Gas Market Report

AUSTRALIAN ENERGY REGULATOR

11 – 17 July 2021

Weekly Summary

Average prices and demand decreased in all regions, following high prices across the east coast gas markets over a number of days last week. Prices in southern markets generally reduced across the week, with Sydney and Adelaide market prices in close alignment, sitting roughly $3-6/GJ higher than Victoria up to 15 July.

In Adelaide, ex ante prices were consistently below D-2 provisional forecasts this week, in contrast to the previous week which saw prices typically above forecast levels, rising up to $7-8/GJ on 8-9 July.

In Sydney, daily ex ante prices were around $4-9/GJ lower compared to provisional D-2 forecast prices from 12 July, in contrast to the previous week when ex ante prices were largely higher than D-2 forecast prices.

In Victoria, prices reduced across the week from $18.45/GJ to $10.72/GJ by 15 July.[1] However, prices escalated over 16-17 July while production issues arose at Longford. The production facility had ramped up capacity from late-June following a partial onshore maintenance outage[2], however a gas dehydrator issue saw production output decline from 2 pm on 16 July, with supply constraints invoked in the Victorian market from 10 pm.[3] The reduced supply capacity resulted in an increased reliance on injections from TasHub, VicHub, SEAGas, Culcairn & Iona to offset the shortfall (see figure 1.5). On 17 July, forecast demand increased for the 2 pm scheduling interval alongside a significant drop in supply scheduled at Longford, coinciding with constraints being invoked for the Longford injection point. As a result, the 2 pm schedule price increased to $39.99/GJ, set by supply capacity offered at Iona.[4]

Increased southerly flows on QSN link from Queensland declined somewhat from 13 July following a noticeable increase over the previous week during significantly high priced days in all markets (especially in southern regions). The Brisbane market price started rising above Victorian prices from this point, in contrast to the relatively lower northern price increases experienced during the previous week.

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1 The 10 pm schedule price for the 15 July gas day dropped to $0/GJ (figure 1.1).

2 The medium term capacity outlook indicated an onshore shutdown limiting production capacity to around 850 TJ/day from 3-14 July. Short term outlooks varied around this level from 28 June, but had risen to 900 TJ or higher from 16 July onwards.

3 Market notices reported gradual increases to projected production levels into the following gas day, with daily output constraints limiting scheduled supply to the following levels: 16 July gas day, 580.1 TJ/day (from 10 pm); and 17 July gas day, 550 TJ/day (from 2 pm), 600 TJ/day (from 6 pm) and 603.1 TJ/day (from 10 pm).

4 There was a significant decline in capacity being offered between $10-30/GJ at the Iona underground storage facility across July, coinciding with lower storage levels following record injections into the Victorian declared transmission system (DTS) across June, and constraints preventing withdrawals into storage from the DTS from late-June (going out to late-July). The constraints related to repair works following the isolation of a leaking pipeline segment on 24 June (participants were notified of a short-notice maintenance outage on 22 June around repair work on the corroded pipeline segment).

Export flows ramped up from 16 July, coinciding with the completion of planned maintenance on a QCLNG export train.[5]

In Sydney, there were 3 instances of prices exceeding a significant price variation reporting threshold this week.[6] The price variations between the D-2 provisional schedule and D-1 ex ante schedule of greater than $7/GJ will be investigated in a significant price variation report to be published on the AER website.

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
11 Jul - 17 Jul 2021	15.77	900	18.40	308	18.64	75	14.46	91
% change from previous week	-29	-14	-15	-2	-13	-3	-16	-3
21-22 financial YTD	17.94	973	18.74	308	18.68	78	15.05	93
% change from previous financial YTD	292	3	363	-4	219	-3	334	-17

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

[5] Planned maintenance was scheduled to occur from 15 June to 13 July (greater than one half of a train, but not greater than one LNG train).

[6] On 14 July, the variation between the D-2 price ($26.00/GJ) and D-1 ex ante price ($17.74/GJ) was $8.26/GJ.
On 15 July, the variation between the D-2 price ($22.45/GJ) and D-1 ex ante price ($13.75/GJ) was $8.70/GJ.
On 17 July, the variation between the D-2 price ($22.45/GJ) and D-1 ex ante price ($14.30/GJ) was $8.15/GJ.

[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
11 Jul - 17 Jul 2021	-	-	13.06	107	12.78	339
% change from previous week	-	-	6	-74	-12	-54
21-22 financial YTD	18.25	5	12.42	558	13.78	1182
% change from previous financial YTD	413	-96	269	-22	308	-33

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

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

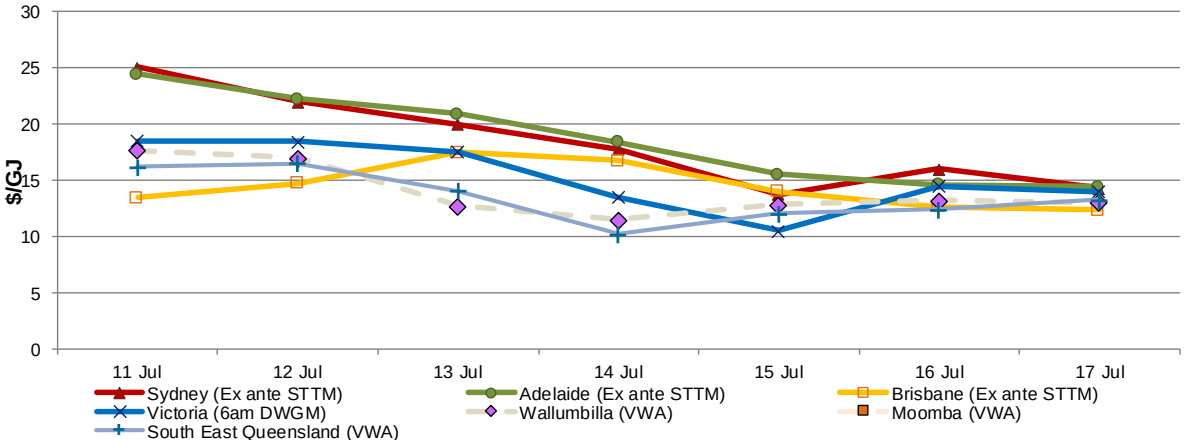

Figure 4 compares average ancillary market payments (VGM) and balancing gas service payments (STTM) against historical averages.

Figure 4: Average daily ancillary payments ($000)

	Victoria Ancillary Payments*	Sydney MOS	Adelaide MOS	Brisbane MOS
11 Jul - 17 Jul 2021	-	28.11	3.08	0.50
% change from previous week	-	24	27	11
21-22 financial YTD		26.82	3.34	0.73
% change from previous financial YTD		32	-88	-17

* 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	-	-	13.37	38.0	11.81	151.5
Daily	-	-	15.00	20.0	13.45	5.0
Day ahead	-	-	10.20	7.0	13.99	84.0
Weekly	-	-	12.33	42.0	13.21	98.0
Monthly	-	-	-	-	-	-
Total	**-**	**-**	**13.06**	**107.0**	**12.78**	**338.5**

* 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	1559	1011	1659	4229
Export Pipeline Flows	1592	1043	888	3523
% change from previous week (pipeline flows)	3	-6	27	5
21-22 financial YTD flows	1568	1087	786	3441

* Production quantities represent flows from facilities operated by APLNG, Santos and QGC. Gas from individual facilities may also supply the domestic market, other LNG projects or storage facilities.

Detailed market analysis

Preliminary analysis – Sydney 14, 15 and 17 July significant price variations

Elevated provisional prices in Sydney were forecast across the D-3 (three day ahead) and D-2 (2 day ahead) schedules across the week, ranging between $20-28/GJ. Rebidding across a number of days saw additional supply capacity offered in the ex ante schedules which supressed forecast high prices to lower levels on D-1. This was primarily offered by exporter/producer[10] participants, and traders[11] to a lesser extent, with prices across 3 days this week falling by more than $7/GJ.[12]

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

[10] Participants classified as Exporter/Producers in the Sydney market are Arrow, BHP Billtion, Esso, Santos and Shell.

14 July significant price variation

On 14 July, the variation between the D-2 price ($26.00/GJ) and D-1 ex ante price ($17.74/GJ) was $8.26/GJ. Despite controllable withdrawal bid quantities being rebid into price bands between $15-30/GJ driving up the ex ante market demand by 12 TJ, a significant downward shift in supply offers drove a large decreased ex ante price. Rebidding shifted a considerable amount of supply capacity priced above $25/GJ into lower price bands, particularly into bands between $15-20/GJ. A significant driver of cheaper offers came from exporter/producers and traders pricing D-1 offers between $15-20/GJ, adding additional supply capacity which not was present in the provisional schedules.

15 July significant price variation

On 15 July, the variation between the D-2 price ($22.45/GJ) and D-1 ex ante price ($13.75/GJ) was $8.70/GJ.

Increase to controllable demand bids[13] being rebid to prices between $5-25/GJ contributed to 24.5 TJ higher hub demand (only 4.5 TJ increase to pricetaker), with an additional 36.7 TJ of supply scheduled D-1. Despite the demand increase, the ex ante price decreased in line with cheaper supply becoming available in the D-1 schedule. This was largely driven by ex ante supply offers being rebid into price bands between $5-15/GJ, leading to more gas being scheduled by exporter/producers, traders, and GPG gentailers[14].

17 July significant price variation

On 17 July, the variation between the D-2 price ($22.45/GJ) and D-1 ex ante price ($14.30/GJ) was $8.15/GJ.

Increased offers available in lower prices bands below $20/GJ D-1, particularly $10-15/GJ, led to significantly more low priced supply capacity being scheduled for exporter/producers and traders.

These price variations of greater than $7/GJ exceeded a reporting threshold outlined in the STTM Significant Price Variation Guideline. The AER will investigate and publish a significant price variation report on the events.

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11 Participants classified as Traders in the Sydney market are Eastern Energy Supply, Macquarie Bank, Petro China and Strategic Gas Market Trading.

12 D-1 prices reduced from D-2 levels on the 3 SPV days despite increased demand. Higher demand levels were largely the result of rebidding affecting controllable withdrawals. On 14 July, additional demand quantities scheduled on D-1 due to rebidding of controllable demand were 3.7 TJ on EGP, 1.9 TJ on MSP and 5.6 TJ in the distribution network (collectively increasing demand by 11.2 TJ). On 15 July, higher demand largely occurred within the distribution network (pricetaker demand increased by 4.5 TJ, with 23.9 TJ of additional demand from controllable withdrawals). On 17 July, 12.2 TJ of additional backhaul was scheduled due to rebidding on the EGP, with only a small increase in pricetaker demand.

13 Controllable demand primarily increased in the distribution network (23.9 TJ), with smaller increases linked to backhaul bid pricing (3.6 TJ on EGP and 2.7 TJ on MSP).

14 Participants classified as GPG Gentailers in the Sydney market are AGL, Alinta, EnegyAustralia, Hydro Tasmania, Origin, Shell Retail, and Snowy Hydro.

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

The main drivers[16] 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[17], 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)

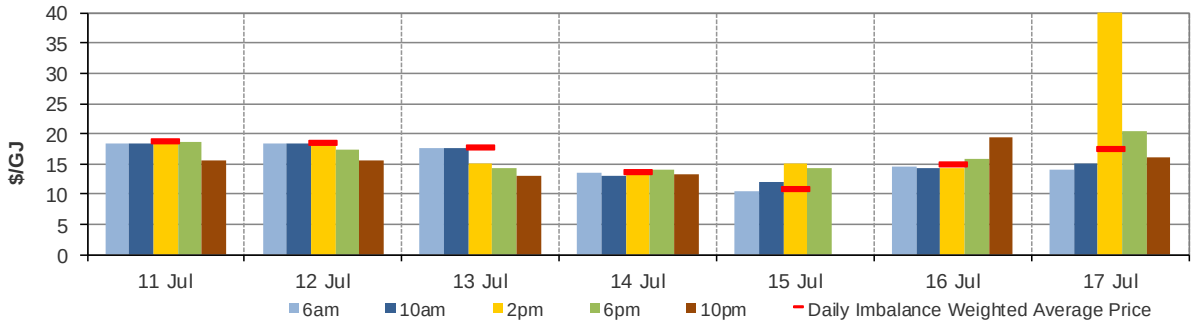
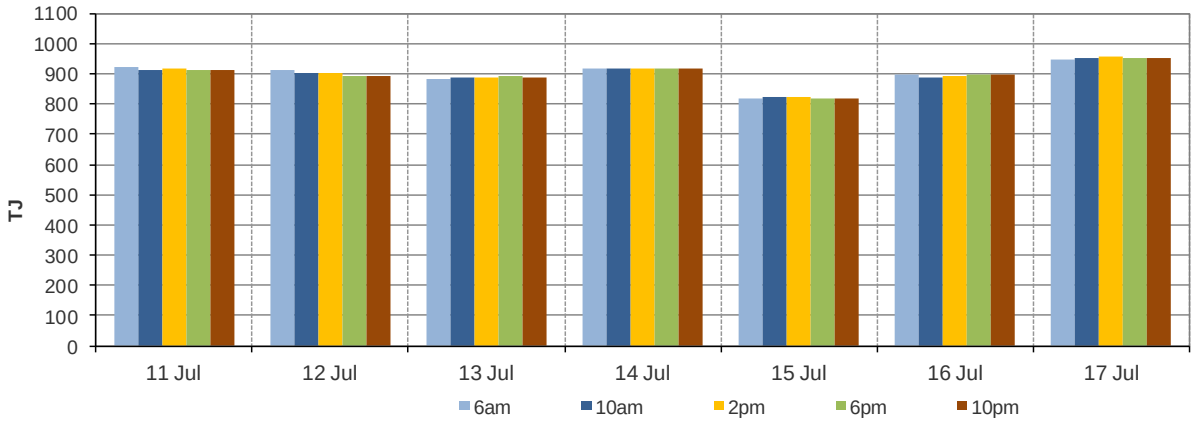


Figure 1.2: Demand forecasts (TJ)



15 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.

16 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.

17 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)

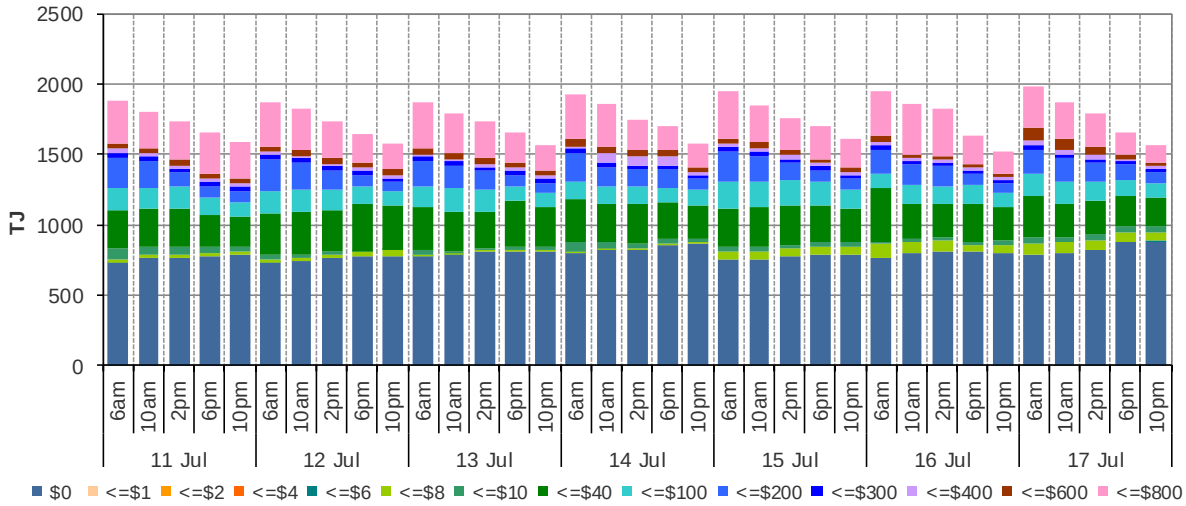


Figure 1.4: Withdrawal bids by price bands (TJ)

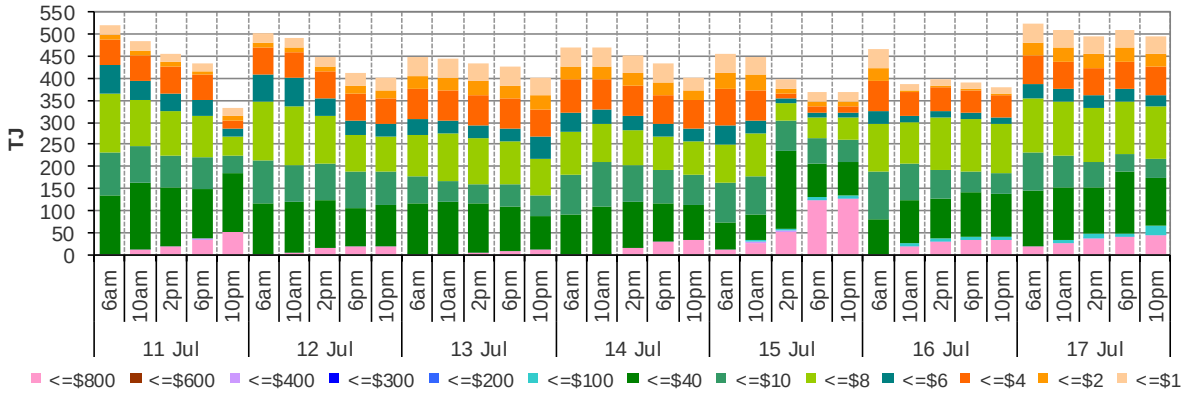
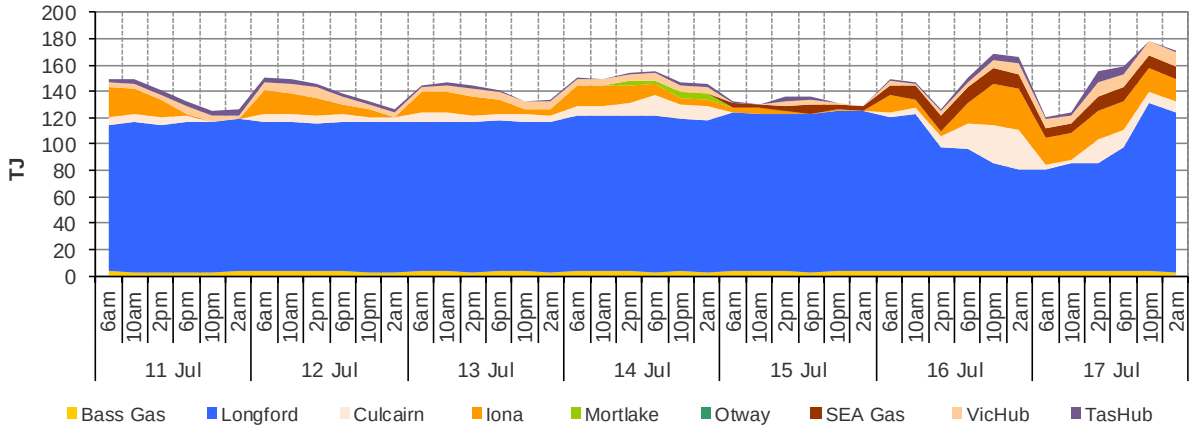


Figure 1.5: Metered Injections by System Injection Point (TJ)



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.[18] 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.

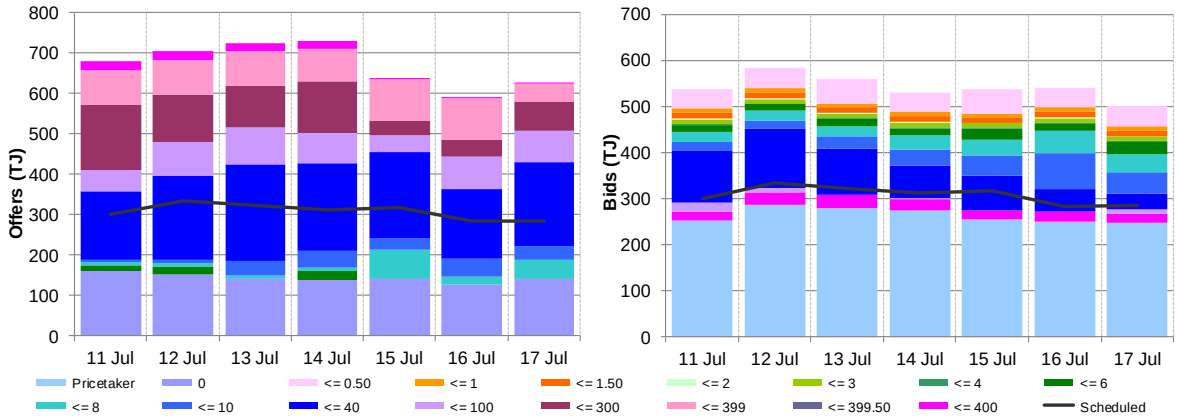
Market Operator Service balancing gas (MOS) payments arise because the amount of gas nominated on pipelines for delivery on a gas day will either exceed or fall short, by some amount, of the amount of gas consumed in the hub. In such circumstances, MOS payments are made to participants for providing a service to park gas on a pipeline or to loan gas from a pipeline to the hub.[19]

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 ($/GJ)	25.05	21.99	19.95	17.74	13.75	16.02	14.30
Ex ante quantity (TJ)	300	335	322	314	317	284	286
Ex post price ($/GJ)	25.05	21.46	19.00	18.14	13.50	16.02	14.30
Ex post quantity (TJ)	302	325	309	331	308	288	284

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



[18] 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.

[19] 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.

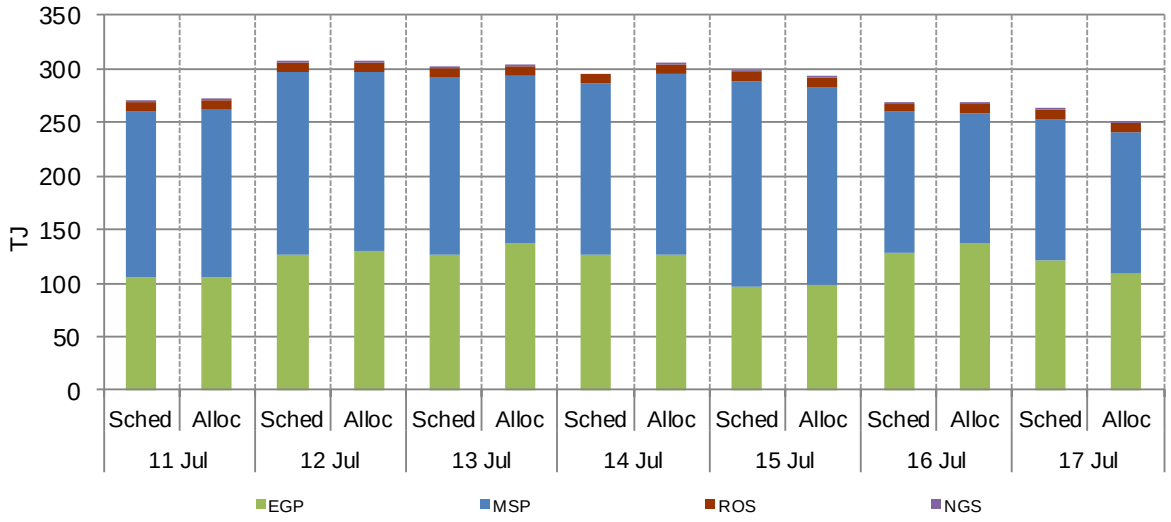
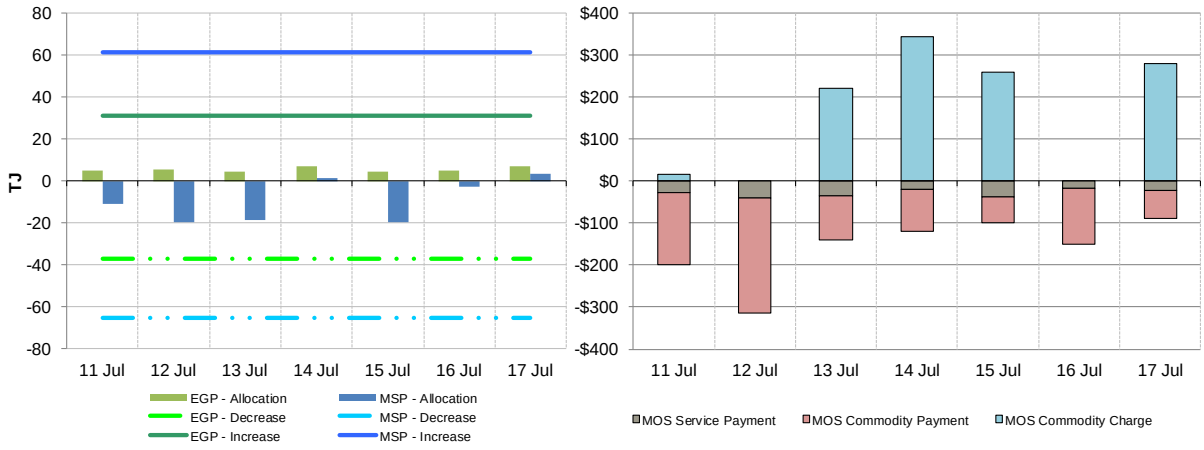


Figure 2.4: SYD MOS allocations (TJ), service payments and commodity payments/charges ($000)[20]



[20] 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 ($/GJ)	24.45	22.22	20.89	18.40	15.50	14.60	14.43
Ex ante quantity (TJ)	65	78	78	74	79	81	73
Ex post price ($/GJ)	24.45	22.30	20.04	18.01	14.70	15.27	14.00
Ex post quantity (TJ)	67	79	75	71	75	83	72

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

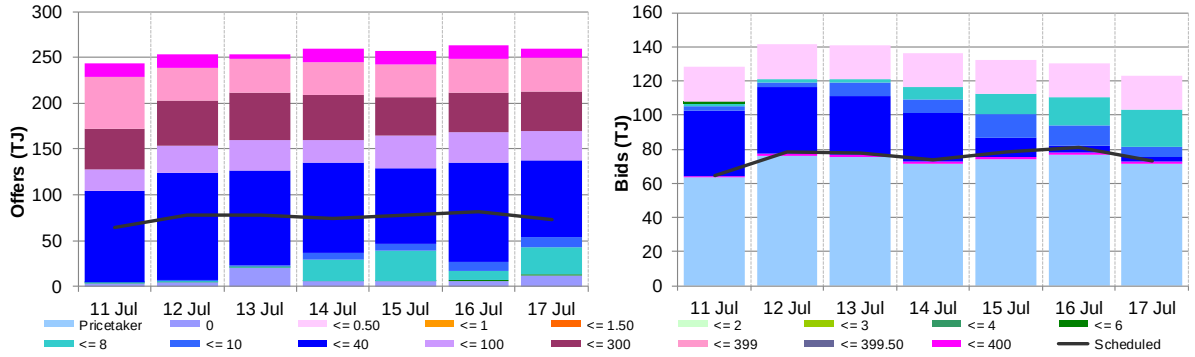


Figure 3.3: ADL net scheduled and allocated gas hub supply (excluding MOS)

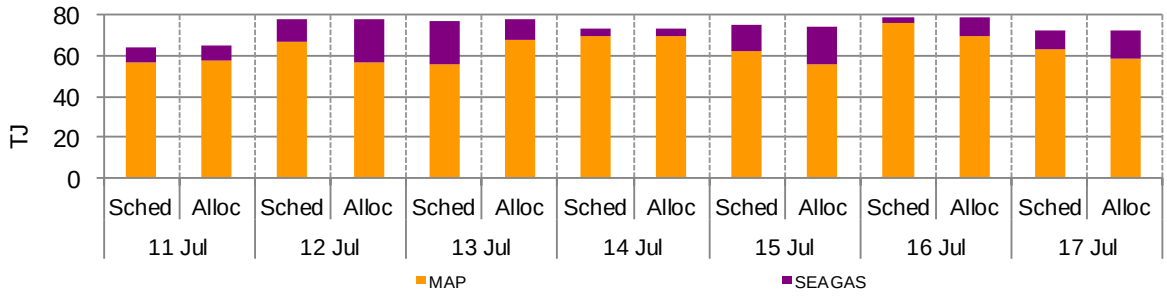
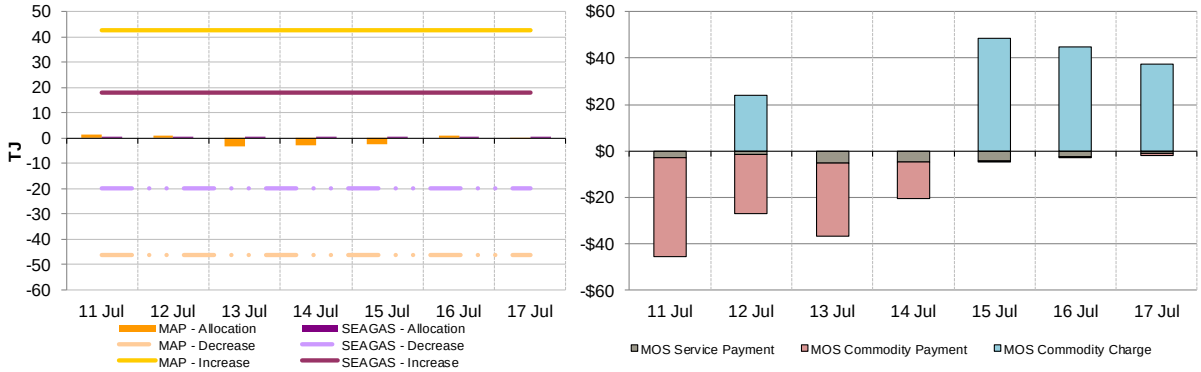


Figure 3.4: ADL MOS allocations (TJ), service payments and commodity payments/charges ($000)



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 ($/GJ)	13.46	14.70	17.44	16.70	14.00	12.64	12.30
Ex ante quantity (TJ)	79	92	97	98	98	94	82
Ex post price ($/GJ)	13.15	14.01	16.75	15.89	14.00	12.64	11.51
Ex post quantity (TJ)	74	88	87	95	96	93	75

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

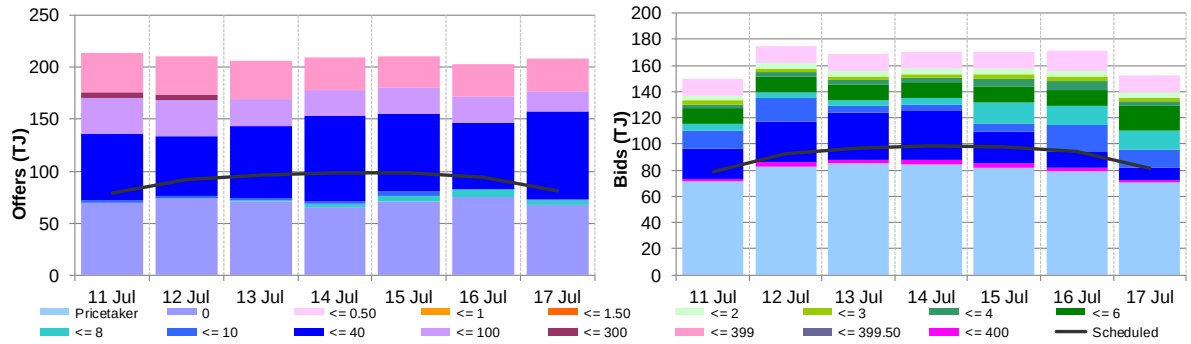


Figure 4.3: BRI net scheduled and allocated gas hub supply (excluding MOS)

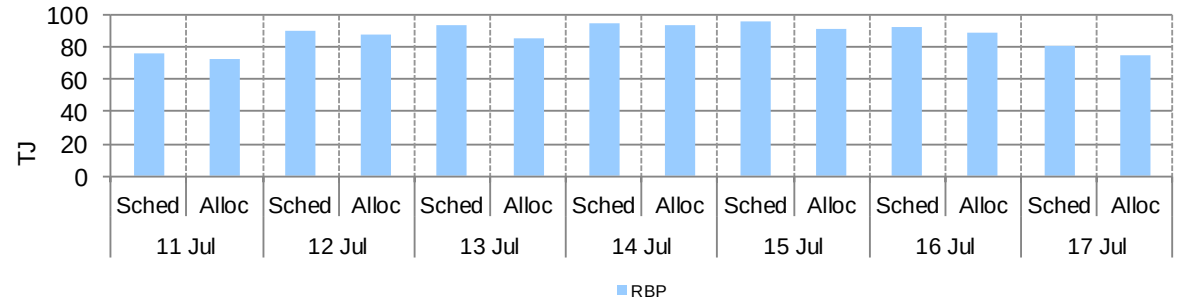
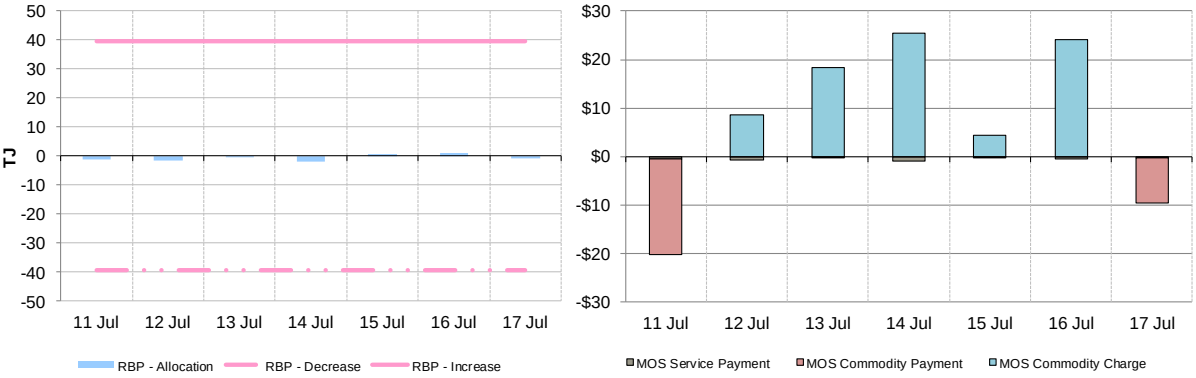


Figure 4.4: BRI MOS allocations (TJ), service payments and commodity payments/charges ($000)



5. National Gas Bulletin Board

Figure 5.1 shows average daily actual flows for the current week[21] from the Bulletin Board (changes from the previous week's average are shown in brackets). Average daily prices[22] 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)[23]

Totals	Current Week	Change (TJ)
Domestic gas flows	1889	(-323)
Export gas flows	3523	(+161)
Gas production	5466	(+84)
GPG gas usage	277	(-321)
Pipelines		
Queensland		
Gladstone		
APLNG	1592	(+40)
GLNG	1043	(-70)
QGP	136	(-2)
WGP	888	(+191)
Mt Isa		
CGP	88	(+4)
Brisbane		
RBP	91	(+0)
South West		
SWQP	46	(+22)
Wallumbilla		
BWP	174	(+3)
CRWP	-77	(-9)
DDP	114	(+0)
QGP (WAL)	14	(0)
RBP (WAL)	-126	(-16)
SWQP (WAL)	340	(+22)
New South Wales		
MSP	267	(-21)
EGP	203	(-7)
Victoria		
LMP	728	(-12)
SWP	90	(-173)
South Australia		
MAP	171	(-58)
SEAGas	38	(-44)
Tasmania		
TGP	34	(-6)

Storage (held volume)		
Moomba LDB	15058	(-70)
Iona UGS	11182	(-961)
LNG Storage Dandenong	322	(-8)
Silver Springs	19707	(-169)
Roma UGS	37719	(-473)

21 **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.

22 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.

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

6. Gas Supply Hub

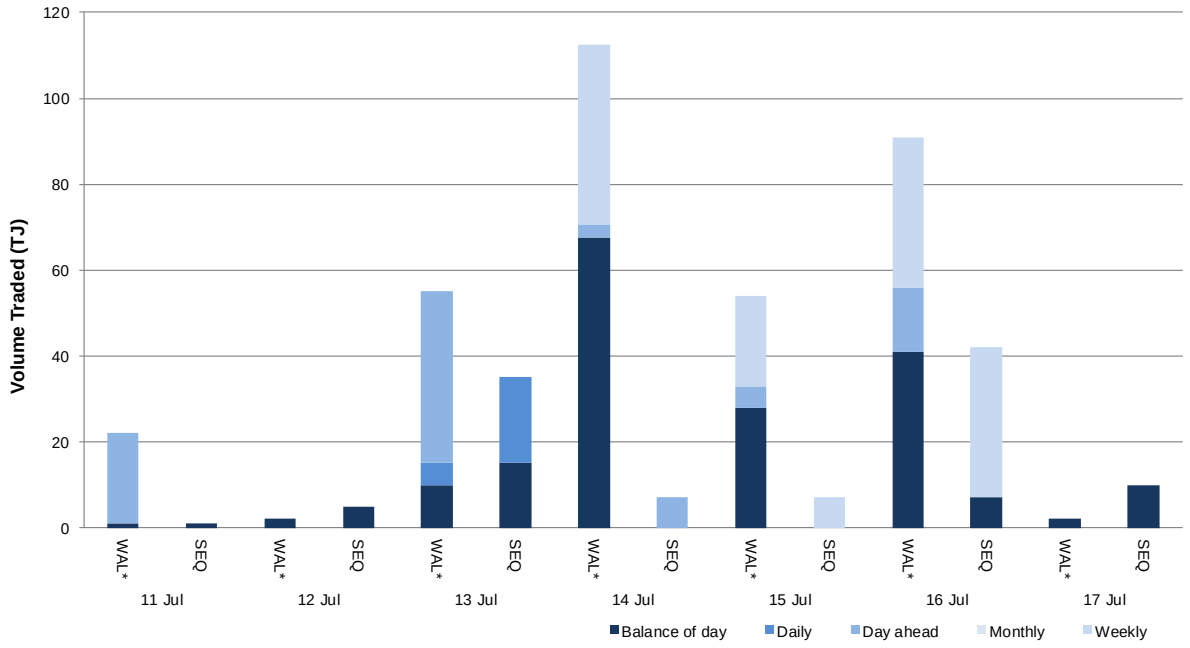
The gas supply hub was established at Wallumbilla in March 2014 to facilitate the voluntary trading of gas between participants, with products listed for sale and purchase at delivery points on three major connecting pipelines. There are separate products for each trading location and delivery period (daily, day-ahead, balance-of-day, weekly and monthly products).[24]

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 445.5 TJ of gas at a volume weighted price of $12.85/GJ. These consisted of 42 trades at WAL (338.5 TJ at $12.78/GJ) and 12 trades at SEQ (107 TJ at $13.06/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.[25]

Figure 6.1: GSH traded quantities



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

25 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.

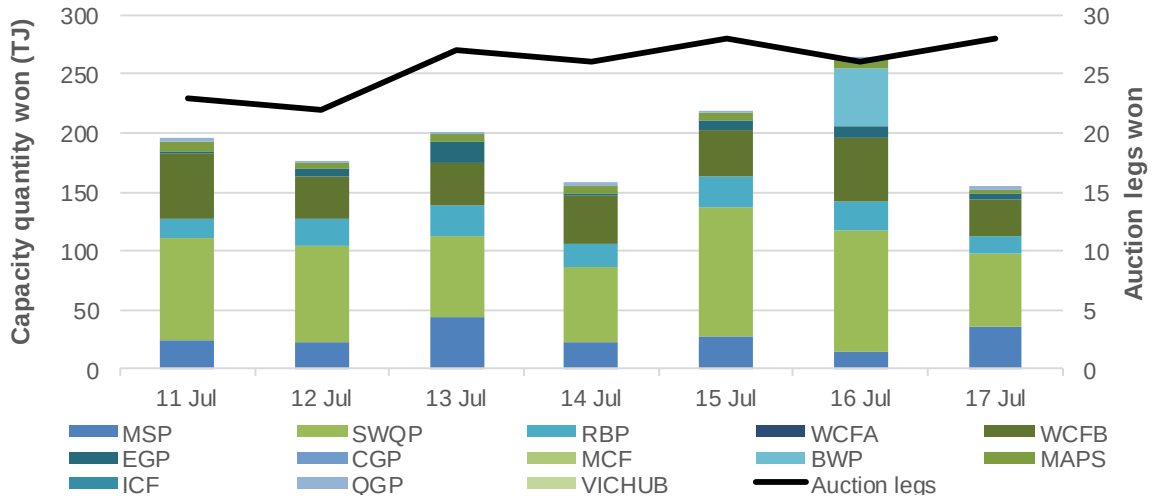
Participants may bid in to the DAA in order to procure the following services:

- 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 1369 TJ of capacity across 8 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.[26]

Figure 7.1: DAA traded quantities and auction legs won



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