Gas Market Report

AUSTRALIAN ENERGY REGULATOR

30 May – 5 June 2021

Weekly Summary

Average prices and demand increased significantly from the previous week, with gas powered generation also significantly higher (figure 5.1).[1] In Brisbane, forecast demand increases in ex ante schedules throughout the week drove higher forecast prices, particularly on 31 May and 4 June. Conversely, Sydney prices were markedly lower than provisional forecasts, deceasing on average $1.56/GJ below D-2 provisional schedules over the week.

In Victoria, Longford production levels increased further this week, averaging above 940 TJ/day.[2] This occurred alongside higher market demand and continued colder weather from the middle of last week.[3]

Flows west out of Wallumbilla delivered south via QSN link increased further over this week at around 115 TJ/day.

Day Ahead Auction activity remained strong for the 2nd week in a row, with capacity won for delivery over the week rising to almost 1780 TJ.[4] On the MSP 50% of all auction capacity won was on routes towards Moomba (208 TJ). On the SWQP the majority of auction quantities won was on routes north (223 TJ) although this started to shift from 3 June onwards towards routes flowing south.

Gas Powered Generation increased significantly this week following a period of higher output across the prior fortnight. This was largely driven by higher generation levels in Queensland and New South Wales following the loss of baseload generation at Callide from 25 June. GPG demand in South Australia also increased by more than 50 TJ/day from last week (figure 5.1).

Gas export flows remained low this week, with GLNG approaching the end of a planned maintenance period from early May.

On 3 June, an amber flag was raised on the Bulletin Board for the Roma to Brisbane Pipeline.[5] High demand on the day saw actual flows slightly above the capacity limit of 188.5 TJ.[6]

---

1 Mainland GPG demand exceeded 760 TJ on 3 June, with the average daily generation requirement above 580 TJ.

2 Around ¾ of production at Longford supplied higher demand in the Victorian DWGM, with the majority of the remaining gas supply flowing east to Sydney via the Eastern Gas Pipeline.

3 Demand exceeded 1 PJ/day on 30 and 31 May and remained around 790-950 TJ later in the week.

4 A record quantity of 1776.9 TJ of capacity was won on the Auction across 9 facilities. This was the highest level of trade since late July 2020, where two weeks exceeded 1500 TJ of traded capacity. The Moomba compression facility also experienced its highest level of trade at just under 167 TJ. There was also a high level of trade on the RBP, with the majority of trade on routes supplying gas powered generators.

5 For non-Victorian pipelines, an amber flag indicates curtailment of one or more interruptible gas customers is likely or happening on the gas day. This may relate to upstream production shortfalls/outages, pipeline outages/constraints, gas escapes, depleting linepack or unexpected high demand on the pipeline.

6 This compares to a static capacity limit of 167 TJ for the pipeline across prior months (for the Wallumbilla to Gibson Island delivery stream). The capacity limit on subsequent days was revised to 185 TJ.

Long term statistics and explanatory material

The AER has published an explanatory note to assist with interpreting the data presented in its weekly gas market reports. The AER also publish a range of longer term statistics on the performance of the gas sector including gas prices, production, pipeline flows and consumer demand.

Market overview

Figure 1 sets out the average daily prices ($/GJ) for the current week, and demand levels, compared to historical averages. Regions shown include the Victorian Declared Wholesale Market **(VGM or Victorian gas market)** and for the Sydney **(SYD)**, Adelaide **(ADL)** and Brisbane **(BRI)** Short Term Trading Market hubs **(STTM)**.

Figure 1: Average daily prices and demand – all markets ($/GJ, TJ)[7]

	Victoria		Sydney		Adelaide		Brisbane	
	Price	Demand	Price	Demand	Price	Demand	Price	Demand
30 May - 05 Jun 2021	7.47	922	8.95	309	8.93	70	9.40	128
% change from previous week	14	15	14	8	17	8	15	11
20-21 financial YTD	5.41	536	5.82	251	6.15	56	5.97	105
% change from previous financial YTD	-20	-5	-13	5	-15	0	0	17

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)[8]

	Moomba		South East Queensland		Wallumbilla	
	Price	Quantity	Price	Quantity	Price	Quantity
30 May - 05 Jun 2021	-	-	8.72	243	8.17	506
% change from previous week	-	-	19	-56	23	-38
20-21 financial YTD	3.04	338	5.77	5844	5.70	15491
% change from previous financial YTD	-56	-34	0	-23	-8	6

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

[8] 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)

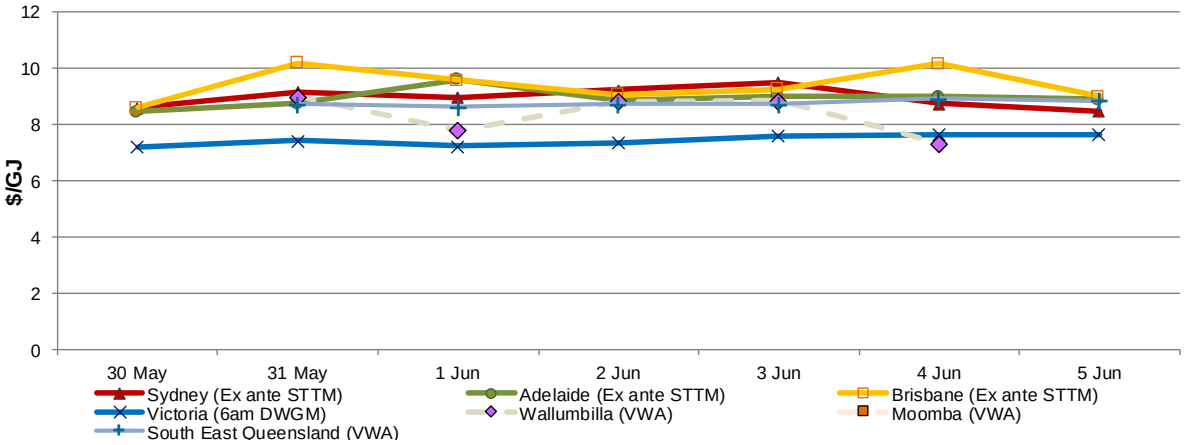


Figure 4 compares average ancillary market payments (VGM) and balancing gas service payments (STTM) against historical averages.

Figure 4: Average daily ancillary payments ($000)

	Victoria Ancillary Payments*	**Sydney** MOS	**Adelaide** MOS	**Brisbane** MOS
30 May - 05 Jun 2021	-	24.35	5.91	1.02
% change from previous week	-	0	-6	86
20-21 financial YTD		19.43	7.72	3.67
% change from previous financial YTD		-7	93	131

* 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)[9]

	Moomba		South East Queensland		Wallumbilla*	
	VWA price	Quantity	VWA price	Quantity	VWA price	Quantity
Balance of day	-	-	8.83	50.0	8.96	49.0
Daily	-	-	8.68	150.0	8.04	355.0
Day ahead	-	-	8.73	43.0	9.00	40.0
Weekly	-	-	-	-	-	-
Monthly	-	-	-	-	7.80	62.0
Total	**-**	**-**	**8.72**	**243.0**	**8.17**	**506.0**

* 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	1474	921	1762	4157
Export Pipeline Flows	1337	735	1393	3465
% change from previous week (pipeline flows)	-9	1	16	2
20-21 financial YTD Flows	1466	998	1323	3787

* 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.

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

Detailed market analysis

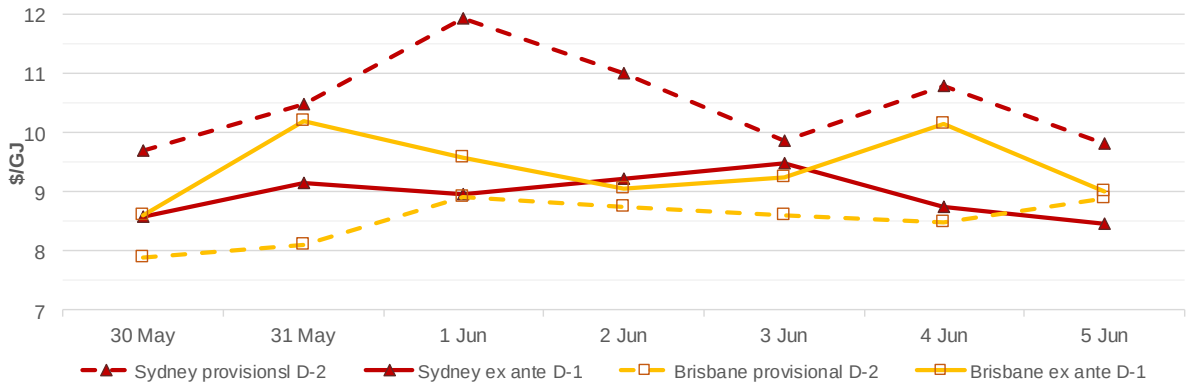
Gas market prices in the Short Term Trading Markets

In Adelaide, gas demand, scheduled supply quantities and market prices across the week remained relatively stable across the D-2 and D-1 forecasts. Market prices followed a similar upward trend to the other STTMs, remaining above Victorian price levels, with the hub getting the majority of its supply from the Moomba to Adelaide Pipeline (see figure 3.3).

In Brisbane, ex ante prices exceeded provisional D-2 forecast prices across the week. Conversely, ex ante prices in Sydney remained below provisional D-2 forecasts, continuing a trend of supressed ex ante prices from mid-May.

Figure 7 shows the D-2 provisional and D-1 ex ante price forecasts for Brisbane and Sydney across the week.

Figure 7: Daily provisional and ex ante prices in Brisbane and Sydney ($/GJ)



The largest price deviations in Brisbane occurred on 31 May and 4 June, with ex ante prices $2.09/GJ and $1.66/GJ higher than D-2 provisional prices respectively.[10] On 31 May, this was the result of an upward shift in gas offer prices, with higher demand (up 11.9 TJ) having little impact. On 4 June, rebidding shifted offer prices above the level of provisional forecast demand (around 122 TJ) up by roughly $2/GJ across the next 50 TJ of available offers. As a result, a demand increase of only 5 TJ had a greater impact.[11]

In Sydney, ex ante prices decreased from provisional forecast levels despite demand increasing by 25 TJ on average from D-2 provisional forecasts.[12] Rebidding providing additional low priced gas offers was concentrated around the Eastern Gas Pipeline supplying gas from Victoria, where market prices have remained below the STTMs.[13]

While gas powered generation is up across the east coast from previous weeks, the increase in Queensland was much more pronounced, particularly over the weekdays this week driving higher upstream gas demand. Following the loss of the baseload Callide generator last week, GPG gas usage in Queensland rose above an average of 200 TJ/day. The higher GPG requirement continued this week, increasing to 293-363 TJ/day from

---

10 Forecast prices rose from $8.10/GJ (D-2) to $10.19/GJ (D-1) on 31 May, and from $8.49/GJ to $10.15/GJ on 4 June.

11 A further increase of 8.6 TJ of additional demand in the ex post (D+1) schedule drove higher costs for supply/demand deviations, with the ex post price rising to $11.10/GJ for the 4 June gas day.

12 Ex ante demand increases from D-2 provisional forecasts ranged from 5.9 TJ on 4 June up to 56 TJ higher on 2 June. With the exception of 3 June, ex ante prices were $1.76/GJ to $2.95/GJ lower than provisional D-2 forecasts.

13 Day Ahead Auction activity on the EGP had also increased over 27 May to 2 June to over 25 TJ/day (averaging 28.3 TJ) for delivery to Horsley Park (Sydney). Rebidding this week also saw increased offers on the Moomba to Sydney Pipeline, but at higher prices.

30 May to 4 June.[14] In contrast, daily GPG gas demand in Victoria and NSW averaged 46 TJ and 78 TJ respectively.

Despite capacity on the MSP won on the Day Ahead Auction to move a significant proportion of gas north, physical flows around Moomba supplied gas south onto the MSP. This was supplemented by supply from Victoria via Culcairn in significant quantities over the week.[15]

Physical gas flows west from Wallumbilla also continued across the week, with an increase later in the week coinciding with reduced auction activity to bring gas towards Wallumbilla on the South West Queensland Pipeline.

[14] The highest day of gas generation demand in Queensland this week occurred on 3 June (363 TJ). Around 80 TJ of that GPG demand came from generators located on the Roma to Brisbane Pipeline (RBP), with the Brisbane STTM and GPG combined accounting for around 92 % of demand on the RBP, with high demand on the day triggering an Amber linepack capacity adequacy (LCA) flag to be raised on the Bulletin Board.

[15] Northern flows on the VNI from Culcairn reached a high of around 100 TJ or more on 2 and 3 June, only reversing towards Victoria at much lower levels later in the week (only up to 16 TJ south on 5 May). Around half of the upstream supply on the MSP made its way into the Sydney STTM, with the other half feeding upstream demand on the pipeline.

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

The main drivers[17] 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[18], 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)

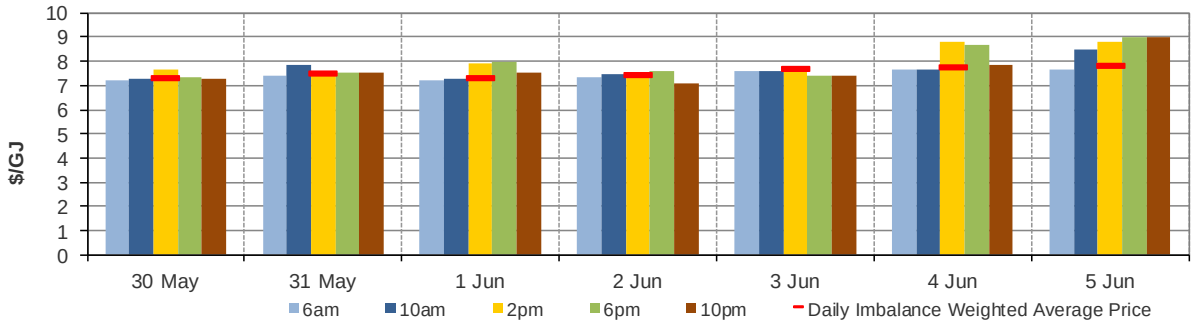
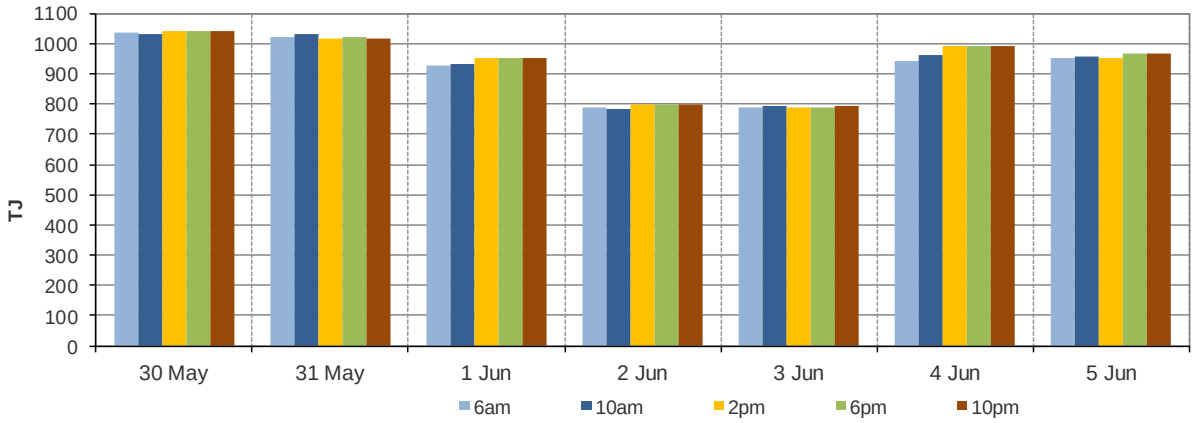


Figure 1.2: Demand forecasts (TJ)



16 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.

17 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.

18 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)

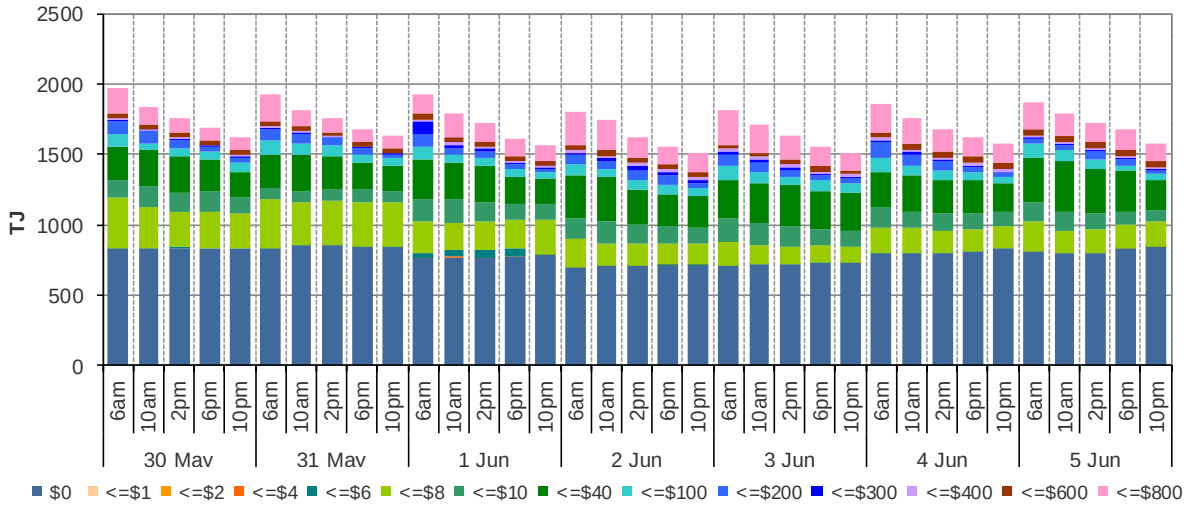


Figure 1.4: Withdrawal bids by price bands (TJ)

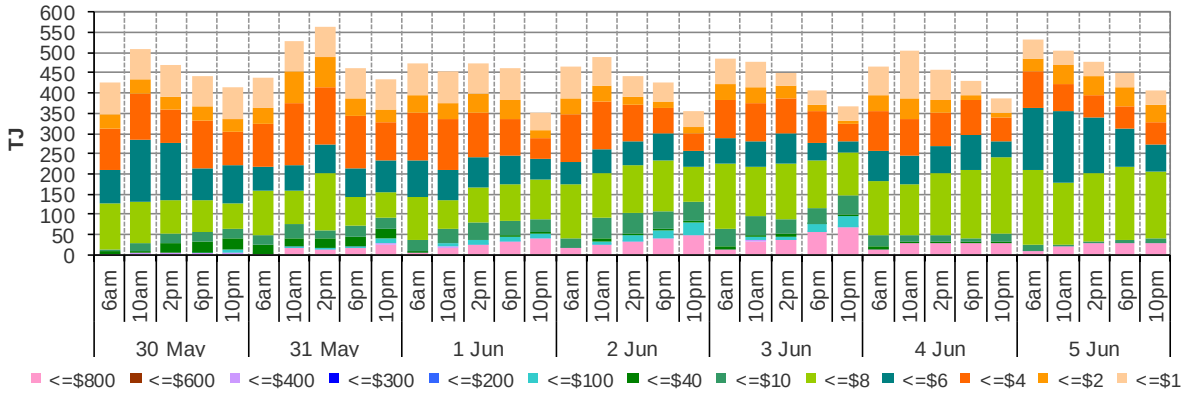
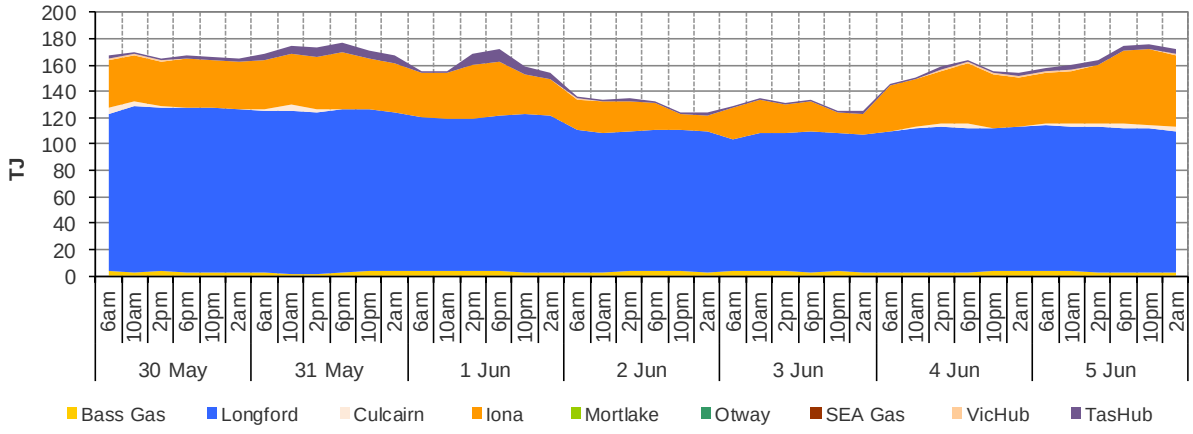


Figure 1.5: Metered Injections by System Injection Point (TJ)



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.[19] 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.

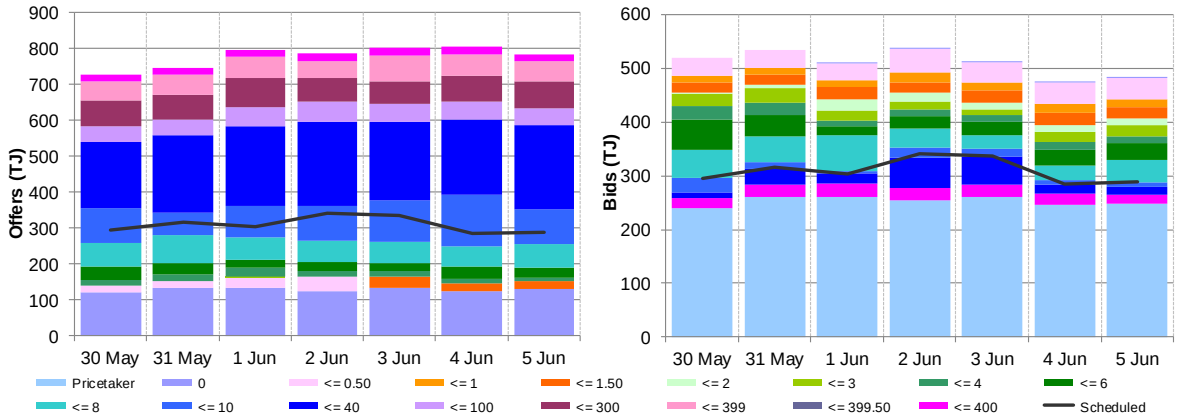
Market Operator Service balancing gas (MOS) payments arise because the amount of gas nominated on pipelines for delivery on a gas day will either exceed or fall short, by some amount, of the amount of gas consumed in the hub. In such circumstances, MOS payments are made to participants for providing a service to park gas on a pipeline or to loan gas from a pipeline to the hub.[20]

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 ($/GJ)	8.59	9.15	8.97	9.23	9.49	8.75	8.47
Ex ante quantity (TJ)	296	316	304	341	336	284	289
Ex post price ($/GJ)	8.59	9.44	9.40	9.50	9.75	8.90	8.50
Ex post quantity (TJ)	300	324	332	353	358	305	293

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



[19] 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.

[20] 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.

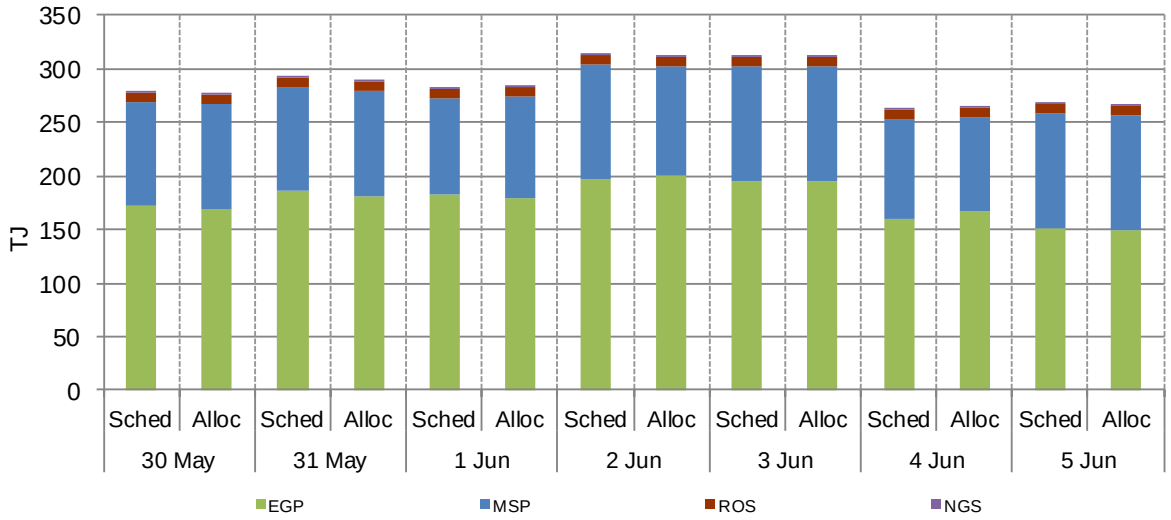
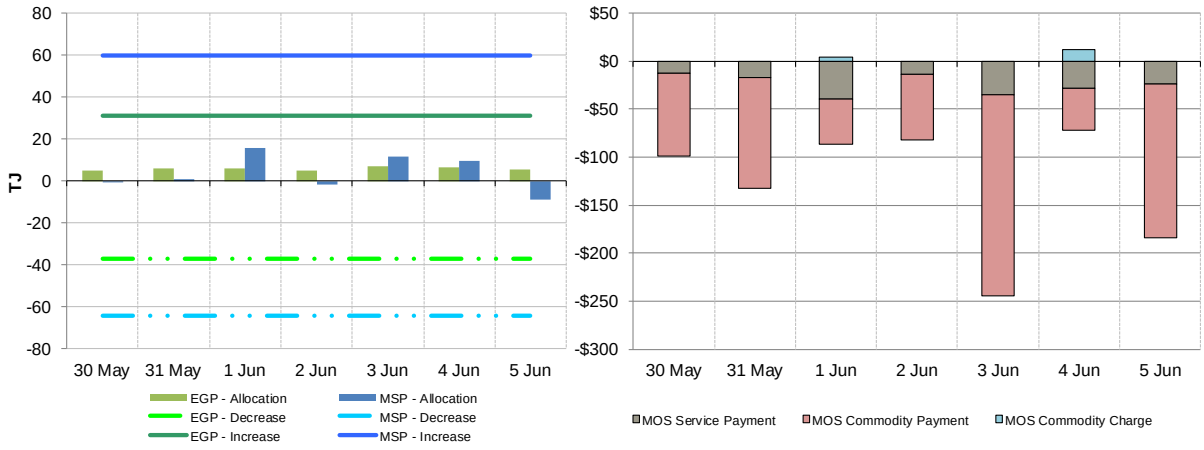


Figure 2.4: SYD MOS allocations (TJ), service payments and commodity payments/charges ($000)[21]



[21] 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 ($/GJ)	8.45	8.75	9.60	8.85	9.00	9.00	8.89
Ex ante quantity (TJ)	71	72	70	68	72	71	67
Ex post price ($/GJ)	8.20	9.10	9.80	8.77	8.77	8.75	8.85
Ex post quantity (TJ)	66	78	72	64	69	68	66

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

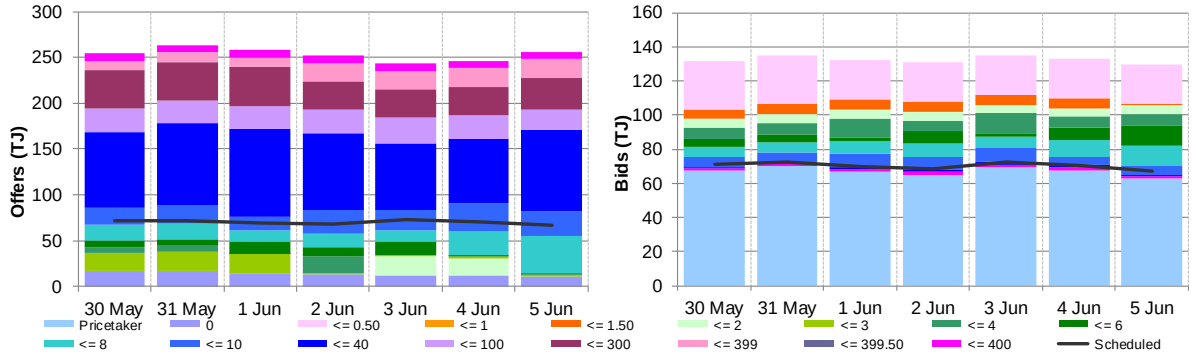


Figure 3.3: ADL net scheduled and allocated gas hub supply (excluding MOS)

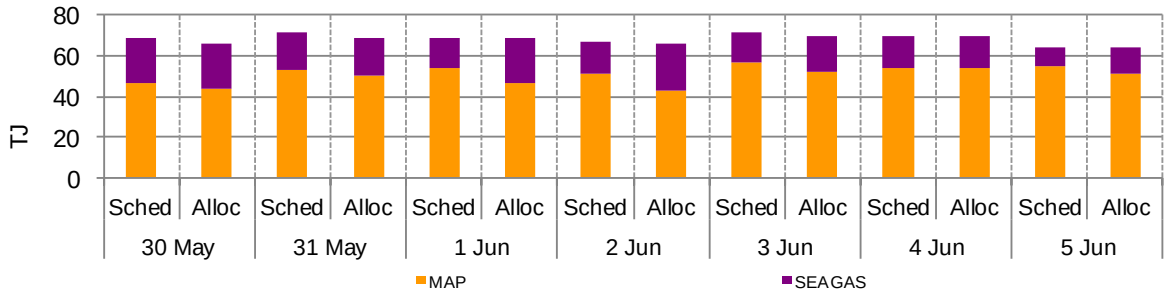
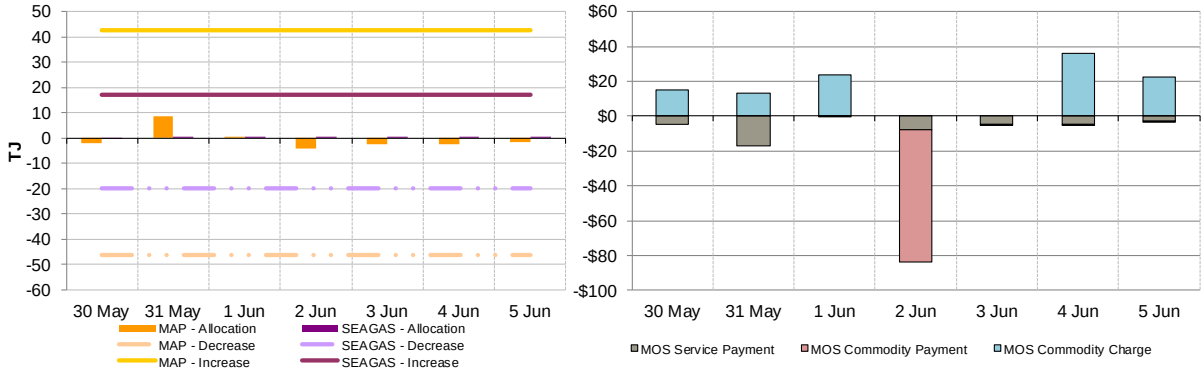


Figure 3.4: ADL MOS allocations (TJ), service payments and commodity payments/charges ($000)



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 ($/GJ)	8.60	10.19	9.57	9.05	9.25	10.15	9.00
Ex ante quantity (TJ)	118	137	134	133	132	127	117
Ex post price ($/GJ)	8.61	10.19	9.49	8.97	9.34	11.10	9.00
Ex post quantity (TJ)	120	137	131	128	136	135	119

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

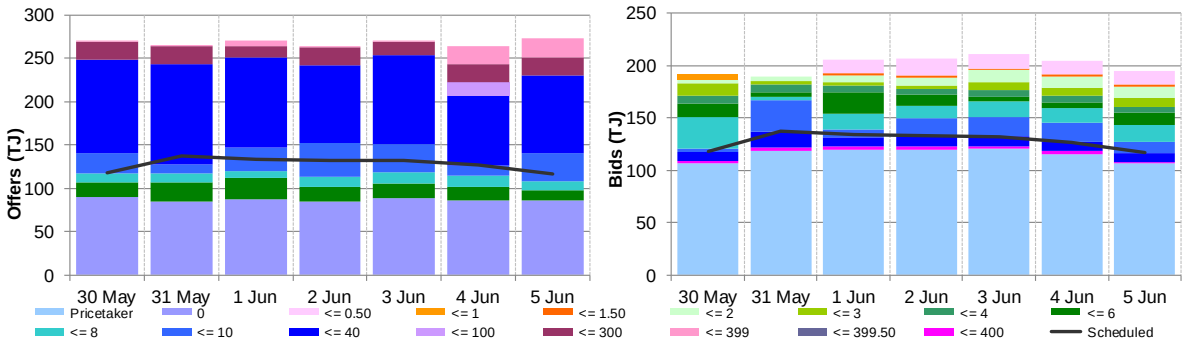


Figure 4.3: BRI net scheduled and allocated gas hub supply (excluding MOS)

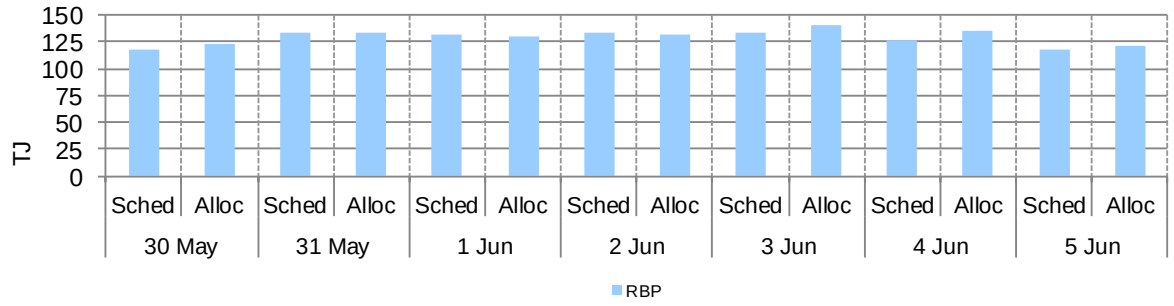
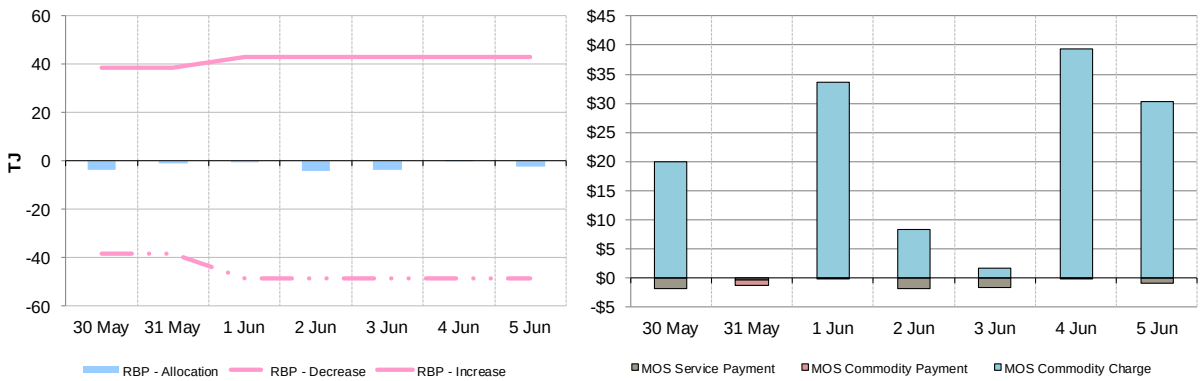


Figure 4.4: BRI MOS allocations (TJ), service payments and commodity payments/charges ($000)



5. National Gas Bulletin Board

Figure 5.1 shows average daily actual flows for the current week[22] from the Bulletin Board (changes from the previous week's average are shown in brackets). Average daily prices[23] 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)[24]

Totals	Current Week	Change (TJ)
Domestic gas flows	2103	(+286)
Export gas flows	3465	(+62)
Gas production	5460	(+268)
GPG gas usage	586	(+231)
Pipelines		
Queensland		
Gladstone		
APLNG	1337	(-137)
GLNG	735	(+7)
QGP	144	(+11)
WGP	1393	(+192)
Mt Isa		
CGP	86	(+1)
Brisbane		
RBP	156	(+31)
South West		
SWQP	37	(-11)
Wallumbilla		
BWP	122	(+51)
CRWP	-50	(+13)
DDP	69	(-40)
QGP (WAL)	20	(+9)
RBP (WAL)	57	(+45)
SWQP (WAL)	151	(+18)
New South Wales		
MSP	203	(+47)
EGP	288	(+34)
Victoria		
LMP	720	(-2)
SWP	203	(+113)
South Australia		
MAP	182	(+32)
SEAGas	81	(+15)
Tasmania		
TGP	39	(+11)

Storage (held volume)		
Moomba LDB	15521	(-77)
Iona UGS	21448	(-1212)
LNG Storage Dandenong	355	(-3)
Silver Springs	20701	(-98)
Roma UGS	39809	(0)

22 **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.

23 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.

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

6. Gas Supply Hub

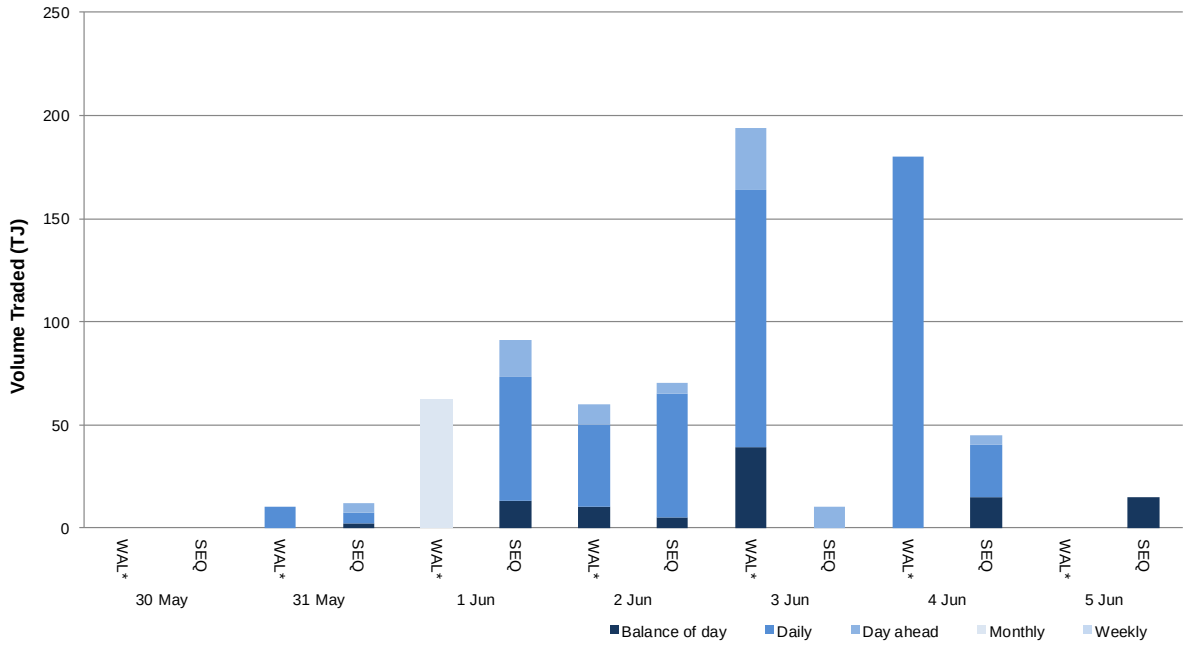
The gas supply hub was established at Wallumbilla in March 2014 to facilitate the voluntary trading of gas between participants, with products listed for sale and purchase at delivery points on three major connecting pipelines. There are separate products for each trading location and delivery period (daily, day-ahead, balance-of-day, weekly and monthly products).[25]

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 54 trades for 749 TJ of gas at a volume weighted price of $8.35/GJ. These consisted of 26 trades at WAL (506 TJ at $8.17/GJ) and 28 trades at SEQ (243 TJ at $8.72/GJ).

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.[26]

Figure 6.1: GSH traded quantities



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

26 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.

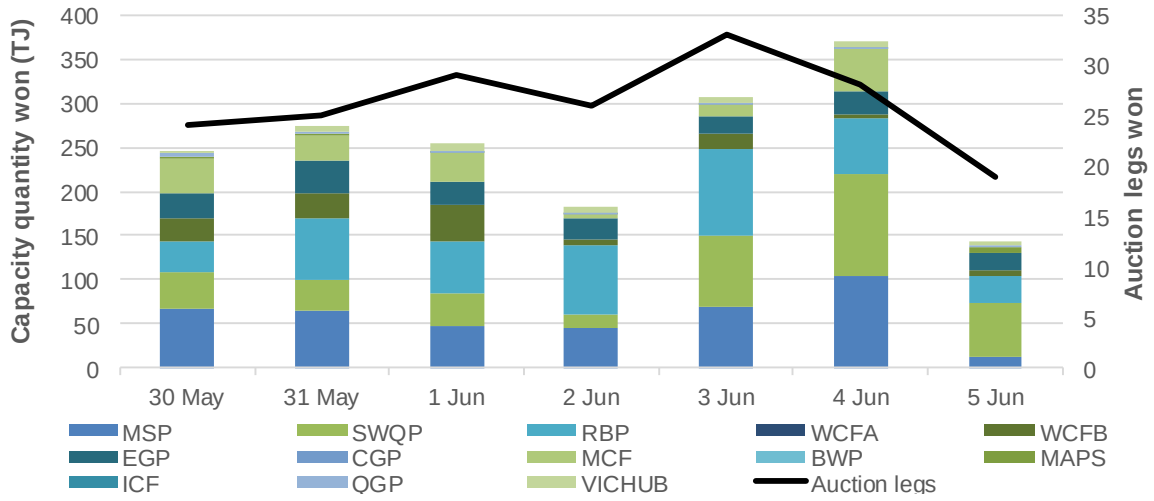
Participants may bid in to the DAA in order to procure the following services:

- 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, 14 participants took part in the DAA, winning 1776 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.[27]

Figure 7.1: DAA traded quantities and auction legs won



Australian Energy Regulator
July 2021

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