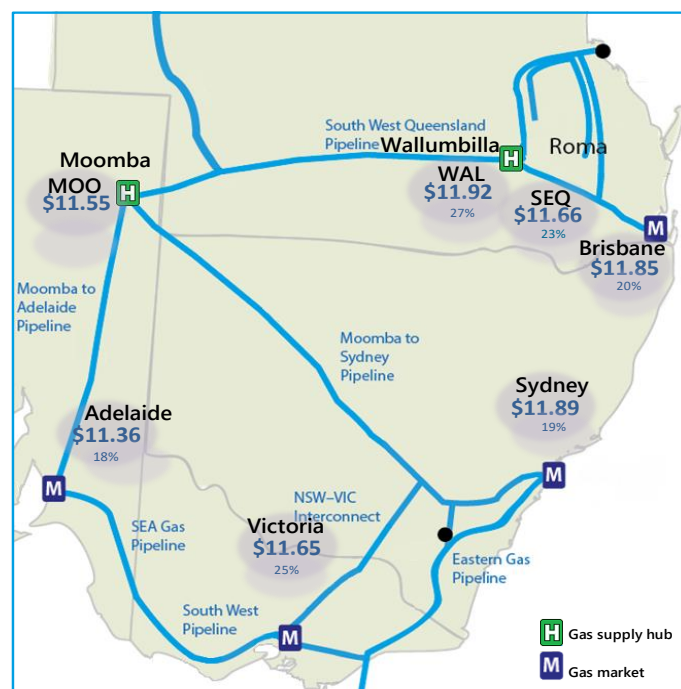


7 – 13 November 2021

Weekly Summary

Downstream wholesale gas market prices (marked M on the map below) rose again this week in all markets, with prices increasing by 25% in Victoria (percentage change from previous week shown on map).

Prices at the upstream supply production hubs (marked H) also increased at Wallumbilla (WAL and SEQ trading points).



Trading in the Wallumbilla gas supply hub was again concentrated around shorter-term products at SEQ and WAL this week.¹ Daily product quantities transacted as strips accounted for 76 TJ of this week's trades, with 60 TJ traded for delivery across the first part of December.²

Mainland gas powered generation increased this week, most significantly in Queensland which offset South Australia's decrease and no generation occurring in Victoria.

LNG export pipeline flows reduced this week, but remained above 4000 TJ/day (see more detailed map and table at figure 5.1).

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.

² Strip trades link together daily quantities across multiple days, and can be traded for delivery periods similar to weekly and monthly products. 60 TJ of this week's strips were traded for delivery over 1-12 December, with the remaining strip trades linked to short term deliveries in November.

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)³

	Victoria		Sydney		Adelaide		Brisbane	
	Price	Demand	Price	Demand	Price	Demand	Price	Demand
07 Nov - 13 Nov 2021	11.65	538	11.89	237	11.36	57	11.85	80
% change from previous week	25	50	19	0	18	23	20	-10
21-22 financial YTD	9.59	706	10.48	266	10.71	65	10.18	94
% change from previous financial YTD	103	0	123	-2	95	-4	119	-9

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

Figure 2: Average prices and total quantity – Gas Supply Hubs (\$/GJ, TJ)⁴

	Moomba		South East Queensland		Wallumbilla	
	Price	Quantity	Price	Quantity	Price	Quantity
07 Nov - 13 Nov 2021	11.55	5	11.66	81	11.92	348
% change from previous week	-	-	23	1250	27	45
21-22 financial YTD	8.29	241	10.60	1858	10.29	6583
% change from previous financial YTD	189	-25	170	-6	148	21

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

³ Average daily quantities are displayed for each region. The weighted average daily imbalance price applies for Victoria.

⁴ 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 3: Daily gas market prices (\$/GJ)

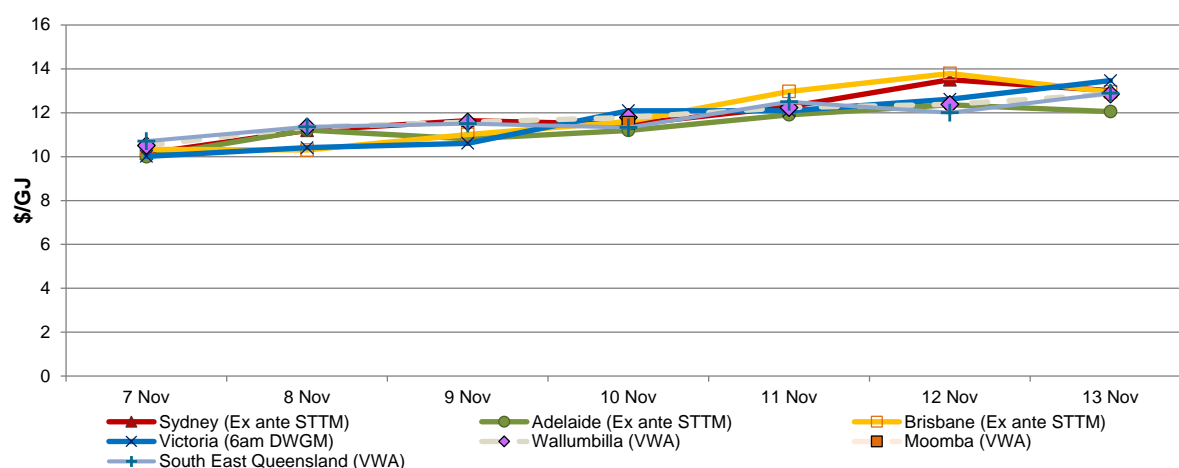


Figure 4 compares average ancillary market payments (for the VGM) and balancing gas service payments (STTM) against historical averages.

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

	Victoria Ancillary Payments*	Sydney MOS	Adelaide MOS	Brisbane MOS
07 Nov - 13 Nov 2021	-	14.88	17.86	0.44
% change from previous week	-	10	331	1
21-22 financial YTD		25.45	5.38	0.75
% change from previous financial YTD		15	-44	-90

* 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.

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)⁵

	Moomba		South East Queensland		Wallumbilla*	
	VWA price	Quantity	VWA price	Quantity	VWA price	Quantity
Balance of day	-	-	12.28	17.0	12.14	86.9
Daily	-	-	-	-	11.72	180.0
Day ahead	11.55	5.0	11.49	64.0	12.11	81.0
Weekly	-	-	-	-	-	-
Monthly	-	-	-	-	-	-
Total	11.55	5.0	11.66	81.0	11.92	347.9

* includes non-netted (off-market) trades.

⁵ Further information about new product trading locations in Victoria (Culcairn) and Sydney (Wilton) is available in section 6. Gas Supply Hub).

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	1598	967	1757	4322
Export Pipeline Flows	1602	1054	1402	4058
% change from previous week (pipeline flows)	-3	-4	-2	-3
21-22 financial YTD flows	1390	1134	1319	3842

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

Detailed market analysis

Gas market prices rise sharply – Longford continued outage and higher demand

Prices continued to rise across the east coast this week, with prices exceeding \$12/GJ in all four markets by the end of the week. A number of factors have been influencing higher prices across the markets recently, including high export demand and supply limitations in Victoria (refer to previous weekly report), with elevated Victorian demand and increased gas generation requirements in Queensland this week adding upwards pressure to east coast gas prices.⁶

In Victoria, cold weather drove unprecedented high demand for November from mid-week. Maximum temperatures in Melbourne peaked at 16.4 degrees over 7 consecutive days from 10 November, driving daily demand well over 600 TJ in the Victorian market. Continued flows north on the VNI⁷ added further pressure to increasing prices, reaching as high as 147 TJ on 11 November (illustrated in the previous weekly report).

Following unplanned issues at Longford leading into this week, coinciding with longer term planned maintenance taking place, the facility delayed an expected return to higher production levels.⁸ Production capacity increased to 615 TJ from 9 November and ramped up in the following days to 660 TJ/day by the end of the week.

While gas supply offers at the Iona underground storage facility under \$10/GJ have increased since September, available capacity priced below \$20/GJ has narrowed in comparison to pre-winter market circumstances, leading to higher levels of price volatility from elevated demand (see figure 7).⁹

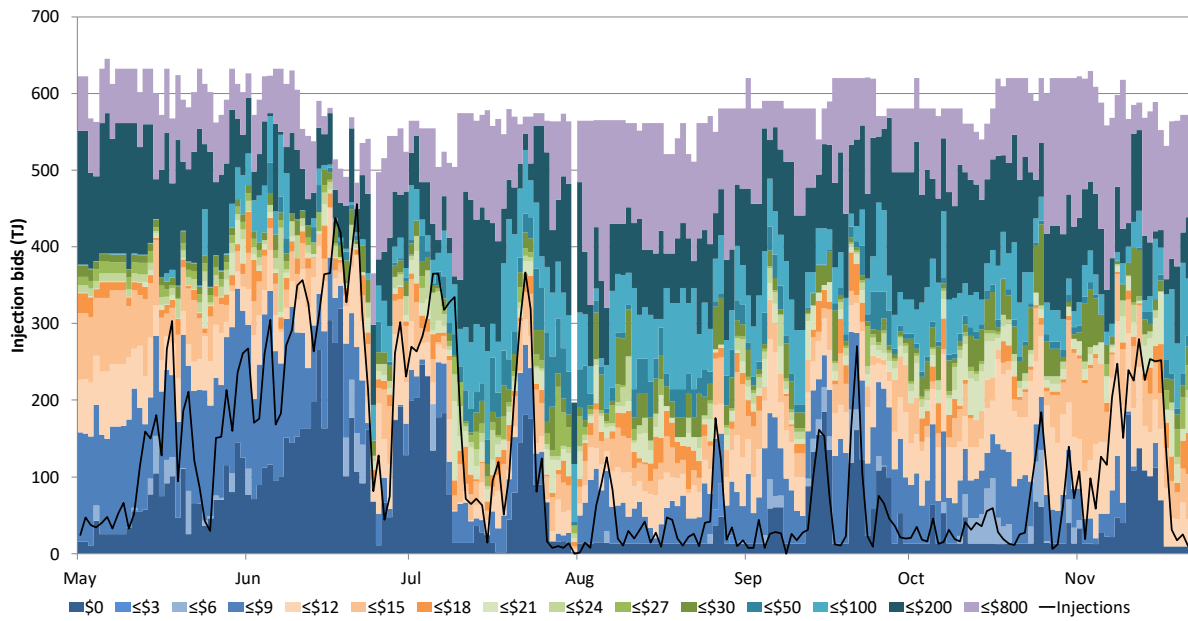
⁶ Elevated weekday GPG demand in Queensland ranged from 130 TJ to 197 TJ across 8 – 12 November.

⁷ The Victoria-NSW interconnect (VNI) connects the Victorian Declared Transmission System (DTS) to the Moomba to Sydney Pipeline (MSP) at Culcairn (NSW).

⁸ Expected daily capacity levels rising to 760 TJ while maintenance continues from 1 November has been pushed out towards the end of the month, after capacity outlooks were revised down from 28 October. Short term daily capacity for 5-8 November fell below 510 TJ, under the expected medium term outlook of 525 TJ updated on 28 October.

⁹ Following unprecedented utilisation of the storage facility in June and a number of high gas market price events across July, storage levels declined significantly.

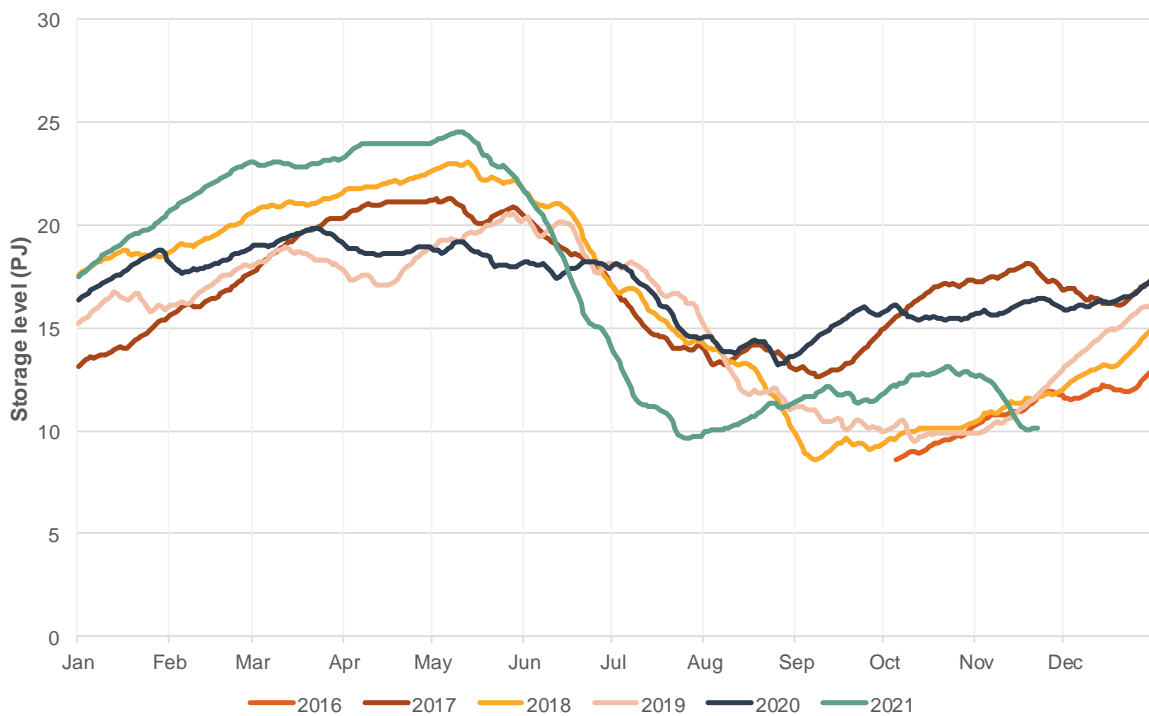
Figure 7: Iona underground storage 6 am injection offers and actual injections*



* Actual injections represent daily supply reported to the Bulletin Board and do not necessarily reflect quantities scheduled in the beginning of day schedule for the Victorian gas market. A more accurate representation of daily scheduled gas injections over July is available in the [July 2020 significant price variation report](#).

Despite a slight ramp up in capacity levels at Longford since a supply reduction last week, the recent unseasonable demand has resulted in storage quantities falling to low levels, particularly for mid-November, as Iona continued to supply a significant proportion of market demand across the week (see figures 8 and 1.5).¹⁰

Figure 8: Iona storage levels (PJ)



¹⁰ Longford supply reduced below 510 TJ/day from 5 – 8 November. Storage levels at the Iona underground storage facility reduced from 12.2 PJ at the start of the week to under 11 PJ by the end of the week (nameplate capacity 23.5 PJ).

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 price¹¹ which is the schedule at which most gas is traded.

The main drivers¹² 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 forecasts¹³, 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)

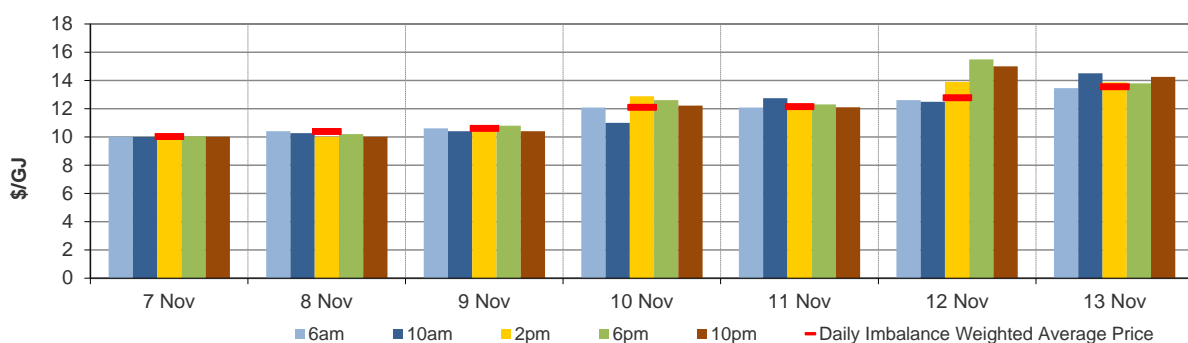
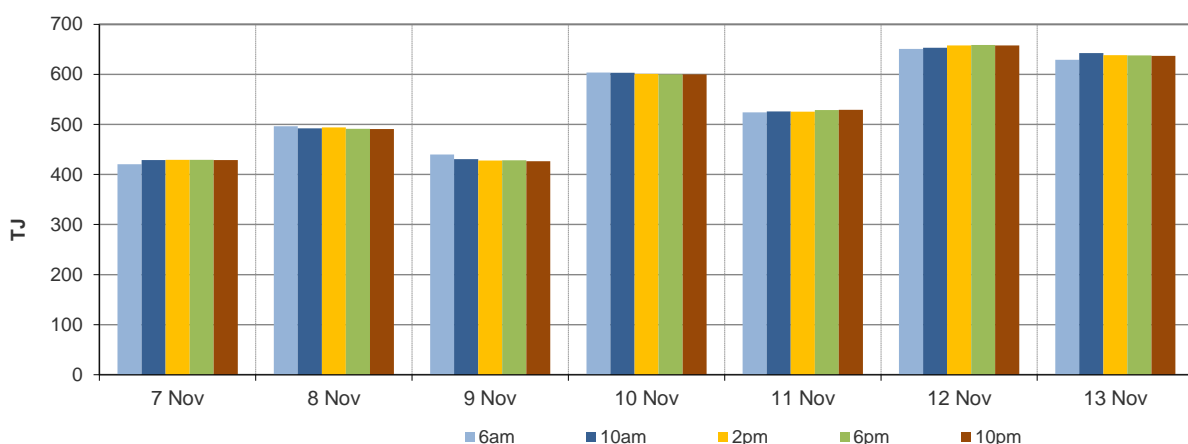


Figure 1.2: Demand forecasts (TJ)



¹¹ 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.

¹² 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.

¹³ 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)

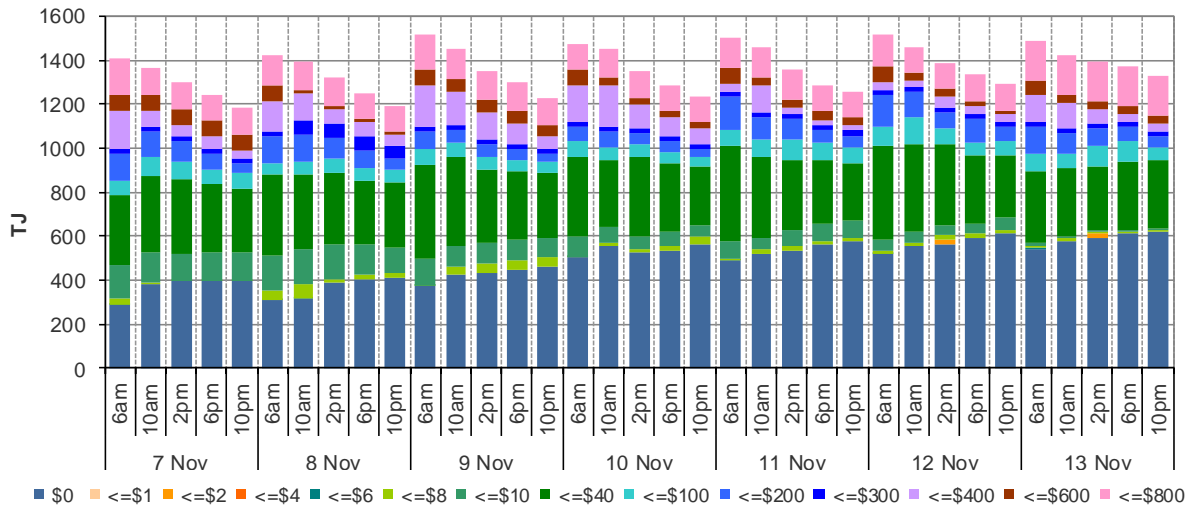


Figure 1.4: Withdrawal bids by price bands (TJ)

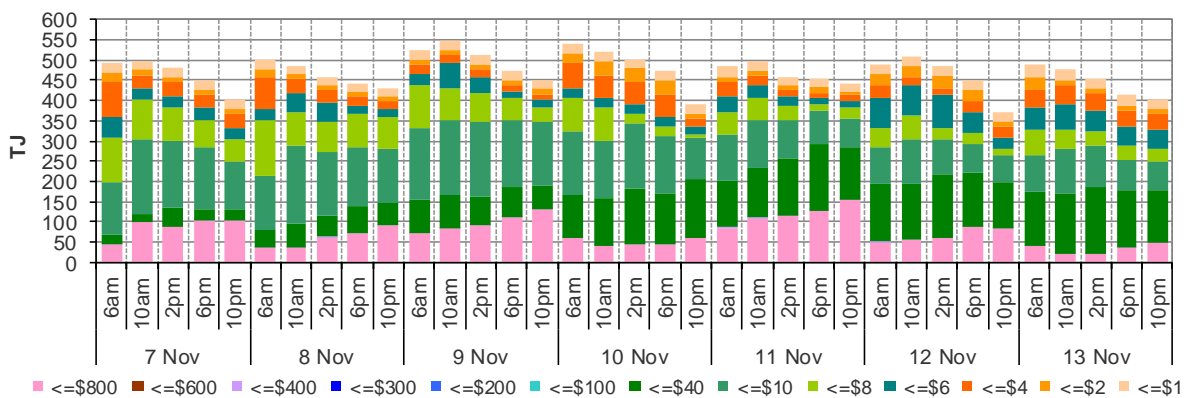
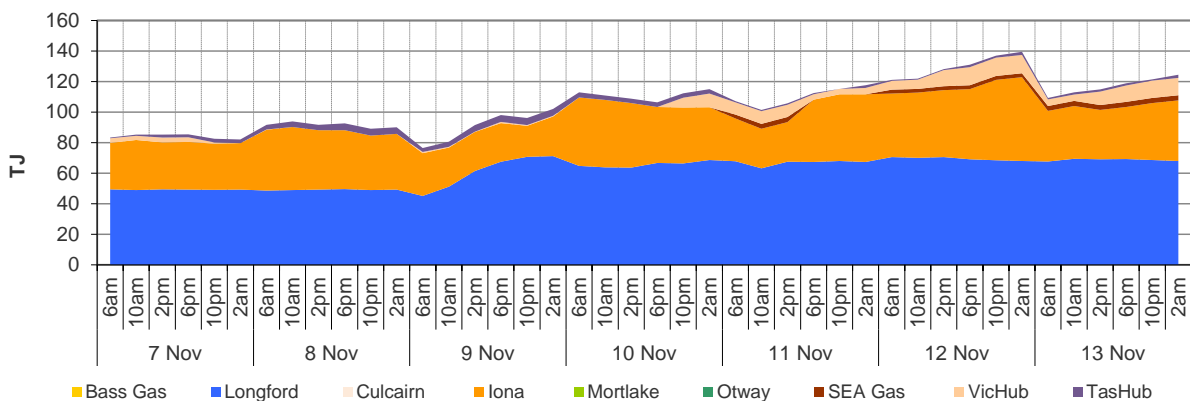


Figure 1.5: Metered Injections by System Injection Point (TJ)



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.¹⁴ 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](#).

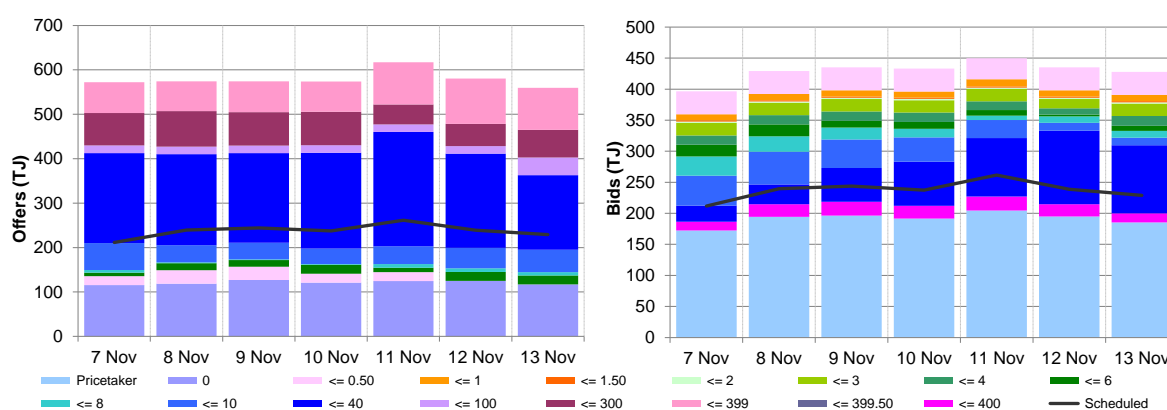
Market Operator Service balancing gas (MOS) payments arise because the amount of gas nominated on pipelines for delivery on a gas day will either exceed or fall short, by some amount, of the amount of gas consumed in the hub. In such circumstances, MOS payments are made to participants for providing a service to park gas on a pipeline or to loan gas from a pipeline to the hub.¹⁵

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)	10.15	11.20	11.64	11.46	12.27	13.50	13.01
Ex ante quantity (TJ)	212	240	244	237	262	239	229
Ex post price (\$/GJ)	10.00	11.42	11.65	11.56	12.40	13.50	13.05
Ex post quantity (TJ)	206	243	246	241	268	241	239

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



¹⁴ 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.

¹⁵ 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.

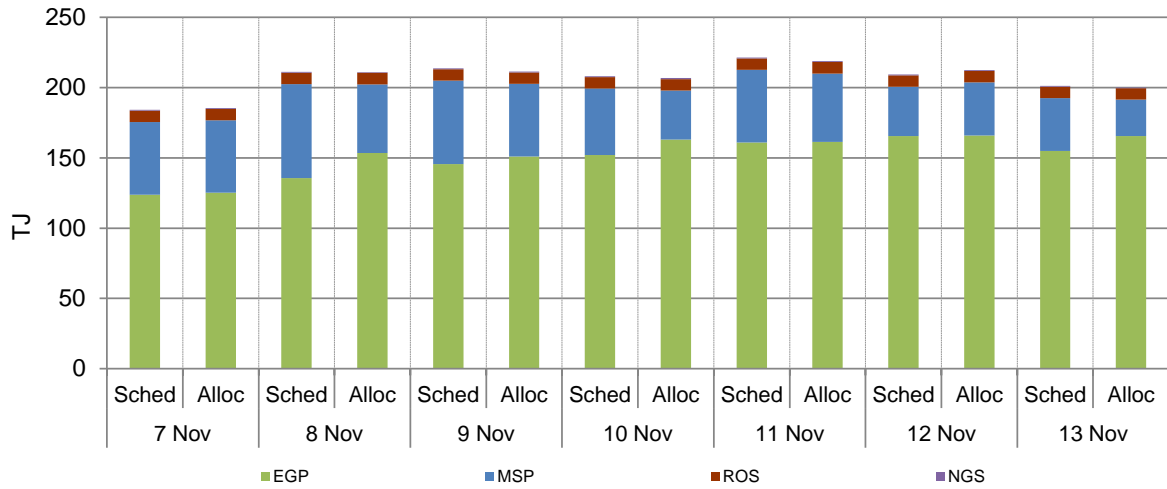
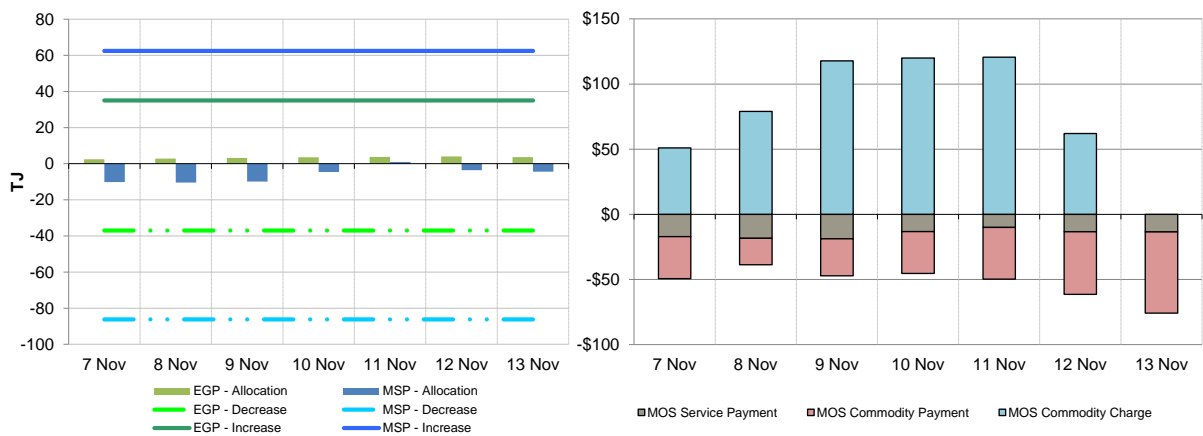


Figure 2.4: SYD MOS allocations (TJ), service payments and commodity payments/charges (\$000)¹⁶



¹⁶ 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)	10.00	11.21	10.81	11.19	11.91	12.36	12.05
Ex ante quantity (TJ)	44	56	53	55	73	64	54
Ex post price (\$/GJ)	9.85	10.40	10.50	10.30	11.19	12.25	12.00
Ex post quantity (TJ)	40	49	52	46	66	61	52

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

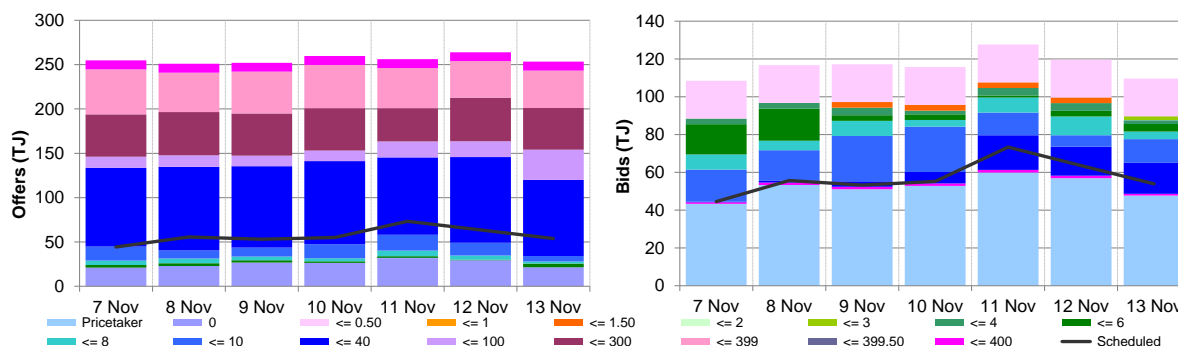


Figure 3.3: ADL net scheduled and allocated gas hub supply (excluding MOS)

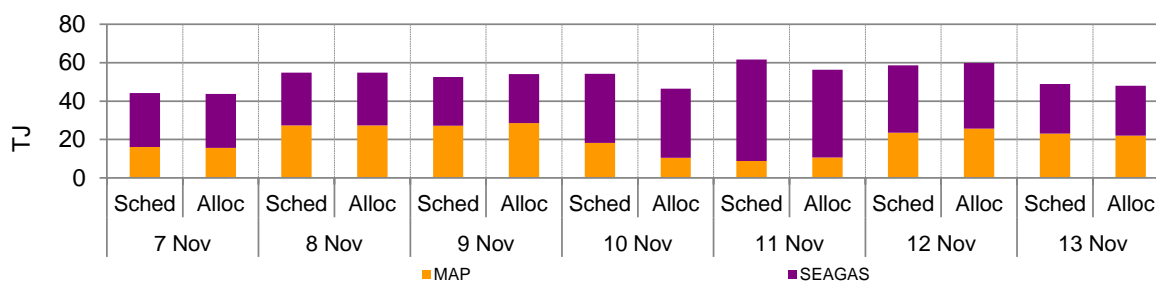
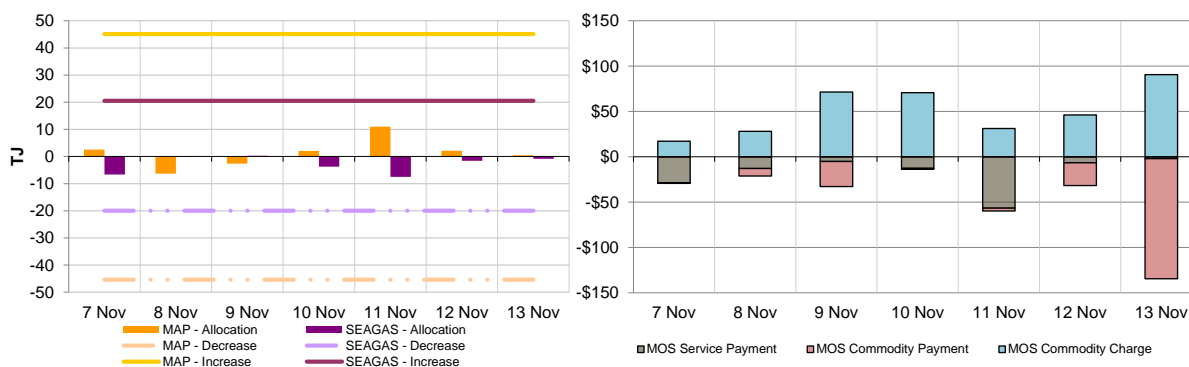


Figure 3.4: ADL MOS allocations (TJ), service payments and commodity payments/charges (\$000)



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)	10.33	10.30	11.01	11.60	12.97	13.79	12.95
Ex ante quantity (TJ)	78	85	83	80	79	80	72
Ex post price (\$/GJ)	10.00	10.30	11.01	11.60	13.14	13.79	12.80
Ex post quantity (TJ)	71	85	84	79	80	77	70

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

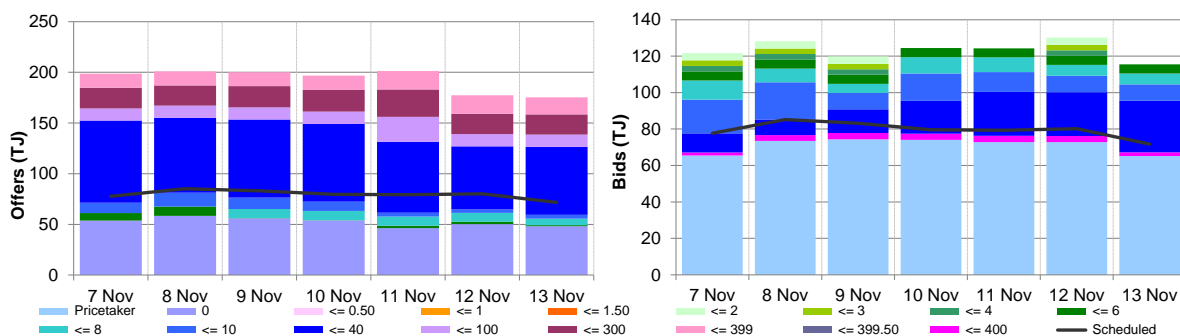


Figure 4.3: BRI net scheduled and allocated gas hub supply (excluding MOS)

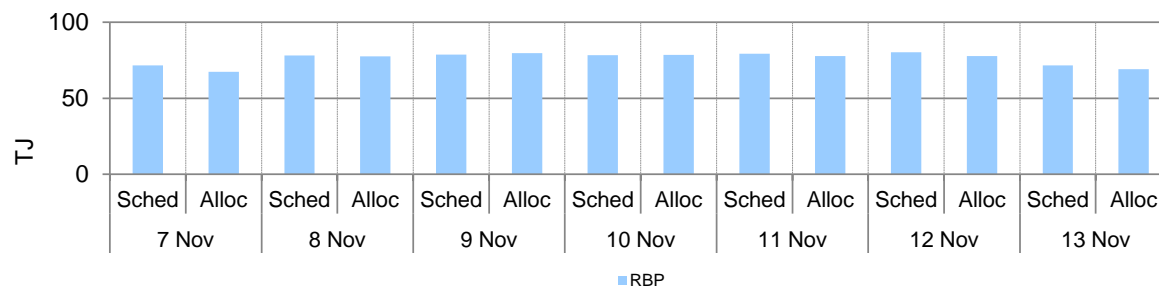
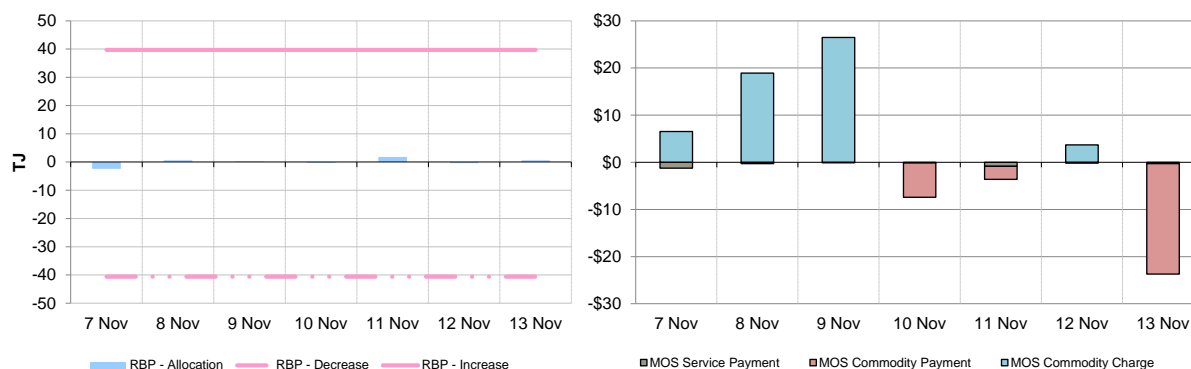


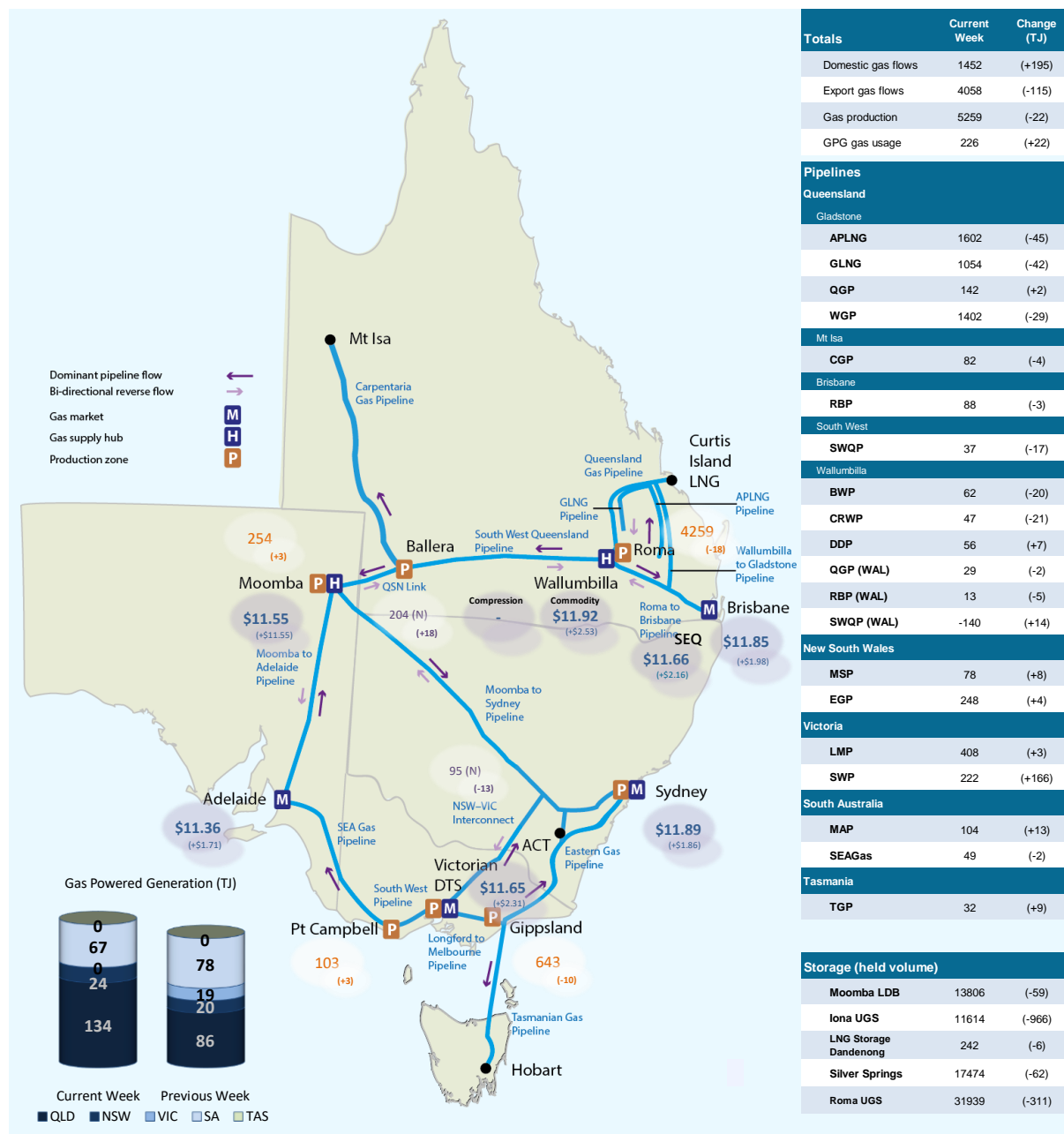
Figure 4.4: BRI MOS allocations (TJ), service payments and commodity payments/charges (\$000)



5. National Gas Bulletin Board

Figure 5.1 shows average daily actual flows for the current week¹⁷ from the Bulletin Board (changes from the previous week's average are shown in brackets). Average daily prices¹⁸ 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)¹⁹



¹⁷ 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.

¹⁸ 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.

¹⁹ Net flows are shown for Bulletin Board facilities, as outlined in the [user guide](#).

6. Gas Supply Hub

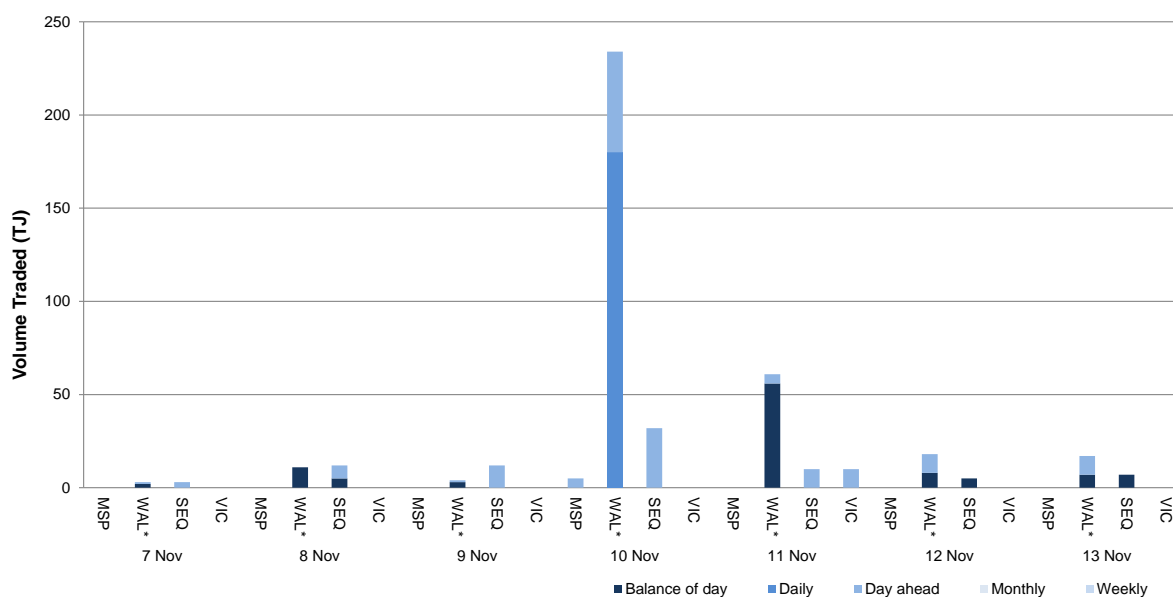
The gas supply hub was established at Wallumbilla in March 2014 to facilitate the voluntary trading of gas between participants, with products listed for sale and purchase at delivery points on three major connecting pipelines. There are separate products for each trading location and delivery period (daily, day-ahead, balance-of-day, weekly and monthly products).²⁰

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 55 trades for 443.9 TJ of gas at a volume weighted price of \$11.87/GJ. These consisted of 35 trades at WAL (347.9 TJ at \$11.92/GJ), 17 trades at SEQ (81 TJ at \$11.66/GJ), 2 trades at MSP (5 TJ at \$11.55/GJ) and 1 trade at VIC (10 TJ at \$12.00/GJ). There were 3 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.²¹

Figure 6.1: GSH traded quantities



²⁰ Additional information on trading locations and available products is detailed in the [user guide](#).

²¹ Non-netted (off-market) trades, allowing the selection of specific delivery point at a trading location, are included with other Wallumbilla trades (WAL*). Non-netted trades at Moomba are shown separately (MOO) from MAP and MSP.

7. Day Ahead Auction

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

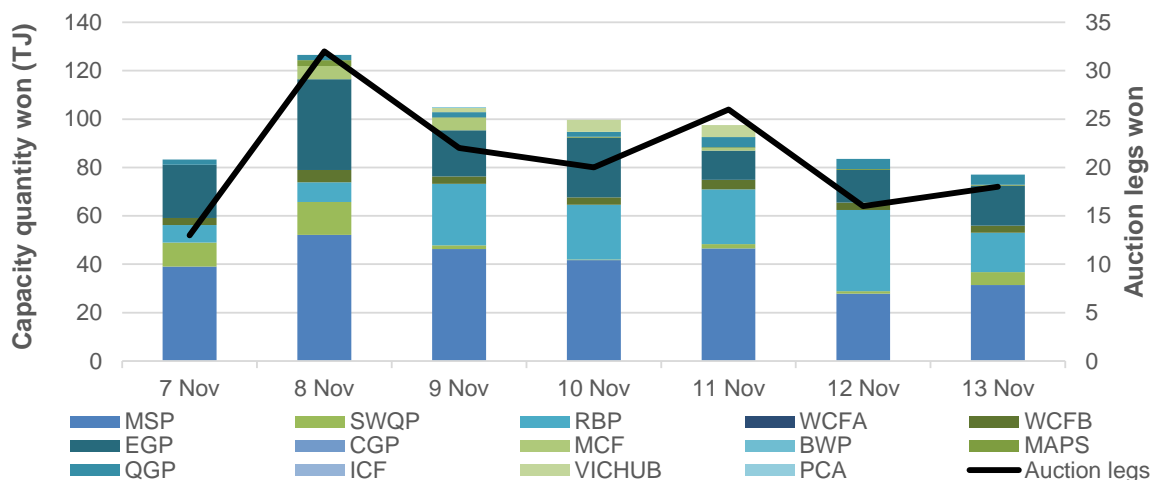
Participants may bid in to the DAA in order to procure the following services:

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

This week, 14 participants took part in the DAA, winning 672 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.²²

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



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²² Additional information is available in the [user guide](#) to the AER gas weekly report.