Gas Market Report

AUSTRALIAN ENERGY REGULATOR

6 – 12 June 2021

Weekly Summary

Average demand levels increased in Adelaide from last week while remaining relatively stable in other markets, however prices increased across all markets. Prices averaged $10.37-$10.39/GJ in the STTMs and $8.43/GJ in Victorian DWGM. Gas powered generation remained high across the east coast, increasing significantly last week.

LNG export pipeline flows increased to a high of 3763 TJ on 9 June, averaging just below 3650 TJ/day over the week (around 180 TJ/day higher than the previous week). This was driven by increased flows to Curtis Island on the APLNG and GLNG export pipelines, with GLNG gradually ramping up following a month long planned maintenance outage.

In Brisbane, prices increased to $11/GJ from 9 June and stayed around that level across the rest of the week. Ex ante market prices were around $0.84/GJ higher than forecast in D-2 provisional schedules alongside relatively stable demand.[1]

In Victoria, a plant trip at the Longford production facility occurred on the evening of 9 June.[2] Longford supply remained below scheduled levels leading into the 10 June gas day, ramping up following the initial schedule before dropping off again from 2 pm (see figure 1.5). Demand forecast overrides were applied from 10 am providing more gas into the transmission system alongside under forecast schedule demand during the mid-day schedules of 10 June. However, actual demand requirements were lower than projected over the evening peak, mitigating the need for market intervention.[3] A declared threat to system security for 10 June was revoked following the demand decrease. Longford increased supply from the 10 pm scheduling interval.

In Sydney, ex ante prices exceeded $10/GJ from 9 June, peaking at $11.76/GJ on 11 June. Daily forecast prices were set above $11/GJ on four occasions in D-2 provisional schedules. Daily prices dropped on average $1.28/GJ by the ex ante schedule despite higher increased

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1 With the exception of 6 June where higher demand and offers below $9/GJ increased, ex ante offer stack prices were higher and there was no significant shift in demand levels (compared to D-2 provisional schedules). Ex ante quantities of gas available between $4-$9/GJ were down on average 6.7 TJ/day from 7 June, attributable to rebidding by GPG gentailers.

2 A partial outage at Longford was triggered by an electricity outage related to a weather event, following damaging winds and flooding across the state. Injection constraints were invoked from the 10 pm scheduling interval to 581 TJ/day for 9 and 10 June, with AEMO subsequently seeking a market response to the unplanned outage on 10 June to avoid a potential pressure drop at the Sale city gate. The Longford constraint limit was reduced to 542 TJ for 10 June.

Market notice of Threat to System Security: The AEMO market notice indicated the requirement of 10-30 TJ of net supply from the Dandenong LNG storage facility to alleviate the threat projected to occur over the evening peak period (6-10 pm). A potential pressure drop at the Sale city gate was projected to impact the Melbourne and Gippsland withdrawal zones. LNG supply was not required on 10 June to maintain pressure levels.

3 Supply from Iona underground gas storage remained relatively flat across both gas days before ramping up prior to the evening peak on 10 June. Additional supply was provided by connection points on the eastern section of the Declared Transmission System (TasHub and VicHub) over the remainder of the 9 June gas day, while Culcairn provided supply into Victoria across the period of the outage (see figure 1.5). Further supply from Dandenong LNG was not required on the day, with the Dandenong city gate outlet supply to Melbourne having been reduced to maintain linepack on the Longford to Melbourne Pipeline.

demand.[4] Apart from participants shifting existing capacity to lower price bands D-1, there were also significant increases in capacity being made available by producers below $10/GJ.[5] There was also a notable trend in supply being provided from the Newcastle underground storage facility, providing 20-30 TJ/day over 4 days from 8 June (figure 2.3).

In Adelaide, ex ante prices were around $0.55/GJ above D-2 forecasts over the week with negligible increases to demand forecasts. Prices climbed above $10/GJ from 8 June, rising to $11.44/GJ on 11 and 12 June coinciding with higher GPG demand and lower wind generation in the region.

Pipeline capacity won on the Day Ahead Auction remained high this week, reaching just over 1790 TJ across 10 facilities.[6] Close to 590 TJ of capacity was won on the MSP, with a bit over 20% of that capacity on routes towards Moomba. Capacity won on the RBP also remained high, with the majority of 412 TJ won on routes supplying gas generators. Most of the capacity won on the SWQP was on routes towards Wallumbilla (more than 85%).

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
06 Jun - 12 Jun 2021	8.43	927	10.37	316	10.39	75	10.38	127
% change from previous week	13	1	16	2	16	7	10	-1
20-21 financial YTD	5.47	544	5.91	253	6.23	57	6.06	106
% change from previous financial YTD	-18	-5	-11	5	-14	0	3	17

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

4 Demand forecasts in ex ante schedules increased by around 20 TJ/day for gas days 8-9 June, and was up around 27 TJ/day for 10-12 June, compared to D-2 forecast levels.

5 Producers offered an additional 30-71 TJ/day of capacity priced below $10/GJ in the D-1 schedule (an average of 49 TJ/day over the week).

6 This was a record quantity for the second consecutive week, with 1778 TJ recorded the last week. The auction has also seen trading commence at VicHub from May, reaching 63.9 TJ this week.

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

Figure 2: Average prices and total quantity – Gas supply hub ($/GJ, TJ)[8]

	Moomba		South East Queensland		Wallumbilla	
	Price	Quantity	Price	Quantity	Price	Quantity
06 Jun - 12 Jun 2021	-	-	8.11	581	9.12	467
% change from previous week	-	-	-7	139	12	-8
20-21 financial YTD	3.04	338	5.99	6425	5.80	15958
% change from previous financial YTD	-55	-37	4	-16	-6	9

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

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

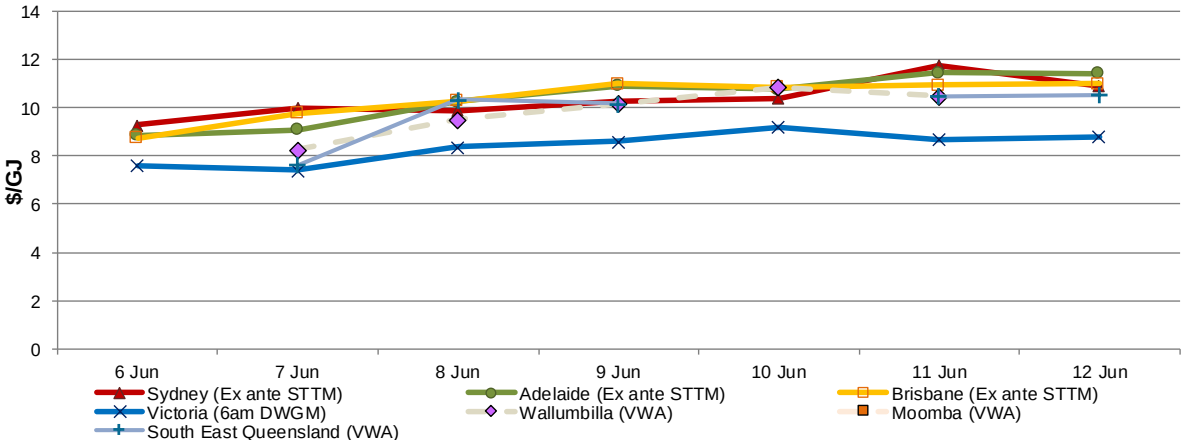


Figure 4 compares average ancillary market payments (VGM) and balancing gas service payments (STTM) against historical averages.

Figure 4: Average daily ancillary payments ($000)

	Victoria Ancillary Payments*	Sydney MOS	Adelaide MOS	Brisbane MOS
06 Jun - 12 Jun 2021	-	26.10	5.96	0.65
% change from previous week	-	7	1	-36
20-21 financial YTD		19.57	7.68	3.60
% change from previous financial YTD		-7	79	128

* 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.

[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 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	-	-	9.96	56.0	10.33	47.0
Daily	-	-	7.38	385.0	8.25	237.0
Day ahead	-	-	10.15	70.0	10.49	113.0
Weekly	-	-	8.60	70.0	9.00	70.0
Monthly	-	-	-	-	-	-
Total	**-**	**-**	**8.11**	**581.0**	**9.12**	**467.0**

* 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	1527	948	1767	4242
Export Pipeline Flows	1488	889	1270	3647
% change from previous week (pipeline flows)	11	21	-9	5
20-21 financial YTD Flows	1467	996	1322	3784

* 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).

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

The main drivers[11] 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[12], 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)

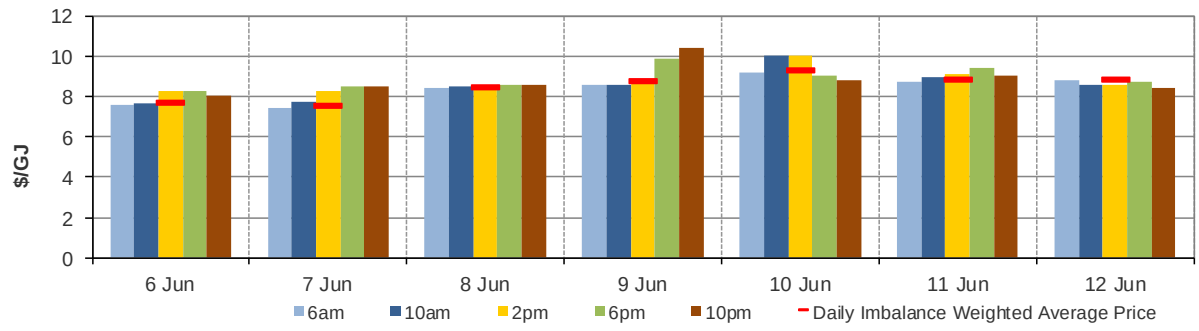
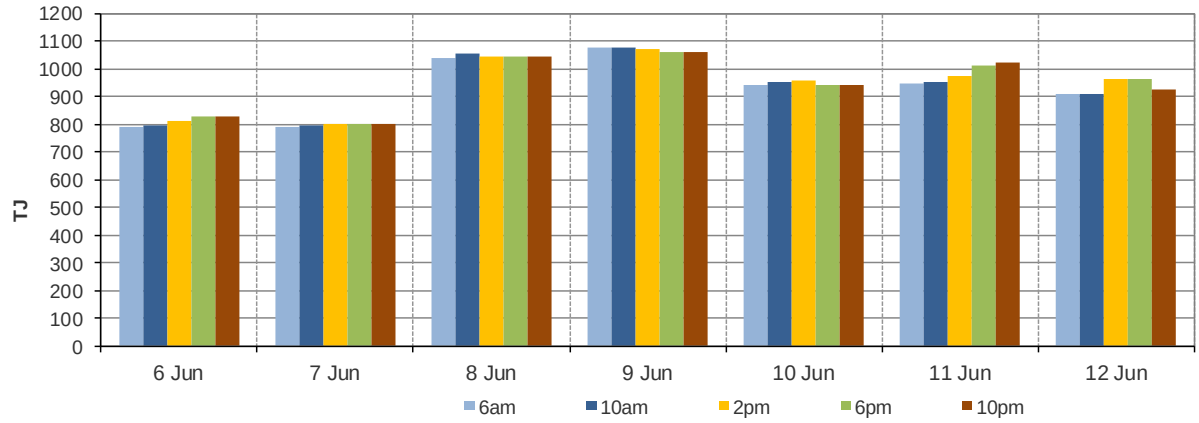


Figure 1.2: Demand forecasts (TJ)



10 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.

11 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.

12 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)

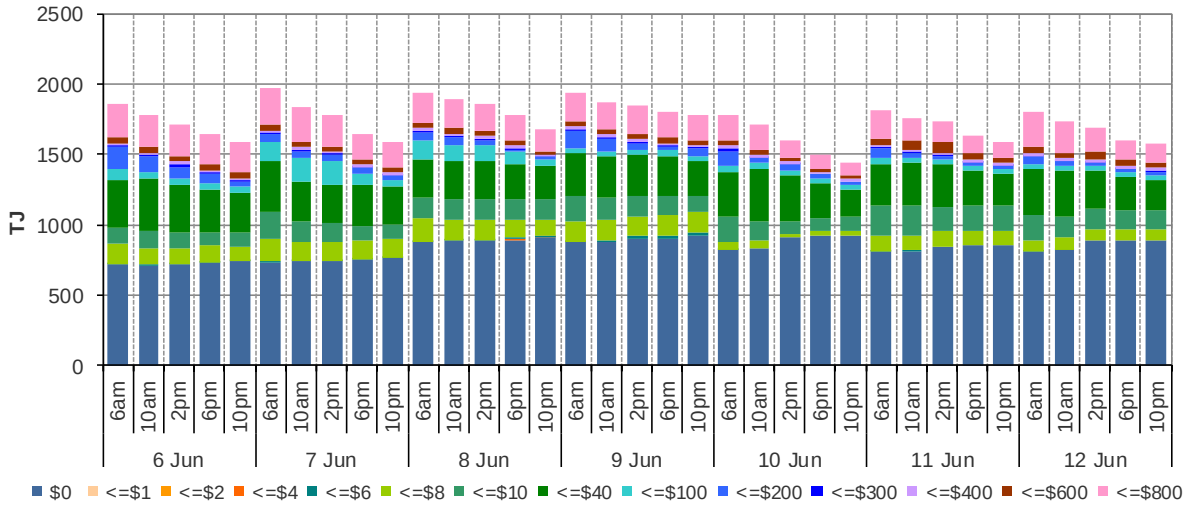


Figure 1.4: Withdrawal bids by price bands (TJ)

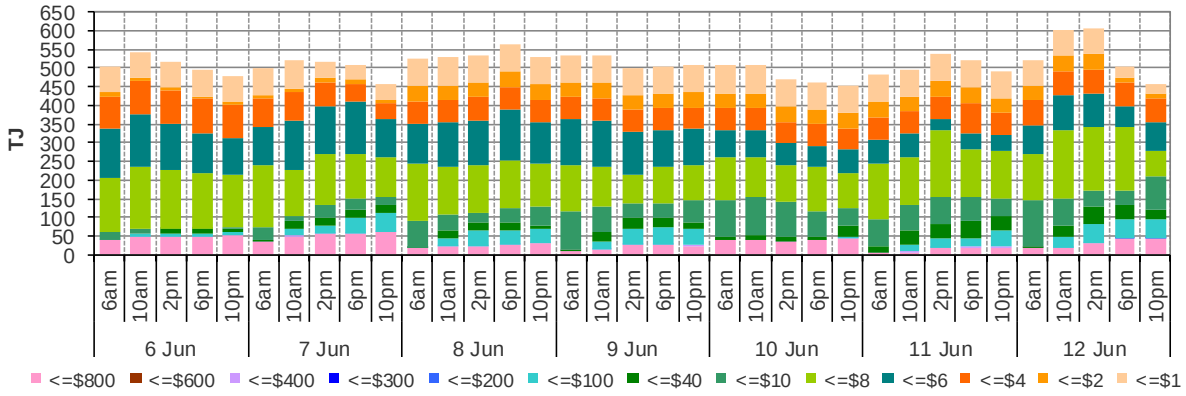
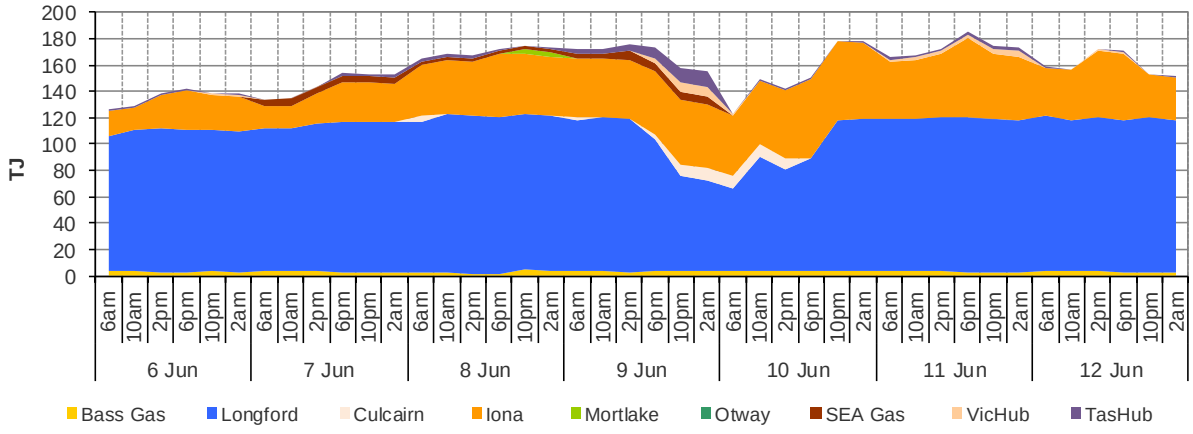


Figure 1.5: Metered Injections by System Injection Point (TJ)



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.[13] 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.

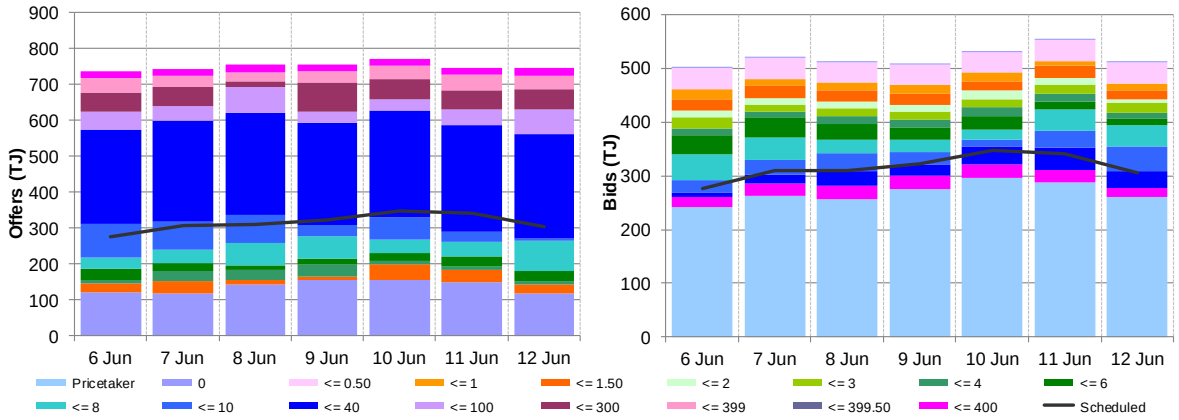
Market Operator Service balancing gas (MOS) payments arise because the amount of gas nominated on pipelines for delivery on a gas day will either exceed or fall short, by some amount, of the amount of gas consumed in the hub. In such circumstances, MOS payments are made to participants for providing a service to park gas on a pipeline or to loan gas from a pipeline to the hub.[14]

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 ($/GJ)	9.30	9.99	9.90	10.30	10.41	11.76	10.92
Ex ante quantity (TJ)	276	309	309	322	347	342	305
Ex post price ($/GJ)	9.50	10.00	9.99	10.51	10.90	11.75	11.00
Ex post quantity (TJ)	285	313	326	334	375	338	314

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



[13] 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.

[14] 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.

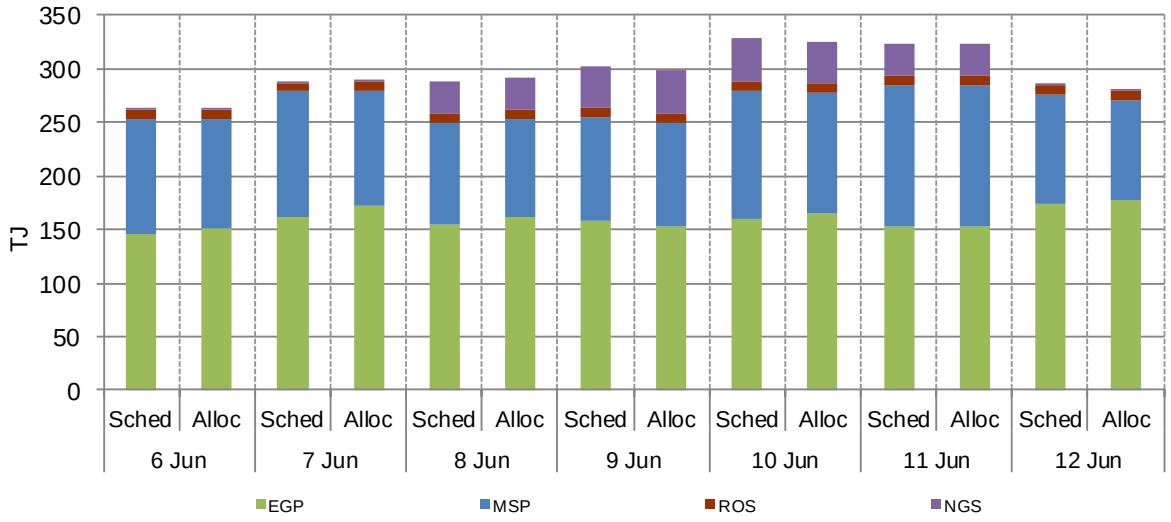
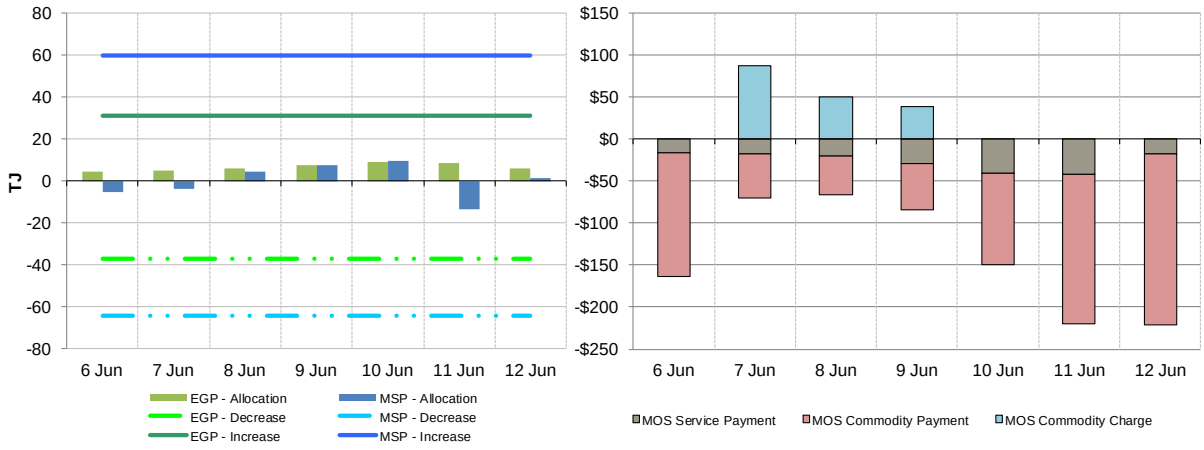


Figure 2.4: SYD MOS allocations (TJ), service payments and commodity payments/charges ($000)[15]



15 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 ($/GJ)	8.85	9.10	10.25	10.90	10.78	11.44	11.44
Ex ante quantity (TJ)	59	68	88	88	81	76	67
Ex post price ($/GJ)	8.72	9.45	10.25	10.60	10.25	10.70	10.80
Ex post quantity (TJ)	56	71	87	85	78	69	64

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

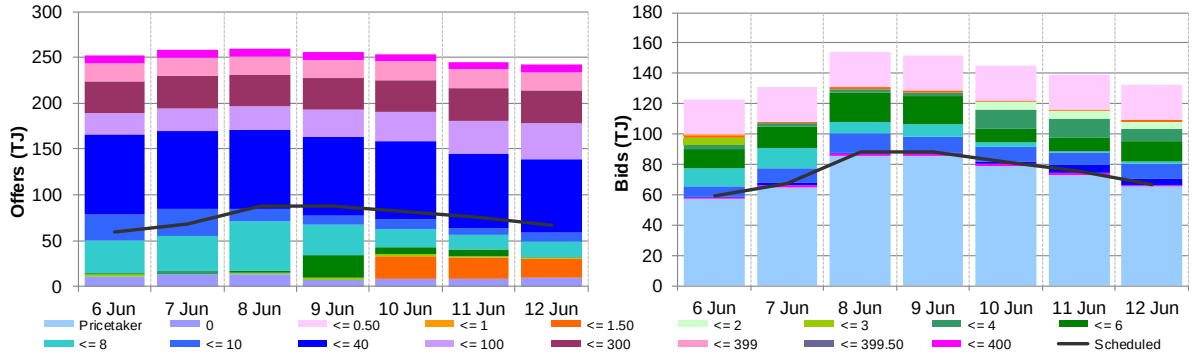


Figure 3.3: ADL net scheduled and allocated gas hub supply (excluding MOS)

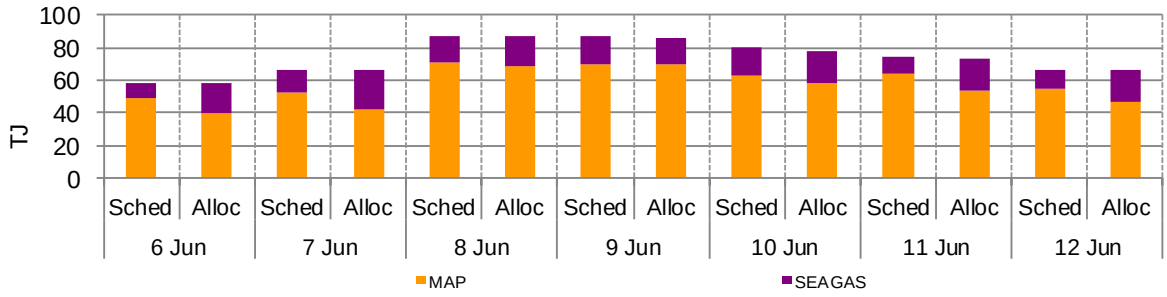
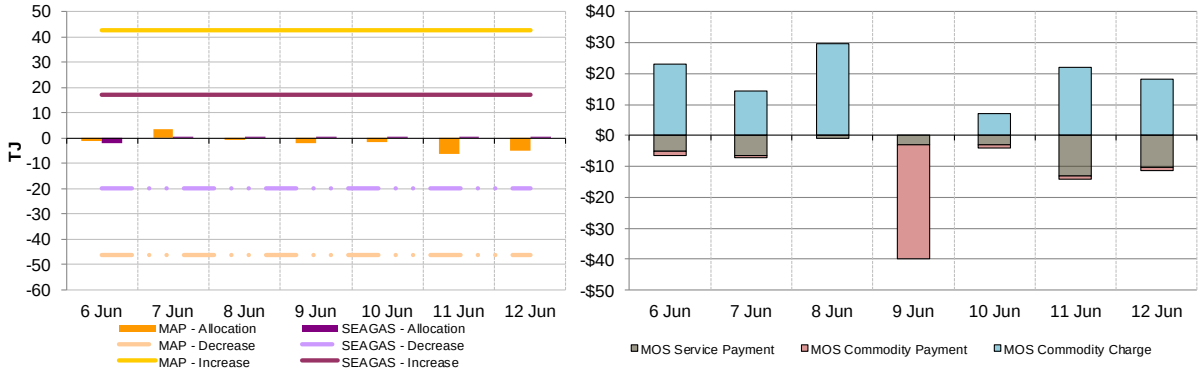


Figure 3.4: ADL MOS allocations (TJ), service payments and commodity payments/charges ($000)



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 ($/GJ)	8.75	9.77	10.30	11.00	10.85	10.95	11.01
Ex ante quantity (TJ)	121	130	130	133	131	127	118
Ex post price ($/GJ)	8.75	9.85	10.75	11.00	10.99	11.00	11.01
Ex post quantity (TJ)	123	132	132	132	133	131	117

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

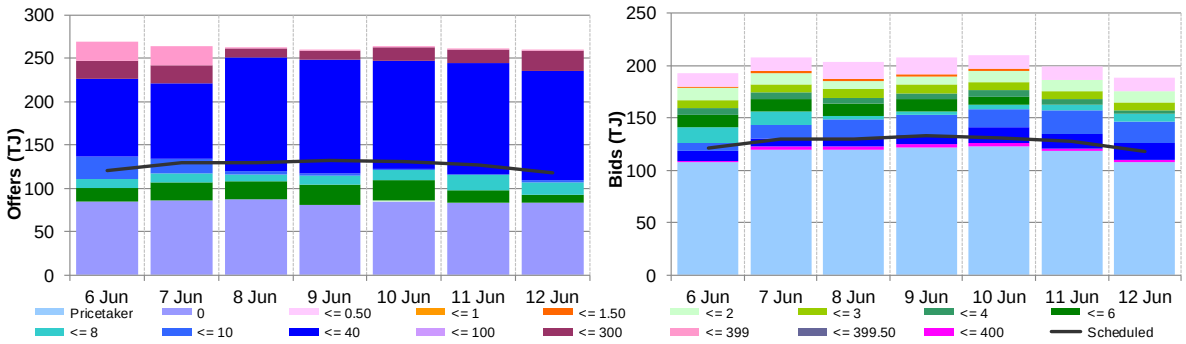


Figure 4.3: BRI net scheduled and allocated gas hub supply (excluding MOS)

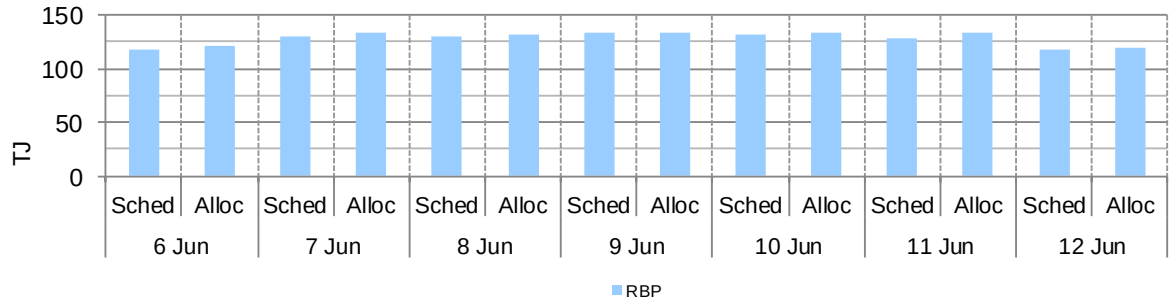
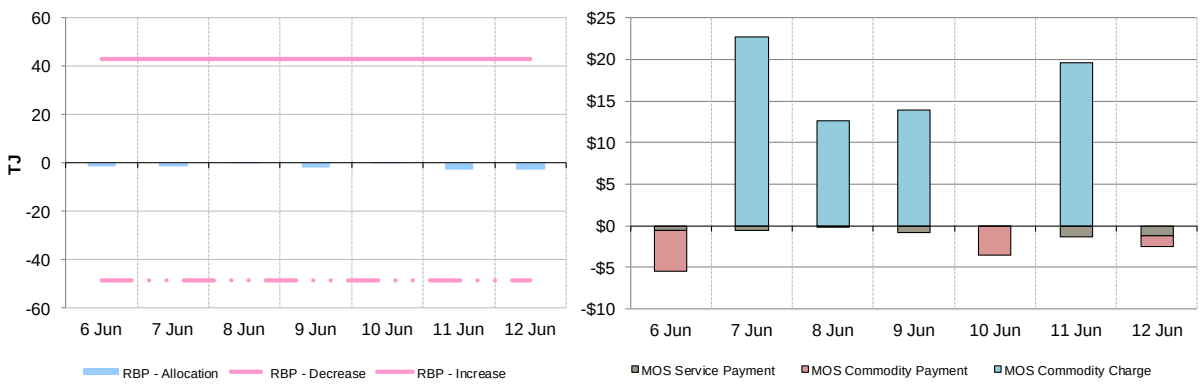


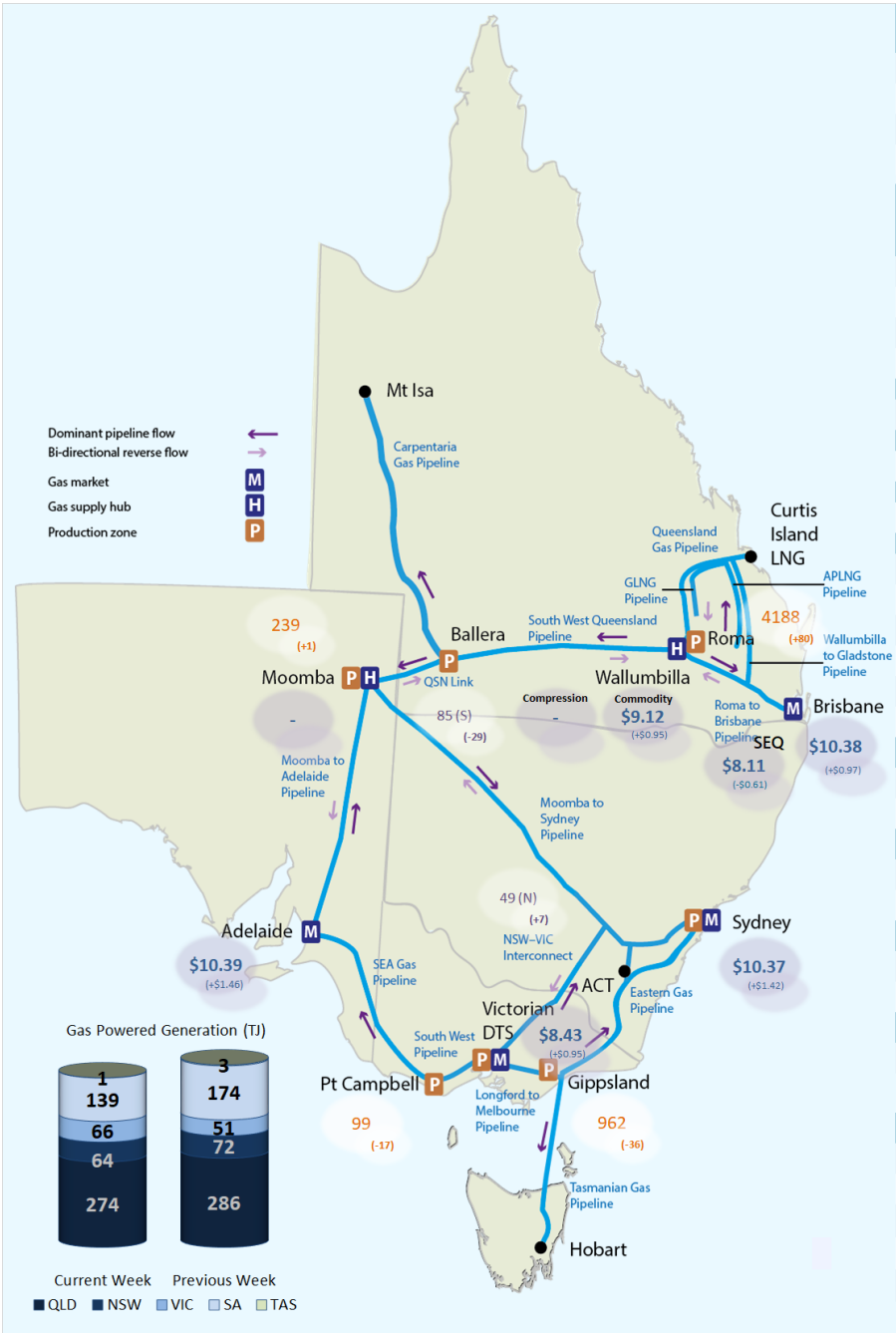
Figure 4.4: BRI MOS allocations (TJ), service payments and commodity payments/charges ($000)



5. National Gas Bulletin Board

Figure 5.1 shows average daily actual flows for the current week[16] from the Bulletin Board (changes from the previous week's average are shown in brackets). Average daily prices[17] 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)[18]



Totals	Current Week	Change (TJ)
Domestic gas flows	2057	(-47)
Export gas flows	3647	(+182)
Gas production	5488	(+28)
GPG gas usage	545	(-41)
Pipelines		
Queensland		
Gladstone		
APLNG	1488	(+151)
GLNG	889	(+155)
QGP	137	(-6)
WGP	1270	(-123)
Mt Isa		
CGP	78	(-8)
Brisbane		
RBP	147	(-9)
South West		
SWQP	38	(+1)
Wallumbilla		
BWP	145	(+23)
CRWP	13	(+62)
DDP	64	(-6)
QGP (WAL)	14	(-6)
RBP (WAL)	36	(-21)
SWQP (WAL)	100	(-51)
New South Wales		
MSP	197	(-6)
EGP	280	(-8)
Victoria		
LMP	688	(-31)
SWP	252	(+49)
South Australia		
MAP	166	(-16)
SEAGas	75	(-5)
Tasmania		
TGP	33	(-6)

Storage (held volume)		
Moomba LDB	15440	(-81)
Iona UGS	19890	(-1558)
LNG Storage Dandenong	349	(-5)
Silver Springs	20552	(-149)
Roma UGS	39759	(-50)

16 **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.

17 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.

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

6. Gas Supply Hub

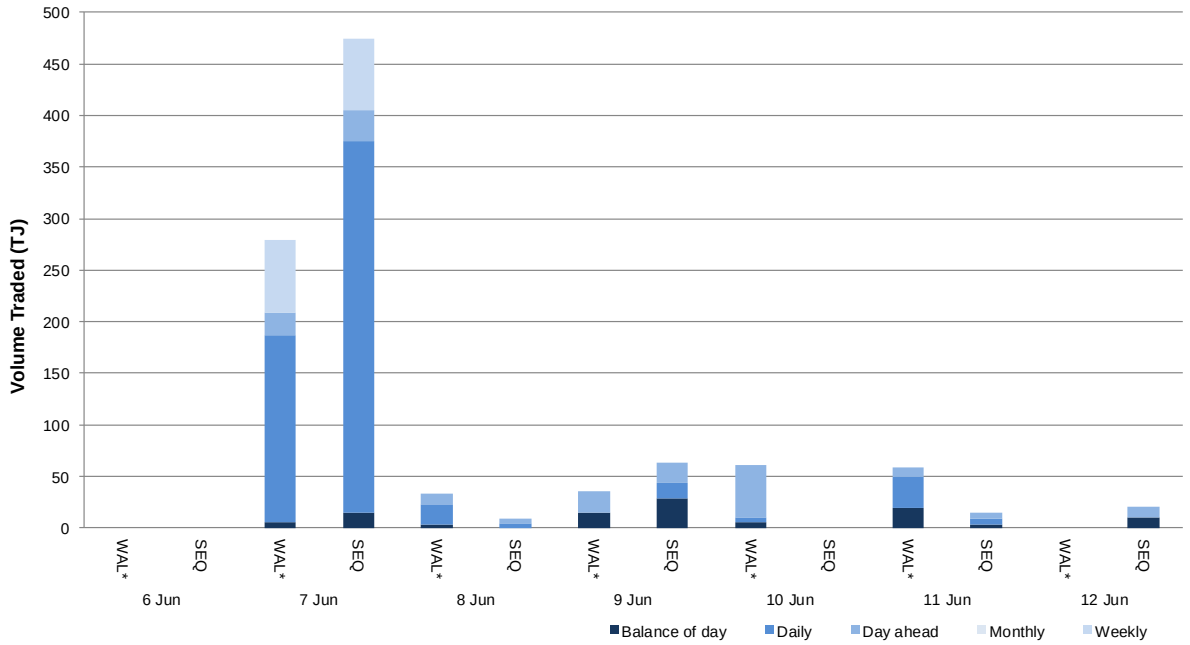
The gas supply hub was established at Wallumbilla in March 2014 to facilitate the voluntary trading of gas between participants, with products listed for sale and purchase at delivery points on three major connecting pipelines. There are separate products for each trading location and delivery period (daily, day-ahead, balance-of-day, weekly and monthly products).[19]

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 74 trades for 1048 TJ of gas at a volume weighted price of $8.56/GJ. These consisted of 36 trades at WAL (467 TJ at $9.12/GJ) and 38 trades at SEQ (581 TJ at $8.11/GJ). There were 2 spread trades 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.[20]

Figure 6.1: GSH traded quantities



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

20 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.

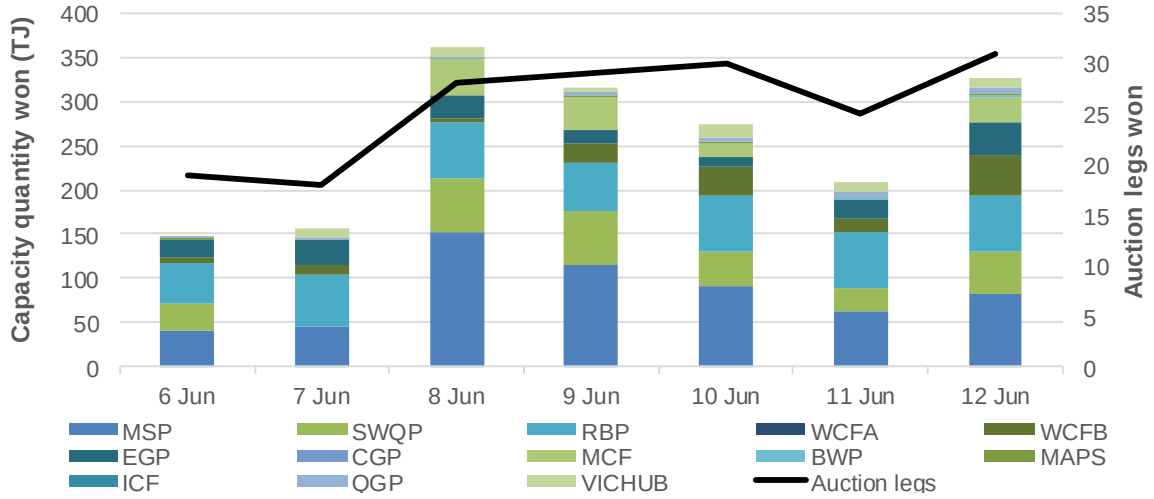
Participants may bid in to the DAA in order to procure the following services:

- 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 1791 TJ of capacity across 10 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.[21]

Figure 7.1: DAA traded quantities and auction legs won



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