

## 24 February – 2 March 2019

### Weekly Summary

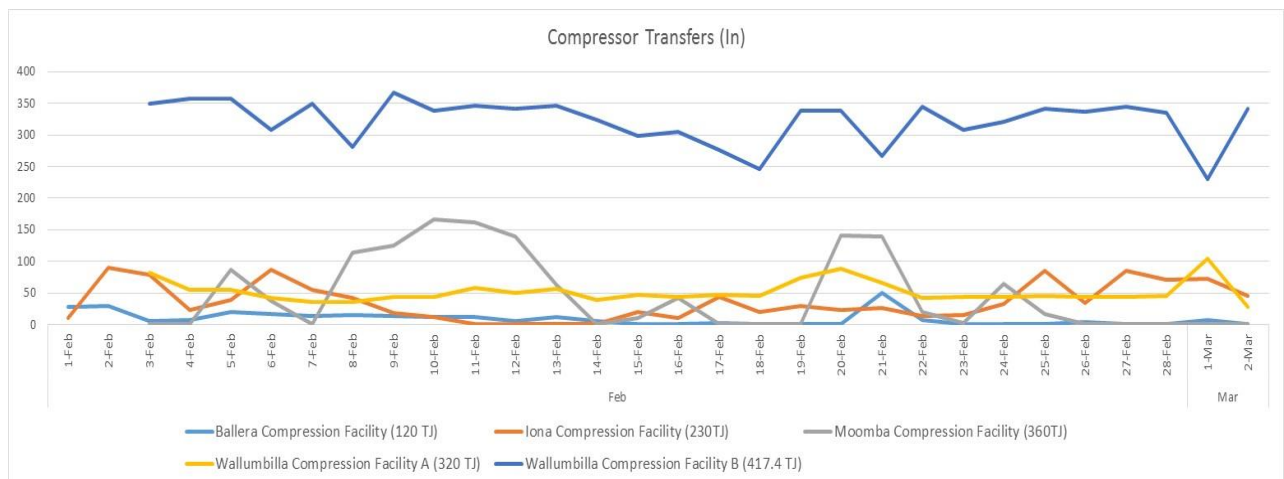
Figure 1 shows prices and demand for gas remained largely unchanged. Victorian demand increased by 12 percent, without a corresponding change in price, while demand in Adelaide slightly fell (5 percent) while price increased (8 percent).

Overall gas powered generation for electricity increased across the states, seen at Figure Fig 5.1. This was associated with the final days of summer weather which persisted most prominently in Victoria and South Australia.

#### New Markets/New Information

On 1 March, the Capacity Trading Platform and Day-ahead Auction market went live. Capacity has been won on the auction on every day since the auction has run. Further analysis on the volume of trade and the pipelines being used in the auction will be reported in the weekly report commencing 3 March, following the conclusion of the first full week since market start<sup>1</sup>. From 1 February, new Gas Bulletin Board reporting required facility operators to publish compressor usage data (in part to facilitate information as to spare capacity which may be purchased i.e. through the new auction). The figure below summarises compressor usage by each facility.

#### Summary of compressor usage data<sup>2</sup>



Despite falling Asian LNG spot prices as reported by the ACCC<sup>3</sup>, production at Roma remains high with a record level production of 4103 TJ reached on 26 February. The number of LNG cargoes shipped fell at Gladstone from 29 cargoes in January (31 days) to 26 cargoes in February (28 days). Around 1 PJ of gas was reported as injected into the RUGS storage towards the end of this week.

<sup>1</sup> See also Capacity Market Fact Sheet at Back

<sup>2</sup> [www.gassbb.com.au](http://www.gassbb.com.au)

<sup>3</sup> <https://www.accc.gov.au/regulated-infrastructure/energy/gas-inquiry-2017-2020/lng-netback-price-series>

## 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 publishes a range of [longer term statistics](#) on the performance of the gas sector including gas prices, production, pipeline flows and consumer demand.

### Market overview

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

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

	Victoria		Sydney		Adelaide		Brisbane	
	Price	Demand	Price	Demand	Price	Demand	Price	Demand
24 Feb - 02 Mar 2019	9.70	339	9.99	233	10.94	42	8.97	123
% change from previous week	0	12	3	-3	8	-5	-2	1
18-19 financial YTD	9.61	533	9.95	246	9.93	58	9.68	85
% change from previous financial YTD	22	-6	18	0	24	-3	34	-8

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 hub (\$/GJ, TJ)<sup>5</sup>**

	Moomba		South East Queensland		Wallumbilla	
	Price	Quantity	Price	Quantity	Price	Quantity
24 Feb - 02 Mar 2019	-	-	8.57	292	8.67	309
% change from previous week	-	-	-5	-18	-5	49
18-19 financial YTD	7.11	91	9.61	8281	9.61	4949
% change from previous financial YTD	33	658	33	31	26	93

<sup>4</sup> Average daily quantities are displayed for each region. The weighted average daily imbalance price applies for Victoria.

<sup>5</sup> 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)**

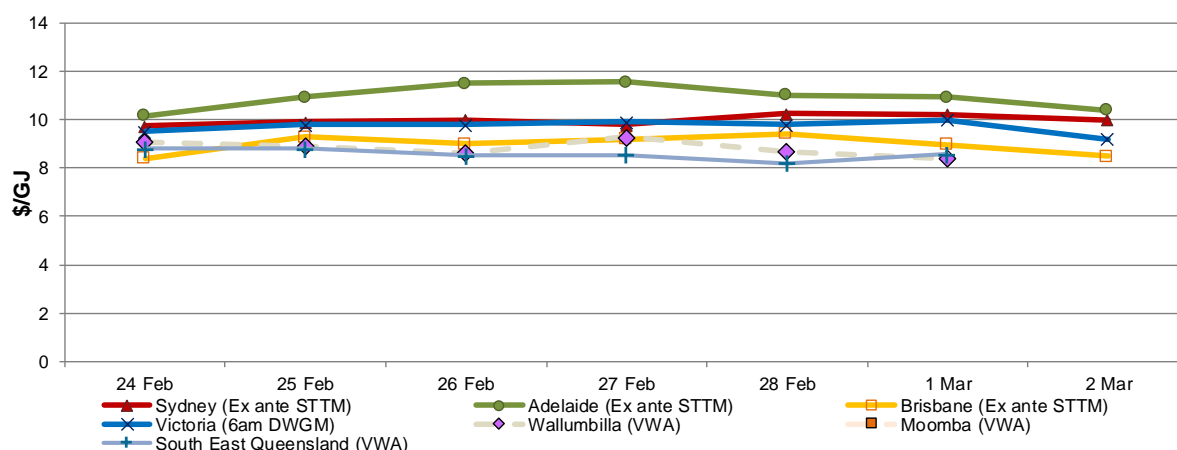


Figure 4 compares average ancillary market payments (VGM) and balancing gas service payments (STTM) against historical averages.

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

	Victoria Ancillary Payments*	Sydney MOS	Adelaide MOS	Brisbane MOS
24 Feb - 02 Mar 2019	-	5.75	2.68	1.16
% change from previous week	-	-61	41	-19
18-19 financial YTD	-	19.09	4.16	1.18
% change from previous financial YTD	-	-37	-29	-51

\* 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 traded for the current week (\$/GJ, TJ)**

	Moomba		South East Queensland		Wallumbilla*	
	VWA price	Quantity	VWA price	Quantity	VWA price	Quantity
<b>Balance of day</b>	-	-	8.52	79.0	8.73	37.0
<b>Daily</b>	-	-	8.62	66.0	8.62	195.0
<b>Day ahead</b>	-	-	8.71	46.0	8.90	42.0
<b>Weekly</b>	-	-	8.50	70.0	8.60	35.0
<b>Monthly</b>	-	-	8.50	31.0	-	-
<b>Total</b>	-	-	<b>8.57</b>	<b>292.0</b>	<b>8.67</b>	<b>309.0</b>

\* 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	1482	884	1758	4124
Export Pipeline Flows	1476	925	1356	3756
% change from previous week (pipeline flows)	-6	7	11	3
18-19 financial YTD Flows	1420	828	1273	3521

\* 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

### South Australia

Warm summer weather persisted in Adelaide with maximum daily temperatures exceeding 35 degrees throughout the week and reached 42 degrees on 1 March. Associated with warmer temperatures and the need for cooling, demand for gas powered electricity generation in South Australia increased by 65 percent, seen at **Figure 5.1**.

### Victoria

**Figure 1** shows no change in price, despite Victorian demand for gas increasing by 12 percent. Increased demand corresponded with continued warmer temperatures, particularly towards the end of the week which marked the final days of summer. Associated with this, demand for gas powered electricity generation in Victoria more than doubled this week (162 percent), shown at **Figure 5.1**.

**Figure 1.2** shows higher demand forecasts on 28 February and 1 March, with warmer temperatures exceeding 35 degrees in Melbourne and maximum temperatures reaching close to 40 degrees on 1 March. Increased Victorian demand on those respective days was met by large injections from Iona gas storage and to a lesser extent the Eastern Gas Pipeline (via Vic Hub), depicted at **Figure 1.5**. Gas storage levels at Iona increased on average across the week compared to the previous week (439 TJ seen at **Figure 5.1**) and there was more gas stored at Iona at the end of the week than in the prior week (18.1 PJ up from 17.8 PJ). On 2 March, Iona's gas storage level was approximately 69 percent full, a 7 percent increase from the storage level reported at the end of January 2019.

There was continued trade activity for Victorian gas futures on the ASX this month with 20 Victorian gas futures products traded, indicating a forward price of between \$9.75-11/GJ for deliveries in 2019 and 2020. Each contract is denominated by a standardised gas quantity of 100 GJ/day. As of the end of February 2019, there were 507 gas futures contracts kept open for hedging or speculation.

## **Wallumbilla netback price and Gladstone LNG exports**

The ACCC published Wallumbilla historic netback prices of \$9.90/GJ for February<sup>6</sup>.

Gladstone Port Corporation information received by the AER indicates that LNG export volumes dropped from the previous month (29 Cargoes in January), with 26 cargoes leaving Gladstone. Although February is 3 days shorter, this may have corresponded with a lower Asian LNG spot price. The majority of cargoes from Gladstone were reported as leaving China, although some cargoes may change route once out to sea.

Since all three Queensland export projects became fully operational, the average monthly export volume has been 26 cargoes, with the record export volumes occurring in December 2017 at 30 cargoes. Since August 2018 till January 2019, there have been high volumes of export cargoes above the average being shipped from Gladstone. This month reflects a return to the average monthly export volume of 26 cargoes.

## **Roma production and storage**

There has been continued high levels of production at Roma. There were 14 instances across February where output exceeded 4 PJ a day (in January there were 18 instances). This week production at Roma exceeded 4PJ/day on 6 of the 7 days. On 26 February there was record level gas production at Roma reaching 4103 TJ.

Corresponding to ramped-up production at Roma, gas storage at the Roma Underground storage facility (RUGS) has increased this week<sup>7</sup>. While gas storage levels at RUGS fell on average across the week compared to the previous week (25 TJ seen at **Figure 5.1**), Roma Storage levels at the end of the week were higher than in the prior week (33PJ up from 32.3PJ). Roma storage levels significantly increased by close to 1 PJ across a couple of days from the end of February to 2 March. On 2 March, Roma Underground storage was approximately 63 percent full (based on a nameplate rating of 54PJ).

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<sup>6</sup> The historical LNG netback prices published by the ACCC for any given month are based on Platts' JKM price assessments for LNG deliveries in that month. For example, an historical LNG netback price for September will be based on an average of JKM price assessments in respect of the month of September, which means that the netback price will be based on the JKM as reported between 16 July and 15 August of that year.

<sup>7</sup> The production being included in the AER's Roma calculation can be found here: <https://www.aer.gov.au/wholesale-markets/wholesale-statistics/average-daily-production-for-production-points-in-roma-region>

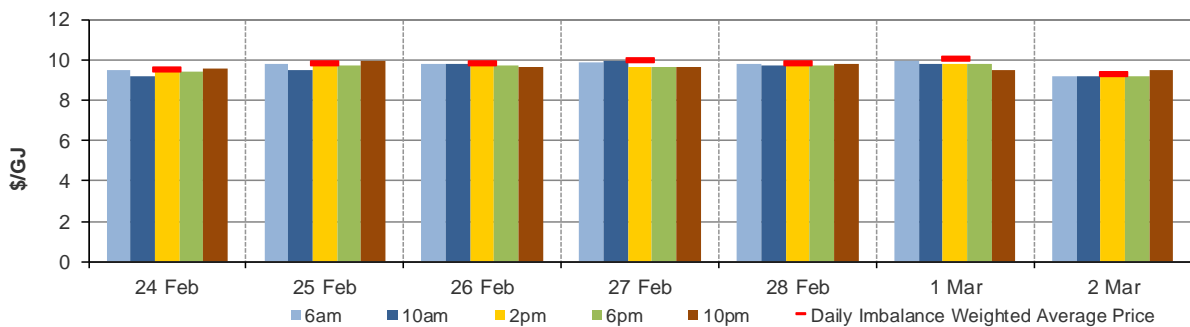
## 1. Victorian Declared Wholesale Market

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<sup>8</sup> which is the schedule at which most gas is traded.

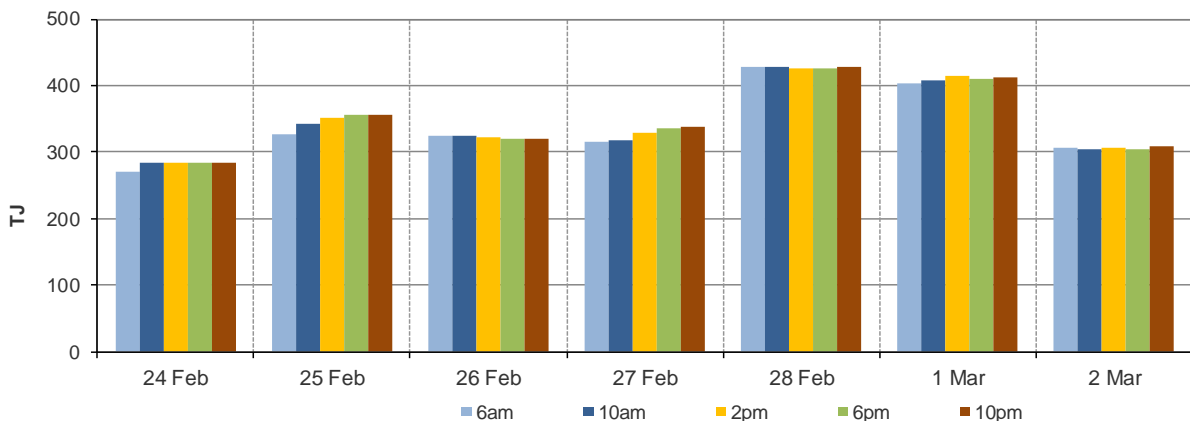
The main drivers<sup>9</sup> of price are demand forecasts and bids to inject or withdraw gas from the market. Figures 1.1 to 1.4 below show the daily prices, demand forecasts<sup>10</sup>, and injection/withdrawal bids for each of the five pricing schedules. Figure 1.5 provides information on which 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)**

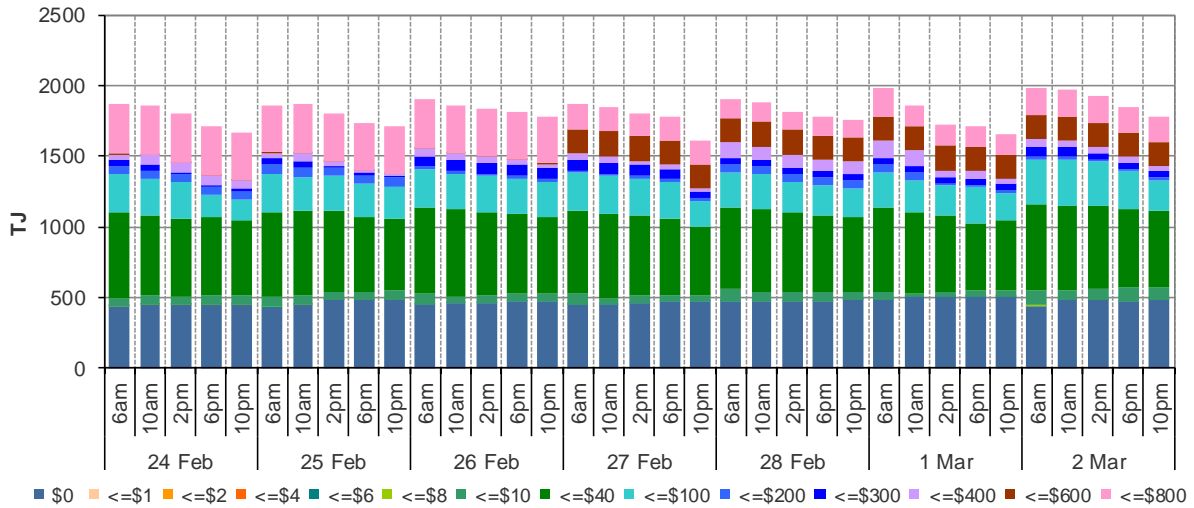


<sup>8</sup> Prices for subsequent schedules are applied only to the differences in scheduled quantities (imbalances) to calculate the weighted price. The 6 am price applies to the entire scheduled quantity in the initial schedule.

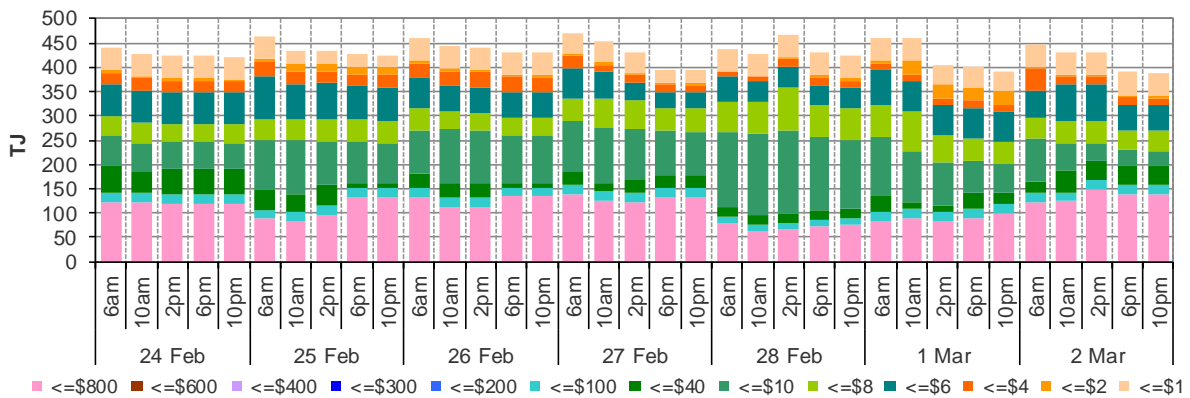
<sup>9</sup> The price might also be affected by transmission or production (contractual) constraints limiting how much gas can be delivered from a locale or System Injection Point (SIP) from time to time.

<sup>10</sup> 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.

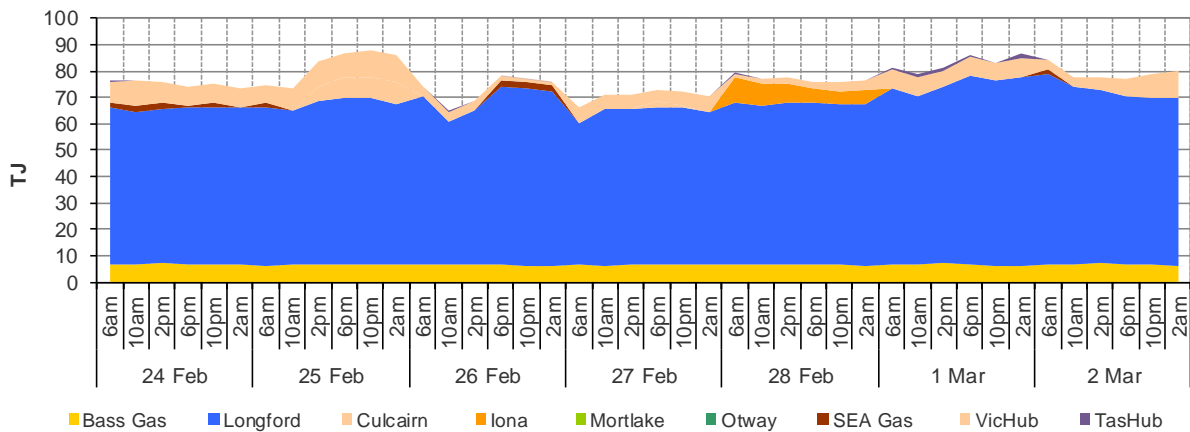
**Figure 1.3: Injection bids by price bands (TJ)**



**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.<sup>11</sup> 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](#).

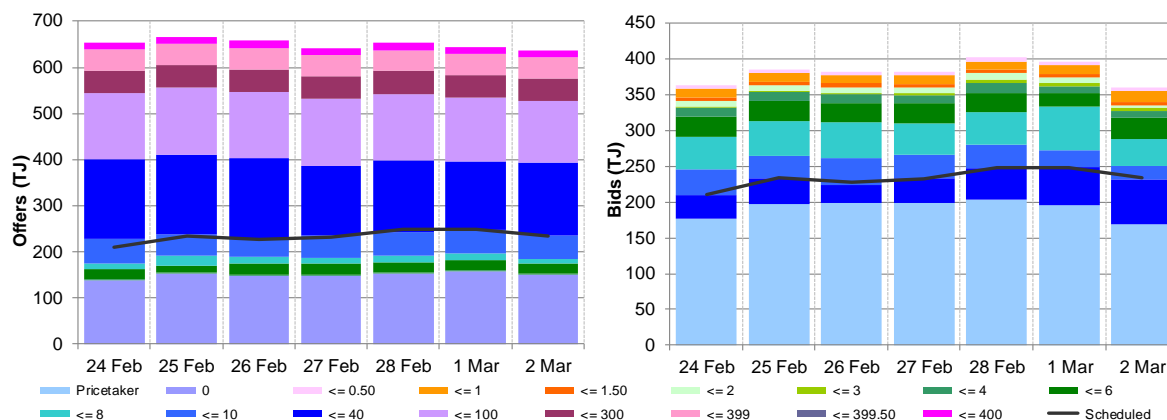
Market Operator Service balancing gas (MOS) payments arise because the amount of gas nominated on pipelines for delivery on a gas day will either exceed or fall short, by some amount, of the amount of gas consumed in the hub. In such circumstances, MOS payments are made to participants for providing a service to park gas on a pipeline or to loan gas from a pipeline to the hub.<sup>12</sup>

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)	9.75	9.92	10.00	9.81	10.24	10.22	10.00
Ex ante quantity (TJ)	210	233	228	233	248	248	234
Ex post price (\$/GJ)	9.82	10.40	10.00	9.91	10.21	10.00	10.11
Ex post quantity (TJ)	212	240	231	233	244	244	237

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

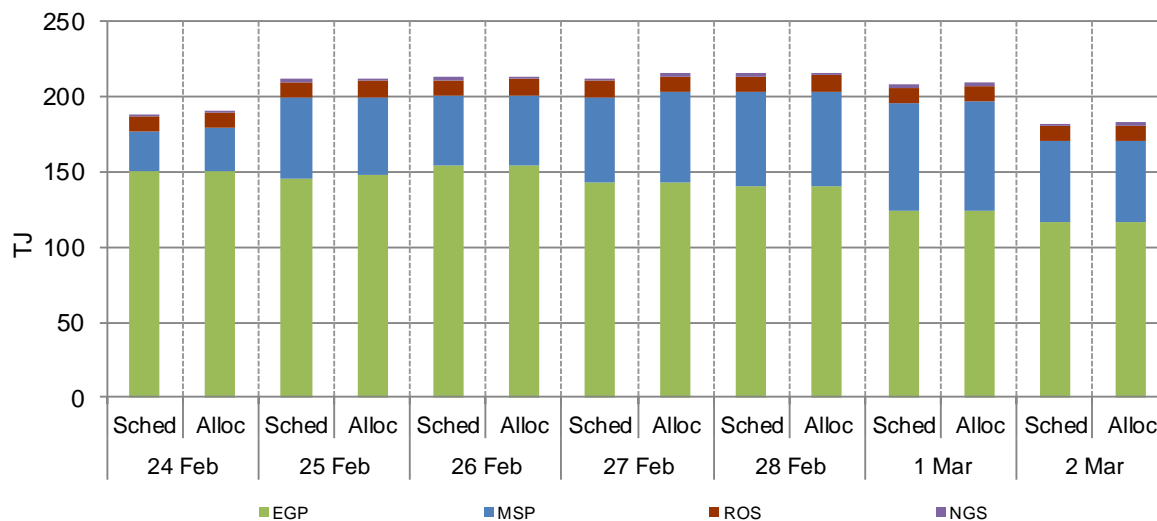


<sup>11</sup> The main driver of the amount of gas scheduled on a gas day is the 'price-taker' bid, which is forecast hub demand that cannot respond to price and which must be delivered, regardless of the price.

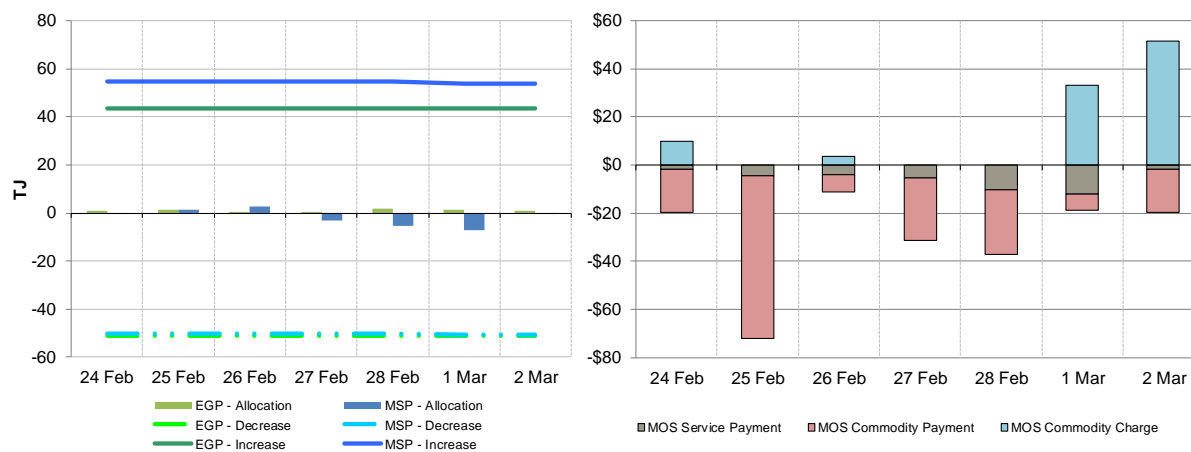
<sup>12</sup> MOS service payments involve a payment for a MOS increase service when the actual quantity delivered exceeds final gas nominations for delivery to a hub, and a payment for a MOS decrease service when the actual quantity delivered is less than final nominations. As well as a MOS 'service' 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)<sup>13</sup>**



<sup>13</sup> 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.

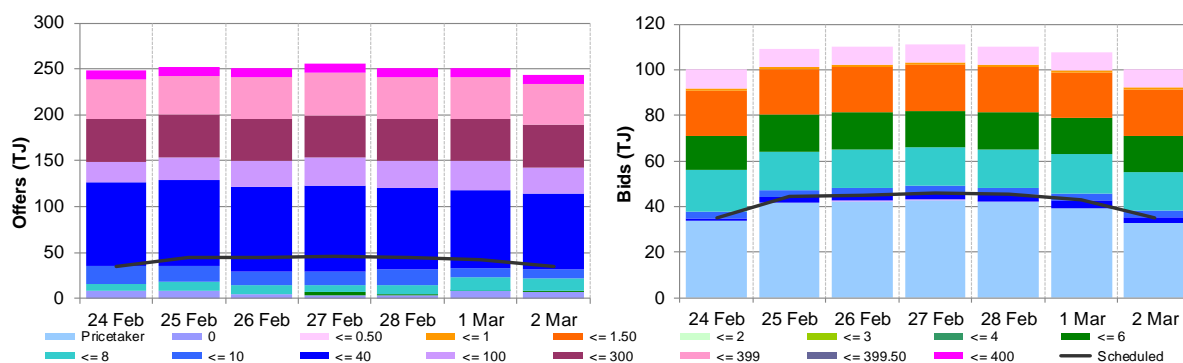
### 3. Adelaide STTM

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.

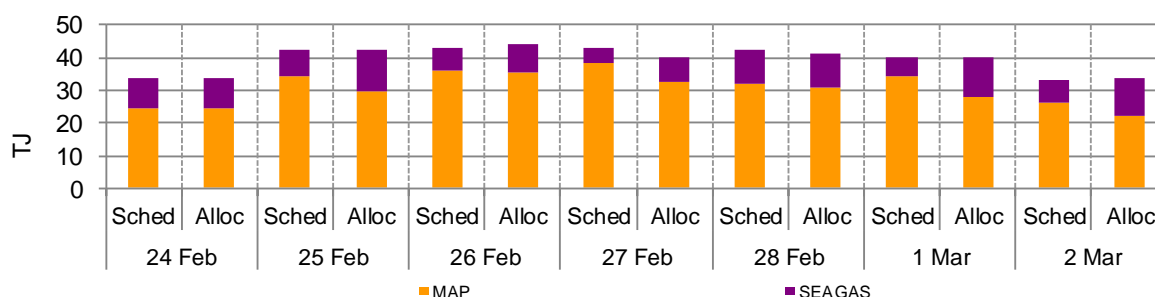
**Figure 3.1: ADL STTM daily ex ante and ex post prices and quantities**

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Ex ante price (\$/GJ)	10.16	10.96	11.50	11.57	11.02	10.95	10.41
Ex ante quantity (TJ)	35	44	45	46	45	43	35
Ex post price (\$/GJ)	10.52	10.97	11.01	11.90	11.09	10.98	10.50
Ex post quantity (TJ)	38	46	43	48	46	45	36

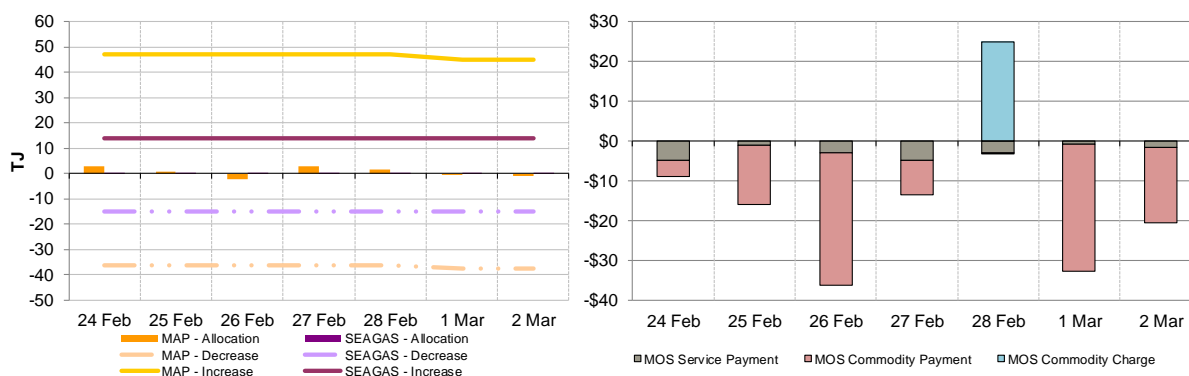
**Figure 3.2: ADL daily hub offers and daily hub bids in price bands (\$/GJ)**



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



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



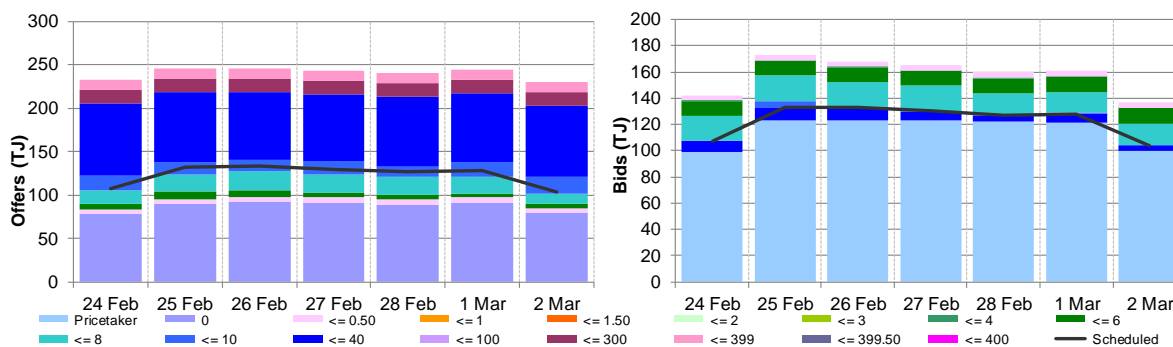
## 4. Brisbane STTM

The Brisbane STTM hub functions in the same way as the Sydney STTM hub. The same data that was presented for the Sydney hub is presented for the Brisbane hub in the figures below.

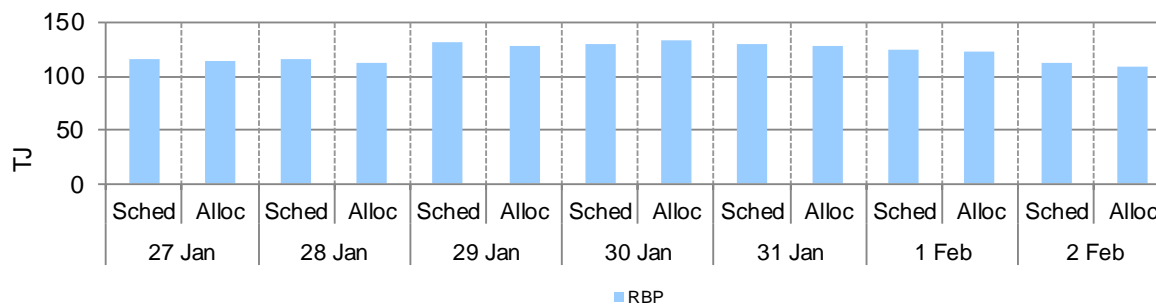
**Figure 4.1: BRI STTM daily ex ante and ex post prices and quantities**

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Ex ante price (\$/GJ)	8.39	9.28	9.00	9.20	9.44	8.97	8.50
Ex ante quantity (TJ)	107	133	133	130	127	128	104
Ex post price (\$/GJ)	8.39	9.14	9.00	7.81	7.80	7.32	6.60
Ex post quantity (TJ)	107	131	132	109	99	93	79

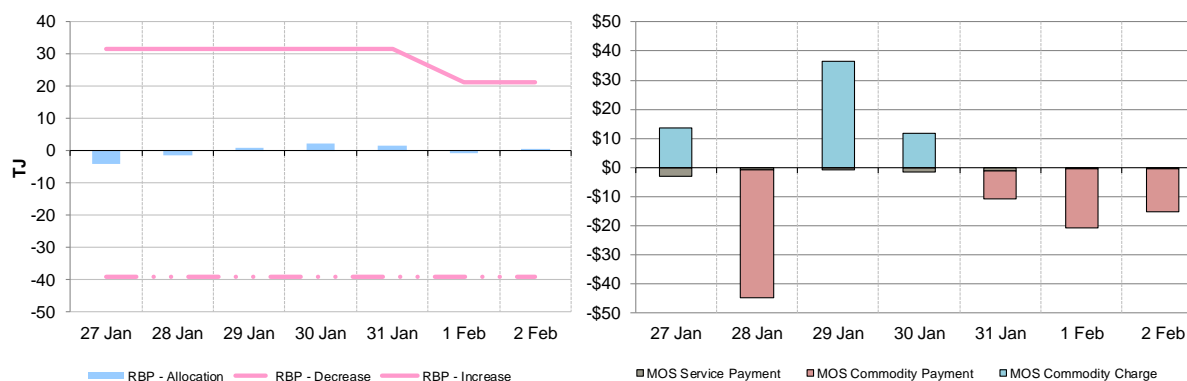
**Figure 4.2: BRI daily hub offers and daily hub bids in price bands (\$/GJ)**



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



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



## 5. National Gas Bulletin Board

Figure 5.1 shows average daily actual flows for the current week<sup>14</sup> from the Bulletin Board (changes from the previous week's average are shown in brackets). Average daily prices<sup>15</sup> are provided for gas markets and gas supply hubs. Average daily quantities are provided for gas powered generation for each region.

Figure 5.1: Gas market data (\$/GJ, TJ); Bulletin Board flows (TJ)<sup>16</sup>



<sup>14</sup> 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.

<sup>15</sup> 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.

<sup>16</sup> Net flows are shown for Bulletin Board facilities, as outlined in the [user guide](#).

## 6. Gas Supply Hub

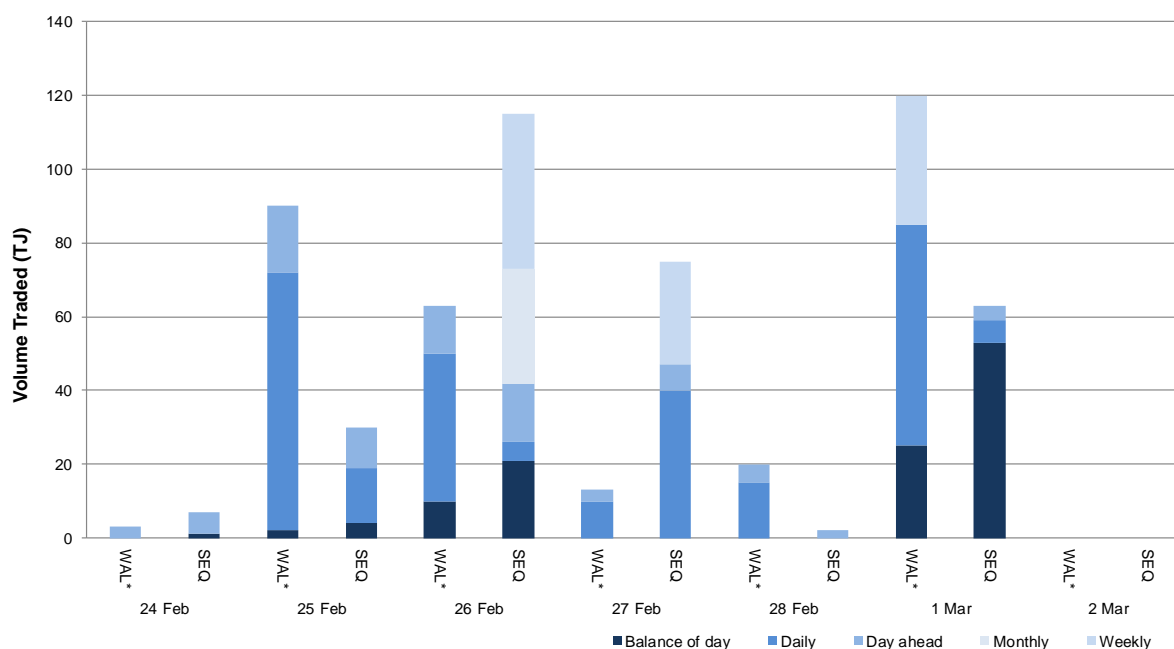
The gas supply hub was established at Wallumbilla in March 2014 to facilitate the voluntary trading of gas between participants, with products listed for sale and purchase at delivery points on three major connecting pipelines. There are separate products for each trading location and delivery period (daily, day-ahead, balance-of-day, weekly and monthly products).<sup>17</sup>

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**).

This week there were 119 trades for 601 TJ of gas at a volume weighted price of \$8.62/GJ. These consisted of 57 trades at WAL (309 TJ at \$8.67/GJ) and 62 trades at SEQ (292 TJ at \$8.57/GJ). Most trades were short-term trades and 10 trades were either weekly or monthly trades. There were 9 spread products traded this week.

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.<sup>18</sup>

**Figure 6.1: GSH traded quantities**



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<sup>17</sup> Additional information on trading locations and available products is detailed in the [user guide](#).

<sup>18</sup> Non-netted (off-market) trades, allowing the selection of specific delivery point at a trading location, are included with other Wallumbilla trades (WAL\*).

# CAPACITY TRADING PLATFORM & DAY AHEAD AUCTION

## BASIC FACT SHEET

### Background

Gas markets are playing an increasingly important role in the broader Australian Economy. As evidenced in the AER's recent Hazelwood advice, gas and gas fired generation is playing a larger role in maintaining power system security as the National Electricity Market transitions away from traditional baseload power such as coal. The opening up of the domestic gas market to LNG exports in 2015 has added complexity to the Australian gas market. With declining production in the southern states and increasing exports from Queensland, the Australian east coast gas market supply is becoming tighter. Access to transportation capacity to bring gas from Queensland to the southern states is therefore becoming increasingly important to market participants - particularly those in the southern states that have expressed difficulty in accessing gas from Queensland.

In December 2014, the AEMC was directed by the COAG Energy Council to review the design, function and roles of facilitated gas markets and gas transportation arrangements on the east coast of Australia. In 2016 the AEMC published its report and recommended a capacity trading reform package that proposed two key initiatives:

### The Markets

**1. Capacity trading platform (CTP)** – The *Voluntary* CTP allows shippers to trade secondary capacity before nomination cut off times on gas day D-1. The CTP will consist of both:

- an anonymous exchange mechanism that shippers can use to buy or sell commonly traded transportation products, such as: firm forward haul services, stand-alone compression services and pipeline storage (park) services across different tenors (day, week, month) and
- a listing service that shippers can use to buy or sell more tailored products.

**2. Day Ahead Auction (DAA)** – as a *Mandatory market mechanism*, any contracted but un-nominated capacity on registered pipelines/compressors after shipper nomination cut-off on gas day D-1 is pooled into an anonymous auction. Participants *may* bid in to the DAA to procure:

- forward haul pipeline services with products offered in both directions on bi-directional pipelines;
- interruptible backhaul services; and
- stand-alone compression services (Moomba, Wallumbilla, Ballera, Iona).

The auctions have a reserve price of zero. Pipelines retain the proceeds of the auction and have a contractual relationship with the shipper who purchases capacity through the auction.

AEMO operates the CTP and DAA through a centralised platform across the East Coast.

### Objectives

An objective of the CTP and DAA is to make it easier for shippers to trade secondary capacity. Shippers with primary capacity on pipelines will be incentivised to engage in trading on the CTP (if they know they won't use all of their contracted capacity) as they can keep the proceeds from the capacity sale. Any unutilised capacity after nomination cut-off time will be subject to the DAA and pipeline operators will retain the revenue from these auctions.

As the CTP will be a common platform, it will help reduce the search and transaction costs as well as information asymmetries associated with secondary capacity trades and price discovery. This can make it easier for market participants, particularly new entrants, to access capacity and transport gas. Also, by allowing gas to move where it is most needed these reforms makes more efficient use of pipeline infrastructure.

### Timing

The CTP and DAA took effect from March 2019.