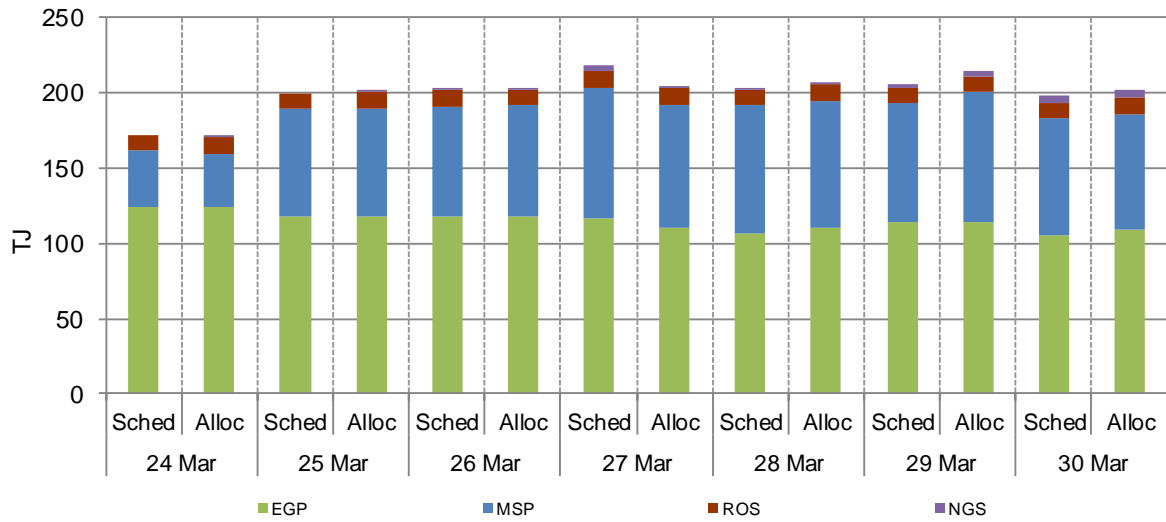
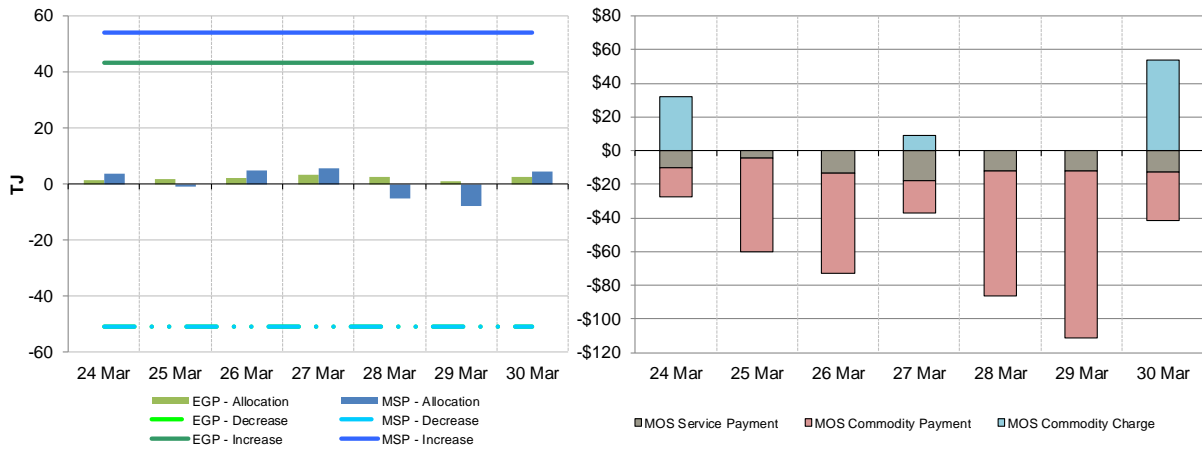


Figure 2.4: SYD MOS allocations (TJ), service payments and commodity payments/charges (\$'000)¹²



¹² 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)	10.22	10.79	10.63	10.48	10.46	10.78	10.78
Ex ante quantity (TJ)	40	54	54	51	49	53	45
Ex post price (\$/GJ)	10.24	10.79	10.63	10.60	10.46	10.72	10.78
Ex post quantity (TJ)	41	53	54	53	50	51	46

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

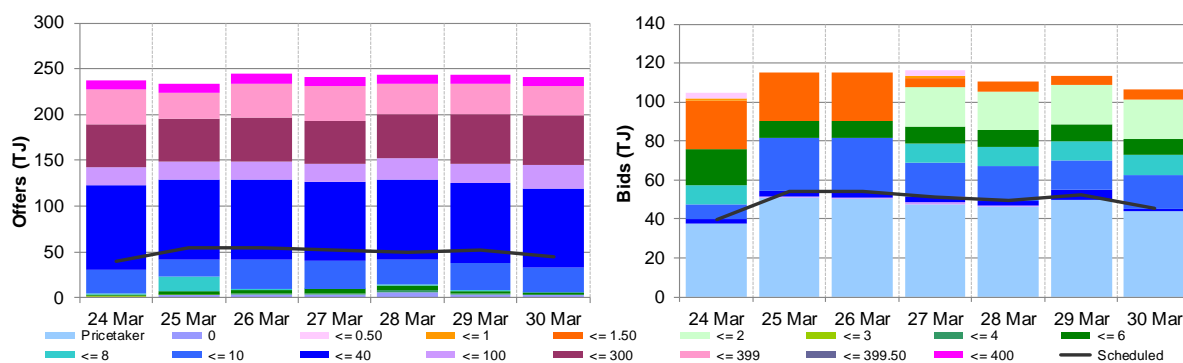


Figure 3.3: ADL net scheduled and allocated gas hub supply (excluding MOS)

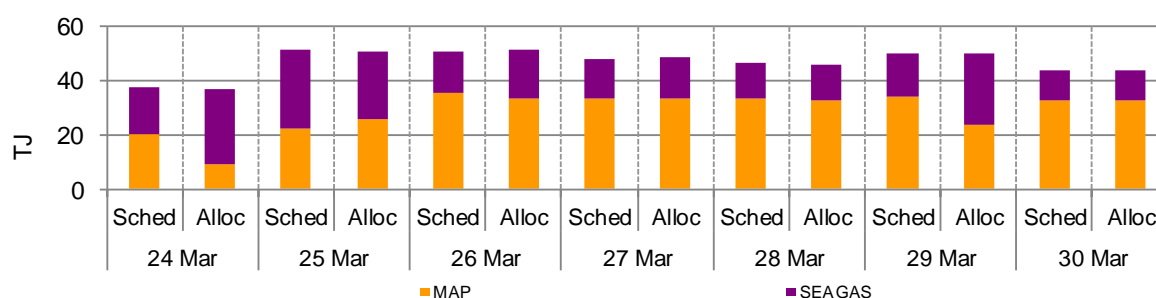
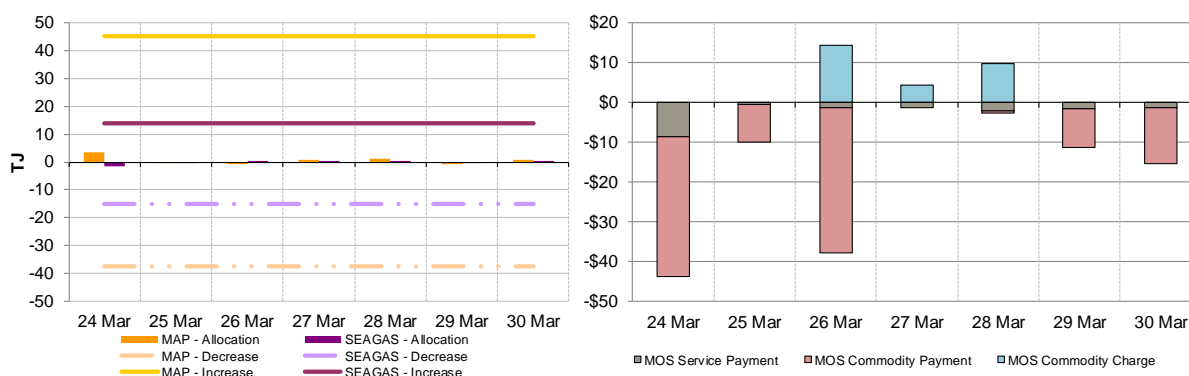


Figure 3.4: ADL MOS allocations (TJ), service payments and commodity payments/charges (\$000)



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)	10.00	9.87	10.20	10.00	10.00	9.89	9.55
Ex ante quantity (TJ)	89	116	117	119	118	112	56
Ex post price (\$/GJ)	10.80	10.61	11.28	10.71	10.71	10.52	10.61
Ex post quantity (TJ)	96	123	124	127	125	117	62

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

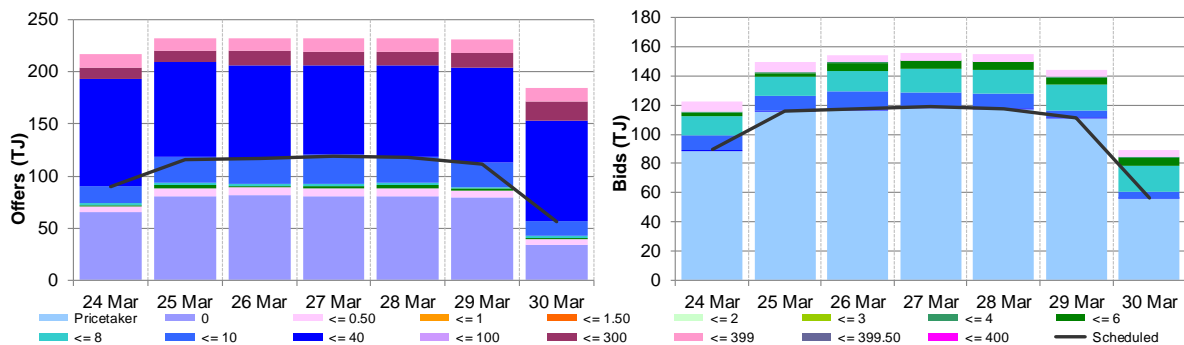


Figure 4.3: BRI net scheduled and allocated gas hub supply (excluding MOS)

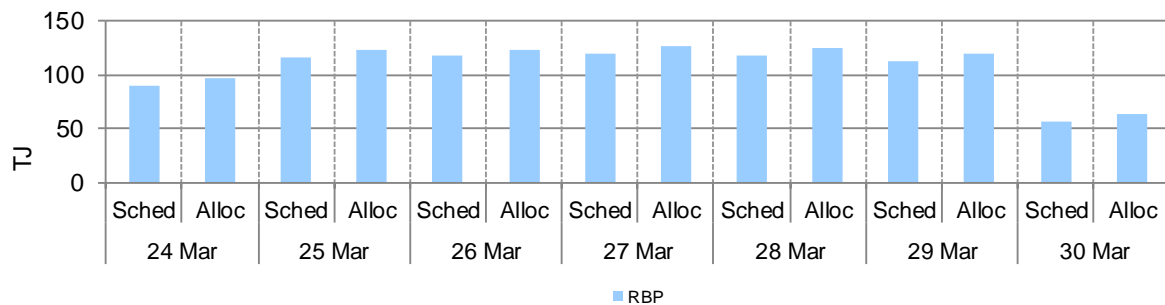
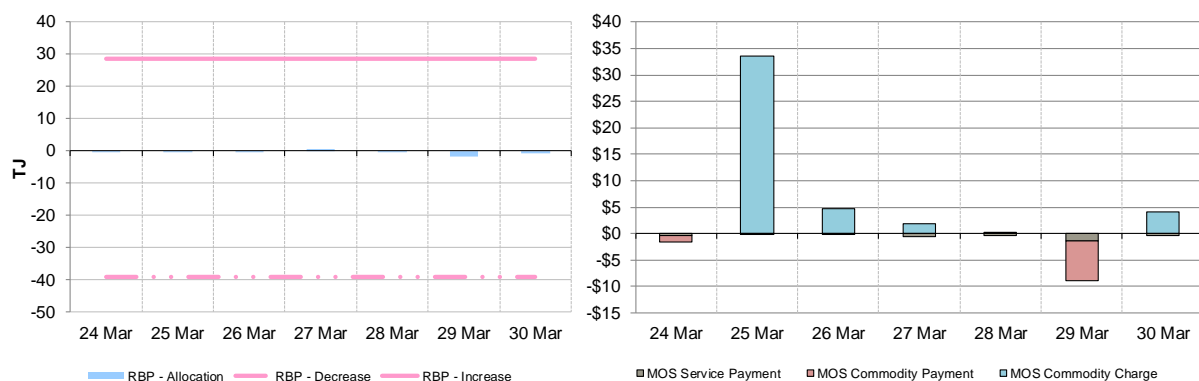


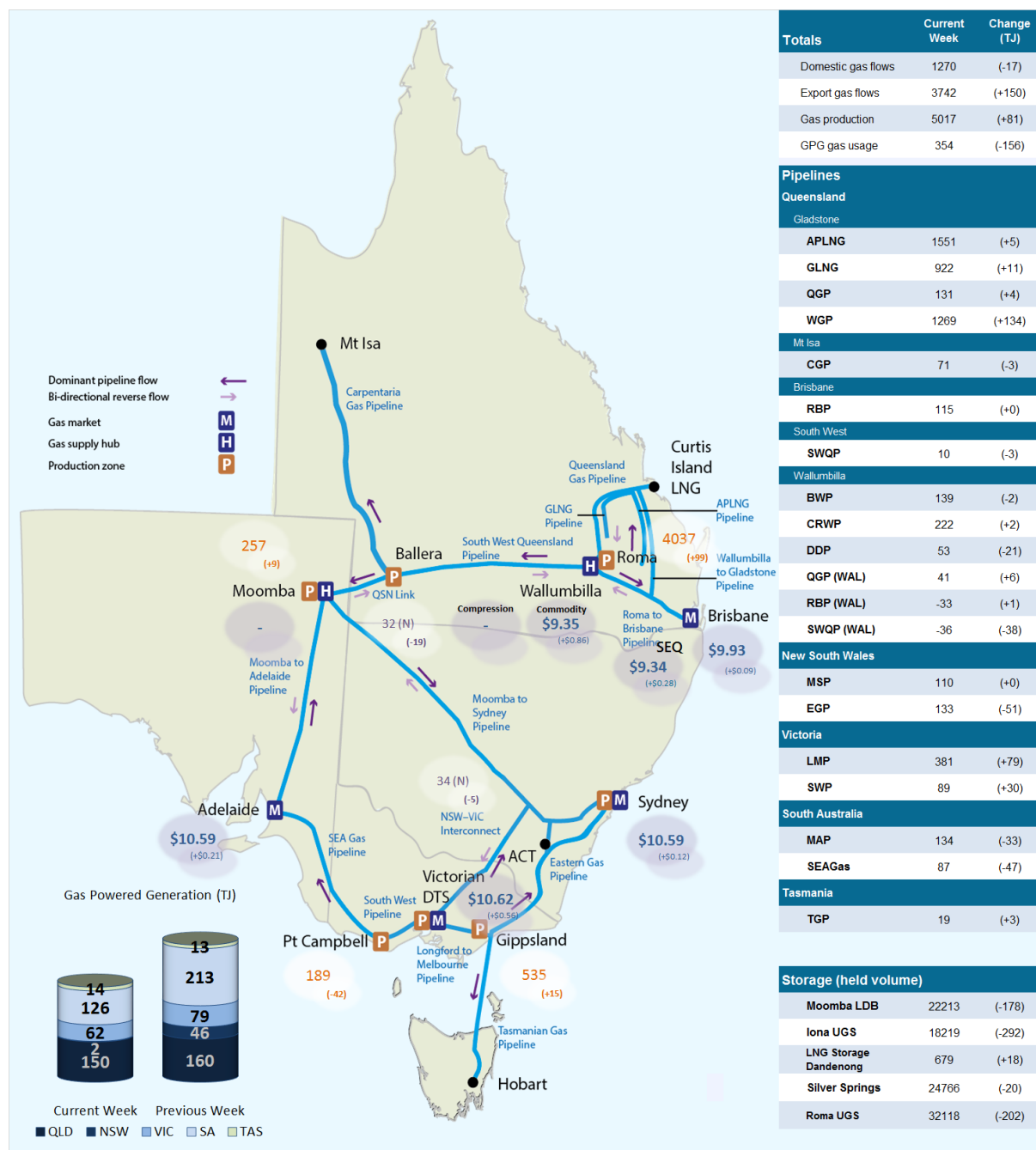
Figure 4.4: BRI MOS allocations (TJ), service payments and commodity payments/charges (\$000)



5. National Gas Bulletin Board

Figure 5.1 shows average daily actual flows for the current week¹³ from the Bulletin Board (changes from the previous week's average are shown in brackets). Average daily prices¹⁴ 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)¹⁵



¹³ 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.

¹⁴ Export gas flows are calculated as the total of: the APLNG pipeline; the GLNG pipeline; and the Wallumbilla to Gladstone pipeline.

¹⁵ GPG volumes may include gas usage that does not show up on Bulletin Board pipeline flows.

¹⁴ 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.

¹⁵ Net flows are shown for Bulletin Board facilities, as outlined in the [user guide](#).

6. Gas Supply Hub

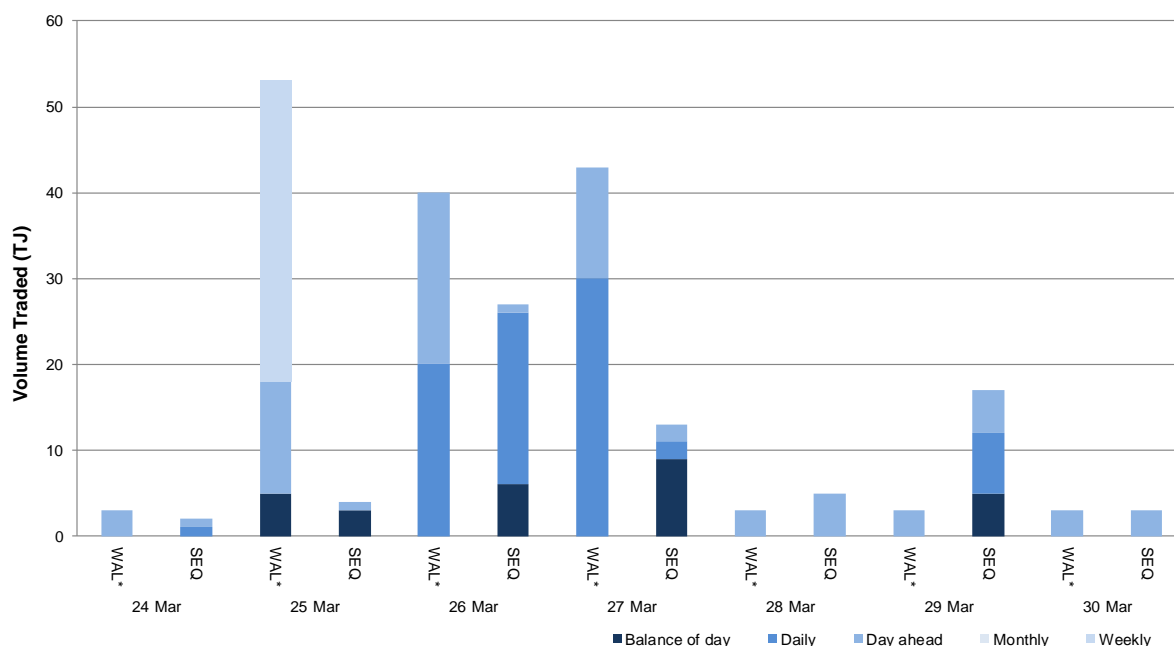
The gas supply hub was established at Wallumbilla in March 2014 to facilitate the voluntary trading of gas between participants, with products listed for sale and purchase at delivery points on three major connecting pipelines. There are separate products for each trading location and delivery period (daily, day-ahead, balance-of-day, weekly and monthly products).¹⁶

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 42 trades for 222 TJ of gas at a volume weighted price of \$9.35/GJ. These consisted of 18 trades at WAL (151 TJ at \$9.35/GJ) and 24 trades at SEQ (71 TJ at \$9.34/GJ). The majority of these trades occurred off market.

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



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¹⁶ Additional information on trading locations and available products is detailed in the [user guide](#).

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