Gas Market Report

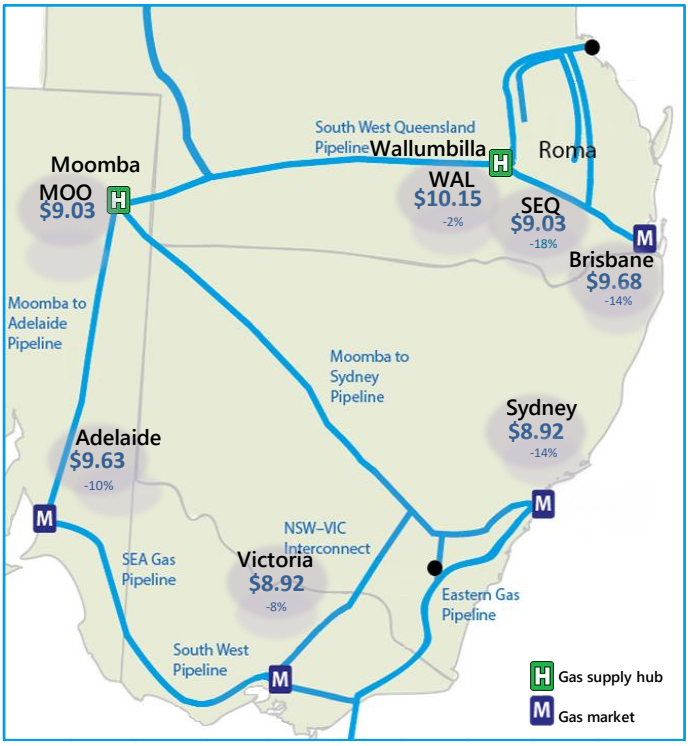
AUSTRALIAN ENERGY REGULATOR

6 – 12 February 2022

Weekly Summary

Downstream wholesale gas market prices (marked M on the map below) decreased in all four markets (percentage change from previous week shown on map).

At the Wallumbilla upstream supply production hubs (marked H), the average price decreased at the WAL trading point and more significantly at the SEQ trading point.



Trading in the Wallumbilla gas supply hub was concentrated around shorter-term deliveries for products at SEQ (45 TJ) and WAL (125 TJ) this week (see section 6).[1] Longer term trades at WAL included 615 TJ (monthly) for delivery across March (155 TJ), April (150 TJ) and August (310 TJ). Prices of forward trades for delivery in winter were similar to prompt trades happening now in March.

Mainland gas powered generation decreased this week, with a significant drop in Queensland reducing average gas usage by over 100 TJ/day. LNG export pipeline flows were higher this week, increasing above 4000 TJ/day on average (see more detailed map and table at figure 5.1). This aligned with increased gas flows north from the southern states from mid-week.

[1] The South East Queensland (SEQ) trading point in the Wallumbilla (WAL) Gas Supply Hub (GSH) supplies gas to an in-pipe notional delivery point on the Roma to Brisbane Pipeline (RBP), located in close proximity to a number of large production facilities in the Roma region. The WAL product location covers the remaining gas deliveries between the South West Queensland Pipeline (SWQP), Roma to Brisbane Pipeline (RBP), Queensland Gas Pipeline (QGP) and other interconnected pipelines in Queensland. Trades at Moomba (MOO) occur on the Moomba to Adelaide Pipeline (MAP) and Moomba to Sydney Pipeline (MSP). Southern market locations also exist at Culcairn (CUL/VIC) and Wilton (WIL/SYD).

In the Sydney STTM on 8 February, a decrease MOS requirement (14 TJ) was largely caused by over forecast demand inside the hub (12.9 TJ).[2] However, counteracting MOS allocations drove increase and decrease MOS up by around 3.5 TJ on the Eastern Gas Pipeline (EGP) and Moomba to Sydney Pipeline (MSP) respectively.

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)[3]

	Victoria		Sydney		Adelaide		Brisbane	
	Price	Demand	Price	Demand	Price	Demand	Price	Demand
06 Feb - 12 Feb 2022	8.92	294	8.92	243	9.63	40	9.68	77
% change from previous week	-8	0	-14	6	-10	4	-14	-6
21-22 financial YTD	9.81	549	10.48	247	10.71	56	10.53	89
% change from previous financial YTD	91	0	97	-2	84	-4	92	-14

[2] 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. With additional supply not required due to lower than forecast demand, gas was stored on the pipeline upstream of the Brisbane hub and allocated as decrease MOS.

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

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 Hubs ($/GJ, TJ)[4]

	Moomba		South East Queensland		Wallumbilla	
	Price	Quantity	Price	Quantity	Price	Quantity
06 Feb - 12 Feb 2022	9.03	10	9.03	45	10.15	740
% change from previous week	-	-	-18	-53	-2	65
21-22 financial YTD	8.39	270	10.74	2367	10.67	10321
% change from previous financial YTD	178	-20	132	-14	115	27

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

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

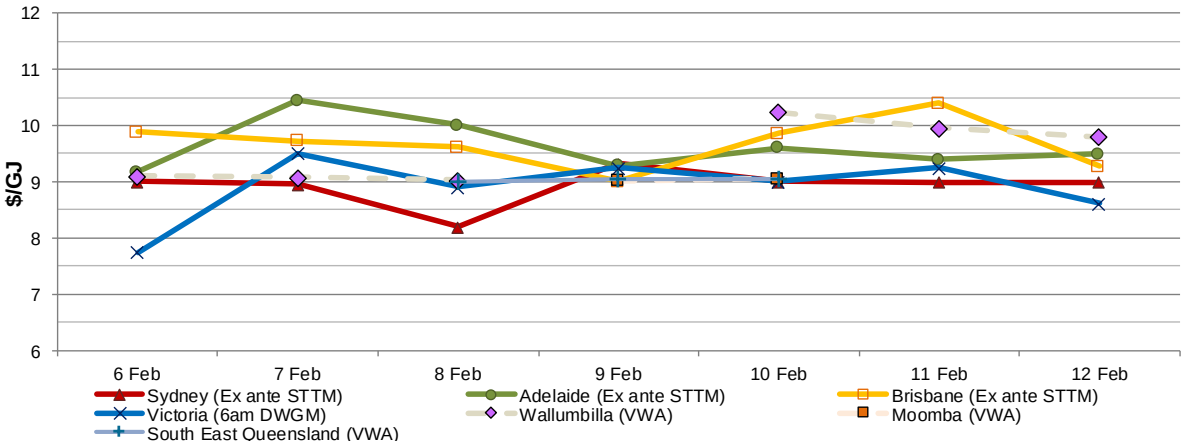


Figure 4 compares average ancillary market payments (for the VGM) and balancing gas service payments (STTM) against historical averages.

Figure 4: Average daily ancillary payments ($000)

	Victoria Ancillary Payments*	Sydney MOS	Adelaide MOS	Brisbane MOS
06 Feb - 12 Feb 2022	-	11.93	3.71	0.79
% change from previous week	-	8	-2	-37
21-22 financial YTD		20.28	7.59	0.84
% change from previous financial YTD		-3	-11	-83

* 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.

[4] 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).

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)[5]

	Moomba		South East Queensland		Wallumbilla*	
	VWA price	Quantity	VWA price	Quantity	VWA price	Quantity
Balance of day	9.02	8.0	8.99	37.0	9.34	60.0
Daily	9.05	2.0	-	-	9.79	24.0
Day ahead	-	-	9.20	8.0	9.38	41.0
Weekly	-	-	-	-	-	-
Monthly	-	-	-	-	10.30	615.0
Total	**9.03**	**10.0**	**9.03**	**45.0**	**10.15**	**740.0**

* 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	1555	919	1741	4215
Export Pipeline Flows	1576	968	1478	4022
% change from previous week (pipeline flows)	1	1	15	6
21-22 financial YTD flows	1462	1085	1353	3900

* 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.

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

Detailed market analysis

High export gas flows continue

Consistent with the high international prices, high levels of export gas flows continue.

Since early September 2021, average daily export pipeline gas flows have regularly exceeded 4000 TJ/day. While gas exports from Victoria briefly dipped this week to bring supply back into the state on 8 and 9 February (see figure 1.5, Culcairn), flows north into Queensland have been sustained since September.

Iona has been steadily refilling since mid-December, with Longford providing the bulk of southern supply.[6] Storage levels increased above 18 PJ from 12 February.

Sydney STTM

On 12 February, a pipeline flow direction constraint (PFDC) was set on the Moomba to Sydney Pipeline (MSP), allowing for the economic scheduling of additional gas.[7] The ex ante price was set by a partially cleared offer on the Eastern Gas Pipeline (EGP, $8.99/GJ).[8]

On this day an irregular pricing outcome happened known as a pipeline flow direction constraint price (the 27th such day in the Sydney STTM since the market commenced).

There were 42.7 TJ of bids on the MSP to purchase gas priced above the ex-ante price of $8.99/GJ but some of these bids could not be scheduled through the normal ex ante price schedule as it would have caused scheduled pipeline flows on the MSP to be negative.

The table below shows relevant MSP and EGP offers and bids.

Offers in merit order	Bids in merit order	Comment
222,845 GJ of offers, including 33,441 GJ of MSP offers, priced up to $8.27/GJ (132,811 GJ priced at $0/GJ)	53,783 GJ of bids, including 28,668 GJ of bids on MSP, priced at $9.65/GJ or higher (4 GJ of 590 GJ bid scheduled)	**Scheduled ex ante** There were sufficient MSP offers to schedule these bids without the MSP schedule becoming negative
5,359 GJ of $8.99/GJ BHP offer (EGP)	4,773 GJ of $9.60/GJ by Santos (10,000 GJ bid on MSP), plus remaining 586 GJ of the 590 GJ EGP bid at $9.65/GJ	Offer **partially scheduled** only to meet bids – more not scheduled to prevent MSP gas schedule being negative (up to this point MSP bids scheduled reach 33,441 GJ)
PFDC – Further scheduling only matches offers and bids on the MSP (other facilities excluded)		
4,700 GJ offered from $8.9999/GJ to $9.59/GJ on MSP by multiple participants: Senex, Delta and Simply Energy	A further 4,700 GJ of $9.60/GJ bid by Santos (10,000 GJ bid), the bid is not fully cleared (9,473 GJ cleared)	Further economic scheduling of gas

[6] Longford production dropped briefly last week due to planned maintenance, with Iona supplying gas into Victoria on 31 January for the first time since mid-December. Unseasonable cold weather from November and continued northern pipeline flows supplying gas to Queensland saw storage at Iona drawn upon to supply the Victorian market while the main source of southern production at Longford was constrained.

[7] Refer to AER Gas Report 26 December 2021-1 January 2022 Box 1 for further information.

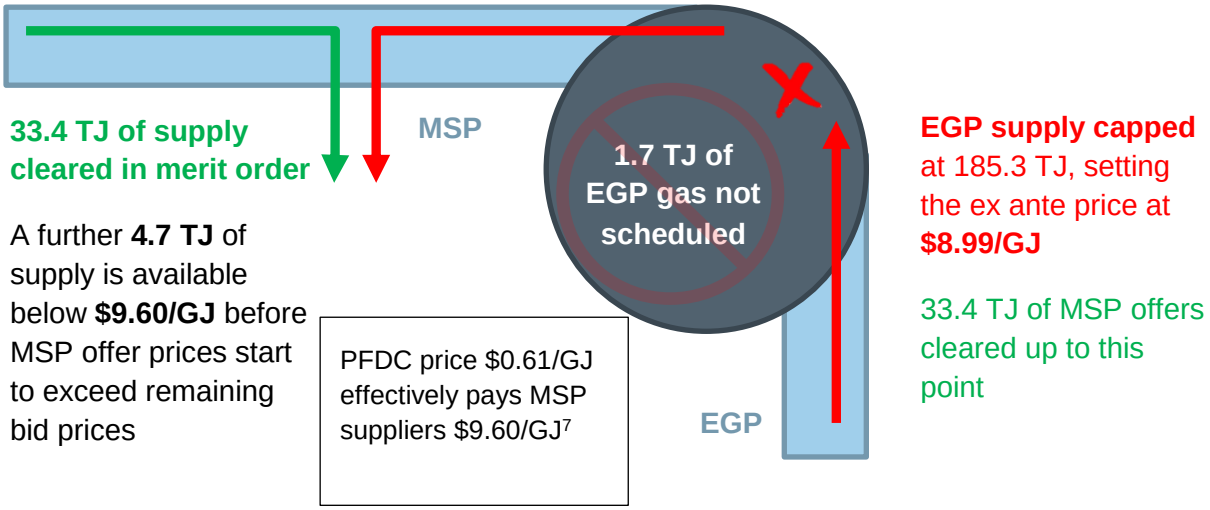
[8] Additional EGP supply could not be scheduled to meet additional MSP backhaul demand because gas cannot physically be delivered to the MSP from the Sydney hub (distribution network).

Offers in merit order	Bids in merit order	Comment
2,000 GJ offer at $10/GJ on MSP by Santos	527 GJ of $9.60/GJ Santos bid remains, with the next MSP bid priced at $9.25/GJ	**Not scheduled, Santos offer priced above next bids on MSP**

The ex ante price of $8.99/GJ was set by the partially cleared BHP offer on EGP, the MSP had zero net flow scheduled into the distribution system, with 33.4 TJ of MSP supply offers catering for 33.4 TJ of backhaul demand on the pipeline including a partially filled bid by Eastern Energy.

However, additional gas supply on the MSP was still available below the price of further MSP backhaul bids, allowing more gas to be scheduled economically on the MSP, with those participants backhauling gas paying a premium above the ex ante price.[9] The PFDC price was set at $0.61/GJ with 4.7 TJ more backhaul delivered on the MSP.

On 12 February AGL, Santos, SGMT and Weston Energy paid the PFDC for their withdrawals on the MSP to Brickworks, CSR, Delta Electricity, Macquarie Bank, Origin, Powershop, Senex, Simply Energy and Weston Energy who cumulatively made 38.14 TJ combined of MSP offers to the Sydney hub priced below $9.59/GJ.[10]



[9] Participants backhauling gas on the MSP also pay the difference between the ex ante price and the PFDC price, which was set by the last partially cleared bid on the MSP ($7.31/GJ).

[10] The PFDC price is paid by all shippers withdrawing gas from the hub on that pipeline. To compensate the supplying shippers (who would otherwise only receive the ex ante market price), the PFDC price is paid to all shippers supplying the hub on that pipeline ($6.45/GJ + $0.86/GJ = $7.31/GJ).

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

The main drivers[12] 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[13], 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)

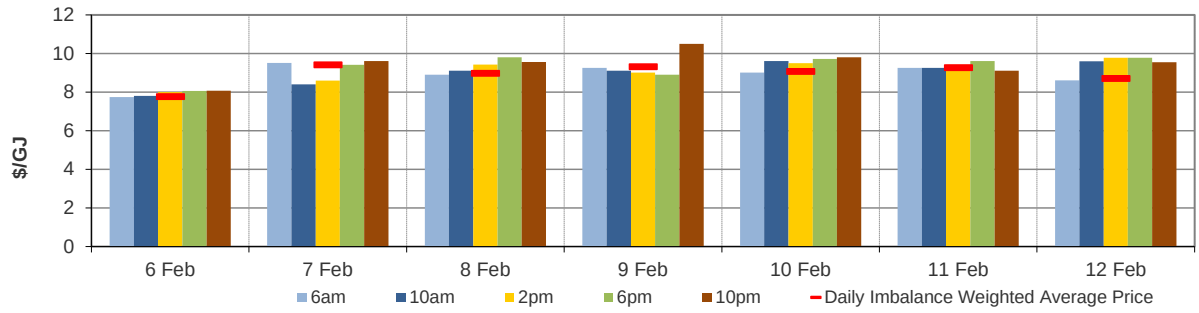
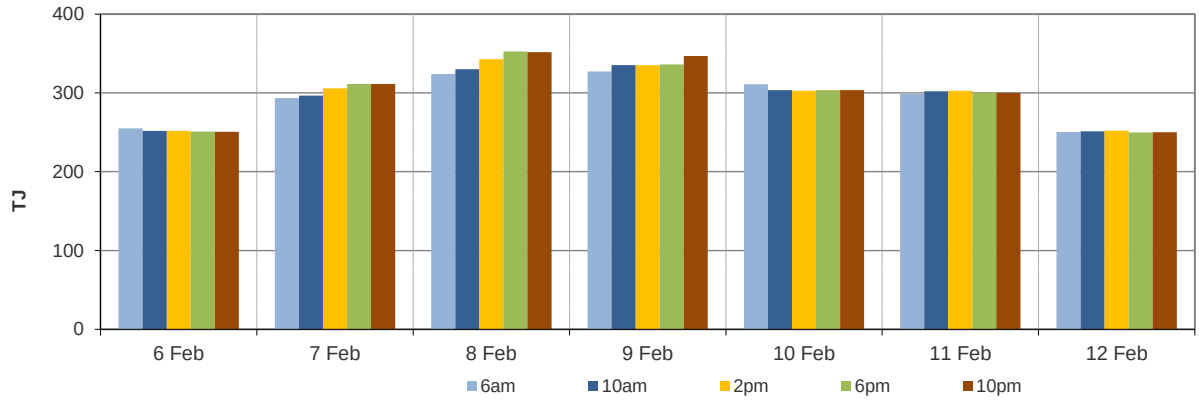


Figure 1.2: Demand forecasts (TJ)



[11] 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.
[12] 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.
[13] 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)

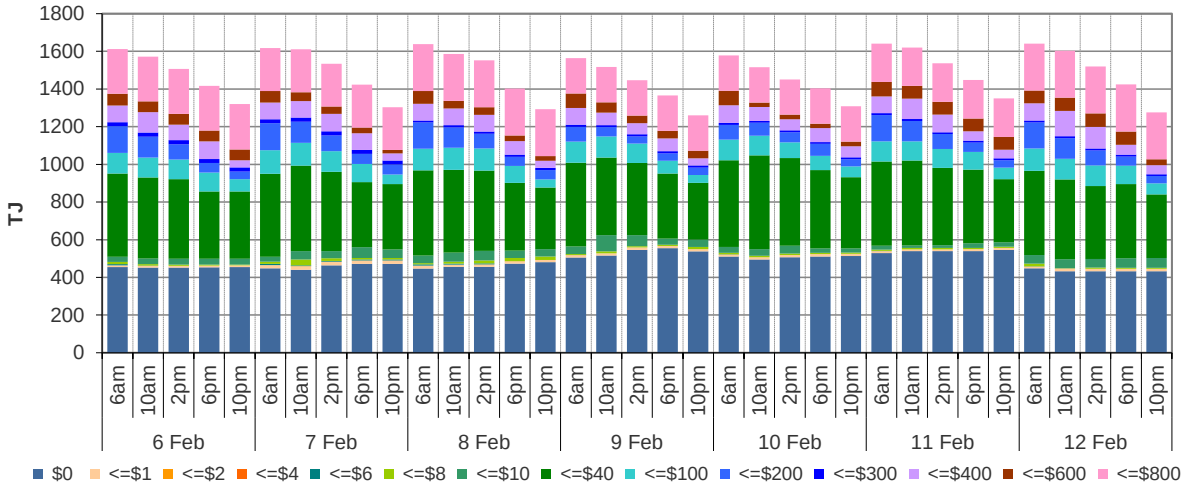


Figure 1.4: Withdrawal bids by price bands (TJ)

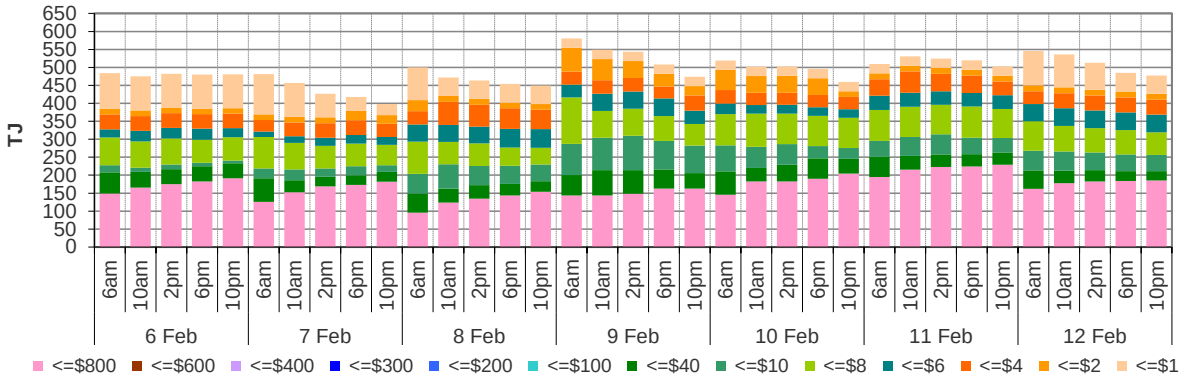
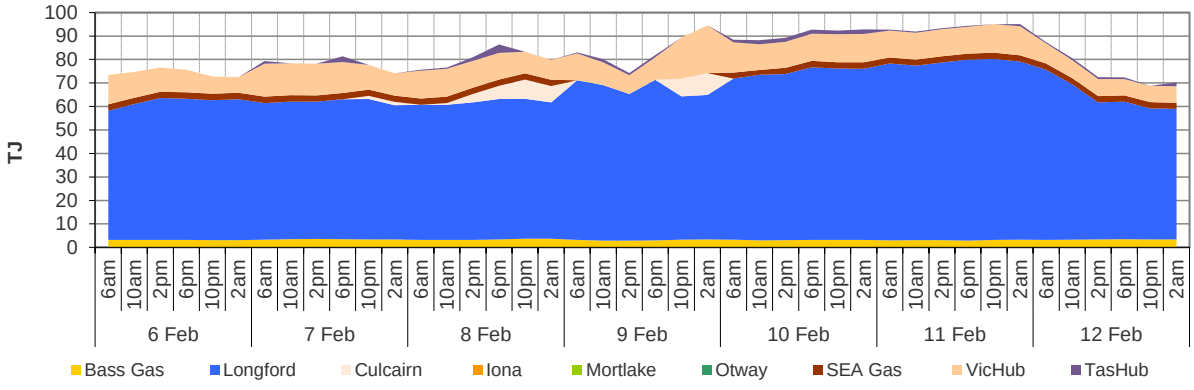


Figure 1.5: Metered Injections by System Injection Point (TJ)



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.[14] 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.

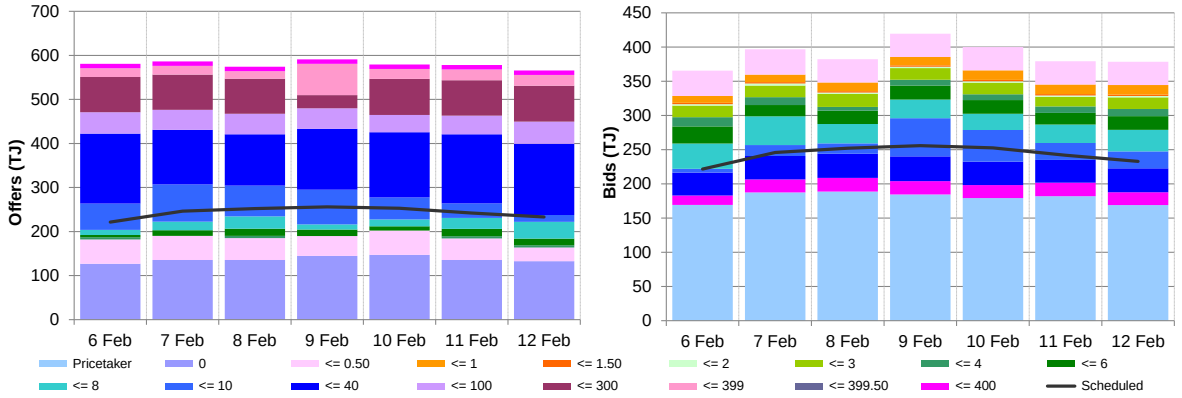
Market Operator Service balancing gas (MOS) payments arise because the amount of gas nominated on pipelines for delivery on a gas day will either exceed or fall short, by some amount, of the amount of gas consumed in the hub. In such circumstances, MOS payments are made to participants for providing a service to park gas on a pipeline or to loan gas from a pipeline to the hub.[15]

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 ($/GJ)	9.00	8.95	8.20	9.32	9.00	8.99	8.99
Ex ante quantity (TJ)	222	246	252	256	253	242	233
Ex post price ($/GJ)	9.00	8.99	8.10	9.39	9.00	8.71	8.99
Ex post quantity (TJ)	223	250	243	261	253	232	233

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



[14] 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.

[15] 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)[16]

Figure 2.3 shows the daily scheduled and allocated quantities sorted by facility for Sydney this week.[17] For a more detailed description of this figure, please refer to the user guide.

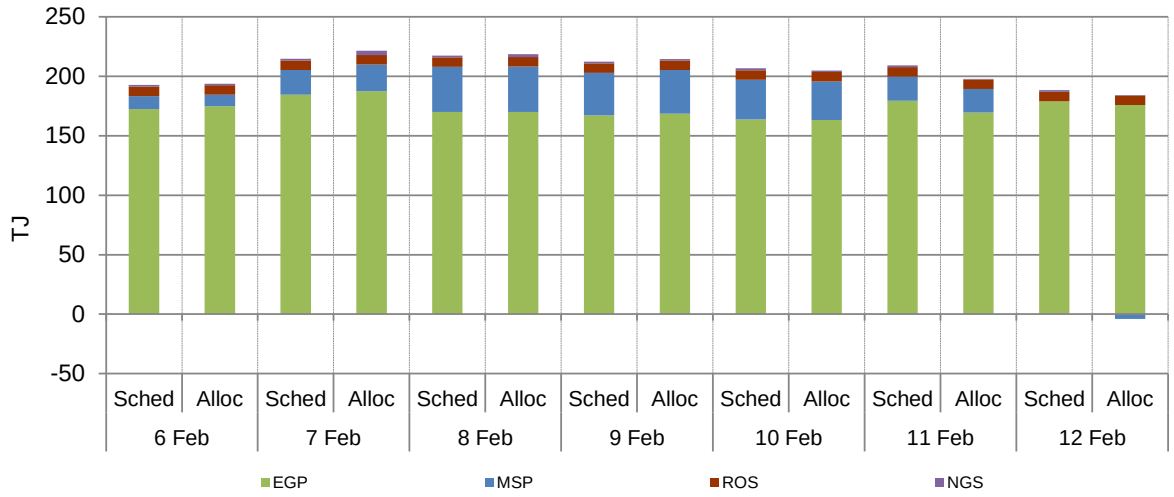
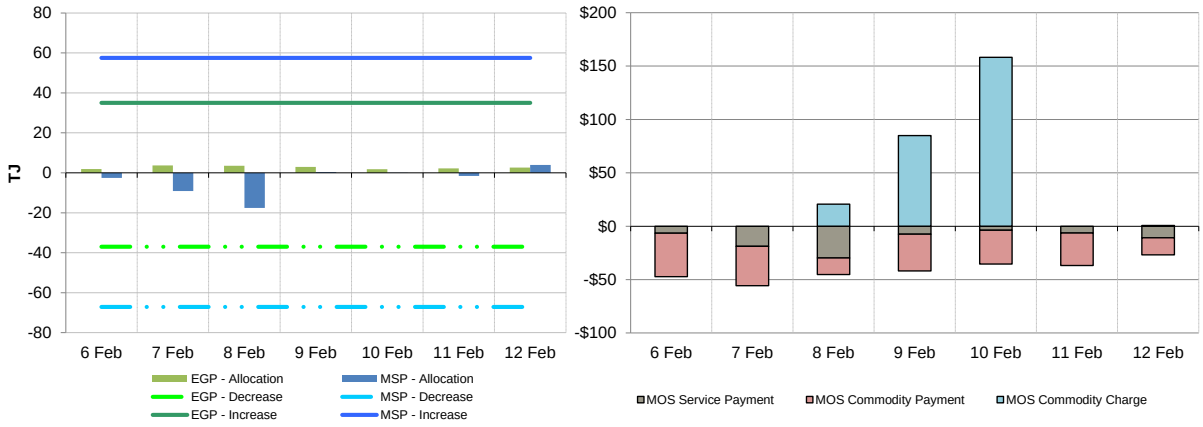


Figure 2.4: SYD MOS allocations (TJ), service payments and commodity payments/charges ($000)[18]



[16] Net flows supplying the hub are calculated as forward haul (supply) minus backhaul (pipeline demand). On 12 February, a pipeline flow direction constraint (PFDC) saw net flows into the Sydney hub on the MSP scheduled at zero (all supply was provided to backhaul services). Negative net allocations (excluding MOS allocations) were recorded on the MSP (-3.9 TJ). This was the result of a renomination to reduce MSP supply and increase EGP supply. As a result an equivalent quantity of increase MOS was allocated on the MSP, netting physical supply into the hub to zero.

[17] Net flows supplying the hub are calculated as forward haul (supply) minus backhaul (pipeline demand). On 12 February, a pipeline flow direction constraint (PFDC) saw net flows into the Sydney hub on the MSP scheduled at zero (all supply was provided to backhaul services). Negative net allocations (excluding MOS allocations) were recorded on the MSP (-3.9 TJ). This was the result of a renomination to reduce MSP supply and increase EGP supply. As a result an equivalent quantity of increase MOS was allocated on the MSP, netting physical supply into the hub to zero.

[18] 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 ($/GJ)	9.17	10.45	10.00	9.29	9.60	9.39	9.49
Ex ante quantity (TJ)	34	41	41	46	44	43	33
Ex post price ($/GJ)	8.99	10.45	10.19	8.45	8.81	9.39	9.49
Ex post quantity (TJ)	31	42	44	39	39	43	34

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

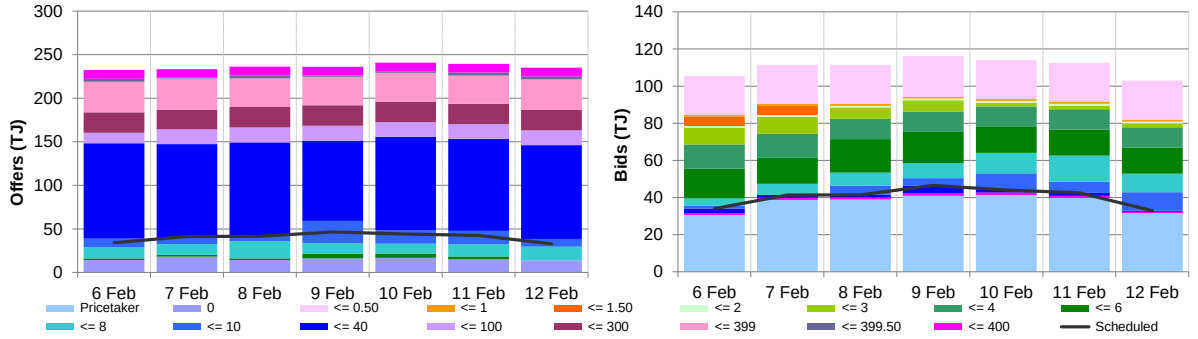


Figure 3.3: ADL net scheduled and allocated gas hub supply (excluding MOS)

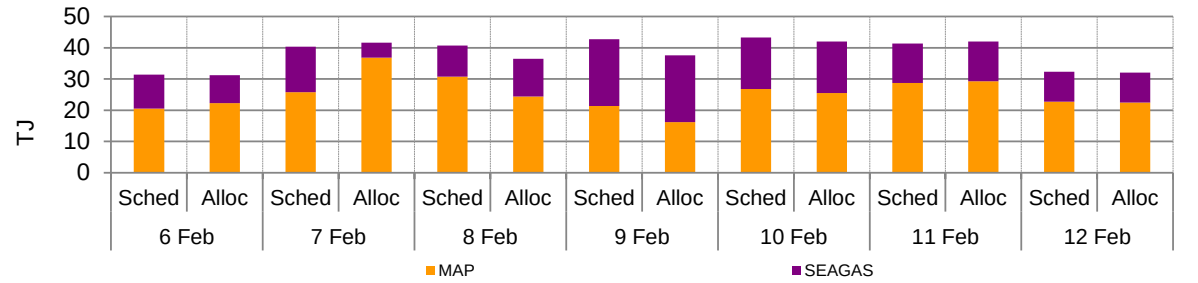
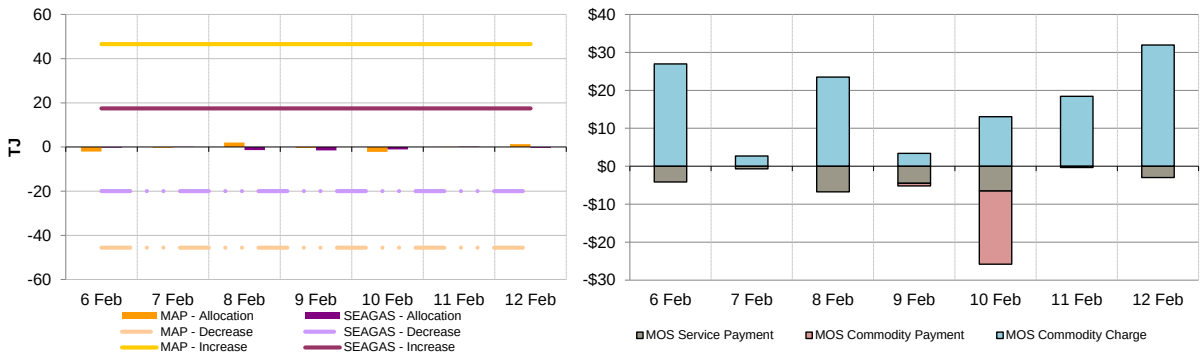


Figure 3.4: ADL MOS allocations (TJ), service payments and commodity payments/charges ($000)



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 ($/GJ)	9.88	9.72	9.62	9.00	9.86	10.40	9.27
Ex ante quantity (TJ)	66	84	78	71	80	82	81
Ex post price ($/GJ)	9.91	9.50	9.69	9.50	10.05	10.40	8.99
Ex post quantity (TJ)	68	80	80	82	82	83	77

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

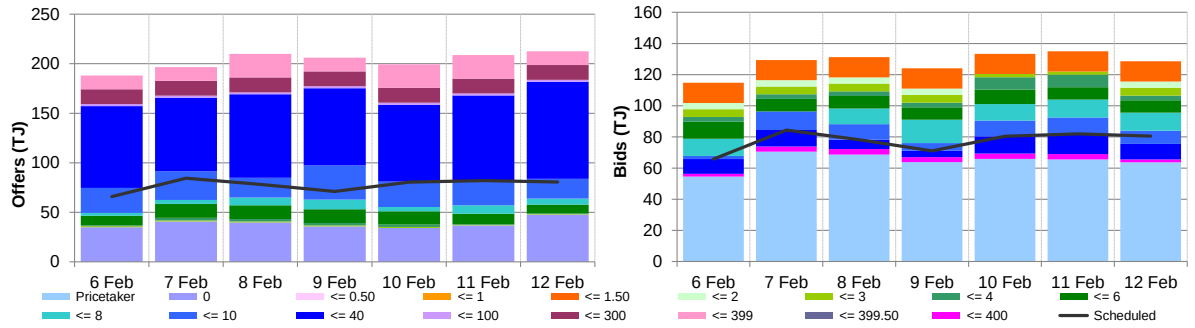


Figure 4.3: BRI net scheduled and allocated gas hub supply (excluding MOS)

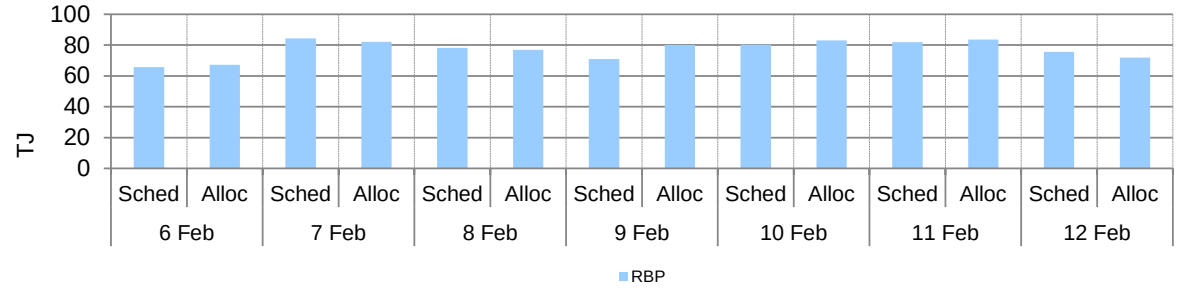
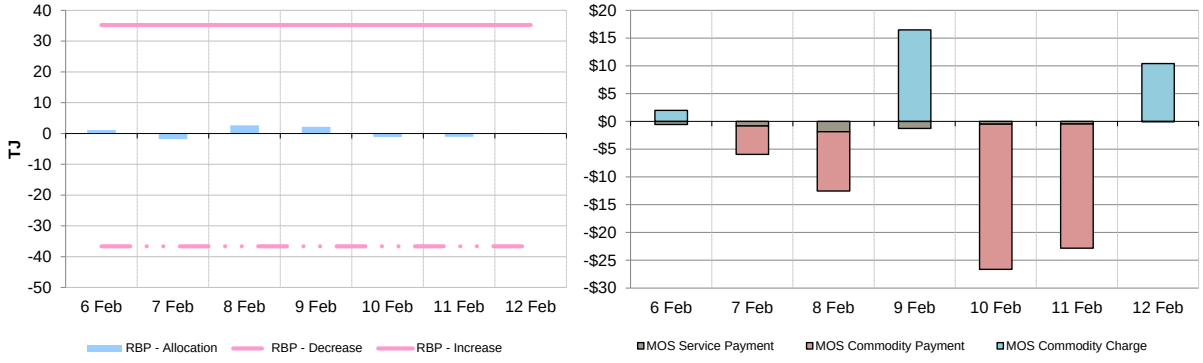


Figure 4.4: BRI MOS allocations (TJ), service payments and commodity payments/charges ($000)



5. National Gas Bulletin Board

Figure 5.1 shows average daily actual flows for the current week[19] from the Bulletin Board (changes from the previous week's average are shown in brackets). Average daily prices[20] 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)[21]

Totals	Current Week	Change (TJ)
Domestic gas flows	1122	(-123)
Export gas flows	4022	(+223)
Gas production	5247	(+90)
GPG gas usage	232	(-116)
Pipelines		
Queensland		
Gladstone		
APLNG	1576	(+18)
GLNG	968	(+7)
QGP	129	(-6)
WGP	1478	(+198)
Mt Isa		
CGP	85	(+1)
Brisbane		
RBP	89	(-7)
South West		
SWQP	58	(+3)
Wallumbilla		
BWP	22	(-13)
CRWP	61	(+25)
DDP	51	(+9)
QGP (WAL)	22	(+3)
RBP (WAL)	21	(-19)
SWQP (WAL)	-137	(+6)
New South Wales		
MSP	46	(-19)
EGP	274	(+10)
Victoria		
LMP	475	(-26)
SWP	-125	(-69)
South Australia		
MAP	88	(-2)
SEAGas	35	(-8)
Tasmania		
TGP	22	(-1)

Storage (held volume)		
Moomba LDB	13088	(-48)
Iona UGS	17644	(+803)
LNG Storage Dandenong	255	(-6)
Silver Springs	16755	(-58)
Roma UGS	30711	(-2)

19 **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.

20 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.

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

6. Gas Supply Hub

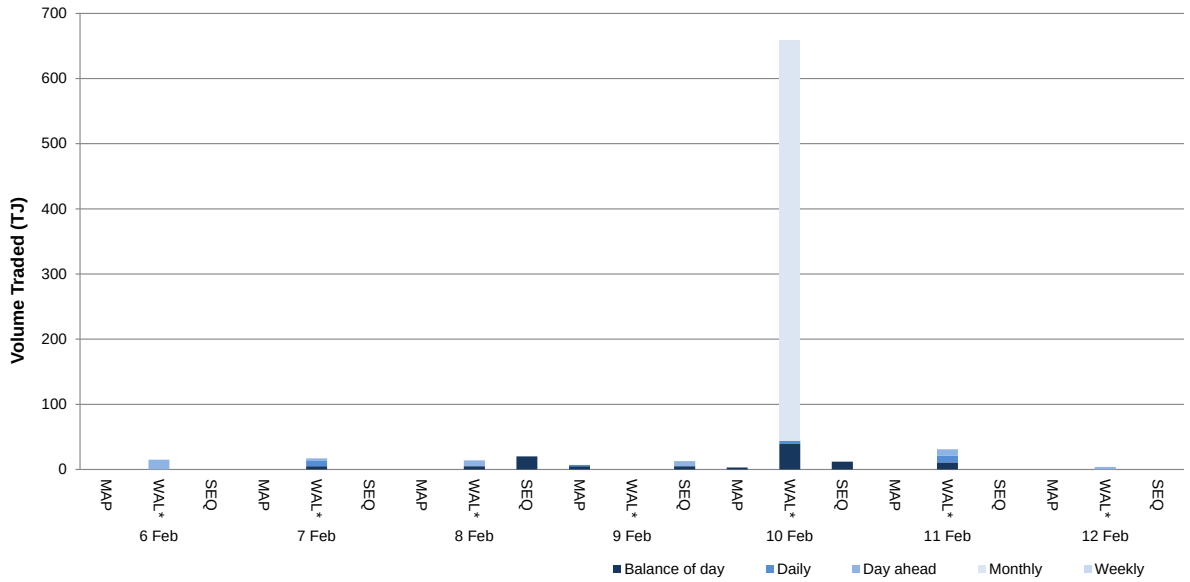
The gas supply hub was established at Wallumbilla in March 2014 to facilitate the voluntary trading of gas between participants, with products listed for sale and purchase at delivery points on three major connecting pipelines. There are separate products for each trading location and delivery period (daily, day-ahead, balance-of-day, weekly and monthly products).[22]

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 39 trades for 795 TJ of gas at a volume weighted price of $10.07/GJ. These consisted of 30 trades at WAL (740 TJ at $10.15/GJ), 6 trades at SEQ (45 TJ at $9.03/GJ) and 3 trades at MAP (10 TJ at $9.03/GJ). There were no spread products traded this week. 0 between SEQ and WAL and 0 between MSP 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.[23]

Figure 6.1: GSH traded quantities



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

23 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.

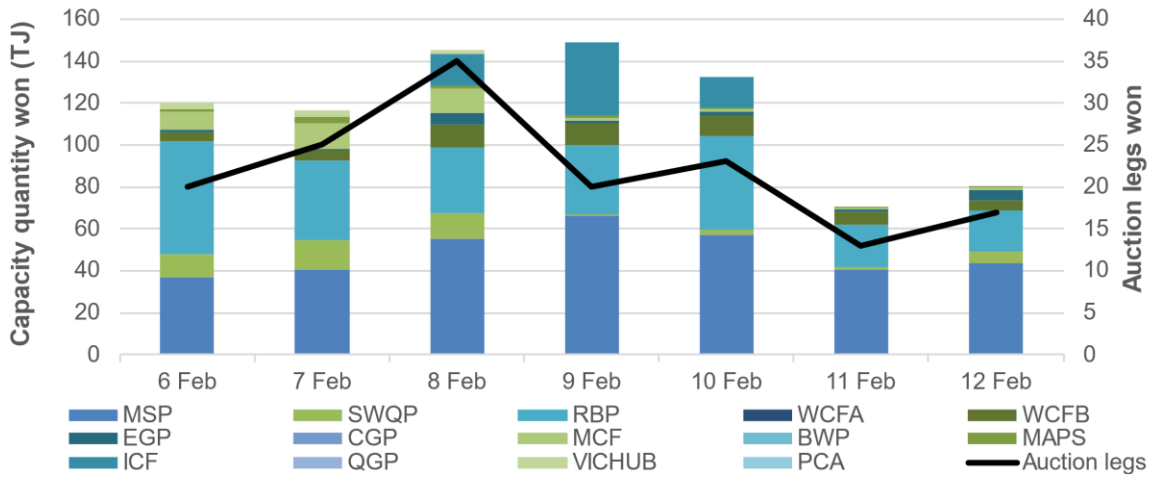
Participants may bid in to the DAA in order to procure the following services:

- 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, 13 participants took part in the DAA, winning 814 TJ of capacity across 9 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.[24]

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



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