

24 – 30 July 2022

Weekly Summary

The Administered Price Cap (APC) continued to cap prices at \$40/GJ in the Victorian market this week.

Downstream wholesale gas market prices (marked M on the map below) decreased in all four markets (percentage change from previous week shown on map).

At the Wallumbilla upstream supply hub (marked H), the average price similarly decreased at both the WAL and SEQ trading points. The map also includes National Electricity Market (NEM) prices for comparison across gas and electricity markets.



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

Note: The LNG netback price is the 15 July 2022 assessment for the front month (August) forward LNG netback price assessed: <u>https://www.accc.gov.au/regulated-infrastructure/energy/gas-inquiry-2017-2025/lng-netback-price-series</u>

The prices on the map for SEQ, WAL and MOO reflect only trades day ahead, to highlight price differentials between market and arbitrage opportunities.

Trading in the Wallumbilla gas supply hub was concentrated around longer-term deliveries for products WAL (535 TJ) this week (see section 6). These consisted of August deliveries (140 TJ) and deliveries over September and October (395 TJ) with delivery periods of up to 12 days. There were also short-term deliveries at WAL (252 TJ), SEQ (50 TJ) and SYD (10 TJ), and a 60 TJ delivery across the first 10 days of November at SEQ.

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

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).

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

	Victoria		Sydney		Adelaide		Brisbane	
	Price	Demand	Price	Demand	Price	Demand	Price	Demand
24 Jul - 30 Jul 2022	32.30	937	35.95	338	36.02	73	33.79	91
% change from previous week	-15	-9	-28	-7	-28	-5	-22	2
22-23 financial YTD	37.72	999	44.02	350	43.41	75	40.69	90
% change from previous financial YTD	140	3	161	13	150	-4	168	-5

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	
24 Jul - 30 Jul 2022	-	-	31.69	110	33.24	787	
% change from previous week	-	-	-29	511	-8	-29	
22-23 financial YTD	31.21	188	37.31	334	35.29	3319	
% change from previous financial YTD	71	3660	192	-57	156	98	

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

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 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
24 Jul - 30 Jul 2022	-	58.60	9.08	1.87
% change from previous week	-	9	-20	-25
22-23 financial YTD		46.29	12.34	1.71
% change from previous financial YTD		42	180	174

* 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.

	Moomba		South East (Queensland	Wallumbilla*		
	VWA price	Quantity	VWA price	Quantity	VWA price	Quantity	
Balance of day	-	-	33.36	18.0	33.98	142.0	
Daily	-	-	31.15	86.0	32.95	584.0	
Day ahead	-	-	34.50	6.0	34.22	61.0	
Weekly	-	-	-	-	-	-	
Monthly	-	-	-	-	-	-	
Total	-	-	31.69	110.0	33.24	787.0	

Figure 5: Gas Supply Hub products total traded for the current week (\$/GJ, TJ)³

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

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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	1452	915	1682	4050
Export Pipeline Flows	1215	1007	1204	3425
% change from previous week (pipeline flows)	-24	3	52	2
22-23 financial YTD flows	1470	1005	862	3337

* 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.

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
24 - 30 Jul	Administered Price Cap (APC) continues	Victoria	Cumulative pricing threshold (CPT) continuing to be exceeded through week.
28 Jul – 24 Aug	APLNG 1 LNG train outage	East Coast (Supply)	Creates greater available domestic supply if production maintained.
28 – 30 Jul	High MOS payments	Sydney	MOS service payments exceeded \$50,000 – counteracting MOS and over forecasting demand drove large MSP decrease allocations.
11 Jul – 30 Sep (or until AEMO removes)	Threat to System Security	Victoria	Reduction in Iona supply capacity and the risk of supply shortfalls due to Iona inventory depletion this winter.
19 Jul – 30 Sep	Gas Supply Guarantee	NSW, VIC, SA & TAS	Projected shortfall event in NSW, VIC, SA & TAS.

Victorian Administered Price Cap continues

The price in the Victorian market continued to be capped at \$40/GJ this week as a result of high cumulative prices leading to the application of an Administered Price Cap (APC).

When APCs are in place, a scheduled price continues to be calculated based on participant's offers and bids. The scheduled price also known as the shadow price reveals the price where the market would have cleared but for the price cap.

Shadow prices are used in the calculation of the 7-day cumulative price. For example, for a price cap to be lifted in the declared wholesale gas market **(DWGM)**, the shadow price would have to be less than \$40/GJ over a 7-day period.

The cumulative price at the end of the week (30 July) of \$2,695/GJ was higher than the threshold of \$1,440/GJ. There were no \$800/GJ shadow prices in the Victorian market this week, which drove the lower cumulative price calculation (cumulative price of \$13,688/GJ on 23 July in the previous week).

APLNG 1 LNG train outage commenced 28 July

APLNG's 1 LNG train outage commenced on 28 July and is scheduled for completion on 24 August.⁴ The outage creates greater available domestic supply if forecasted production

Australian Energy Market Operator, <u>LNG Maintenance Notice – APLNG update</u>, August 2022.

levels continue. Pipeline flows on the APLNG Pipeline connected to the LNG facility at Curtis Island dropped to average 857 TJ per day this week after 28 July, in comparison to a daily average of 1,533 TJ per day over May and June.

High MOS service payments in the Sydney market

In the Sydney STTM from 28 – 30 July, there were high MOS service payments of \$135,718, \$60,544, and \$51,437 respectively. On all three days, a mix of counteracting MOS drove large MSP decrease allocations and EGP increase allocations.

On 28 July, participants under forecasted demand by 15.8 TJ, 11 TJ of which was under forecast by industrial participants. This contributed to an increase MOS requirement on the EGP of 18.4 TJ and a decrease MOS requirement on the MSP of 15.6 TJ.

On 29 and 30 July, participant over forecasting pushed up the net decrease requirement by 15.4 TJ and 10.4 TJ respectively. This was in addition to the counteracting MOS allocations of increase MOS requirement on the EGP (9.3 TJ and 7.7 TJ respectively) and decrease MOS requirement on the MSP (18.6 TJ and 18.1 TJ respectively).

Significantly higher MOS service payments in Sydney market

There has been a significant increase in Sydney market MOS service payments in 2022 in comparison to previous years (Figure 7). The higher MOS service payments have been driven by an increase in prices in the MOS stack in addition to increased MOS volumes allocated in the Sydney market (Table 2). In particular, there has been a significant increase in decrease MOS required on the MSP in 2022, across May – July (Figure 8).

	2020			2021			2022		
	Мау	June	July	Мау	June	July	Мау	June	July
MOS Service Payment (\$)	545,977	828,579	634,164	568,801	826,195	1,004,091	1,141,739	1,299,792	1,422,675
MOS volume (GJ)*	296,144	435,288	339,270	310,882	457,326	580,603	599,410	596,789	623,618
\$/GJ for MOS	1.84	1.90	1.87	1.83	1.81	1.73	1.90	2.18	2.28

Table 2: MOS service payments and volumes in Sydney market

Source: AER analysis of STTM data.

*Note: Decrease MOS volumes allocated have been converted to absolute numbers.





Source: AER analysis of STTM data.



Figure 8: MOS volumes allocated in Sydney Market

Source: AER analysis of STTM data.

Note: The two transmission pipelines that serve the Sydney STTM are the Moomba to Sydney Pipeline (MSP) and the Eastern Gas Pipeline (EGP).

Threat to System Security in Victoria

The Threat to System Security (TTSS) event on 11 July due to unsustainable storage inventory depletion at Iona continued to be in effect.

East Coast Gas Supply Guarantee event continues

The Gas Supply Guarantee event continues for NSW, VIC, SA and TAS regions this week.

Significant Price Variation analysis

This week, the AER significant price variation reporting thresholds were triggered in the Sydney short term trading market (STTM). The Significant Price Variations listed below were caused by participants rebidding supply offers to lower prices in the ex ante schedules. Specifically, the D-1 price in the Sydney STTM deviated from the D-2 forecast price by more than \$14/GJ on a total of 7 occasions.

Table 2 provides a summary of the breaches. The schedule price variation is the difference between the D-1 ex ante price and the D-2 provisional price.

Table 3: Significant price variation threshold breaches – variation >\$14/GJbetween D-2 and D-1 price

Gas day	Market	D-2 provisional price (\$/GJ)	D-1 ex ante price (\$/GJ)	Schedule price variation (\$/GJ)	Threshold breach description
24-July	Sydney	65	36.98	-28.02	Supply offer bid
25-July	Sydney	65	39.98	-25.02	Supply offer bid
26-July	Sydney	65.22	39.98	-25.24	Supply offer bid
27-July	Sydney	60	37.68	-22.32	Supply offer bid
28-July	Sydney	65.22	35.01	-30.21	Supply offer bid
29-July	Sydney	65.22	33.01	-32.21	Supply offer bid
30-July	Sydney	55	29	-26	Supply offer bid

For each breach, more detailed analysis is provided below. The AER will investigate and publish a further report on these events in or before September 2022. Our analysis below identifies drivers of these significant price variation events as a complement to this further reporting.

Significant Price Variation analysis

Rebidding reduced the price of available supply in ex ante schedules across the week, largely offered by exporter/producers, industrial and trader participants. This resulted in ex ante prices reducing by \$22.32-32.21/GJ from D-2 provisional prices.



Figure 9: Sydney provisional and ex ante bid and offer curves (24 July)

On 24 July, gas supply offered below \$65/GJ increased from 312.9 TJ in the provisional D-2 schedule to over 420 TJ in the ex ante schedule, with gas offers up to the level of scheduled demand (308.2 TJ) reducing below \$40/GJ. Most additional capacity available below \$40/GJ was offered by exporter/producer, industrial and trader participants.





On 25 July, gas offers under \$40/GJ increased by 64 TJ, of which 34.9 TJ was added to the \$15-40/GJ price range in the ex ante schedule. There was also 24.5 TJ more gas available at \$40-50/GJ. This resulted in the ex ante price decreasing by around \$25/GJ compared to the D-2 provisional price. Most additional capacity available below \$40/GJ was offered by exporter/producers and traders, with smaller quantities also offered by GPG gentailer and industrial participants.



Figure 11: Sydney provisional and ex ante bid and offer curves (26 July)

On 26 July, gas offers under \$40/GJ increased by 59.6 TJ, with a 59.9 TJ increase in \$40-50/GJ offers, which resulted in the ex ante gas price decreasing by around \$25/GJ compared to the D-2 provisional price. Additional capacity available below \$40/GJ was offered by exporter/producers and traders, with smaller quantities also offered by GPG gentailer and industrial participants.



Figure 12: Sydney provisional and ex ante bid and offer curves (27 July)

On 27 July, ex ante gas offers at \$20-50/GJ increased by 136.6 TJ, with 90 TJ of those offers priced under \$40/GJ, resulting in the ex ante price reducing more than \$20/GJ below the D-2 provisional price. Most additional capacity available below \$40/GJ was offered by exporter/producer, industrial and trader participants.



Figure 13: Sydney provisional and ex ante bid and offer curves (28 July)

On 28 July, ex ante gas offers below \$30/GJ increased by 25.6 TJ, while gas offers at \$30-40/GJ increased by 68.2 TJ, resulting in the ex ante price reducing by over \$30/GJ from the D-2 provisional schedule. Additional capacity available below \$40/GJ was offered by GPG gentailer, exporter/producer industrial and trader participants.



Figure 14: Sydney provisional and ex ante bid and offer curves (29 July)

On 29 July, gas offers below \$35/GJ increased by over 95 TJ, with more than 70 TJ of those offers priced at \$20-35/GJ, resulting in the ex ante price reducing by over \$30/GJ from the D-2 provisional schedule. Most additional capacity available below \$35/GJ was offered by GPG gentailer, exporter/producer and trader participants.



Figure 15: Sydney provisional and ex ante bid and offer curves (30 July)

On 30 July, gas offers below \$30/GJ increased by 79 TJ, with 74 TJ of those offers priced at \$15-30/GJ, resulting in the ex ante price reducing by \$26/GJ from the D-2 provisional schedule. Most additional capacity available below \$30/GJ was offered by GPG gentailer, exporter/producer and trader participants



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 price⁵ which is the schedule at which most gas is traded.

The main drivers⁶ 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 forecasts⁷, 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)





⁵ 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.

⁶ 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.

⁷ 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.⁸ 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.⁹

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)	36.98	39.98	39.98	37.68	35.01	33.01	29.00
Ex ante quantity (TJ)	308	339	339	347	344	354	335
Ex post price (\$/GJ)	37.23	40.00	40.00	37.68	35.25	32.10	28.40
Ex post quantity (TJ)	309	347	348	346	347	339	330



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

⁸ 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.

⁹ 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 2.4: SYD MOS allocations (TJ), service payments and commodity payments/charges (\$000)¹⁰



¹⁰

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)	35.43	38.50	39.88	38.60	36.20	33.51	30.00
Ex ante quantity (TJ)	56	72	75	76	80	78	72
Ex post price (\$/GJ)	34.50	36.44	43.00	37.80	35.91	33.10	30.00
Ex post quantity (TJ)	52	71	83	73	79	74	72









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



¹¹ On 30 July, SEAGas had 5.5 TJ of backhaul scheduled/delivered. However, a 12 TJ SEAGas forward haul offer was renominated to be supplied via the MAP, and SEAGas backhaul was supplied by a MOS increase allocation (5.5 TJ).

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)	35.70	36.95	36.85	35.80	34.80	30.23	26.23
Ex ante quantity (TJ)	86	97	93	95	96	94	78
Ex post price (\$/GJ)	32.05	36.00	35.80	35.80	33.84	30.10	26.00
Ex post quantity (TJ)	81	94	90	95	92	90	77









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 week¹² from the Bulletin Board (changes from the previous week's average are shown in brackets). Average daily prices¹³ are provided for gas markets and gas supply hubs. Average daily quantities are provided for gas powered generation for each region.





¹⁴ Net flows are shown for Bulletin Board facilities, as outlined in the <u>user guide</u>.

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.

¹³ 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.

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).¹⁵

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 61 trades for 907 TJ of gas at a volume weighted price of \$33.1/GJ. These consisted of 46 trades at WAL (787 TJ at \$33.24/GJ), 13 trades at SEQ (110 TJ at \$31.69/GJ) and 2 trades at SYD (10 TJ at \$37.35/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.¹⁶



Figure 6.1: GSH traded quantities

¹⁵ Additional information on trading locations and available products is detailed in the <u>user guide</u>.

¹⁶ 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, 15 participants took part in the DAA, winning 1669 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.¹⁷



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.