Gas Market Report

AUSTRALIAN ENERGY REGULATOR

27 June – 3 July 2021

Weekly Summary

Average demand in Adelaide was stable from the previous week and average prices increased in Victoria. With those exceptions, average demand and prices were down from the previous week.

Gas generation levels remained high across the mainland despite decreasing in southern regions from the previous week.

In Sydney, high MOS requirements on 1 and 2 July resulted from a combination of oversupply and over forecast demand. This saw MSP decrease allocations of around 18-20 TJ alongside roughly 5-6 TJ of counteracting increase allocations on the EGP. However, service payments for these days remained below $50,000. This coincides with a significant increase in cheaper MOS offers on the MSP across the past financial year, particularly for decrease services.

On 1 July, the variation between the D-2 provisional price ($20.99/GJ) and D-1 ex ante price ($12.59/GJ) in Sydney was $8.40/GJ. The price variation 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 event.

Recent gas market trends

LNG export flows from Queensland continued at record levels, despite falling from the previous quarters. Following unseasonably cold weather in Asia from the end of 2020 alongside global LNG supply outages and record international prices, international LNG demand has remained strong. With both Q4 2020 and Q1 2021 reaching record levels of export demand, Q2 2021 has exceeded the previous record for the quarter set in 2019, reaching 310.6 PJ (compared to 291 PJ for Q2 2019). This is despite a number of planned maintenance outages taking place over the quarter, and has been influenced by increased trading ahead of the Asian summer period. A factor driving this has been Asian buyers securing supply capacity while European gas inventories are low, aiming to avoid supply shortfalls in the upcoming months.[1] With rising international prices, local east coast gas prices increased alongside export spot cargoes being tendered by local suppliers, which saw northern prices trading at elevated levels across most of the quarter.

Industrial and retail demand in Sydney reached record levels at 7.5 PJ and 3.3 PJ over Q2 2021. Industrial demand in Adelaide also peaked at 1.69 PJ for the quarter, while retail demand in Brisbane peaked at 0.26 PJ. In Brisbane and Sydney, there were similar trends in net trade activity (spot market purchases), at or close to record levels over recent quarters. In Victoria, supply and demand from industrial participants was also high for the quarter, however the most significant trends were record net trading from GPG gentailers purchasing from the spot market, and exporter/producers selling gas to the market over the quarter.

[1] Above average temperatures are predicted for Japan, currently the world's largest importer of LNG.

In Victoria, the Iona underground gas storage facility was impacted by an unplanned outage in late June related to gas leaking from a corroded pipeline. Following a short term outage to isolate the affected pipeline segment, constraints were applied to the facility which prevented net physical withdrawals of gas from the declared transmission system into storage.[2] Heavy reliance on supply from the facility over June saw injections into the transmission system reach their highest levels to-date, averaging over 250 TJ/day across the month.[3]

Record pipeline transportation capacity was won on the Day Ahead Auction over June, with 7,745 TJ of capacity acquired across 10 auction facilities. This complemented an upturn in trading activity in the gas supply hub, with close to 8.3 PJ traded at Wallumbilla over the last quarter (mainly through off-market transactions).

For more information on recent trends in the wholesale gas and electricity markets the wholesale markets quarterly report for Q2 2021 has been published on the AER website.[4]

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)[5]

	Victoria		Sydney		Adelaide		Brisbane	
	Price	Demand	Price	Demand	Price	Demand	Price	Demand
27 Jun - 03 Jul 2021	11.68	976	12.14	299	12.30	80	11.09	94
% change from previous week	7	-6	-5	-4	-10	0	-2	-18
20-21 financial year	5.71	568	6.21	256	6.54	58	6.32	106
% change from previous financial year	-13	-3	-4	5	-8	0	10	16

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

2 Repairs at the facility, scheduled to take place from 26 June – 2 July, were extended on two occasions, being pushed out to the end of July. Withdrawals recommenced from 27 July.

3 Significant supply from storage over July saw the reservoirs reduce to a bit over 9.7 PJ towards the end of the month, falling to just over 40% of the facility's storage capacity of 23.5 PJ. This is the lowest storage levels have been since 2016. The reservoirs were replenished in the following week with some injections into storage during milder weather.

4 https://www.aer.gov.au/wholesale-markets/performance-reporting/wholesale-markets-quarterly-q2-2021

5 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)[6]

	Moomba		South East Queensland		Wallumbilla	
	Price	Quantity	Price	Quantity	Price	Quantity
27 Jun - 03 Jul 2021	-	-	10.83	67	10.91	208
% change from previous week	-	-	-4	-44	5	-57
20-21 financial year	3.04	338	6.19	6707	6.01	16696
% change from previous financial year	-55	-37	8	-14	0	7

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

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

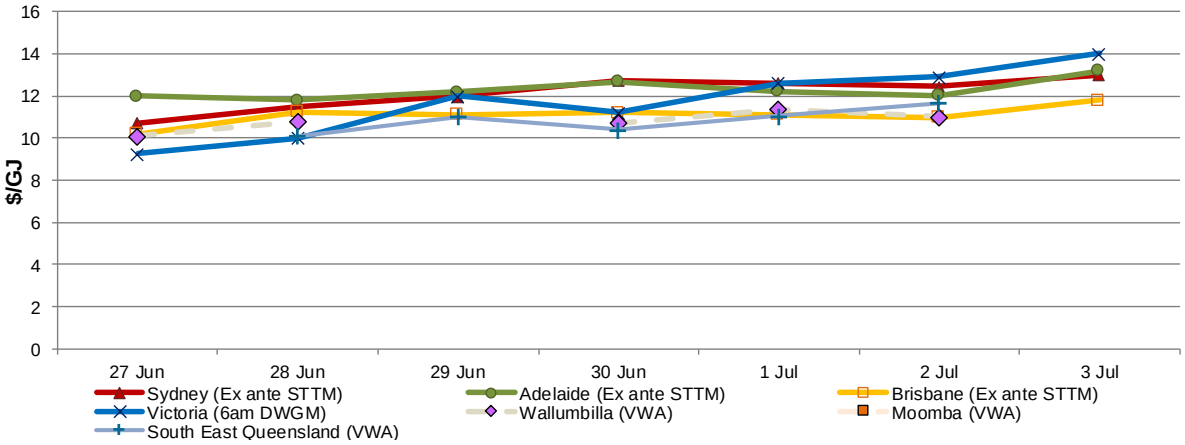


Figure 4 compares average ancillary market payments (VGM) and balancing gas service payments (STTM) against historical averages.

Figure 4: Average daily ancillary payments ($000)

	Victoria Ancillary Payments*	Sydney MOS	Adelaide MOS	Brisbane MOS
27 Jun - 03 Jul 2021	-	28.34	4.48	1.34
% change from previous week	-	7	-3	62
20-21 financial year		19.98	7.62	3.48
% change from previous financial year		-5	80	117

* 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.

[6] 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)[7]

	Moomba		South East Queensland		Wallumbilla*	
	VWA price	Quantity	VWA price	Quantity	VWA price	Quantity
Balance of day	-	-	11.14	27.0	10.84	48.0
Daily	-	-	11.00	20.0	10.87	101.0
Day ahead	-	-	10.24	20.0	11.03	58.5
Weekly	-	-	-	-	-	-
Monthly	-	-	-	-	-	-
Total	**-**	**-**	**10.83**	**67.0**	**10.91**	**207.5**

* 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	1009	1527	4094
Export Pipeline Flows	1569	1219	714	3502
% change from previous week (pipeline flows)	4	4	11	5
20-21 financial year flows	1471	1007	1291	3769

* 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.

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

Detailed market analysis

Preliminary analysis – Sydney 1 July significant price variation

On 1 July, the variation between the D-2 provisional price ($20.99/GJ) and D-1 ex ante price ($12.59/GJ) in Sydney was $8.40/GJ. The price variation 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 event.

The D-3 provisional forecast for the 1 July gas day in the Sydney STTM produced a forecast price of $14.28/GJ. The D-2 provisional forecast price increased significantly, rising to $20.99/GJ despite a similar pricing structure in the supply offer curve. This was driven by a combination of higher demand forecasts and high priced controllable withdrawal bids in the D-2 schedule, resulting in a 57.8 TJ increase to the scheduled supply.

Subsequent rebidding of supply offers saw the ex ante (D-1) price drop below the D-2 (and D-3) forecast, despite a further increase in demand.[8] Additional gas supply offers were submitted at lower prices by exporter/producers and traders, significantly reducing the steepness of the supply curve from provisional forecast schedules. This also resulted in additional controllable demand being scheduled (inside the Sydney distribution network and pipeline backhaul on the EGP and MSP).

[8] Pricetaker bids (uncontrollable demand forecasts) increased by 45.6 TJ in the D-2 schedule, and were up another 9.7 TJ in the ex ante schedule to 273.5 TJ.

1. Victorian Declared Wholesale Market

In the Victorian gas market, gas is priced five times daily at 6 am, 10 am, 2 pm, 6 pm and 10 pm. The imbalance weighted price on a gas day tends towards the 6 am price[9] which is the schedule at which most gas is traded.

The main drivers[10] 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[11], 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)

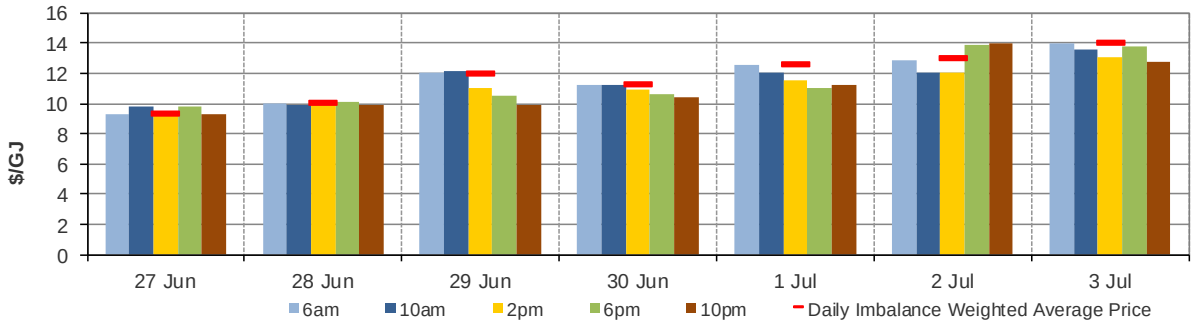
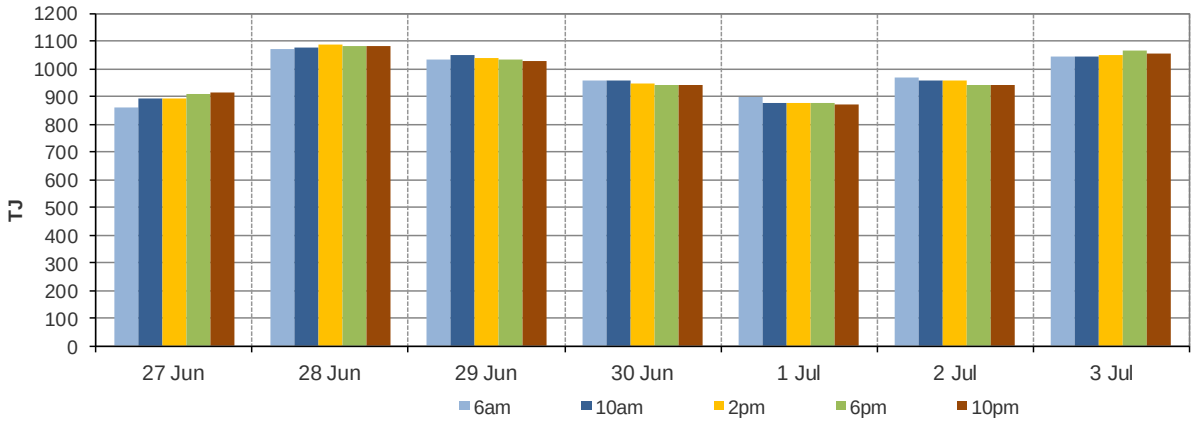


Figure 1.2: Demand forecasts (TJ)



9 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.

10 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.

11 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)

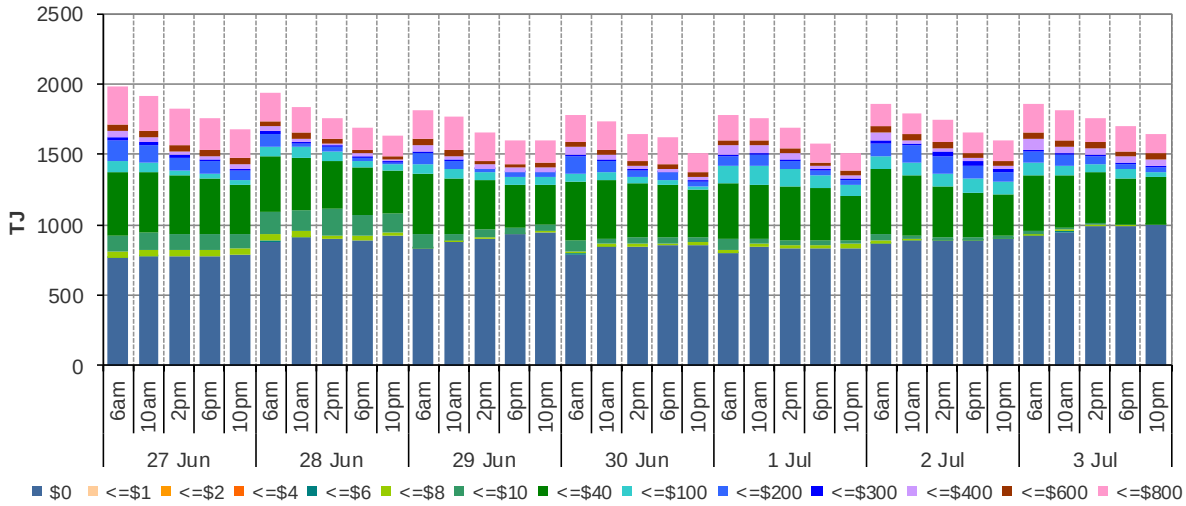


Figure 1.4: Withdrawal bids by price bands (TJ)

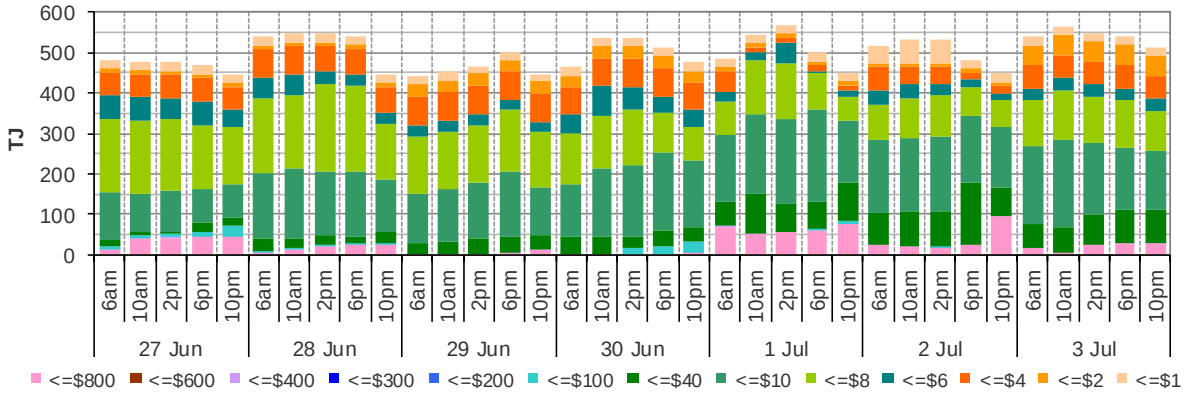
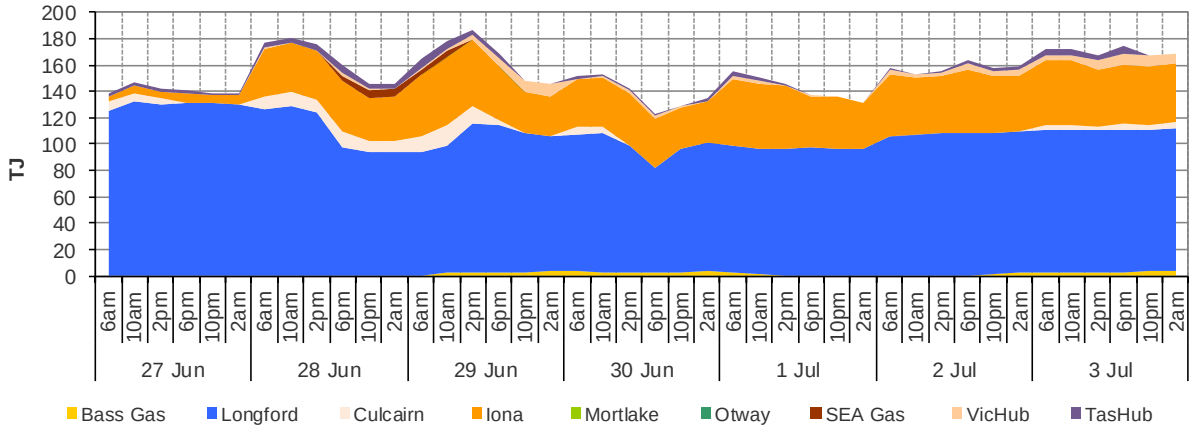


Figure 1.5: Metered Injections by System Injection Point (TJ)



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.[12] 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.

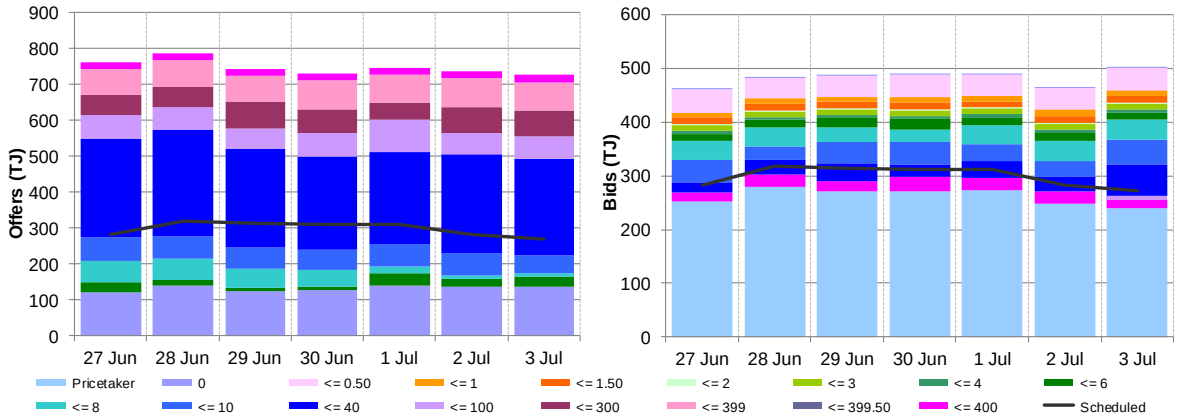
Market Operator Service balancing gas (MOS) payments arise because the amount of gas nominated on pipelines for delivery on a gas day will either exceed or fall short, by some amount, of the amount of gas consumed in the hub. In such circumstances, MOS payments are made to participants for providing a service to park gas on a pipeline or to loan gas from a pipeline to the hub.[13]

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 ($/GJ)	10.71	11.49	12.00	12.74	12.59	12.43	13.00
Ex ante quantity (TJ)	283	319	313	311	312	282	271
Ex post price ($/GJ)	10.47	11.50	12.00	12.46	12.39	12.40	12.60
Ex post quantity (TJ)	274	322	314	300	291	276	261

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



[12] 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.

[13] 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.

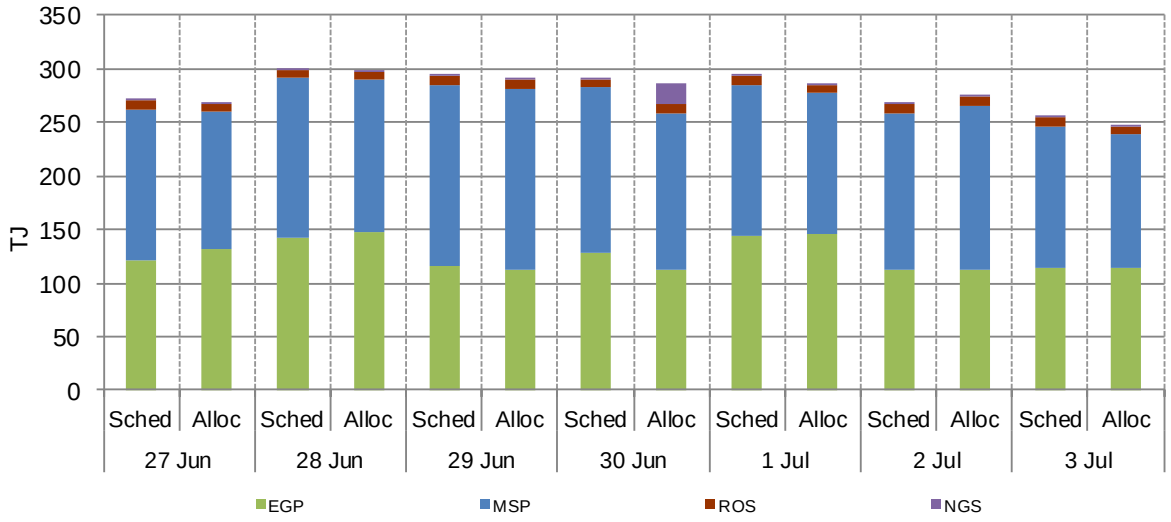
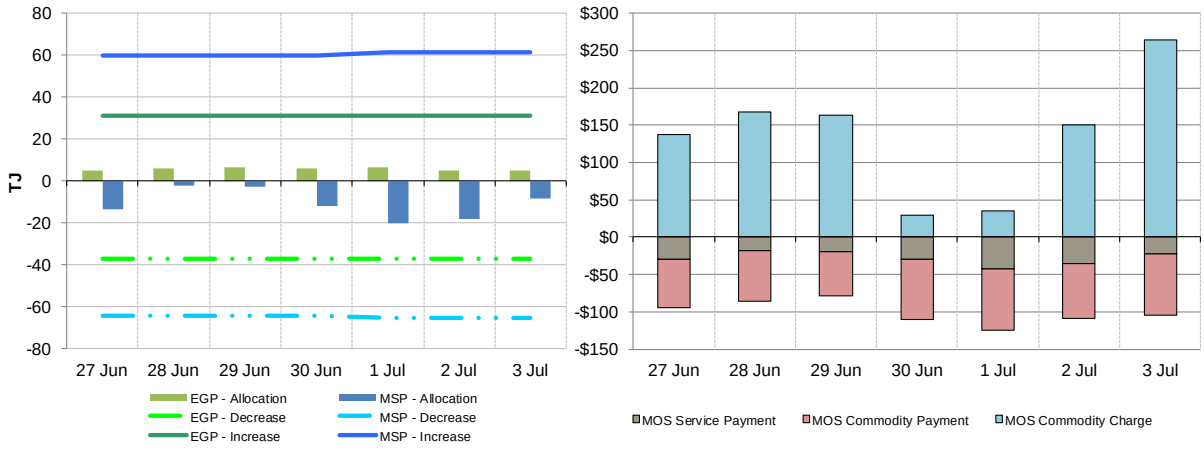


Figure 2.4: SYD MOS allocations (TJ), service payments and commodity payments/charges ($000)[14]



[14] 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 ($/GJ)	12.00	11.78	12.19	12.67	12.22	12.00	13.20
Ex ante quantity (TJ)	71	78	81	82	85	87	78
Ex post price ($/GJ)	11.90	11.48	12.19	12.10	12.00	11.76	12.67
Ex post quantity (TJ)	69	77	81	78	82	84	74

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

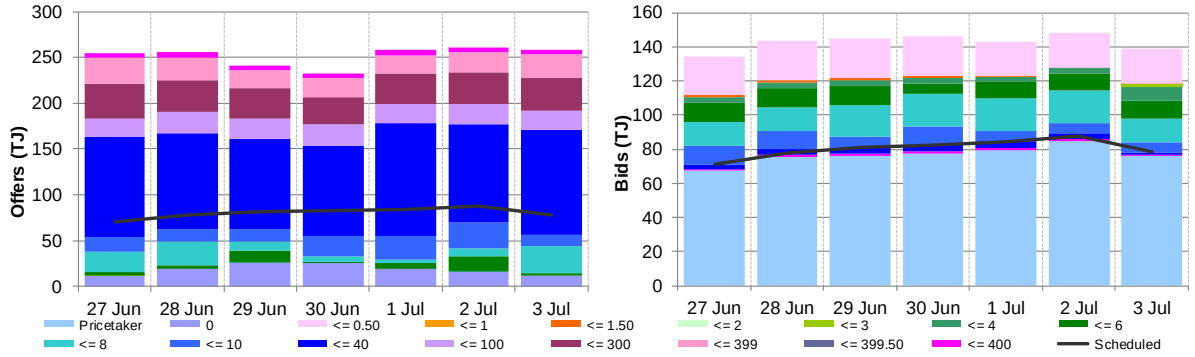


Figure 3.3: ADL net scheduled and allocated gas hub supply (excluding MOS)

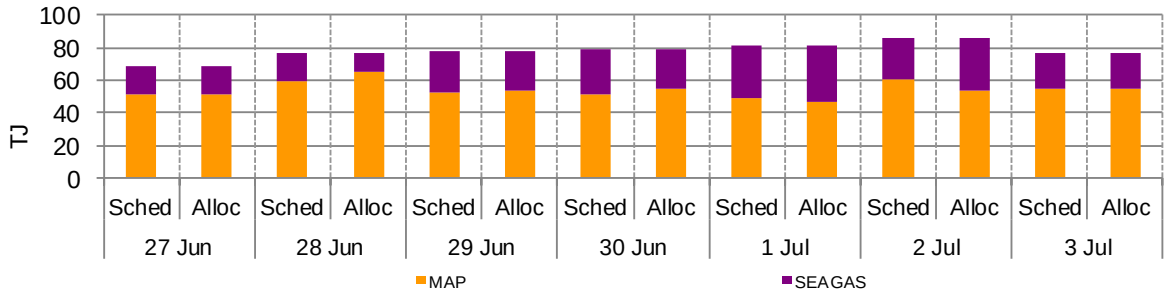
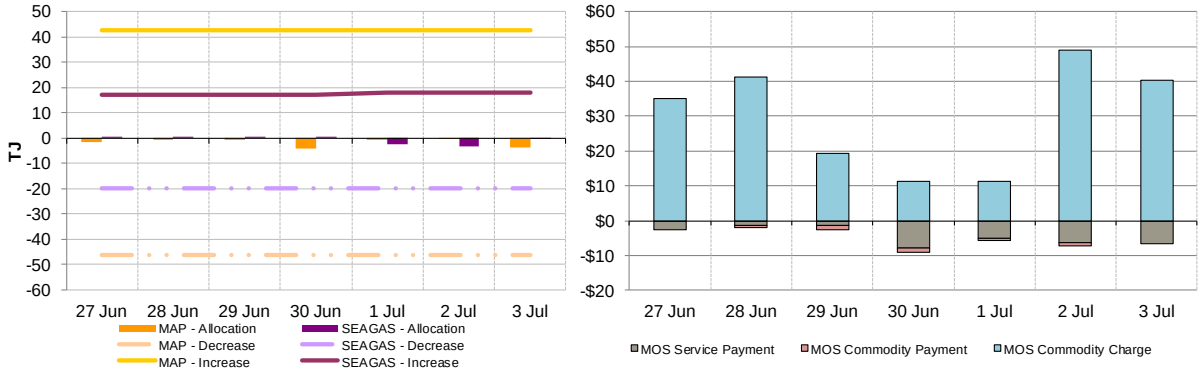


Figure 3.4: ADL MOS allocations (TJ), service payments and commodity payments/charges ($000)



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 ($/GJ)	10.20	11.23	11.09	11.19	11.10	10.99	11.80
Ex ante quantity (TJ)	87	97	100	100	101	93	82
Ex post price ($/GJ)	9.75	11.23	10.88	10.90	10.80	10.99	11.70
Ex post quantity (TJ)	83	99	97	95	94	93	80

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

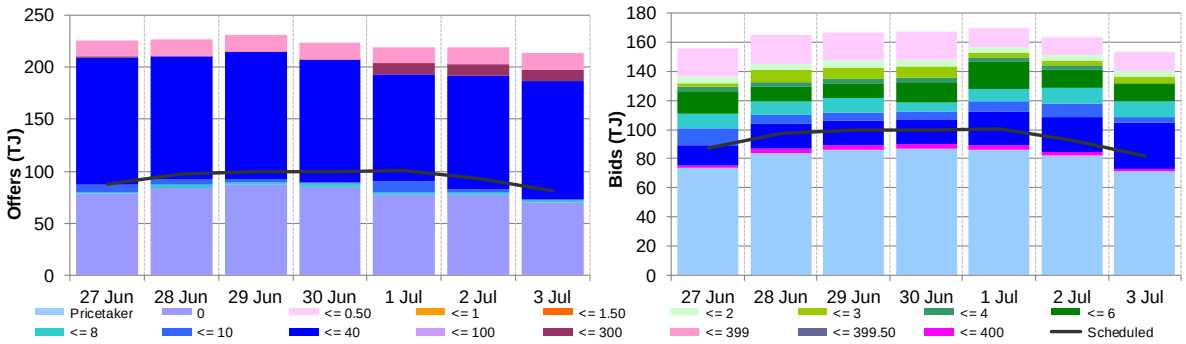


Figure 4.3: BRI net scheduled and allocated gas hub supply (excluding MOS)

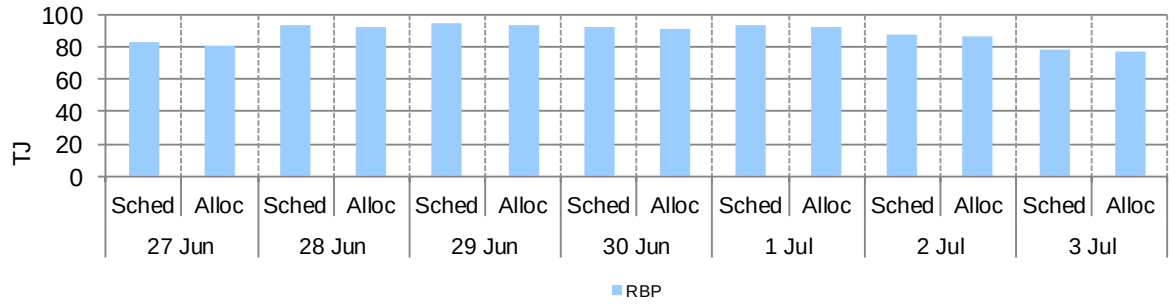
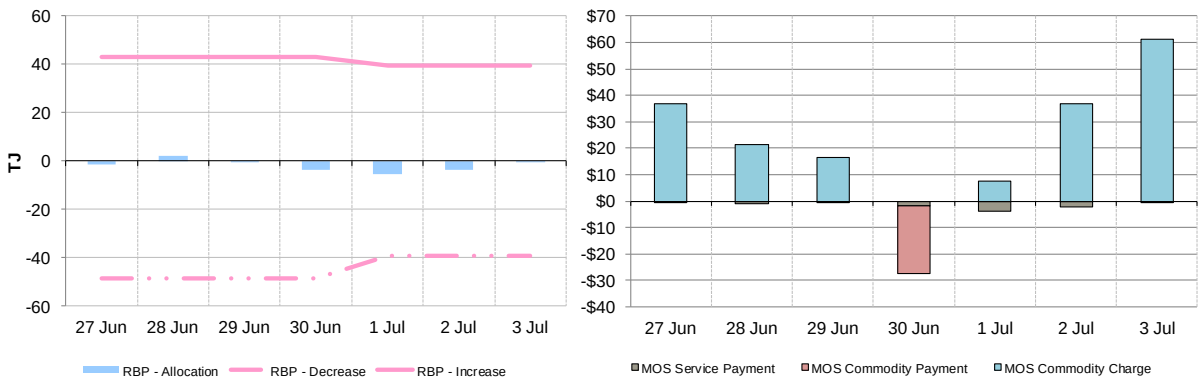


Figure 4.4: BRI MOS allocations (TJ), service payments and commodity payments/charges ($000)



5. National Gas Bulletin Board

Figure 5.1 shows average daily actual flows for the current week[15] from the Bulletin Board (changes from the previous week's average are shown in brackets). Average daily prices[16] 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)[17]

Totals	Current Week	Change (TJ)
Domestic gas flows	1986	(-111)
Export gas flows	3502	(+181)
Gas production	5315	(+56)
GPG gas usage	433	(-51)
Pipelines		
Queensland		
Gladstone		
APLNG	1569	(+59)
GLNG	1219	(+48)
QGP	135	(+1)
WGP	714	(+73)
Mt Isa		
CGP	83	(0)
Brisbane		
RBP	93	(-23)
South West		
SWQP	40	(+2)
Wallumbilla		
BWP	170	(+1)
CRWP	-11	(+45)
DDP	103	(-3)
QGP (WAL)	13	(-2)
RBP (WAL)	-73	(+44)
SWQP (WAL)	219	(-28)
New South Wales		
MSP	224	(-7)
EGP	232	(-2)
Victoria		
LMP	684	(-95)
SWP	220	(+18)
South Australia		
MAP	194	(+2)
SEAGas	66	(-5)
Tasmania		
TGP	36	(+12)

Storage (held volume)		
Moomba LDB	15202	(-78)
Iona UGS	14268	(-1138)
LNG Storage Dandenong	337	(-3)
Silver Springs	20045	(-161)
Roma UGS	38661	(-396)

15 **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.

16 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.

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

6. Gas Supply Hub

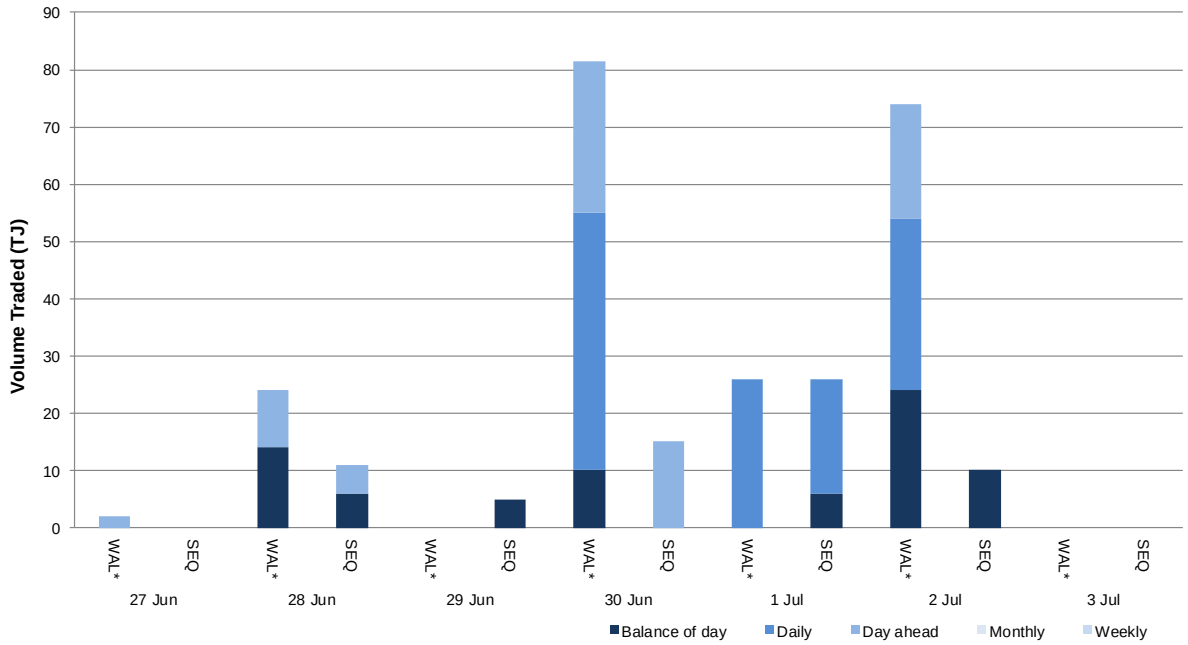
The gas supply hub was established at Wallumbilla in March 2014 to facilitate the voluntary trading of gas between participants, with products listed for sale and purchase at delivery points on three major connecting pipelines. There are separate products for each trading location and delivery period (daily, day-ahead, balance-of-day, weekly and monthly products).[18]

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 37 trades for 274.5 TJ of gas at a volume weighted price of $10.89/GJ. These consisted of 27 trades at WAL (207.5 TJ at $10.91/GJ) and 10 trades at SEQ (67 TJ at $10.83/GJ). There were 5 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.[19]

Figure 6.1: GSH traded quantities



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

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

7. Day Ahead Auction

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

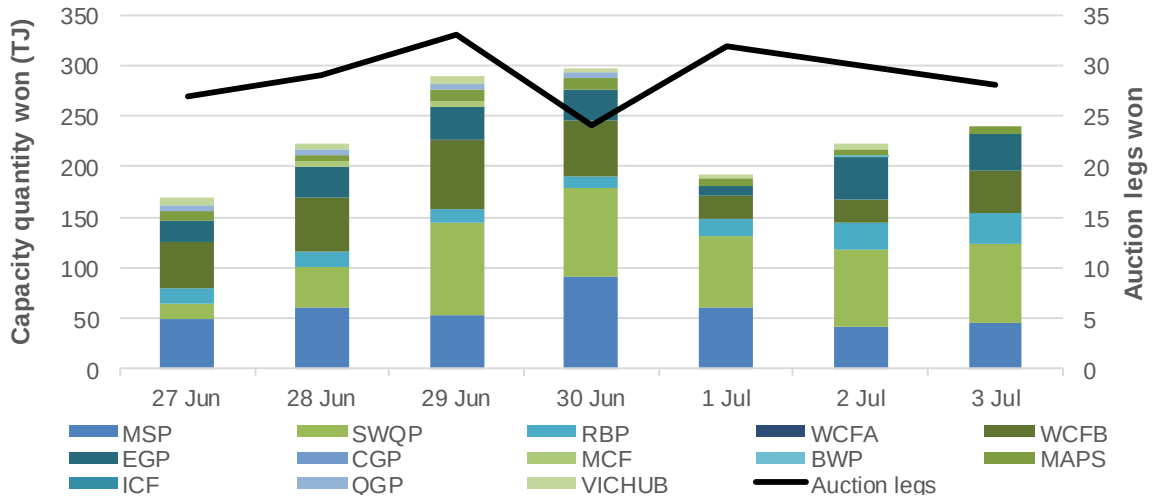
Participants may bid in to the DAA in order to procure the following services:

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

This week, 16 participants took part in the DAA, winning 1635 TJ of capacity across 11 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.[20]

Figure 7.1: DAA traded quantities and auction legs won



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