# Gas Market Report

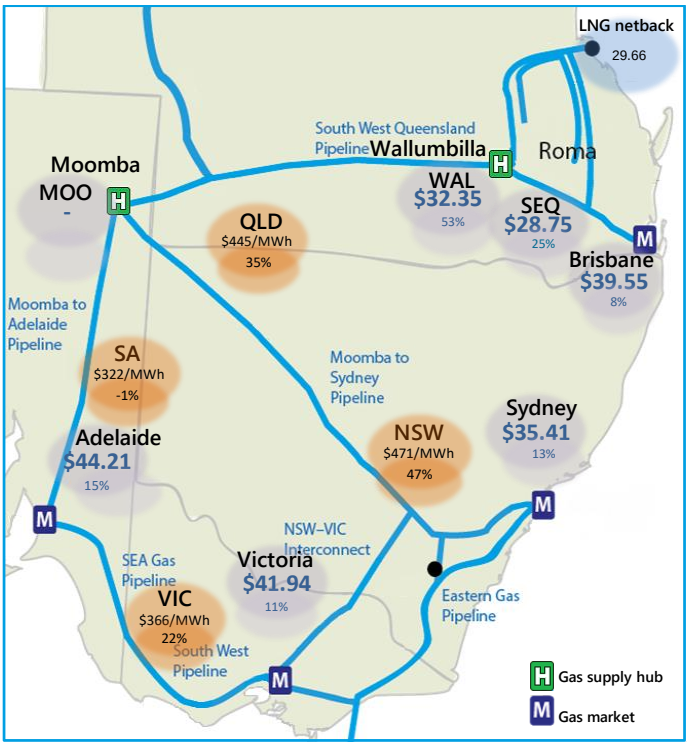
AUSTRALIAN ENERGY REGULATOR

## 29 May – 4 June 2022

## Weekly Summary

Downstream wholesale gas market prices (marked M on the map below) increased in every market this week to a weekly record (percentage change from previous week shown on map). Prices in the Adelaide STTM and Victorian Declared Wholesale Gas Market (DWGM) reached record highs of $46.45/GJ and $48.72/GJ respectively. The cumulative price threshold for the DWGM was exceeded on 30 May, resulting in an administered price cap of $40/GJ from 10 am. At the Wallumbilla upstream supply hub (marked H on the map below), the average price increased significantly at both the WAL trading point and the SEQ trading point. The map also includes equivalent National Electricity Market (NEM) prices.

### Map: Gas Market Prices, LNG netback price ($/GJ)*, NEM prices ($/MWh)




*The LNG netback price is the 30 May 2022 assessment for the front month forward LNG netback price assessed: https://www.accc.gov.au/regulated-infrastructure/energy/gas-inquiry-2017-2025/lng-netback-price-series

Domestic spot prices exceeded contemporaneous LNG spot netback prices this week.

Trading at Wallumbilla this week was concentrated around both short term trades within the week (357 TJ at WAL and 171 TJ at SEQ – see map for locations) and longer term trades for delivery later in June and July (393 TJ at WAL and 355 TJ at SEQ). Section 6 has a more detailed breakdown by product type.

Mainland gas powered generation (GPG) increased in Victoria, South Australia, New South Wales and Queensland this week. LNG export pipeline flows were lower this week (see more detailed map and table at figure 5.1).

The >$7/GJ variation between D-2 and D-1 price threshold outlined in the STTM Significant Price Variation Guideline was exceeded on 10 occasions this week. The AER will investigate and publish a significant price variation report on the events. However, additional information on the Significant Price Variation breaches is set out in the Significant Price Variation analysis below.

## 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 **(or Victorian Gas Market - VGM)** 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)[1]

| | Victoria | | Sydney | | Adelaide | | Brisbane | |
|---|---|---|---|---|---|---|---|---|
| | Price | Demand | Price | Demand | Price | Demand | Price | Demand |
| 29 May - 04 Jun 2022 | 41.94 | 1017 | 35.41 | 297 | 44.21 | 72 | 39.55 | 85 |
| % change from previous week | 11 | 30 | 13 | 13 | 15 | 22 | 8 | 2 |
| 21-22 financial YTD | 12.75 | 531 | 13.11 | 250 | 13.71 | 54 | 13.40 | 85 |
| % change from previous financial YTD | 136 | -1 | 126 | -1 | 123 | -4 | 125 | -19 |

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

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

## Figure 2: Average prices and total quantity – Gas Supply Hubs ($/GJ, TJ)[2]

| | Moomba | | South East Queensland | | Wallumbilla | |
|---|---|---|---|---|---|---|
| | Price | Quantity | Price | Quantity | Price | Quantity |
| 29 May - 04 Jun 2022 | - | - | 28.75 | 526 | 32.35 | 750 |
| % change from previous week | - | - | 25 | 472 | 53 | -28 |
| 21-22 financial YTD | 8.62 | 282 | 14.17 | 4532 | 13.10 | 19502 |
| % change from previous financial YTD | 184 | -17 | 149 | -18 | 131 | 32 |

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

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

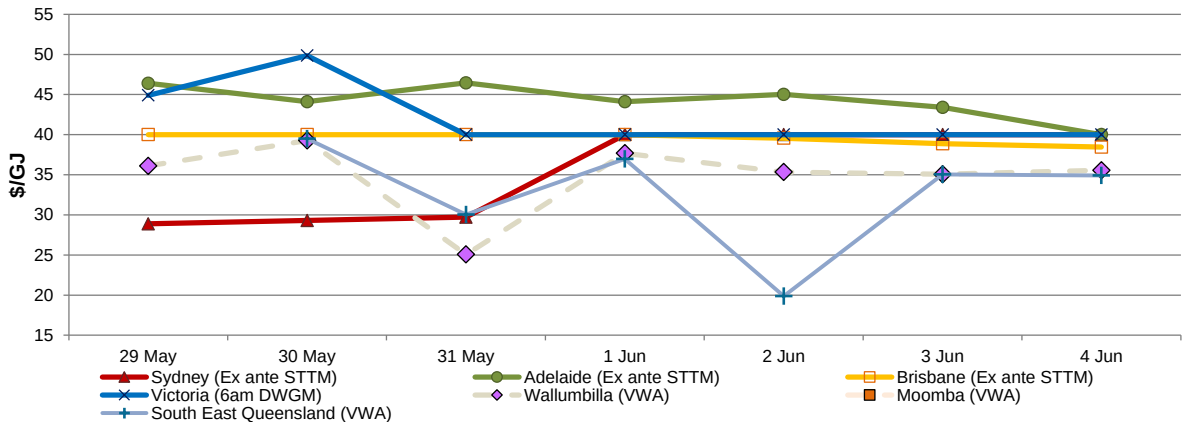



Figure 4 compares average ancillary market payments (for the VGM) and balancing gas service payments (STTM) against historical averages.

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

| | Victoria Ancillary Payments* | Sydney MOS | Adelaide MOS | Brisbane MOS |
|---|---|---|---|---|
| 29 May - 04 Jun 2022 | 0.01 | 39.62 | 5.12 | 0.82 |
| % change from previous week | - | -19 | -11 | -60 |
| 21-22 financial YTD | | 21.43 | 8.82 | 0.92 |
| % change from previous financial YTD | | 10 | 14 | -75 |

* 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.

[2] 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)[3]

| | Moomba | | South East Queensland | | Wallumbilla* | |
|---|---|---|---|---|---|---|
| | VWA price | Quantity | VWA price | Quantity | VWA price | Quantity |
| **Balance of day** | - | - | 36.01 | 42.0 | 37.28 | 158.0 |
| **Daily** | - | - | 26.28 | 331.0 | 29.13 | 450.0 |
| **Day ahead** | - | - | 36.28 | 87.0 | 37.74 | 107.0 |
| **Weekly** | - | - | 35.00 | 35.0 | 35.00 | 35.0 |
| **Monthly** | - | - | 17.00 | 31.0 | - | - |
| **Total** | **-** | **-** | **28.75** | **526.0** | **32.35** | **750.0** |

* 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 | 1380 | 937 | 1673 | 3990 |
| Export Pipeline Flows | 1244 | 986 | 1177 | 3407 |
| % change from previous week (pipeline flows) | -17 | 1 | -3 | -7 |
| 21-22 financial YTD flows | 1486 | 1057 | 1359 | 3902 |

* 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.

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

# Detailed market analysis

## Table 1: Key events this week

| Date | Event | Market Affected | Description |
|---|---|---|---|
| 30-May | Cumulative Price Threshold exceedance | Victoria | Administered price period commencing at 10 am on 30 May. |
| 30-May | Change in Administration state to Administered price | Sydney | In accordance with a Ministerial direction under NSW Essential Services Regulations |
| 31 May - 4 June | High Shadow prices | Victoria | Multiple schedules on multiple days |
| 1 - 3 June | High Shadow prices | Sydney | 1,2,3 June: Ex Ante $400/GJ |
| 1-June | Threat to System Security | Victoria | AEMO notice critical at 11:13AM - ended on 1 June 9:50pm |
| 1-June | Gas Supply Guarantee | East Coast wide | Projected shortfall for 2 June |
| 4-June | Administered price | Adelaide | Administered ex post price state |

***Summary of cumulative price thresholds***

The Victorian DWGM and STTMs (in Brisbane, Adelaide and Sydney) and with regards to electricity the NEM, all operate cumulative price thresholds (CPT).[4] If the cumulative price, over 7 days, breaches the CPT, then a price cap is implemented. This helps reduce risks and provides a stop gap for the market participants when the price in the market is unusually high.

However, the precise mechanism is different between the three markets.

The DWGM implements an administered price cap (APC) at a lower level of past average prices - $40/GJ - than the STTMs in Brisbane, Adelaide and Sydney which require seven days of prices averaging around $63/GJ (see table 3 below). As a comparison, table 3 also includes the CTP for the electricity industry (i.e. NEM). Similarly, the NEM's CTP is based on 7 days, with 5-minute pricing intervals (i.e. 12 intervals per hour, over 24 hours).

## Table 2: Cumulative price thresholds and price caps

| | CPT | Calculation period[5] Days / periods | Is shadow / dispatch price used | Average price to hit CPT | Price Cap |
|---|---|---|---|---|---|
| DWGM | 1,400 | 7*5 | Y | ~$40/GJ | $40/GJ |
| STTMs | 440 | 7*1 | Y | ~$63/GJ | $40/GJ |
| NEM | 1,359,100 | 7*24*12 | Y | $670/MWh | $300/MWh |

[4] The Declared Wholesale Gas Market (DWGM), Short Term Trading Market (STTM) and National Electricity Market (NEM).

[5] Calculation periods: NEM = 5 minutes prices over 7 days, Victoria = 5 schedules a day over 7 days, STTM = 1 schedule a day over 7 days)

When the APC is in place for the DWGM and STTM markets, a scheduled price (also known as the shadow price) continues to be calculated based on participant's offers and bids and reveals the price where the market would have cleared but for the price cap.

Similarly in the NEM the dispatch price continues to be calculated even when a price cap is in place.

Note that shadow prices are used in the calculation of the 7-day cumulative price. For example, for a price cap to be lifted in the DWGM, the shadow price would have to be less than $40/GJ over a 7-day period.

***Victoria enters Administered Price Cap state***

The pricing events in Victoria from 30 May are unprecedented.

The Victorian DWGM entered an administered pricing state on 30 May when the cumulative price[6] crossed the CPT of $1400/GJ[7].

Prices had ranged between $30.74/GJ and $48.72/GJ in the 35 previous schedules with the average price just exceeding $40/GJ. As a result, AEMO implemented an APC which limits the maximum scheduled gas prices to $40/GJ.

This is the first time the DWGM has ever operated with an APC in place. It is also the first time an APC has operated as a result of a CPT breach in any downstream gas market.

The day after the APC was put in place, the Victorian DWGM shadow price reached the market price cap of $800/GJ across three scheduling intervals (6 am, 10 am and 6 pm). This level of pricing continued through the week. Table 3 highlights the $800/GJ shadow prices recorded across the week.

Note that a $800/GJ price has only occurred once, in 2008[8]. Therefore, the pricing events from 30 May onwards are unprecedented.

### Table 3: High shadow prices ($/GJ) in the Victorian DWGM

| | Prices at each schedule ($/GJ) | | | | |
|---|---|---|---|---|---|
| | 6am | 10am | 2pm | 6pm | 10pm |
| 31 May | **800** | **800** | 45 | **800** | 45 |
| 1 June | **800** | **800** | 49 | **800** | 40 |
| 2 June | **800** | 49 | 47 | 50 | 47 |
| 3 June | 43 | 42 | **800** | 64 | 40 |
| 4 June | 33 | 40 | 38 | 39 | 39 |

[6] The Victorian cumulative price is calculated as the sum of the marginal clearing price over 35 consecutive scheduling intervals (7 gas days).

[7] Australian Energy Market Operator, *Gas Market Parameter Review*, March 2018.

[8] On 22 November 2008 the gas spot price reached $800/GJ in the 10pm schedule. This was due to a combination of outages at the Longford production plant and Iona storage and inclement weather conditions.

### *Bidding extends the Victorian Administered Price Cap state*

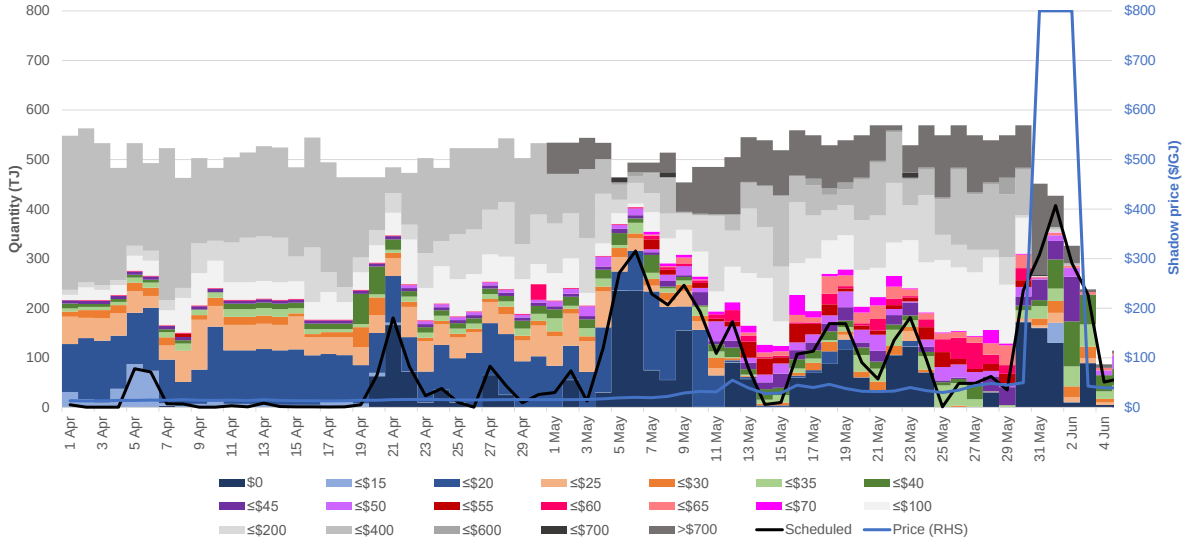
Iona injection bids set the price across multiple schedules from 29 May – 4 June.

Many of the maximum shadow prices of $800/GJ this week were set by Iona injection bids where there was a large fall in total volumes offered (see Figure 7) with three participants telling the AER they sought to conserve gas in storage over this period.

The $800/GJ prices were set by bids for injection at Culcairn, VicHub and TasHub. Of the $800/GJ price setting bids at Iona most of these were industrial participant bids (69%), with the rest bid by GPG gentailers.

By 4 June, the Victorian cumulative price was $7,677/GJ. This indicates an average price of $219/GJ driven by the $800/GJ injection bids.

## Figure 7: Injection bid bands at Iona storage facility




### *Notice of Threat to System Security on 1 June in Victoria*

On the morning of 1 June, AEMO issued a notice of a threat to system security for the DWGM. This was a result of insufficient offers being made available to meet forecast demand for the declared transmission system at the 10 am schedule[9]. This was resolved on the same day after the market responded to provide additional supply.

### *Sydney STTM downgraded to Administered Price Cap (APC) State – 1 - 7 June*

As discussed in the previous weekly, due to a retailer of last resort (RoLR) event (Weston) Sydney's STTM went into an administered scheduling state on 24 May.

The Sydney STTM market administered scheduling state ended on 31 May and was replaced by an administered price cap state (from 1 June), which was scheduled to end on 7 June.

Specifically and in accordance with a 30 May ministerial direction under NSW Essential Services Regulation, AEMO was instructed to administer the STTM at the Sydney hub as if a minor (not major) retailer of last resort (RoLR) event had occurred on 24 May 2022 (effective from 1 June).

The consequence of this change was to move from a market administered schedule price (ex ante) which set prices based on the previous 30-day prices to an APC of $40/GJ.

[9] Australian Energy Market Operator, *Declared Wholesale Gas Market – Intervention Report*, June 2022.

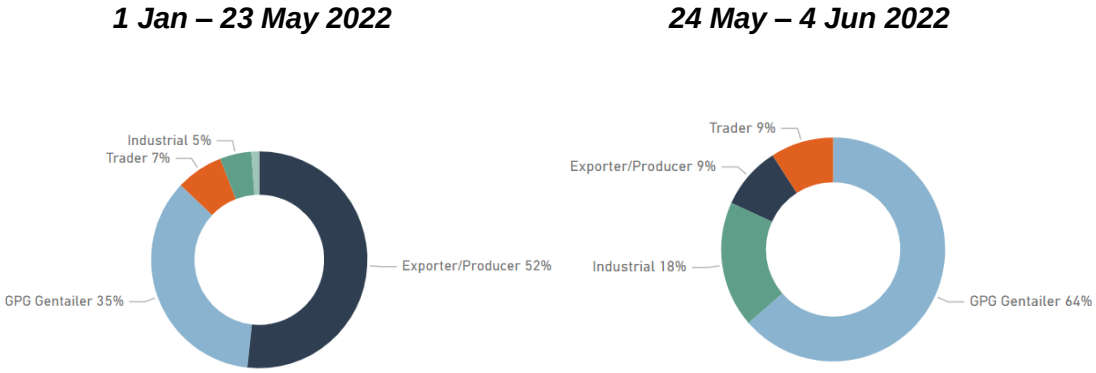
Further, there were high shadow prices ($400/GJ) from 1 June to 3 June. This resulted in the cumulative price breaching the cumulative price threshold of $440/GJ. Therefore, while the APC was due to end on 7 June due to the "Minor RoLR event", the APC was extended because Sydney's cumulative price exceeded the threshold from 1 June (the $572/GJ cumulative price had increased to $1,331/GJ by 4 June).

***Sydney bidding***

Across the week, during both the market administered scheduling state (24 to 31 May) and the administered price cap state (1 to 3 June), ex ante prices (D-1) have been predominantly set by offers from retailers.

This is in comparison to the calendar year to date (see figure 8), wherein exporters/producers set a majority (52%) of the Sydney ex ante prices (which reduced to only 9% for this week).

## Figure 8: Sydney STTM price setter[10]




***Sydney High MOS Quantity on 31 May (last day of administered scheduling state)***

In the Sydney STTM on 31 May, an increase MOS requirement on the MSP (33.3 TJ) led to a $77,240 MOS service payment.[11] MOS service payments are considered as significant when they are greater than $50,000 in the Sydney market on any given day. A $77,240 service payment is more than double the daily average MOS payment of $33,350 on the other days this week. An increase MOS requirement increases the gas flows on the pipeline to manage daily pipeline deviations.

Participants have indicated that the price setting during the administered scheduling state period created an overall incentive to buy gas from the Sydney market rather than supply Sydney (from Melbourne). The administered scheduling state period includes this high MOS day on 31 May where the price in Sydney was capped at $29.71/GJ in comparison to a $40/GJ capped price in Victoria. Similar high MOS quantities occurred in the previous week during the administered scheduling state.

***East Coast Gas Supply Guarantee event – 1 June***

On the afternoon of 1 June, AEMO issued a notice of a potential Gas Supply Guarantee event[12] for the VIC, SA and TAS regions for gas day 2 June. The event was triggered due to

[10] Note that the price can be set by more than one participant and participant group.

[11] 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.

[12] The Gas Supply Guarantee is a mechanism to make gas available (by production facility operators and pipeline operators) to meet peak demand periods in the National Electricity Market (NEM).

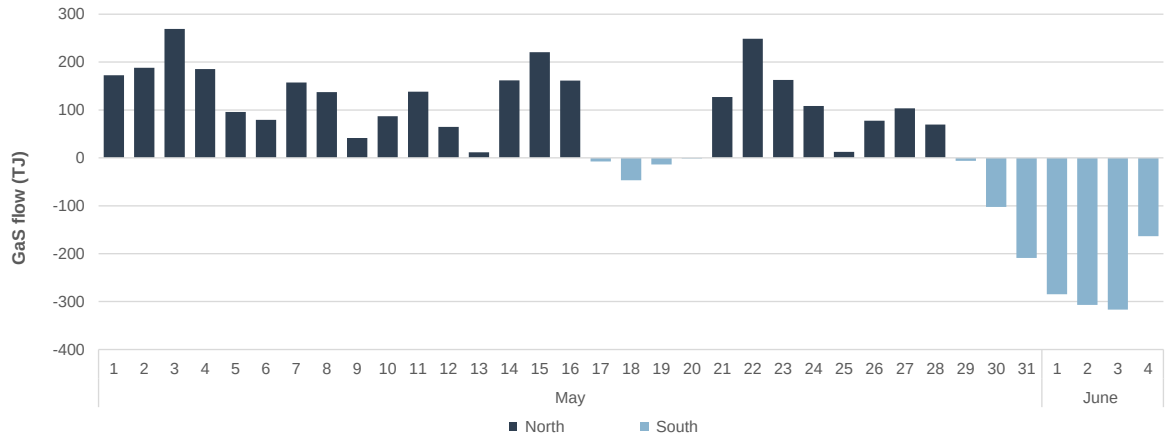
low reserve conditions in the NEM and gas generators running on liquid fuel due to a lack of gas supply.

AEMO convened a gas supply guarantee assessment conference with market participants to assess the gas supply shortfall trigger event. At the conference, LNG exporters committed to bring gas south and from 5 pm, 45 TJ of day ahead gas was bought by market participants through the Gas Supply Hub trading exchange.

As a result of the Gas Supply Guarantee activation the gas supply shortfall trigger event was resolved. Specifically, gas flows south on the QSN link[13] into NSW, VIC and SA were near nameplate capacity.[14] (see Figure 9).

Further, note that domestic gas prices in the south continue to be higher than international prices, which indicates that even without a Gas Supply Guarantee event, there was incentive for exporters to bring gas south.

### Figure 9: Increase in gas flows south following Gas Supply Guarantee event




***Administered Ex Post State at the Adelaide STTM - gas day 4 June***

An administered ex post pricing state resulted from an AEMO IT system failure to publish the ex post schedule at 11:30 AEST for gas day 4 June. The ex post price was set to equal the lesser of the ex ante and the administered price cap of $40/GJ which resulted in an ex post price of $40/GJ. The administered ex post pricing state was removed at the conclusion of gas day 4 June.

## Significant Price Variation analysis

This week, the AER significant price variation reporting thresholds were triggered in the short term trading markets (STTMs). Our analysis below identifies drivers of these significant price variation events as a complement to this further reporting.

The Significant Price Variations listed below are generally caused by participants rebidding between schedules to buy or sell, or unexpected movements in supply and demand forecasts. Specifically, the D-1 price in the STTMs deviated from the D-2 forecast price by more than $7/GJ on a total of 10 occasions.

Table 1 provides a summary of the breaches. Along with reporting on these events through its Gas Weeklies, the AER will investigate and publish a further consolidated report on price variation events from mid-May to end July in or before September 2022.

[13] Flows through Moomba on the South West Queensland Pipeline (SWQP).

[14] The nameplate capacity of westernhaul gas (Wallumbilla to Moomba) on the SWQP is 404 TJ/day between the period 1 May to 30 September.

## Table 4: Significant price variation threshold breaches - variation >$7/GJ between D-2 and D-1 price

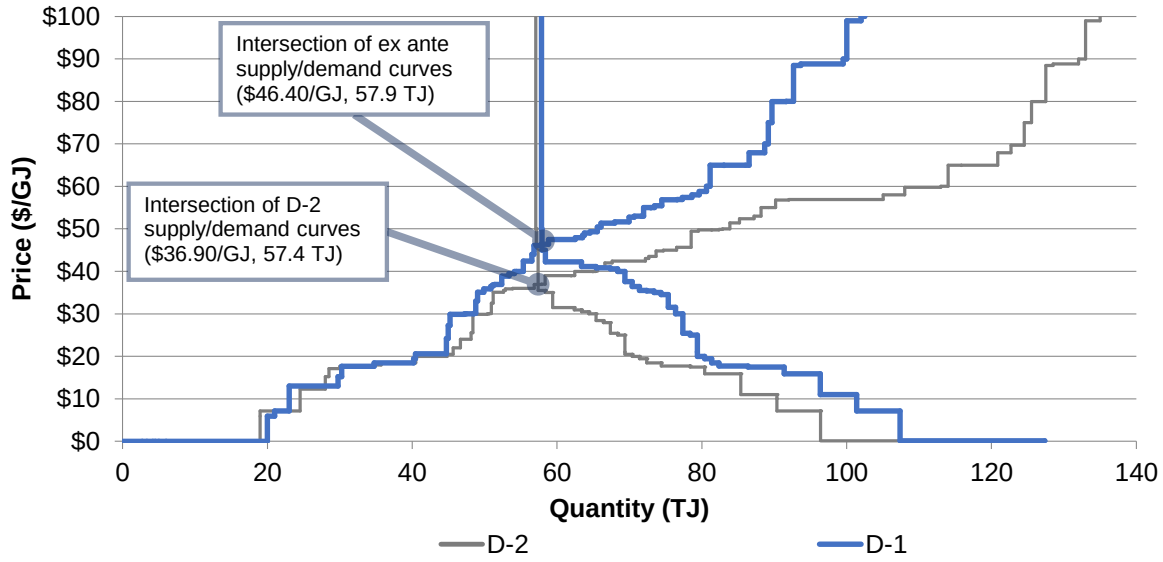
| Gas day | Market | D-2 provisional price ($/GJ) | D-1 ex ante price ($/GJ) | Threshold breach description |
|---|---|---|---|---|
| 29-May | Adelaide | 36.9 | 46.40 | Supply offer bid |
| | Brisbane* | 29 | 40.00 | Supply offer bid |
| | Sydney* | 40 | 28.88 | Administered state pricing in Sydney |
| 30-May | Brisbane* | 30.01 | 40.00 | Supply offer bid |
| | Sydney* | 40.01 | 29.30 | Administered state pricing in Sydney |
| 31-May | Brisbane* | 32.26 | 40.00 | Supply offer bid |
| | Sydney* | 43.01 | 29.71 | Administered state pricing in Sydney |
| 1-June | Sydney* | 150 | 40 | Supply offer bid (very high D-2 prices) |
| 2-June | Sydney* | 400 | 40 | Supply offer bid (very high D-2 prices) |
| 3-June | Sydney* | 400 | 40 | Supply offer bid (very high D-2 prices) |

* The Brisbane and Sydney STTM hubs were put into administered pricing states following the suspension of Weston Energy

For each breach, more detailed analysis is provided below. This analysis describes the pricing outcomes that resulted in significant price variation breaches due to administered pricing states and shows the shadow prices[15] (where available) in these markets.

In Victoria, administered pricing was also applied from 30 May due to the CPT being exceeded, however there have been no further breaches of SPV thresholds in this market.

## Figure 10: Adelaide provisional and ex ante bid and offer curves (29 May)

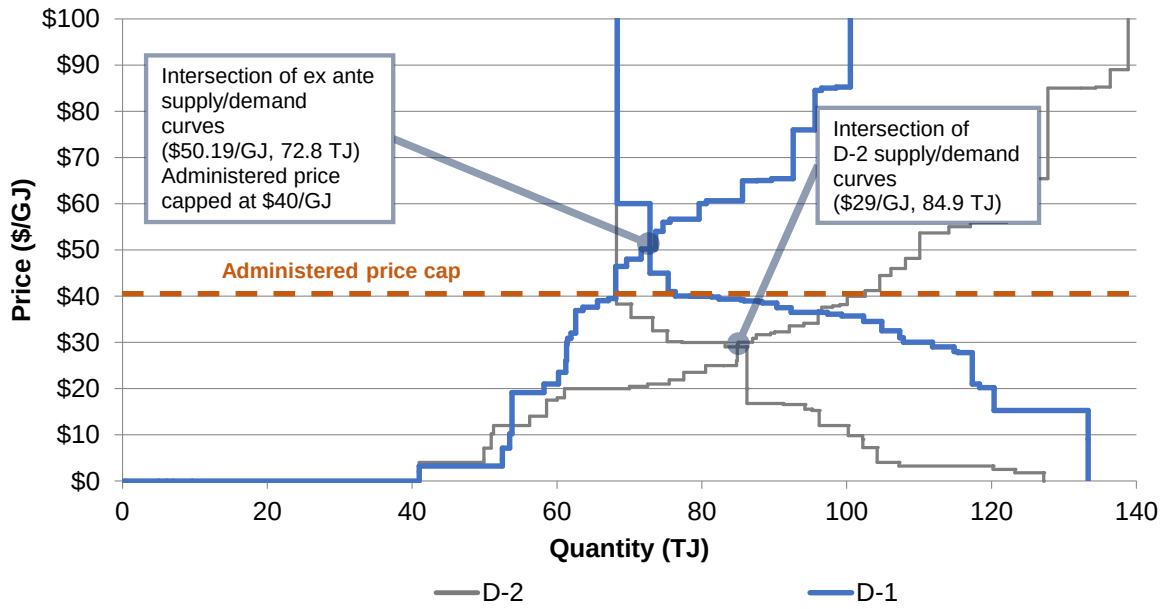



On 29 May, Adelaide was not in an administered price state. The increased ex ante price in Adelaide was largely driven by higher offer prices. This resulted in an increase of $9.50/GJ between the D-2 provisional price ($36.90/GJ) and the ex ante price ($46.40/GJ). Gas

[15] Prices that would have been set in the ex ante schedule in the event administered pricing had not been applied.

offered in the $35-45/GJ price range reduced by 17.5 TJ in the ex ante schedule, rebid by GPG gentailers (down 15.5 TJ) and traders (down 2 TJ).

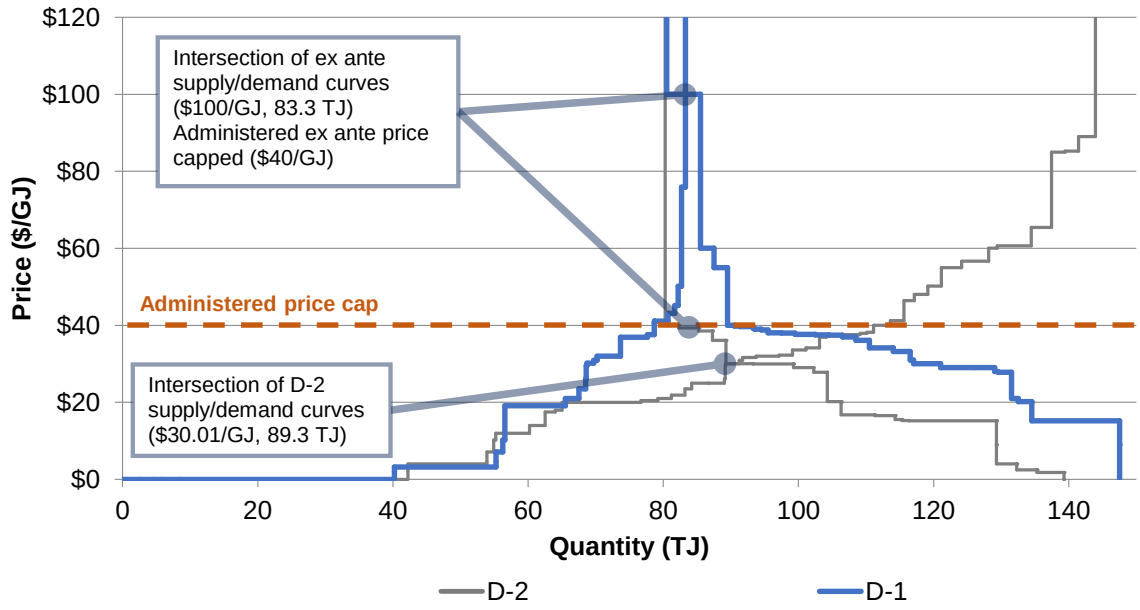
### Figure 11: Brisbane provisional and ex ante bid and offer curves (29 May)




On 29 May, Brisbane was in an administered price state. In the ex ante schedule there was a significant shift in gas offers in the $20-60/GJ price range, down by 62 TJ from the D-2 provisional schedule. Gas in that price range was rebid by GPG gentailers (down 10 TJ), exporter/producers (down 5 TJ) and traders (down 15 TJ), with no gas offered in that range by industrial or retail participants.

This would have resulted in prices for both the ex ante and ex post schedules being set around $50/GJ, however both were capped at the administered price cap (APC) of $40/GJ (see Figure 11).[16]

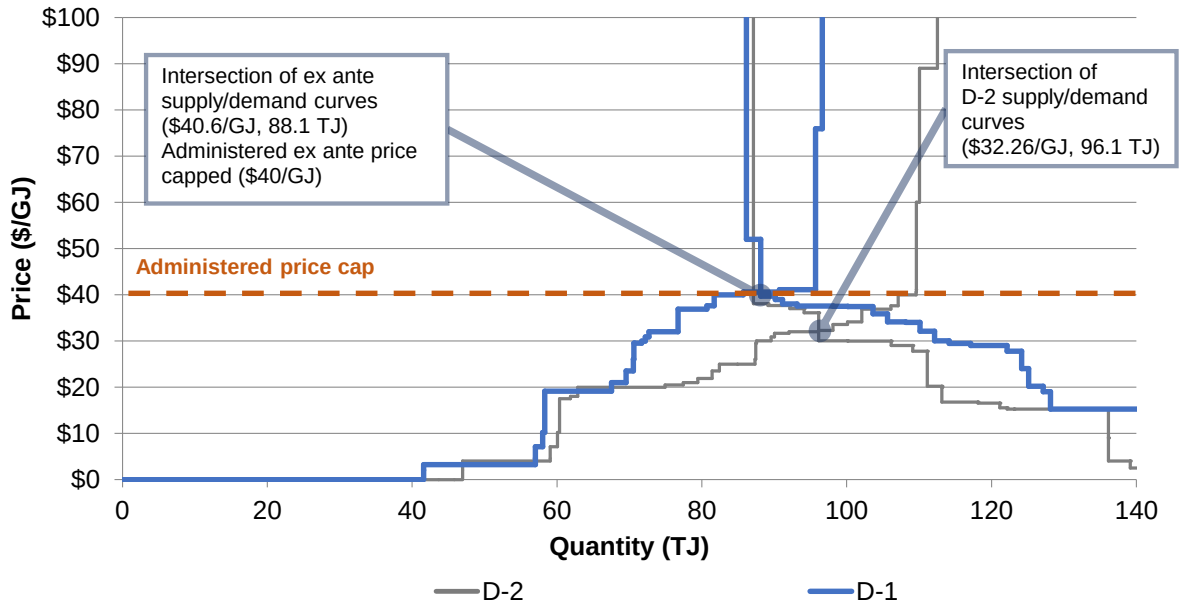
### Figure 12: Brisbane provisional and ex ante bid and offer curves (30 May)




[16] Administered prices in Brisbane were set under a different arrangement following the declaration of a minor Retailer of Last Resort (RoLR) event, whereas ex post prices in Sydney resulted in the administered state setting ex post prices equal to ex ante prices using a rolling average calculation under the major RoLR declaration.

On 30 May in Brisbane, there was around 65 TJ less gas offered in the ex ante schedule, particularly impacting gas offers below $70/GJ. Controllable demand also moved above $40/GJ, with another 3 TJ added at prices up to $100/GJ as Ampol rebid up from $30/GJ, setting the shadow price[17] (capped at the $40/GJ administered price cap).

### Figure 13: Brisbane provisional and ex ante bid and offer curves (31 May)



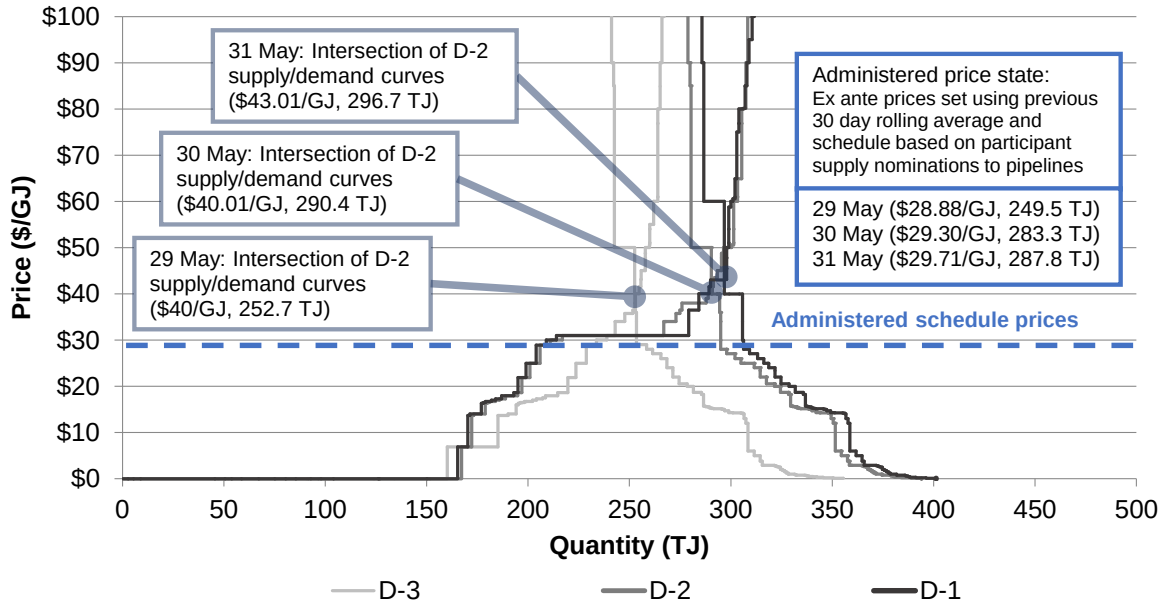

In Brisbane on 31 May, shadow prices[18] for the ex ante and ex post schedules were set very close to the administered price cap (APC, $40/GJ, see Figure 13).

The price increase from the D-2 provisional schedule resulted from ex ante offers below the cap reducing by 33 TJ, with little change to uncontrollable (pricetaker) and controllable demand bids above the cap. Gas offers under $40/GJ from GPG gentailers and traders were down by 26 TJ (evenly split), with offers by industrial participants down 9 TJ (no capacity was offered in this range by Exporter/producer or retail participants).

[17] The price that would have been set in the ex ante schedule in the event administered pricing had not been applied.

[18] The price that would have been set in the ex ante schedule in the event administered pricing had not been applied.

## Figure 14: Sydney provisional and ex ante bid and offer curves (29 May / 30 May / 31 May)




On 29 May to 31 May, Sydney was in an administered schedule state under major Retailer of Last Resort (RoLR) provisions.

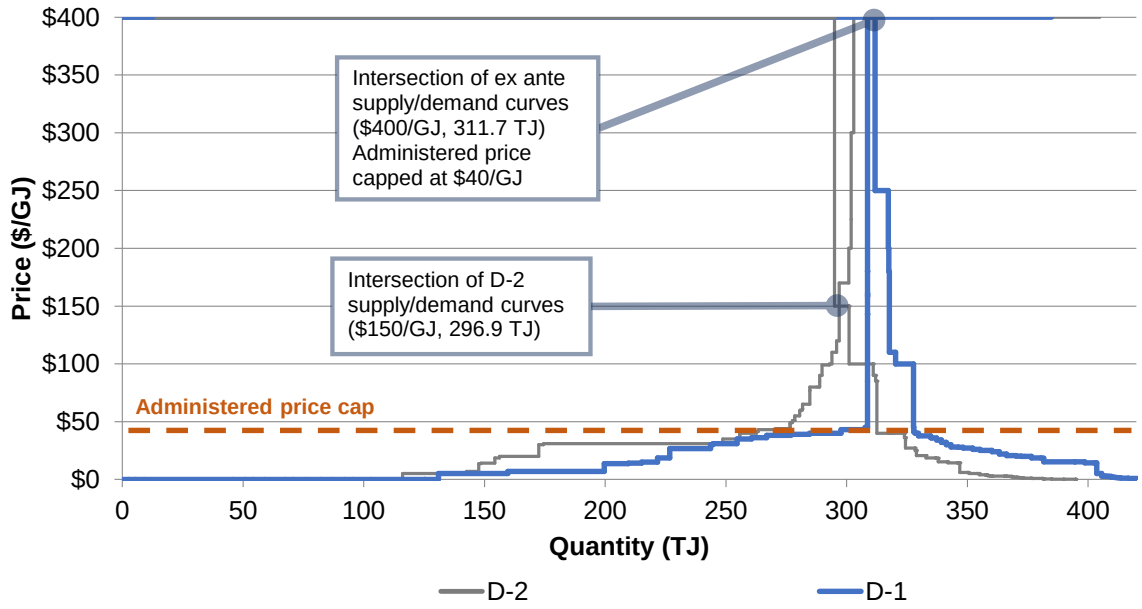
Participants during this period nominated directly to facility operators (rather than nominating based on scheduled bids and offers cleared by AEMO), with no ex ante schedules being produced for these gas days (hence the missing ex ante supply and demand curves in Figure 14).

On 29 May, the uncapped D-2 indicative price was set at $40/GJ, using quantities scheduled by AEMO from supplied bids and offers. In contrast the ex ante price was set by the 30 day rolling average ($28.88/GJ), resulting in prices dropping by $11.12/GJ. This is a technical breach of the variation thresholds.

Similar outcomes occurred on the following days:

- 30 May: D-2 price = $40.01/GJ, reduced to an ex ante price (administered schedule price) of $29.30/GL, a decrease of $10.71/GJ
- 31 May: D-2 price = $43.01/GJ reduced to an ex ante price (administered schedule price) of $29.71/GL, a decrease of $13.30/GJ.

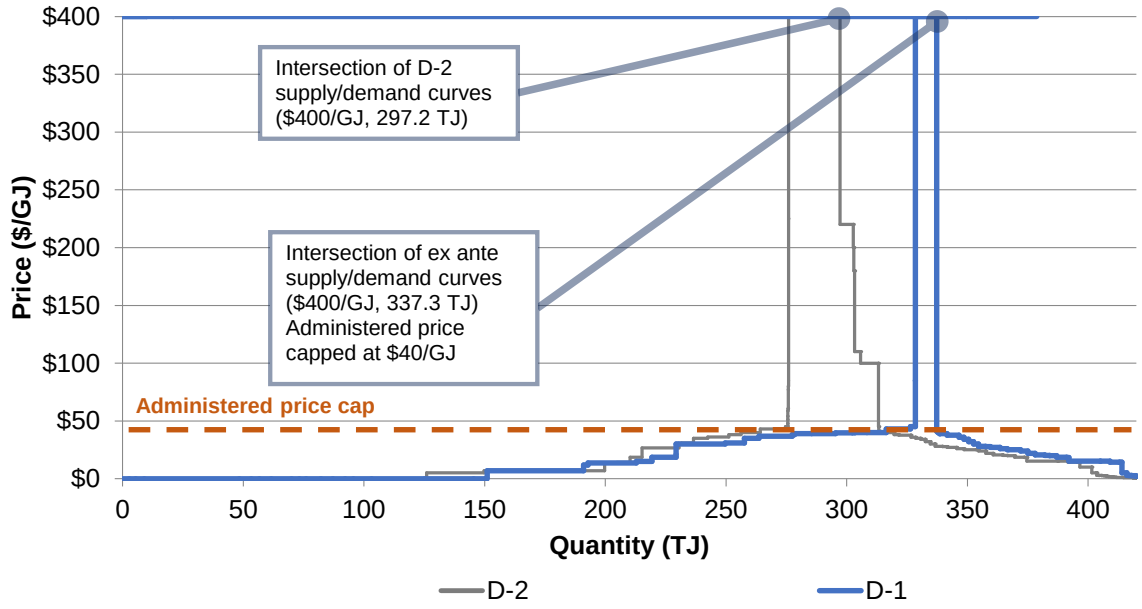
## Figure 15: Sydney provisional and ex ante bid and offer curves (1 June)




From 1 June, Sydney participants recommenced submitting information to produce ex ante scheduling outcomes, setting administered prices under the same regime as the Brisbane hub.[19]

While there was an increase to offers below $50/GJ on the gas day, higher demand (uncontrollable pricetaker demand was up 4.3 TJ) and an increase in Eastern Energy bid prices and quantities exhausted the gas supply available below the cap, with no supply offered between $181 and $399/GJ.[20]

## Figure 16: Sydney provisional and ex ante bid and offer curves (2 June)



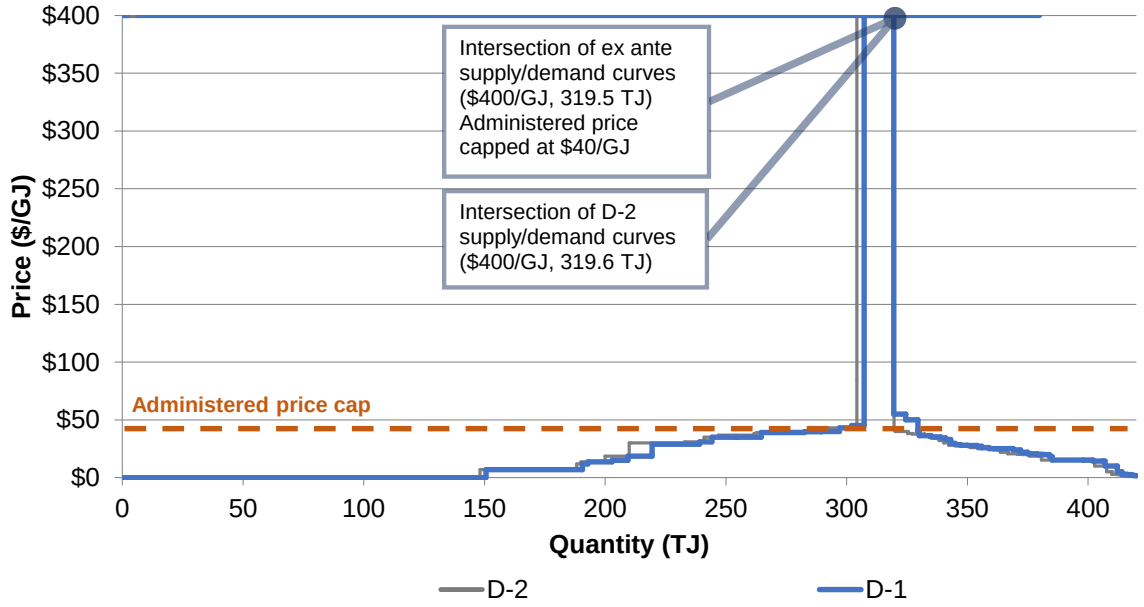

On 2 June, ex ante supply offered below $85/GJ in Sydney increased significantly, up by 52.5 TJ in the ex ante schedule (while a 4 TJ offer at $225/GJ from Visy removed) with the remaining offers at or near the cap in both D-2 and D-1 schedules. Forecast uncontrollable

[19] From 1 June, the administered price sate in Sydney changed after the major Retailer of Last Resort (RoLR) event was replaced by a minor RoLR declaration following a ministerial direction.

[20] Eastern Energy, increased their controllable demand bids from 6 TJ at $150/GJ in the D-2 provisional schedule (which set the provisional price) to 12.5 TJ at $400/GJ in the ex ante schedule.

(pricetaker) demand was also up by 26.6 TJ. Visy and Eastern Energy increased their controllable demand bid quantities and prices above the difference (21.9 TJ).[21] Despite the large increase in supply relative to demand, the gap in gas offers and bids below the cap was not able to be bridged, and the ex ante price was capped at $40/GJ.

### Figure 17: Sydney provisional and ex ante bid and offer curves (3 June)




On 3 June, Sydney's demand in the ex ante schedule was relatively unchanged from D-2 levels, with only a small increase in supply offered below the cap. This set the ex ante price at the administered price cap ($40/GJ), $360/GJ below the D-2 price (which was set at the maximum price cap, $400/GJ).

[21] Eastern Energy's cap bids increased by 3.5 TJ, while Visy increased bids above $180/GJ by 3.9 TJ and moved to the cap.

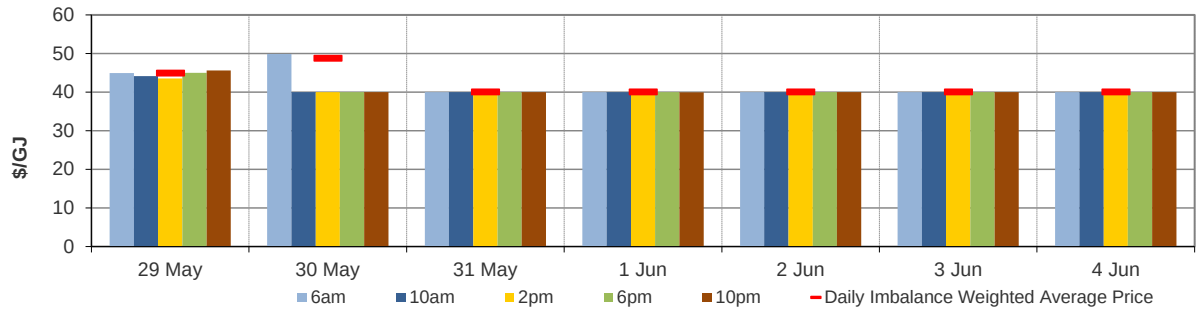
# 1. Victorian Declared Wholesale Market

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

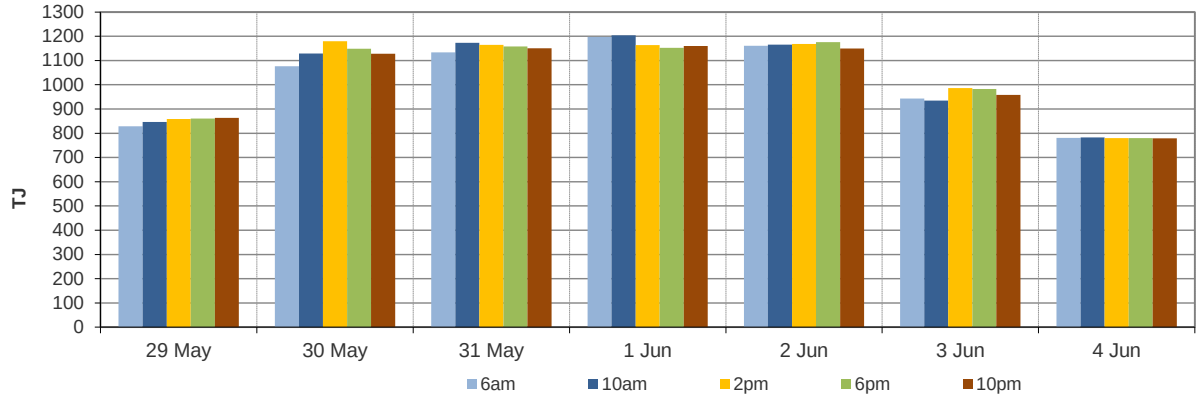
The main drivers[23] of price are demand forecasts and bids to inject or withdraw gas from the market. Figures 1.1 to 1.4 below show the daily prices, demand forecasts[24], and injection/withdrawal bids for each of the five pricing schedules. Figure 1.5 provides information on which system injection 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)




## Figure 1.2: Demand forecasts (TJ)

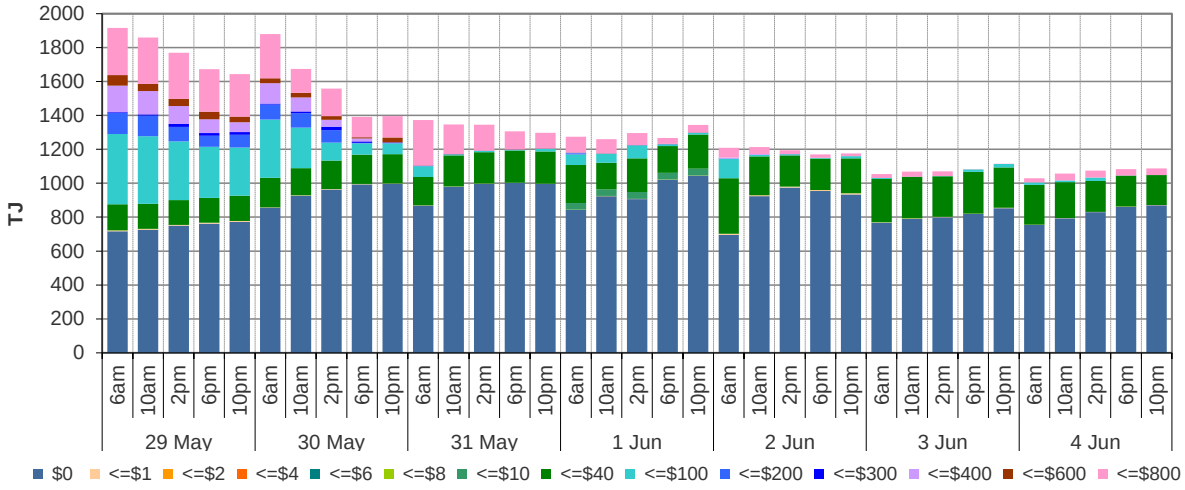



[22] Prices for subsequent schedules are applied only to the differences in scheduled quantities (imbalances) to calculate the weighted price. The 6 am price applies to the entire scheduled quantity in the initial schedule.

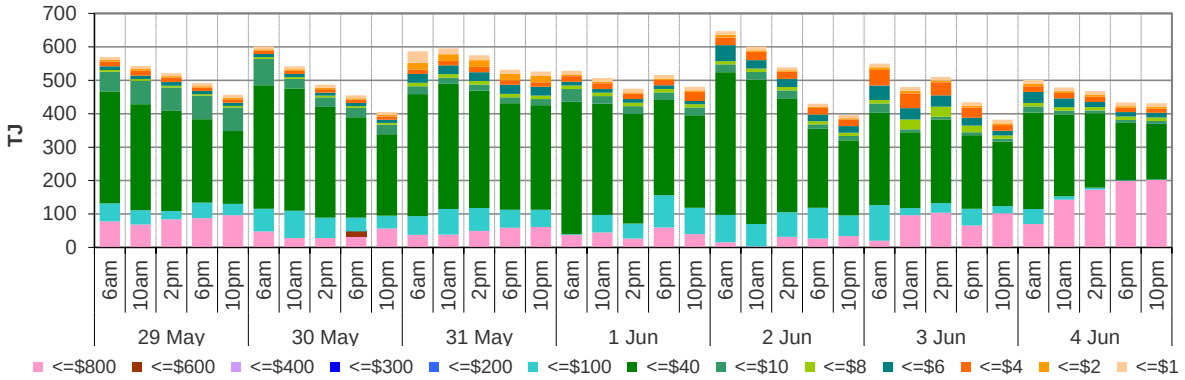
[23] The price might also be affected by transmission or production (contractual) constraints limiting how much gas can be delivered from a locale or System Injection Point (SIP) from time to time.

[24] 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.

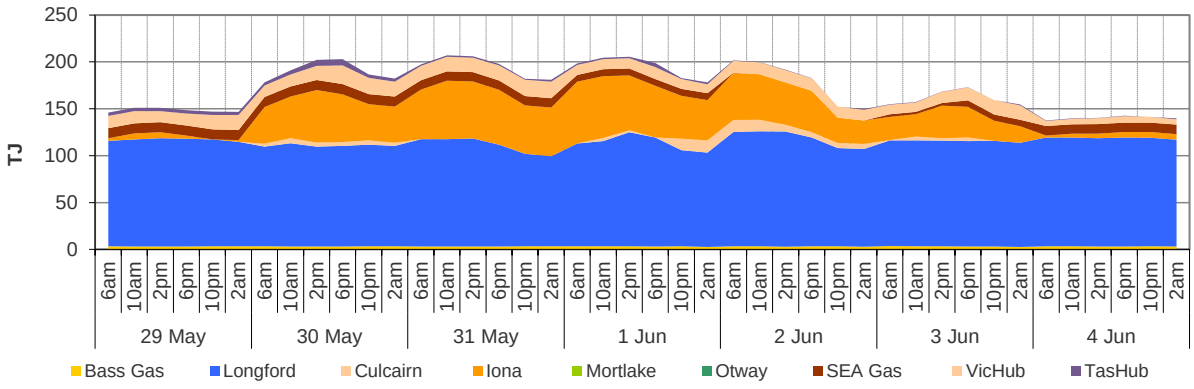
## Figure 1.3: Injection bids by price bands (TJ)




## 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.[25] 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.

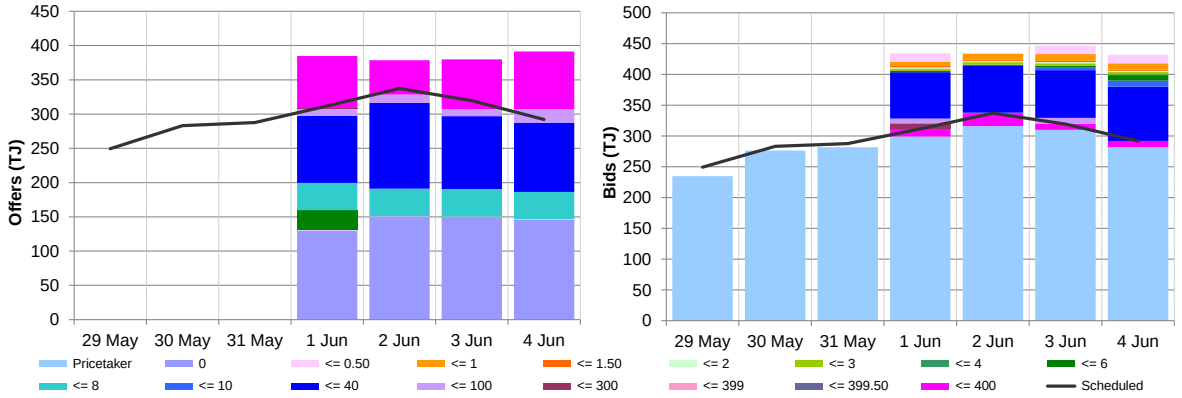
Market Operator Service balancing gas (MOS) payments arise because the amount of gas nominated on pipelines for delivery on a gas day will either exceed or fall short, by some amount, of the amount of gas consumed in the hub. In such circumstances, MOS payments are made to participants for providing a service to park gas on a pipeline or to loan gas from a pipeline to the hub.[26]

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 ($/GJ) | 28.88 | 29.30 | 29.71 | 40.00 | 40.00 | 40.00 | 40.00 |
| Ex ante quantity (TJ) | 249 | 283 | 288 | 312 | 337 | 320 | 292 |
| Ex post price ($/GJ) | 28.88 | 29.30 | 29.71 | 40.00 | 40.00 | 40.00 | 40.00 |
| Ex post quantity (TJ) | 249 | 283 | 288 | 320 | 346 | 347 | 301 |

## Figure 2.2: SYD daily hub offers and bids in price bands ($/GJ)[27]



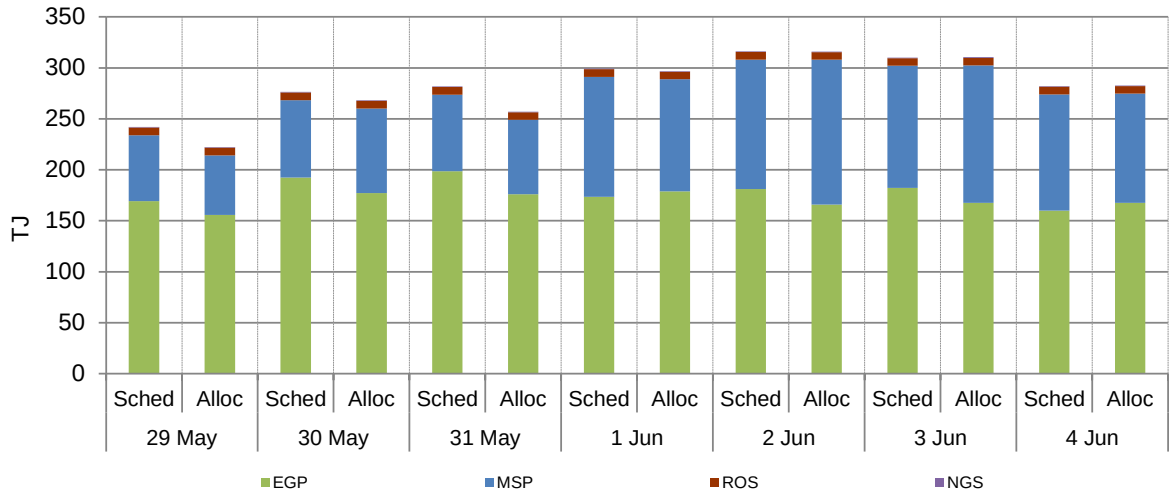

[25] The main driver of the amount of gas scheduled on a gas day is the 'price-taker' bid, which is forecast hub demand that cannot respond to price and which must be delivered, regardless of the price.

[26] 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).

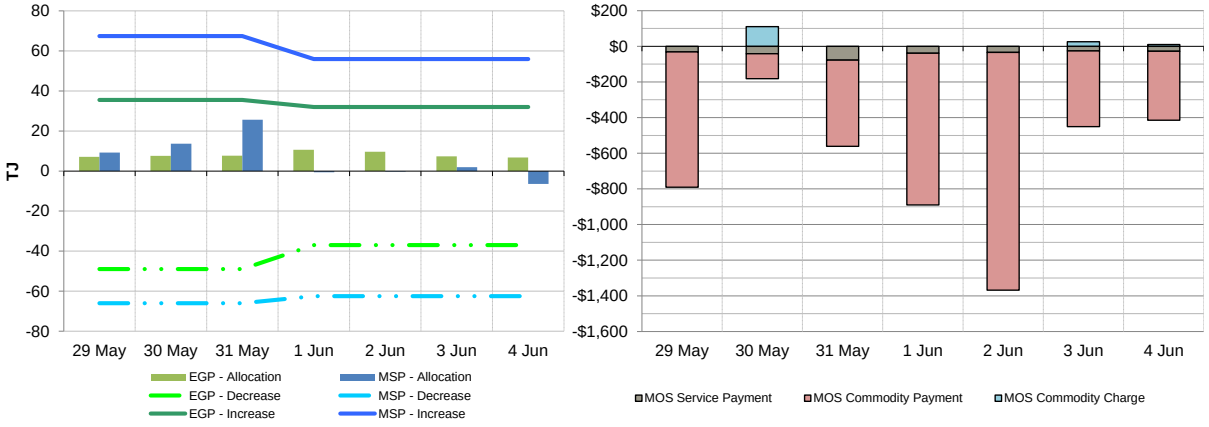
[27] Due to the administered pricing state resulting from a major Retailer of Last Resort (RoLR) event being declared for the Sydney hub (following the suspension of Weston Energy from the STTM), ex ante schedules were not run for the 25-31 May gas days. Scheduled quantities on these days were determined based on participants' nominated supply quantities, with ex ante and ex post prices set using a rolling 30-day average from 27 May (for further information, see preliminary analysis for significant price variations in the detailed analysis section).

## 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)[28]




[28] 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.

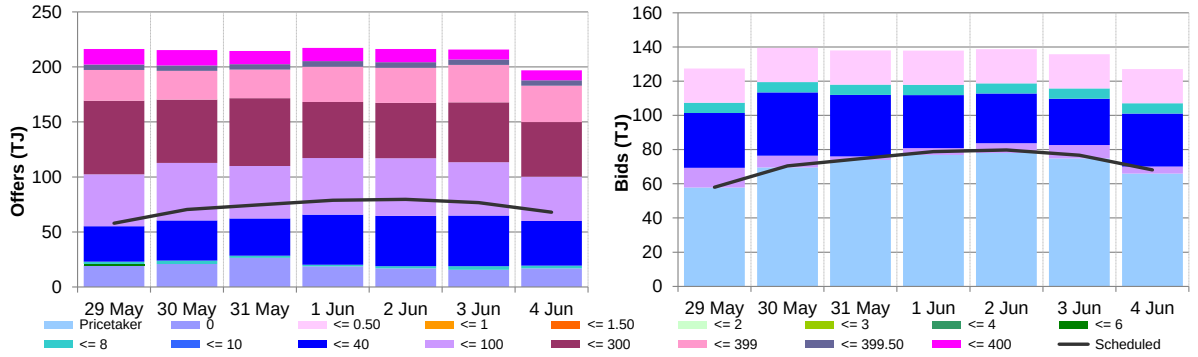
# 3. Adelaide STTM

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.

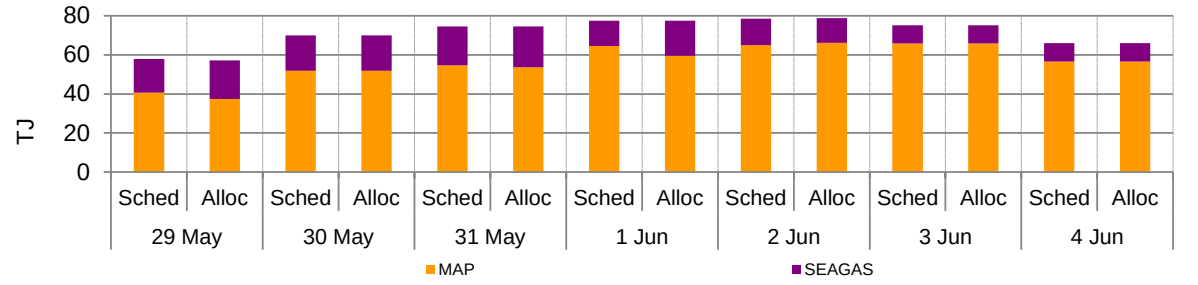
## Figure 3.1: ADL STTM daily ex ante and ex post prices and quantities

| | Sun | Mon | Tue | Wed | Thu | Fri | Sat |
|---|---|---|---|---|---|---|---|
| Ex ante price ($/GJ) | 46.40 | 44.10 | 46.45 | 44.11 | 45.01 | 43.40 | 40.00 |
| Ex ante quantity (TJ) | 58 | 70 | 75 | 79 | 80 | 77 | 68 |
| Ex post price ($/GJ) | 42.40 | 44.00 | 48.80 | 45.40 | 47.49 | 42.01 | 40.00 |
| Ex post quantity (TJ) | 55 | 70 | 77 | 81 | 82 | 74 | 0 |

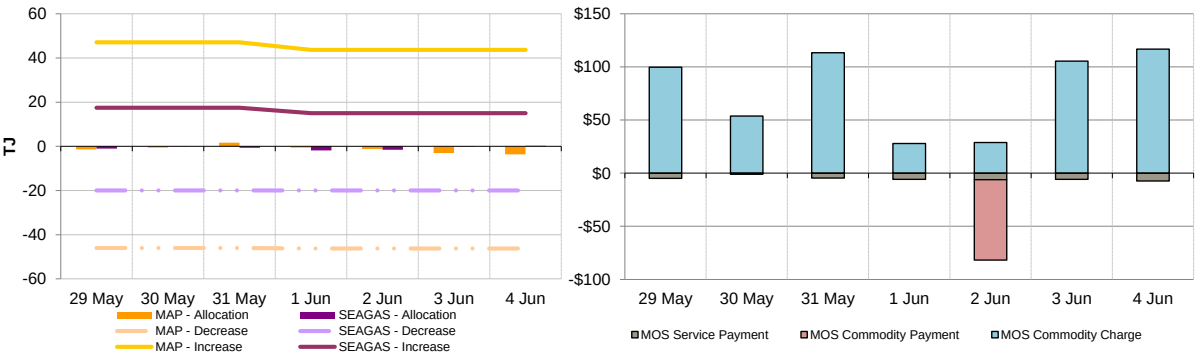
## Figure 3.2: ADL daily hub offers and bids in price bands ($/GJ)




## 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)



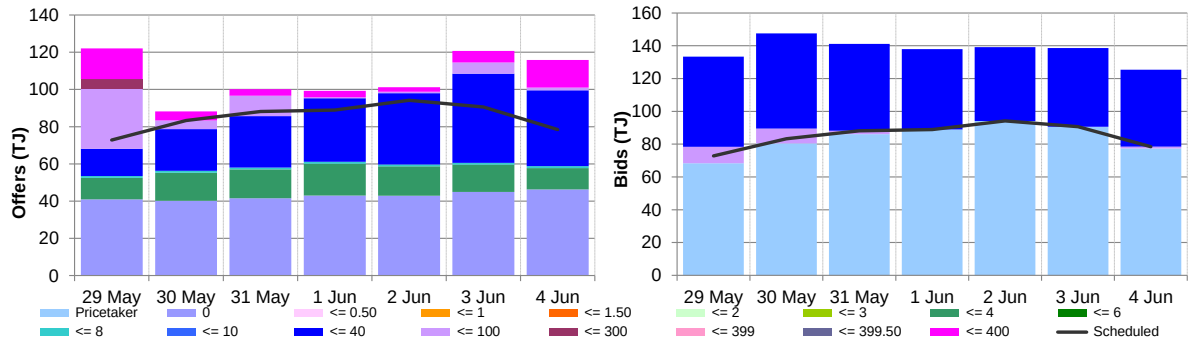
# 4. Brisbane STTM

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.

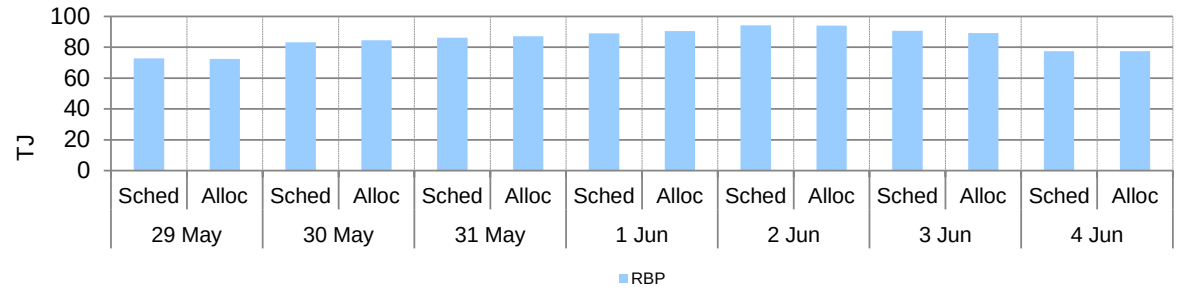
## Figure 4.1: BRI STTM daily ex ante and ex post prices and quantities

| | Sun | Mon | Tue | Wed | Thu | Fri | Sat |
|---|---|---|---|---|---|---|---|
| Ex ante price ($/GJ) | 40.00 | 40.00 | 40.00 | 40.00 | 39.55 | 38.87 | 38.45 |
| Ex ante quantity (TJ) | 73 | 83 | 88 | 89 | 94 | 91 | 78 |
| Ex post price ($/GJ) | 40.00 | 40.00 | 40.00 | 40.00 | 39.00 | 38.72 | 37.46 |
| Ex post quantity (TJ) | 69 | 83 | 87 | 89 | 93 | 88 | 77 |

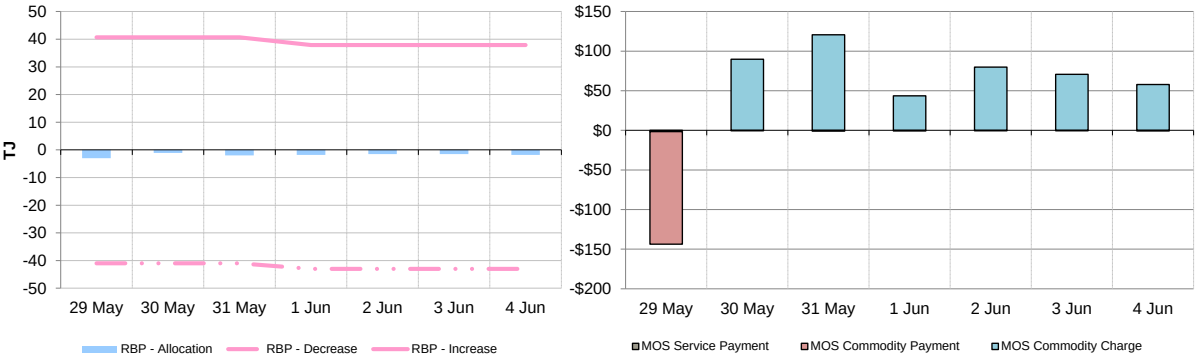
## Figure 4.2: BRI daily hub offers bids in price bands ($/GJ)




## 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[29] from the Bulletin Board (changes from the previous week's average are shown in brackets). Average daily prices[30] 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/day); Bulletin Board flows (TJ/day)[31]


| Totals | Current Week | Change (TJ) |
|---|---|---|
| Domestic gas flows | 2069 | (+295) |
| Export gas flows | 3407 | (-267) |
| Gas production | 5418 | (-108) |
| GPG gas usage | 511 | (+100) |
| **Pipelines** | | |
| **Queensland** | | |
| Gladstone | | |
| APLNG | 1244 | (-251) |
| GLNG | 986 | (+14) |
| QGP | 139 | (-2) |
| WGP | 1177 | (-31) |
| Mt Isa | | |
| CGP | 57 | (-1) |
| Brisbane | | |
| RBP | 92 | (+6) |
| South West | | |
| SWQP | 52 | (-11) |
| Wallumbilla | | |
| BWP | 166 | (+11) |
| CRWP | -38 | (-48) |
| DDP | 47 | (+23) |
| QGP (WAL) | 44 | (+1) |
| RBP (WAL) | -81 | (-50) |
| SWQP (WAL) | 217 | (+214) |
| **New South Wales** | | |
| MSP | 222 | (+104) |
| EGP | 290 | (+18) |
| **Victoria** | | |
| LMP | 780 | (+1) |
| SWP | 243 | (+133) |
| **South Australia** | | |
| MAP | 164 | (+30) |
| SEAGas | 36 | (-14) |
| **Tasmania** | | |
| TGP | 31 | (+3) |

| Storage (held volume) | | |
|---|---|---|
| Moomba LDB | 12428 | (-18) |
| Iona UGS | 18706 | (-1020) |
| LNG Storage Dandenong | 301 | (-16) |
| Silver Springs | 16325 | (+0) |
| Roma UGS | 27394 | (-246) |

29 **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.

30 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.

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

# 6. Gas Supply Hub

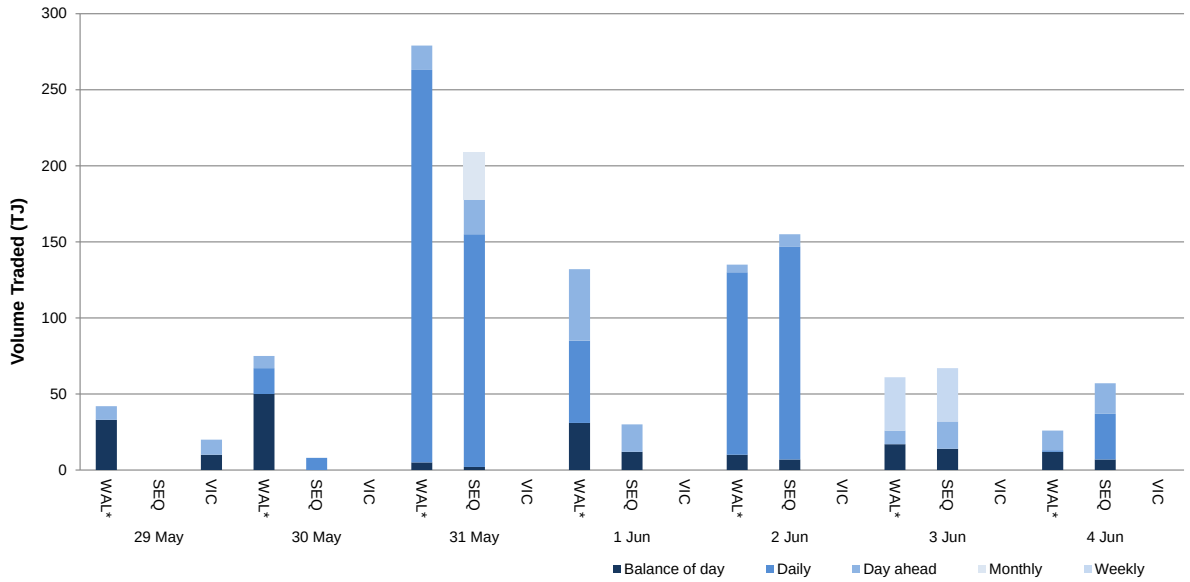
The gas supply hub was established at Wallumbilla in March 2014 to facilitate the voluntary trading of gas between participants, with products listed for sale and purchase at delivery points on three major connecting pipelines. There are separate products for each trading location and delivery period (daily, day-ahead, balance-of-day, weekly and monthly products).[32]

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 and an in-pipe RBP trading location at South East Queensland. On 28 January 2021, trading locations at Wilton (Sydney) and Culcairn (Victoria) were introduced.

This week there were 122 trades for 1296 TJ of gas at a volume weighted price of $30.54/GJ. These consisted of 67 trades at WAL (750 TJ at $32.35/GJ), 53 trades at South East Queensland (526 TJ at $28.75/GJ) and 2 trades at VIC (20 TJ at $9.80/GJ). There were 10 spread trades this week between South East Queensland and Wallumbilla.

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.[33]

## Figure 6.1: GSH traded quantities




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

33 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.

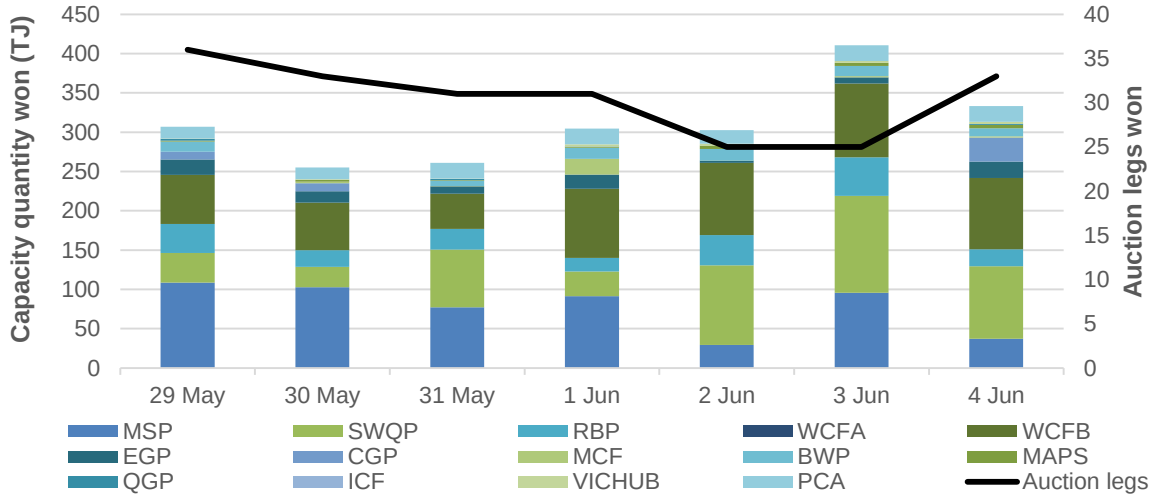
Participants may bid in to the DAA in order to procure the following services:

- 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, 17 participants took part in the DAA, winning 2174 TJ of capacity across 12 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.[34]

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




**Australian Energy Regulator**
**August 2022**

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