

1 – 7 May 2022

Weekly Summary

Downstream wholesale gas market prices (marked M on the map below) increased significantly in all four markets (percentage change from previous week shown on map). There has been a steep increase in prices across the week with downstream prices averaging \$16.33/GJ at the start of the week to \$24.41/GJ by the end. At the Wallumbilla upstream supply production hubs (marked H), the average price also increased significantly at the WAL and SEQ trading locations. Increased gas powered generation (GPG) usage and high Queensland LNG exports are putting upwards pressure on gas market prices.



Trading in the Wallumbilla gas supply hub was concentrated around short- and medium-term deliveries for products at SEQ (84 TJ) and WAL (130 TJ) this week (see section 6).¹

Mainland GPG increased this week, most significantly in Queensland and New South Wales. This coincided with additional baseload outages in both regions.² LNG export pipeline flows decreased below 4000 TJ/day on average (see more detailed map and table at figure 5.1). While export demand was down this week as QCLNG flows decreased, total export volumes

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

² In Queensland, baseload generation came offline at Tarong and Millmerran units from late-April alongside continuing outages at Gladstone and Callide. In New South Wales, a Bayswater unit came offline from late-April and a Liddell unit came of midweek alongside continuing outages at Vales Point, Liddell, Eraring and Bayswater units from earlier last month.

for the first week of May were higher than the same time last year (when records were consistently set for export flows across 2021).

In the Sydney STTM on 5 May, an increase MOS requirement (33.8 TJ) was driven by under forecast demand inside the hub (32.9 TJ), leading to a \$79,497 MOS service payment.³

On 7 May, the variation between the D-2 provisional price (\$19.71/GJ) and D-1 ex ante price (\$28/GJ) in Brisbane was \$8.29/GJ. The price variation of greater than \$7/GJ exceeded a reporting threshold outlined in the <u>STTM Significant Price Variation Guideline</u>. The AER will investigate and publish a significant price variation report on the event.

Long term statistics and explanatory material

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

Market overview

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

	Victoria		Syd	dney Adelaide		laide	Brisbane	
	Price	Demand	Price	Demand	Price	Demand	Price	Demand
01 May - 07 May 2022	17.90	662	19.42	265	19.03	55	19.88	82
% change from previous week	16	42	18	4	13	21	18	43
21-22 financial YTD	10.50	507	11.23	247	11.49	53	11.40	85
% change from previous financial YTD	98	-1	100	-1	92	-4	97	-19

Figure 1: Average daily prices and demand – all markets (\$/GJ, TJ)⁴

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

³ MOS is an ancillary service providing balancing gas on a pipeline where there is a difference between scheduled/nominated supply/demand and actual delivered gas quantities.

⁴ 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 Hubs (\$/GJ, TJ)⁵

	Moomba		South East	Queensland	Wallumbilla		
	Price	Quantity	Price	Quantity	Price	Quantity	
01 May - 07 May 2022	-	-	19.10	84	19.54	130	
% change from previous week	-	-	18	-20	18	82	
21-22 financial YTD	8.62	282	11.13	3446	10.87	15561	
% change from previous financial YTD	184	-17	108	-25	101	28	

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



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

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

Figure 4: Average daily ancillary payments (\$000)

	Victoria Ancillary Payments*	Sydney MOS	Adelaide MOS	Brisbane MOS
01 May - 07 May 2022	-	32.81	17.40	0.93
% change from previous week	-	29	452	-4
21-22 financial YTD		20.02	8.34	0.89
% change from previous financial YTD		4	6	-77

* 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.

⁵ 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.

	Moomba		South East (Queensland	Wallumbilla*		
	VWA price	Quantity	VWA price	Quantity	VWA price	Quantity	
Balance of day	-	-	19.00	10.0	20.71	38.0	
Daily	-	-	19.33	59.0	19.37	51.0	
Day ahead	-	-	18.27	15.0	18.66	41.0	
Weekly	-	-	-	-	-	-	
Monthly	-	-	-	-	-	-	
Total	-	-	19.10	84.0	19.54	130.0	

Figure 5: Gas Supply Hub products total traded for the current week (\$/GJ, TJ)⁶

* 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	1546	929	1704	4179
Export Pipeline Flows	1614	950	1361	3925
% change from previous week (pipeline flows)	8	-3	-9	-1
21-22 financial YTD flows	1487	1065	1372	3924

* 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.

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

Detailed market analysis

Significant increase in prices

Domestic gas prices started increasing in late March and has remained high throughout April. This week, prices again increased significantly (13-18%) across all four downstream wholesale gas markets, most notably in the Victorian, Sydney and Brisbane market. There were significant increases (>40%) in demand in the Victorian and Brisbane market this week. Cold weather in Victoria and South Australia this week drove up demand as minimum temperatures reduced to 7 and 5 degrees respectively. Victorian market demand climbed to around 900 TJ on 4 and 5 May alongside elevated demand for gas generation.

Increased Gas Powered Generation (GPG) usage

There was a notable increase (96 TJ) in gas usage by gas powered generation this week, most significantly in Queensland and New South Wales. This can be attributed to coal generation outages as well as low renewables generation. In addition to increased gas demand this week, GPG demand across mainland regions likely pushed up gas market prices. It is expected that the high GPG usage will remain as the price volatility in the NEM continues.

Reduced storage levels at lona

Iona storage levels peaked close to nameplate capacity in mid-April before depleting at a steep rate in May (see Figure 7 below). Storage levels at Iona decreased 583 TJs this week, in response to the spike in demand and prices in Victoria. Supply offered at prices above \$50/GJ has increased significantly from the previous year, closer resembling the offer profile from winter 2021 (figure 7). Storage has begun depleting earlier than last year where we saw an unprecedented rate of storage draw down from mid-May (figure 8).



Figure 7: Iona supply offers (injection bids)





Significant price variation (SPV)

On 7 May, the variation between the D-2 provisional price (\$19.71/GJ) and D-1 ex ante price (\$28/GJ) in Brisbane was \$8.29/GJ. Preliminary analysis shows rebidding increasing offer prices by roughly \$10/GJ for quantities above 70 TJ in the ex ante schedule (figure 9). The price variation of greater than \$7/GJ exceeded a reporting threshold outlined in the <u>STTM</u> <u>Significant Price Variation Guideline</u>. The AER will investigate and publish a significant price variation report on the event.⁷



Figure 9: Brisbane provisional and ex ante bid and offer curves

⁷ We are planning to analyse and report on multiple SPV threshold breaches on subsequent days in a single report for May, to be published by late-July.



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 price⁸ which is the schedule at which most gas is traded.

The main drivers⁹ 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 forecasts¹⁰, 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 4.



Figure 1.1: Prices by schedule (\$/GJ)





⁸ 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.

⁹ 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.

¹⁰ 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)









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.¹¹ 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 <u>user guide</u>.

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.¹²

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)	16.75	17.00	17.01	18.05	18.50	22.72	25.94
Ex ante quantity (TJ)	221	258	242	278	264	303	289
Ex post price (\$/GJ)	16.91	16.90	16.95	18.00	20.00	22.72	25.00
Ex post quantity (TJ)	228	248	239	274	297	308	280



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

¹¹ 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.

¹² 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)¹³



¹³ 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.

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	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Ex ante price (\$/GJ)	15.65	17.60	16.70	17.51	19.15	22.60	24.00
Ex ante quantity (TJ)	42	54	51	59	64	62	52
Ex post price (\$/GJ)	17.12	18.15	17.06	18.11	20.00	27.80	28.80
Ex post quantity (TJ)	53	58	53	65	70	76	63

Figure 3.1: ADL STTM daily ex ante and ex post prices and quantities









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.

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	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Ex ante price (\$/GJ)	17.28	17.56	17.86	18.93	19.30	20.23	28.00
Ex ante quantity (TJ)	71	73	86	92	90	85	78
Ex post price (\$/GJ)	17.05	17.26	17.84	18.81	19.06	20.71	27.50
Ex post quantity (TJ)	68	67	84	90	88	85	77

Figure 4.1: BRI STTM daily ex ante and ex post prices and quantities









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 week¹⁴ from the Bulletin Board (changes from the previous week's average are shown in brackets). Average daily prices¹⁵ are provided for gas markets and gas supply hubs. Average daily quantities are provided for gas powered generation for each region.





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.

¹⁵ 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.

¹⁶ Net flows are shown for Bulletin Board facilities, as outlined in the <u>user guide</u>.

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).¹⁷

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 38 trades for 214 TJ of gas at a volume weighted price of \$19.36/GJ. These consisted of 21 trades at WAL (130 TJ at \$19.54/GJ) and 17 trades at SEQ (84 TJ at \$19.10/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.¹⁸



Figure 6.1: GSH traded quantities

¹⁷ Additional information on trading locations and available products is detailed in the <u>user guide</u>.

¹⁸ 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 unnominated 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 bidirectional pipelines;
- interruptible backhaul services; and
- stand-alone compression services.

This week, 14 participants took part in the DAA, winning 1257 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.¹⁹



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

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