Gas Market Report

AUSTRALIAN ENERGY REGULATOR

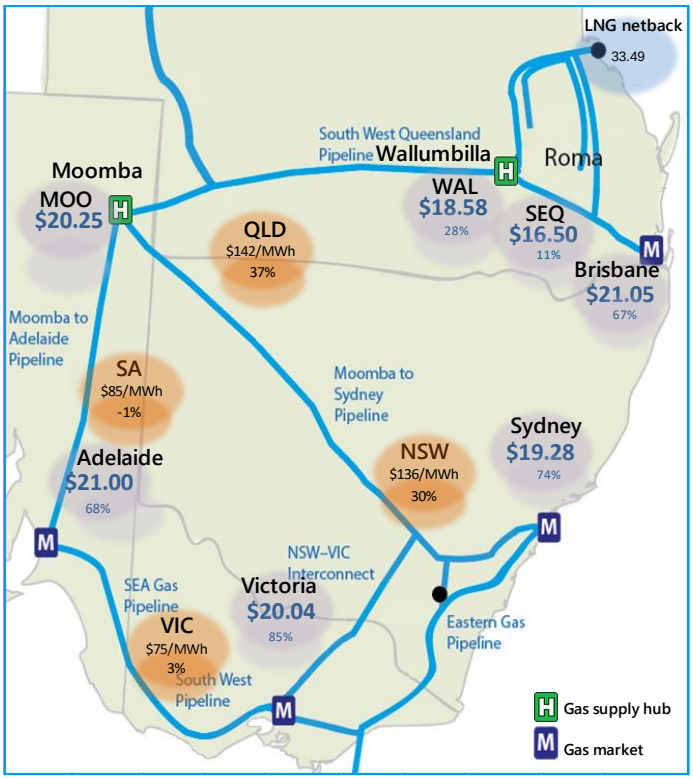
13 – 19 November 2022

Weekly Summary

Downstream wholesale gas market prices (marked M on the map below) increased in all four markets (percentage change from previous week shown on map). This week, there has been a significant increase in demand in the Victorian and Adelaide markets.

At the Wallumbilla upstream supply hub (marked H), the average price increased at the WAL trading point and more significantly at the SEQ trading point. The map also includes equivalent National Electricity Market (NEM) prices.

Map: Gas Market Prices, LNG netback price ($/GJ)*, NEM prices ($/MWh)



Note: The LNG netback price is the 14 November 2022 assessment for the front month (December) forward LNG netback price assessed: https://www.accc.gov.au/regulated-infrastructure/energy/gas-inquiry-2017-2025/lng-netback-price-series

The prices on the map for SEQ, WAL and MOO reflect only trades day ahead, to highlight price differentials between market and arbitrage opportunities.

Trading in the Wallumbilla gas supply hub was concentrated around shorter-term deliveries for products at SEQ (7.6 TJ) and WAL (696 TJ) this week (see section 6). Longer-term trades at WAL totalled 267 TJ for delivery across November and December, including a 62 TJ monthly trade for December.

Gas powered generation decreased in New South Wales and Victoria from the previous week. Tasmania remained flat, while generation in South Australia and Queensland

increased. LNG export pipeline flows were lower this week, decreasing to nearly 3826 TJ/day on average (see more detailed map and table at figure 5.1).

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 (or Victorian Gas Market - VGM) 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
13 Nov - 19 Nov 2022	20.04	484	19.28	232	21.00	53	21.05	109
% change from previous week	85	44	74	4	68	24	67	0
22-23 financial YTD	22.24	700	23.99	289	24.54	64	23.43	97
% change from previous financial YTD	127	0	126	10	126	-1	126	3

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

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

	Moomba		South East Queensland		Wallumbilla	
	Price	Quantity	Price	Quantity	Price	Quantity
13 Nov - 19 Nov 2022	20.25	6	16.50	8	18.58	963
% change from previous week	-	-	11	-93	28	-40
22-23 financial YTD	29.01	1060	23.99	1211	22.85	15246
% change from previous financial YTD	250	340	125	-37	120	126

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

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

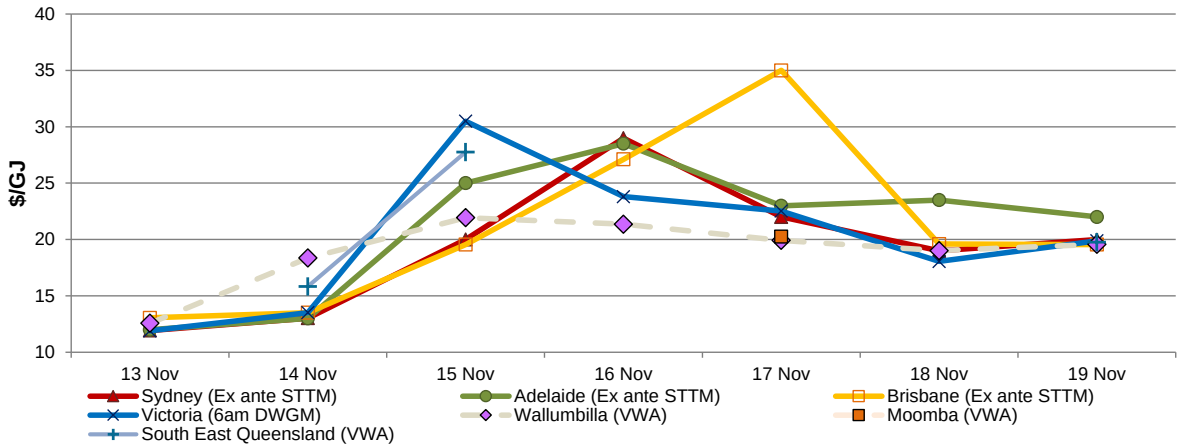


Figure 4 compares average ancillary market payments (for the VGM) and balancing gas service payments (STTM) against historical averages.

Figure 4: Average daily ancillary payments ($000)

	Victoria Ancillary Payments*	**Sydney** MOS	**Adelaide** MOS	**Brisbane** MOS
13 Nov - 19 Nov 2022	-	28.05	4.46	0.58
% change from previous week	-	39	-65	-43
22-23 financial YTD		33.04	11.70	1.38
% change from previous financial YTD		32	95	87

* 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 total traded for the current week ($/GJ, TJ)[3]

	Moomba		South East Queensland		Wallumbilla*	
	VWA price	Quantity	VWA price	Quantity	VWA price	Quantity
Balance of day	20.25	6.0	20.35	2.6	21.58	158.0
Daily	-	-	-	-	16.86	511.0
Day ahead	-	-	14.50	5.0	20.16	232.0
Weekly	-	-	-	-	-	-
Monthly	-	-	-	-	19.25	62.0
Total	**20.25**	**6.0**	**16.50**	**7.6**	**18.58**	**963.0**

* 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	1535	896	1702	4132
Export Pipeline Flows	1471	1111	1244	3826
% change from previous week (pipeline flows)	-11	-20	42	-2
22-23 financial YTD flows	1385	1052	1180	3617

* 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.

[3] Further information about new product trading locations in Victoria (Culcairn) and Sydney (Wilton) is available in section 6. Gas Supply Hub).

Detailed market analysis

Table 1: Key events this week

Date	Event	Market Affected	Description
17 Oct – 13 Nov	QCLNG ½ - 1 LNG train outage ended	East Coast (Supply)	Recovery of pipeline flows on the Wallumbilla Gas Pipeline.
18 Nov	High MOS payment	Sydney	MOS payment exceeded $50,000 – large decrease MOS allocation on the MSP. Counteracting MOS due to increase MOS requirement on the EGP.

QCLNG ½ - 1 LNG train outage ended

QCLNG's ½ - 1 LNG train ended on 13 November.[4] Pipeline flows on the Wallumbilla Gas Pipeline connected to the LNG facility at Curtis Island recovered to 1,244 TJ per day this week.

High MOS[5] Service Payment on Sydney STTM

On 18 November in the Sydney market, a significant decrease MOS allocation on the MSP (30.15 TJ) and a counteracting increase MOS requirement on the EGP (7.41 TJ) resulted in significant MOS payments totalling $63,915. The significant decrease MOS requirement on the MSP was driven by over forecast demand (22.1 TJ) by a manufacturer at the Sydney hub.

4 Australian Energy Market Operator. *LNG Maintenance Notice – QCLNG update*. October 2022.

5 MOS is an ancillary service providing balancing gas on a pipeline where there is a difference between scheduled/nominated supply/demand and actual delivered gas quantities. Counteracting MOS occurs when one pipeline facility provides increase MOS services (additional supply to the hub) offsetting another pipeline providing decrease services (parking gas not delivered to the hub).

Significant price variation analysis

This week, one of the AER significant price variation reporting thresholds was triggered in the Sydney and Brisbane short term trading market (STTM). Table 2 provides a summary of the breaches. The schedule price variation is the difference between the D-1 ex ante price and the D-2 provisional price.

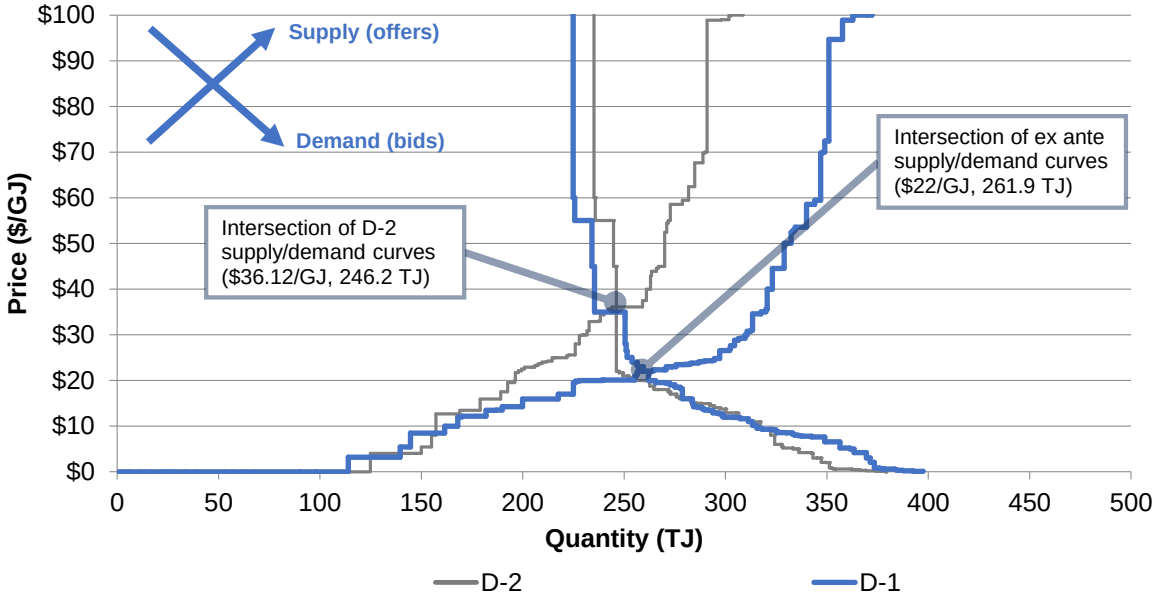
Table 2: Significant price variation threshold breaches - variation >$14/GJ between D-2 and D-1 price

Gas day	Market	D-2 provisional price ($/GJ)	D-1 ex ante price ($/GJ)	Schedule price variation ($/GJ)	Threshold breach description
17 Nov	Sydney	36.12	22	-14.12	Supply offer bid
18 Nov	Brisbane	35	19.6	-15.4	Supply offer bid

Significant Price Variation analysis

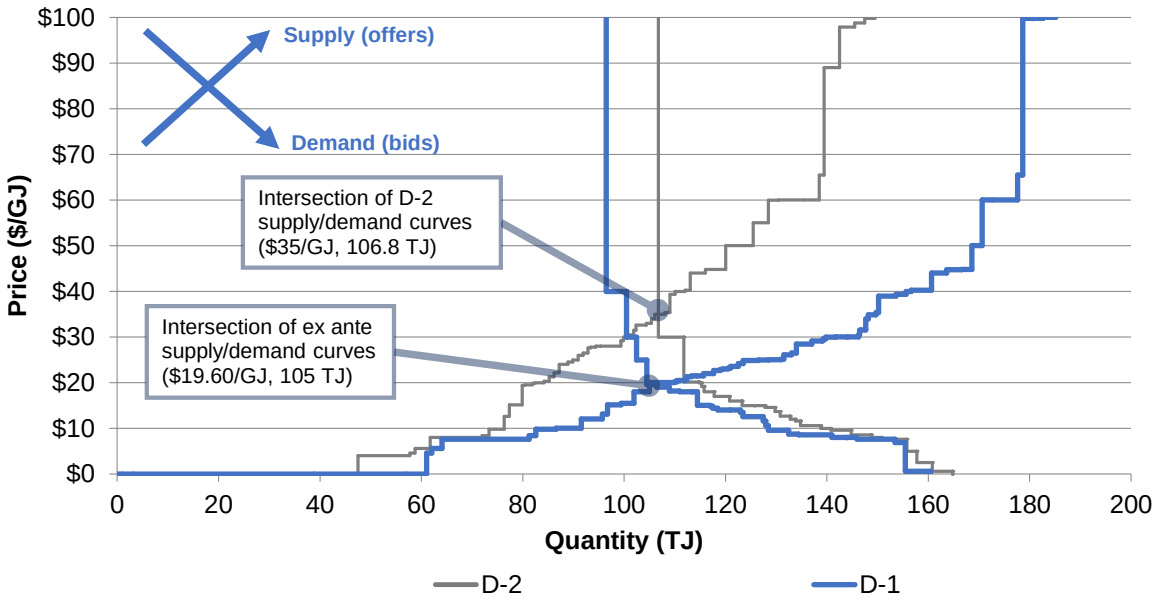
In Sydney rebidding of supply drove lower ex ante prices on 17 November. Exporter/producers and traders were the main contributors to the increased availability of lower priced supply in Sydney. In Brisbane, rebidding of supply bids was the primary driver of lower ex ante prices on 18 November. Lower priced available capacity increases in Brisbane's ex ante schedule were largely provided by a trader and an exporter/producer.

Figure 7: Sydney provisional and ex ante bid and offer curves (17 November)



On 17 November in Sydney, an additional 31.9 TJ of supply was offered at $12-20/GJ in the ex ante schedule. The shift in supply and similar demand levels reduced the ex ante price by more than $14.12/GJ below the D-2 provisional schedule price. The majority of additional supply capacity available below $20/GJ was offered by a GPG gentailer, a trader, exporter/producers, and industrial participants at $15-20/GJ (21.8 TJ).

Figure 8: Brisbane provisional and ex ante bid and offer curves (18 November)



On 18 November in Brisbane, an additional 37.6 TJ of supply was offered below $25/GJ in the ex ante schedule, reducing the ex ante price by $15.40/GJ below the D-2 provisional schedule price. More supply capacity offered by a GPG gentailer at the price floor (16.2 TJ) was a significant driver of the price decrease, while additional supply was also offered by a trader at $10.05/GJ (5 TJ) and an exporter/producer at $18/GJ (3 TJ).

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

The main drivers[7] 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[8], 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 4.

Figure 1.1: Prices by schedule ($/GJ)

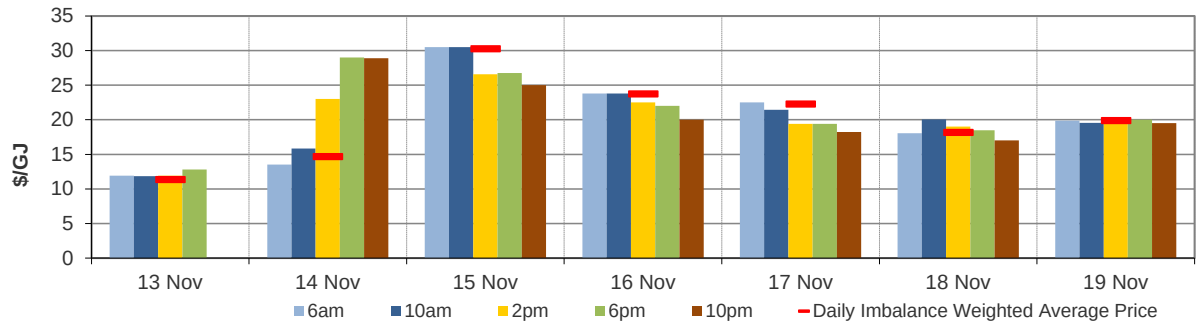
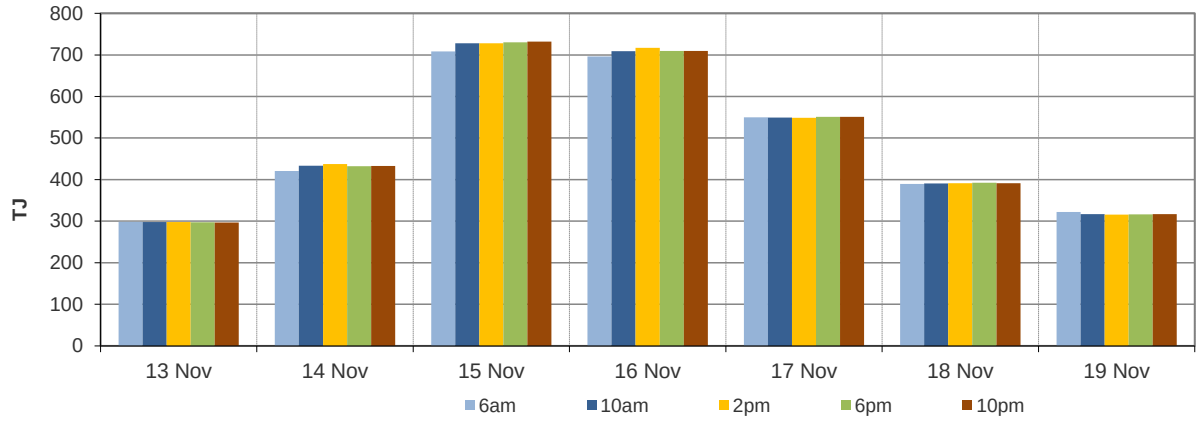


Figure 1.2: Demand forecasts (TJ)



6 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.

7 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.

8 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)

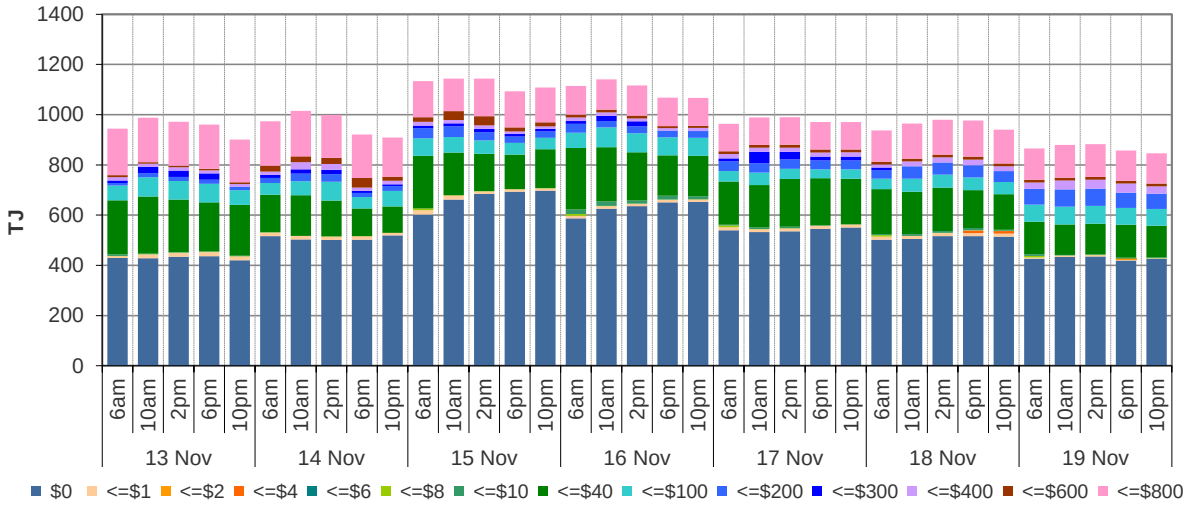


Figure 1.4: Withdrawal bids by price bands (TJ)

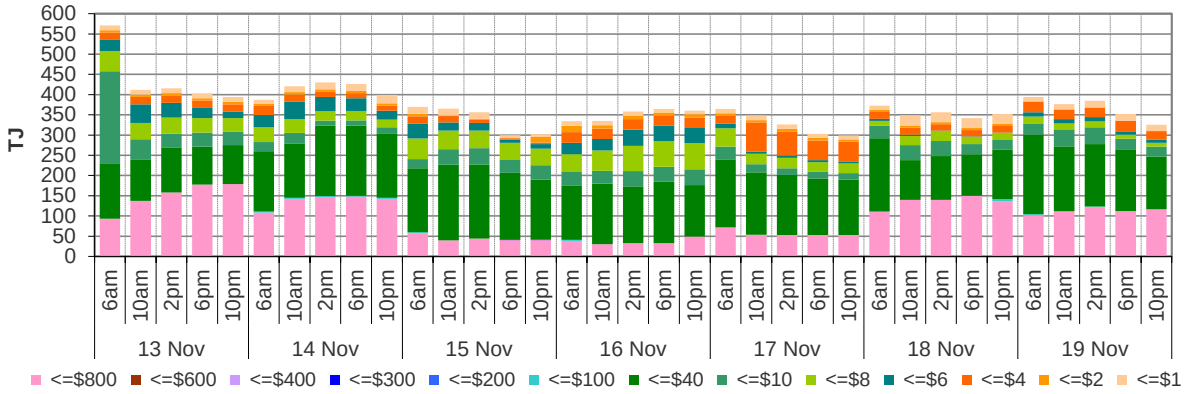
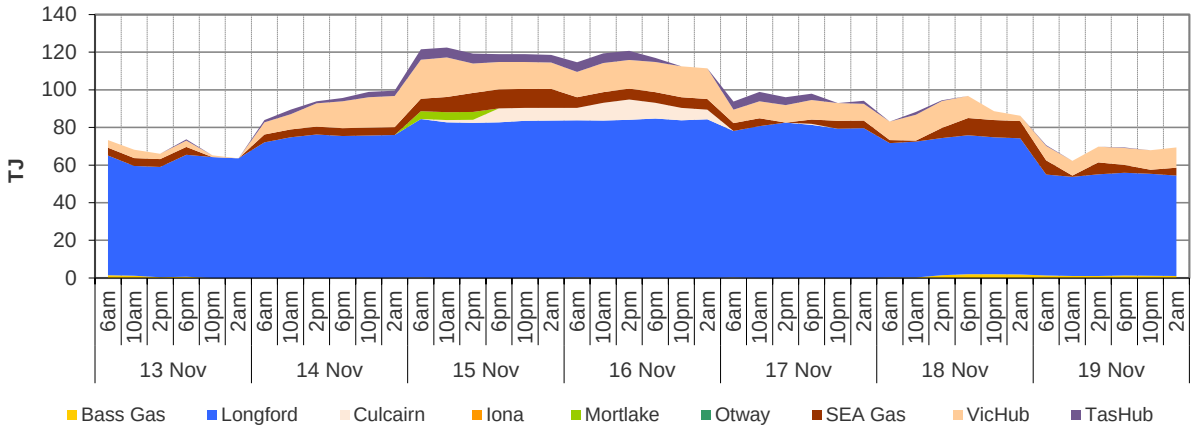


Figure 1.5: Metered Injections by System Injection Point (TJ)



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.[9] 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.

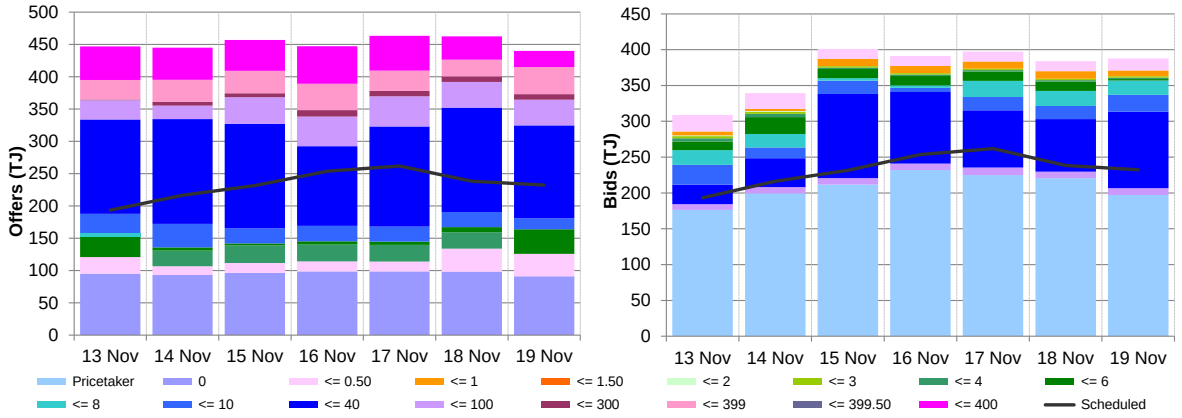
Market Operator Service balancing gas (MOS) payments arise because the amount of gas nominated on pipelines for delivery on a gas day will either exceed or fall short, by some amount, of the amount of gas consumed in the hub. In such circumstances, MOS payments are made to participants for providing a service to park gas on a pipeline or to loan gas from a pipeline to the hub.[10]

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 ($/GJ)	11.93	13.03	20.00	28.99	22.00	18.99	19.99
Ex ante quantity (TJ)	193	216	232	254	262	238	232
Ex post price ($/GJ)	11.93	13.03	19.67	26.41	22.00	17.00	19.99
Ex post quantity (TJ)	199	219	223	230	261	219	230

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



[9] 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.

[10] 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 2.3 shows the daily scheduled and allocated quantities sorted by facility for Sydney this week. For a more detailed description of this figure, please refer to the user guide.

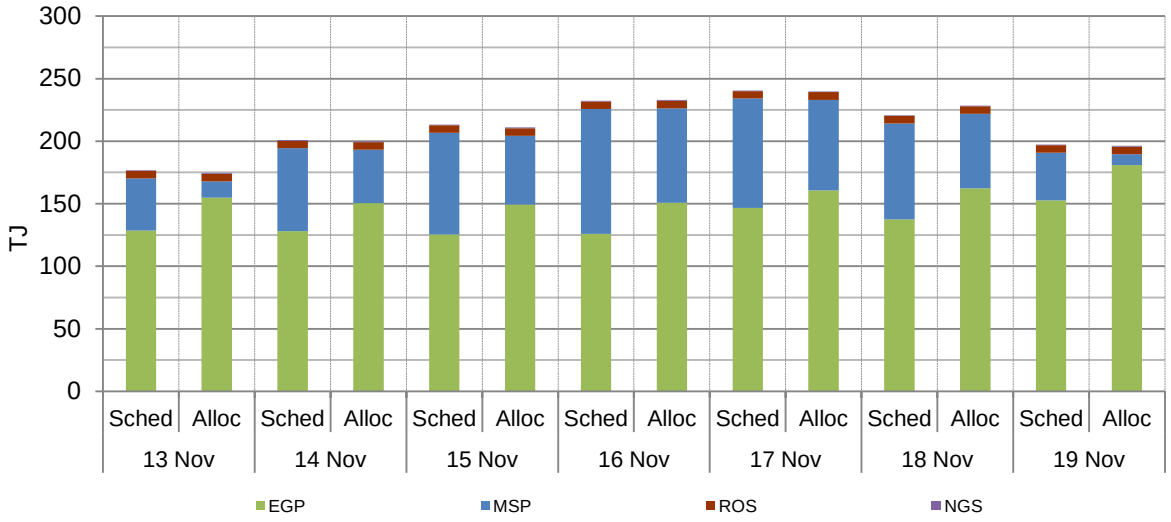
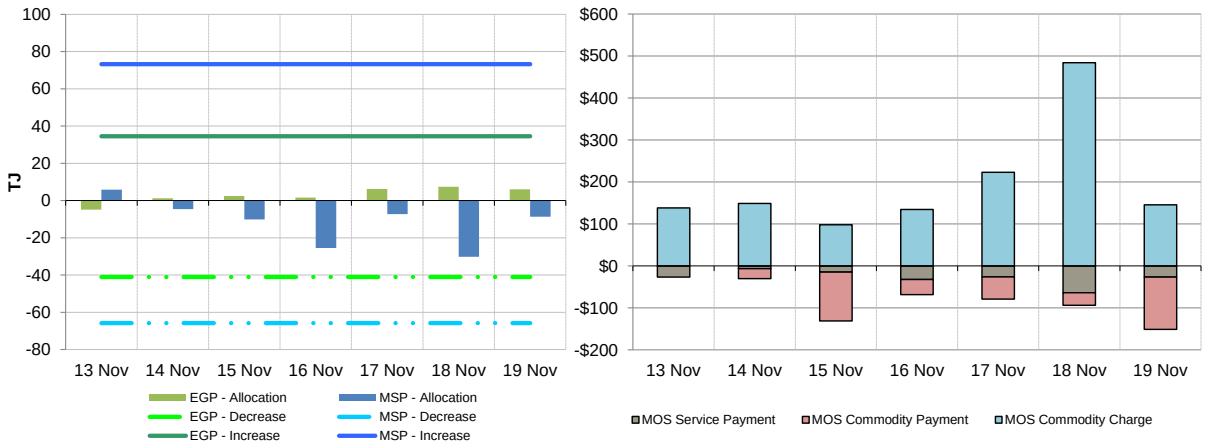


Figure 2.4: SYD MOS allocations (TJ), service payments and commodity payments/charges ($000)[11]



[11] 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 ($/GJ)	11.99	13.00	25.00	28.50	22.99	23.50	22.00
Ex ante quantity (TJ)	42	55	68	62	54	50	42
Ex post price ($/GJ)	11.99	12.99	25.00	29.04	22.51	23.50	22.20
Ex post quantity (TJ)	42	52	70	63	51	49	42

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

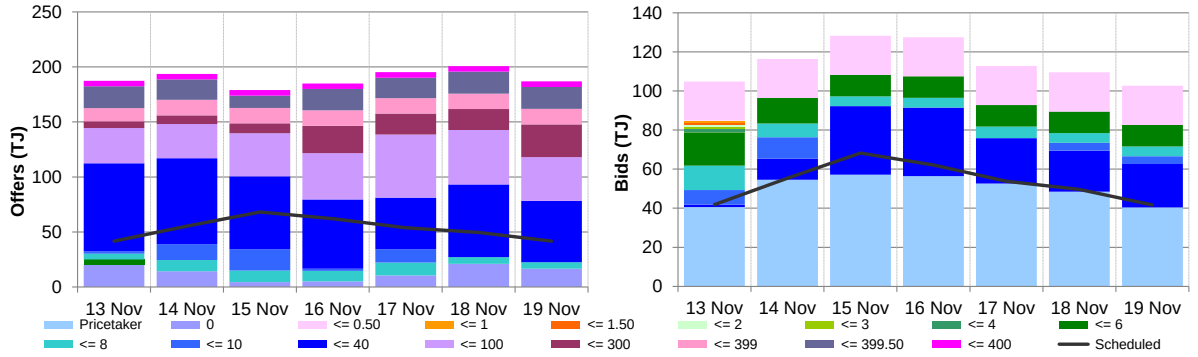


Figure 3.3: ADL net scheduled and allocated gas hub supply (excluding MOS)

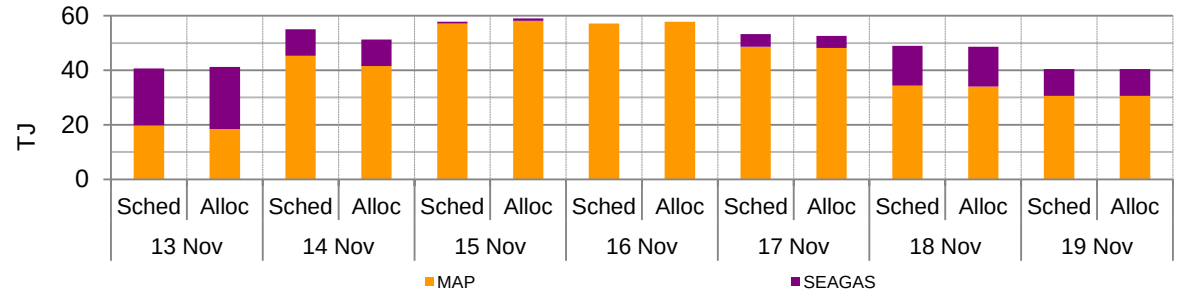
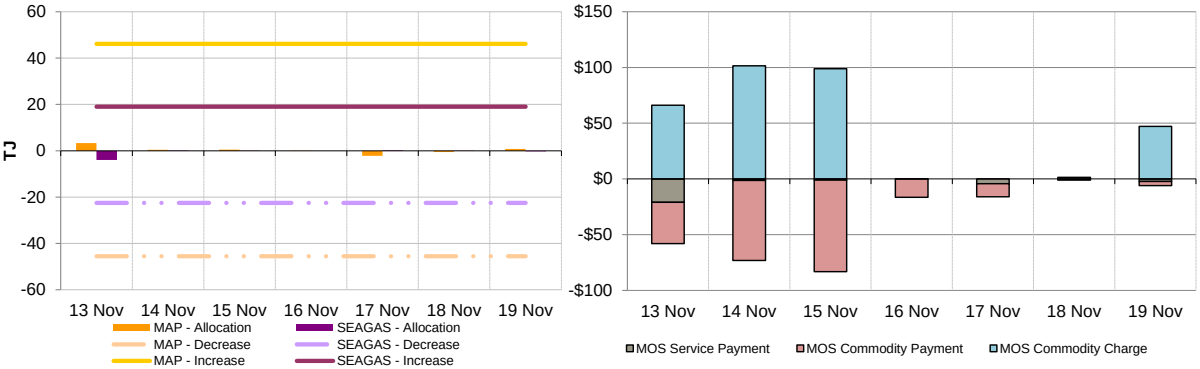


Figure 3.4: ADL MOS allocations (TJ), service payments and commodity payments/charges ($000)



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 ($/GJ)	13.05	13.51	19.55	27.11	35.00	19.60	19.55
Ex ante quantity (TJ)	92	122	121	115	113	105	95
Ex post price ($/GJ)	12.94	12.61	18.41	29.20	39.89	18.01	19.00
Ex post quantity (TJ)	90	114	116	118	121	98	91

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

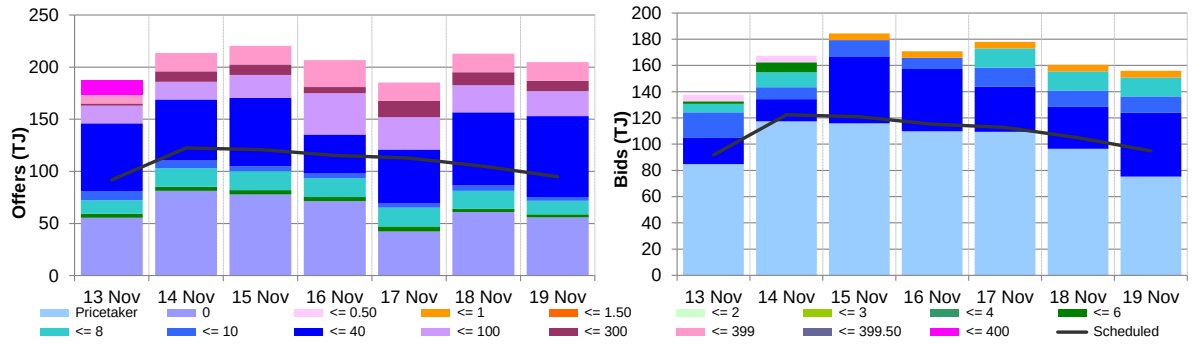


Figure 4.3: BRI net scheduled and allocated gas hub supply (excluding MOS)

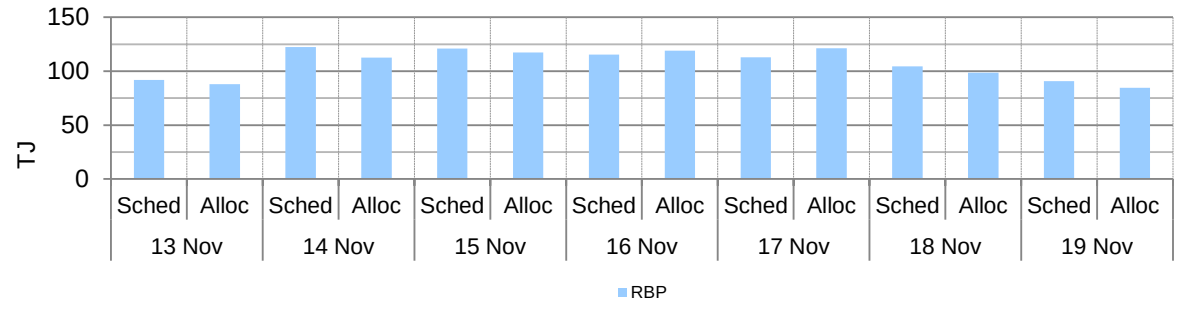


Figure 4.4: BRI MOS allocations (TJ), service payments and commodity payments/charges ($000)

5. National Gas Bulletin Board

Figure 5.1 shows average daily actual flows for the current week[12] from the Bulletin Board (changes from the previous week's average are shown in brackets). Average daily prices[13] 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/day); Bulletin Board flows (TJ/day)[14]

Totals	Current Week	Change (TJ)
Domestic gas flows	1421	(+177)
Export gas flows	3826	(-85)
Gas production	5206	(+103)
GPG gas usage	219	(+18)
Pipelines		
Queensland		
Gladstone		
APLNG	1471	(-180)
GLNG	1111	(-274)
QGP	131	(+6)
WGP	1244	(+369)
Mt Isa		
CGP	96	(+11)
Brisbane		
RBP	111	(-2)
South West		
SWQP	105	(+11)
Wallumbilla		
BWP	100	(-38)
CRWP	76	(-67)
DDP	75	(+6)
QGP (WAL)	36	(0)
RBP (WAL)	8	(+67)
SWQP (WAL)	-20	(+84)
New South Wales		
MSP	66	(+4)
EGP	256	(-32)
Victoria		
LMP	519	(+100)
SWP	32	(+39)
South Australia		
MAP	138	(+28)
SEAGas	31	(+4)
Tasmania		
TGP	31	(+9)

Storage (held volume)		
Moomba LDB	11670	(+0)
Iona UGS	14866	(+0)
LNG Storage Dandenong	380	(+21)
Silver Springs	15462	(-44)
Roma UGS	23266	(-125)

12 **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.

13 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.

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

6. Gas Supply Hub

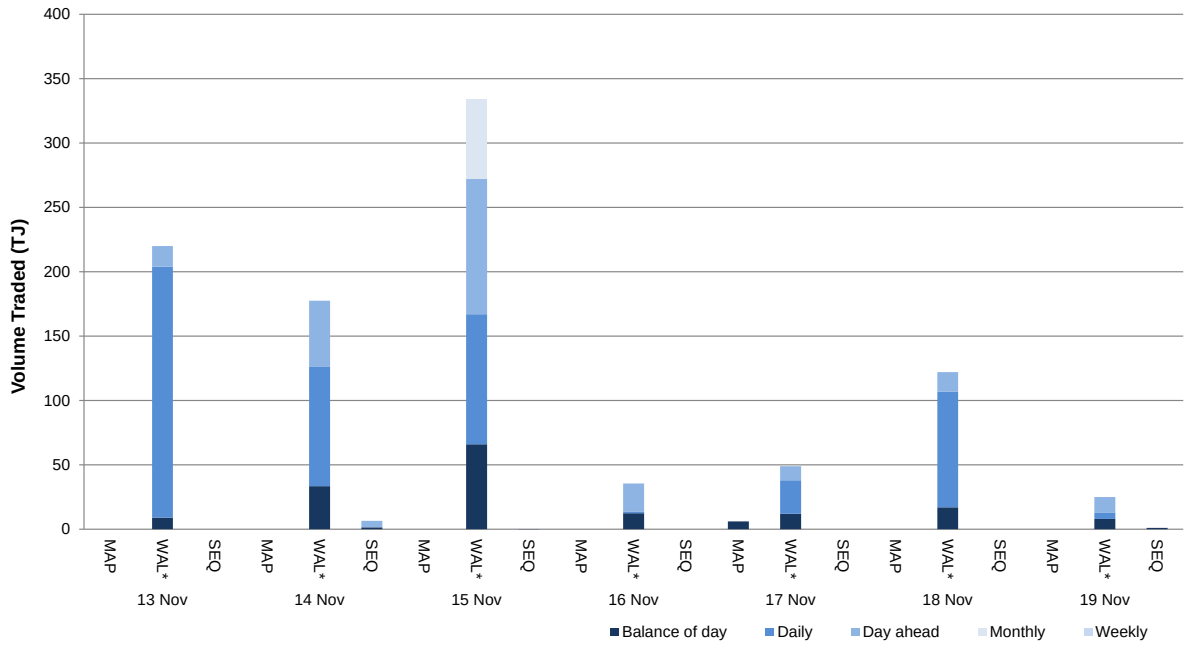
The gas supply hub was established at Wallumbilla in March 2014 to facilitate the voluntary trading of gas between participants, with products listed for sale and purchase at delivery points on three major connecting pipelines. There are separate products for each trading location and delivery period (daily, day-ahead, balance-of-day, weekly and monthly products).[15]

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). On 28 January 2021, trading locations at Wilton (Sydney) and Culcairn (Victoria) were introduced.

This week there were 104 trades for 976.6 TJ of gas at a volume weighted price of $18.58/GJ. These consisted of 98 trades at WAL (963 TJ at $18.58/GJ), 4 trades at SEQ (7.6 TJ at $16.50/GJ) and 2 trades at MAP (6 TJ at $20.25/GJ). There was one spread trade this week between SEQ and WAL.

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.[16]

Figure 6.1: GSH traded quantities



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

16 Non-netted (off-market) trades, allowing the selection of specific delivery point at a trading location, are included with other Wallumbilla trades (WAL*). Non-netted trades at Moomba are shown separately (MOO) from MAP and MSP.

7. Day Ahead Auction

The DAA is a centralised auction platform providing the release of contracted but un-nominated transportation capacity on designated pipelines and compression facilities across eastern Australia. The auction enables transportation facility users to procure residual capacity on a day-ahead basis after nomination cut-off, with a zero reserve price and compressor fuel provided.

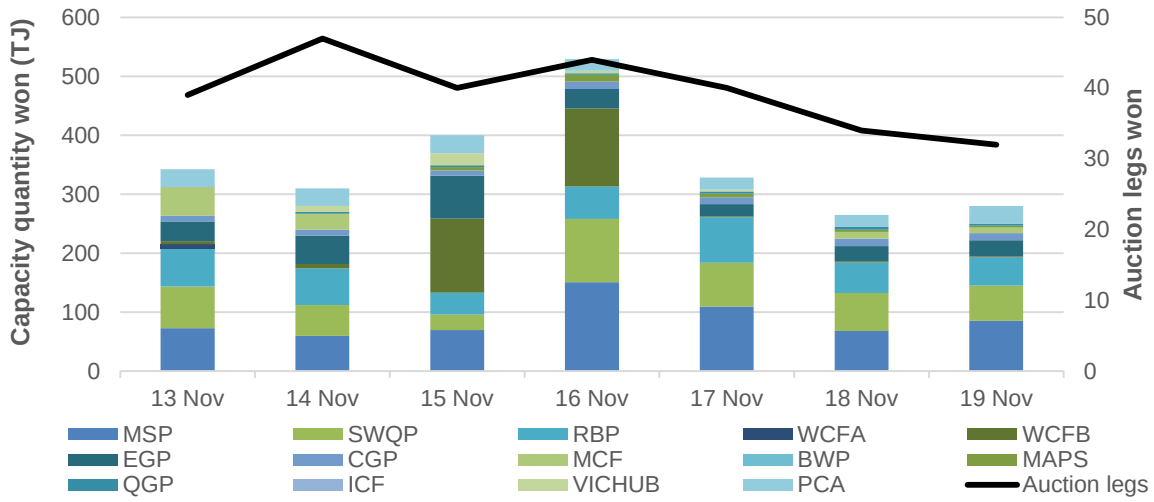
Participants may bid in to the DAA in order to procure the following services:

- park services;
- forward haul pipeline services with products offered in both directions on bi-directional pipelines;
- interruptible backhaul services; and
- stand-alone compression services.

This week, 16 participants took part in the DAA, winning 2453 TJ of capacity across 12 different facilities.

Figure 7.1 shows the quantities of gas and auction legs won through the DAA by gas date, with gas deliverable up to the level of capacity procured. Auction legs reflect each individual facility transaction.[17]

Figure 7.1: DAA traded quantities (TJ) and auction legs won



Australian Energy Regulator
December 2022

[17] Additional information is available in the user guide to the AER gas weekly report.