

9 – 15 February 2014

## Weekly summary

Prices were relatively stable across the week, with some high prices mid-week in Adelaide (up to \$6.58/GJ ex ante) in line with a reduction in low priced gas offers. The ex post price in Brisbane reached \$9.85/GJ on 11 February due to constrained capacity. Some other exceptions are detailed 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) in 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**) for the current week compared to historical averages.

**Figure 1: Average daily prices – all markets (\$/GJ)<sup>1</sup>**

	Victoria	Sydney	Adelaide	Brisbane
09 Feb - 15 Feb 2014	3.92	4.07	4.91	4.23
% change from previous week	0	2	4	1
13-14 financial YTD	3.96	4.17	4.56	5.25
% change from previous financial YTD	-12	-21	-11	-7

Figure 2 compares average weekly gas prices, ancillary market payments and scheduled injections against historical averages for the Victorian gas market.

**Figure 2: Victorian gas market**

	Price (\$/GJ)	Ancillary payments (\$000)*	BOD forecast demand quantity (TJ)
09 Feb - 15 Feb 2014	3.92	-	309
% change from previous week	0	-	-4
13-14 financial YTD	3.96	-	540
% change from previous financial YTD	-12	-	-5

\* Note: only positive ancillary payments, reflecting system constraints will be shown here.

More detailed analysis on the VGM is provided in section 1.

<sup>1</sup> The weighted average daily imbalance price applies for Victoria.

Figures 3 to 5 show average ex ante and ex post gas prices, Market Operator Service (MOS) balancing gas service payments together with the related daily demand quantities against historical averages for the Sydney, Adelaide and Brisbane STTM hubs, respectively.

**Figure 3: Sydney STTM**

	Ex ante price (\$/GJ)	Ex post price (\$/GJ)	MOS payments (\$000)	Ex ante quantity (TJ)	Ex post quantity (TJ)
09 Feb - 15 Feb 2014	4.07	3.85	7.89	217	210
% change from previous week	2	-2	-41	3	3
13-14 financial YTD	4.17	4.02	11.94	239	234
% change from previous financial YTD	-21	-28	8	-1	-3

**Figure 4: Adelaide STTM**

	Ex ante price (\$/GJ)	Ex post price (\$/GJ)	MOS payments (\$000)	Ex ante quantity (TJ)	Ex post quantity (TJ)
09 Feb - 15 Feb 2014	4.91	4.73	23.32	50	47
% change from previous week	4	6	53	-1	5
13-14 financial YTD	4.56	4.56	16.45	68	68
% change from previous financial YTD	-11	-10	89	-3	0

**Figure 5: Brisbane STTM**

	Ex ante price (\$/GJ)	Ex post price (\$/GJ)	MOS payments (\$000)	Ex ante quantity (TJ)	Ex post quantity (TJ)
09 Feb - 15 Feb 2014	4.23	5.22	1.61	168	173
% change from previous week	1	26	14	2	6
13-14 financial YTD	5.25	5.35	1.63	149	149
% change from previous financial YTD	-7	-4	-38	2	4

More detailed analysis of the STTM hubs is found in sections 2 to 4.

Section 5 provides analysis on production and pipeline flows on the National Gas Bulletin Board (**Bulletin Board**), as well as gas powered generation (**GPG**) volumes in each state.

### Significant Market Events or Issues this week

There were a number of significant price events this week related to the use of pricing mechanisms. In Brisbane, this flowed through to increased market prices on 11 February (described in more detail below). In Sydney, over-forecast demand led to MOS decrease requirements of around 19 TJ and an ex post price of \$2.90/GJ.

### *Pipeline Flow Direction Constraints in Adelaide—9 February 2014*

A pipeline flow direction constraint (**PFDC**) price of \$0.0682/GJ<sup>2</sup> occurred on the Moomba to Adelaide Pipeline (**MAP**) on 9 February. This was the 13th occurrence of PFDC pricing in Adelaide since market start. There were also five occurrences of counteracting MOS (**CMOS**)<sup>3</sup> in Adelaide resulting in three service payments of around \$30 000, and up to \$49 195 on 9 February.

### *High market prices and capacity prices in Brisbane—11 and 12 February 2014*

Construction work on the Roma to Brisbane Pipeline (**RBP**) led to constrained capacity this week, triggering high market prices and the capacity pricing mechanism being used in Brisbane for the first time.

Since 6 January, there has been a reduction in capacity on the RBP. The capacity reduction relates to the second stage of pipeline lowering work to rebury larger sections of the pipeline around Sandy Creek (which was affected by flooding in Queensland at the beginning of last year). The reduction of around 30 TJ is scheduled to be completed by the end of March 2014.

During the period of reduced capacity availability, a combination of higher demand in the hub and an increase in the availability of cheap gas<sup>4</sup> offers saw the scheduled volumes getting closer to the maximum capacity level (see figure 6). This led to an increase in demand for gas (including controllable demand bidding) above the registered capacity levels for 11 and 12 February.

As a result of this restriction, the bids determined the market prices for both days.<sup>5</sup> In particular, the bids drove ex post prices significantly higher on 11 February, whereby the larger step changes in the bid prices led to the 5.6 TJ imbalance increasing the price to \$9.85/GJ. In contrast, the prices on the 12 February were significantly lower despite higher demand levels due to more low priced capacity, alongside a capacity increase to 181 TJ.

The reduced capacity availability on these two days also caused capacity prices on the pipeline (\$1.22/GJ and \$0.249/GJ respectively), which is the mechanism used to compensate shippers with firm transportation rights.<sup>6</sup> This pricing mechanism has previously been implemented in Sydney<sup>7</sup> on two occasions for the Moomba to Sydney Pipeline (**MSP**) and a number of times on the Rosalind Park Pipeline (**ROS**)<sup>8</sup> facility.

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<sup>2</sup> 1.4 TJ of Simply Energy's backhaul bid on MAP was scheduled out of merit order which was supported by Adelaide Brighton Cement's forward haul offer on MAP. PFDC prices occur due to a physical restriction where cheaper gas i.e. supplied by SEAGas to the hub cannot physically flow backwards from the hub to supply backhaul on the MAP.

<sup>3</sup> CMOS can be explained as when more balancing gas is supplied than is needed. This occurs because of network constraints which require one pipeline to be backed off and the other to be increased.

<sup>4</sup> The increased availability of lower priced gas offers has also seen a significant reduction in the number of prices above \$5/GJ since 7 January (when average weekly prices were around \$1/GJ higher than current levels).

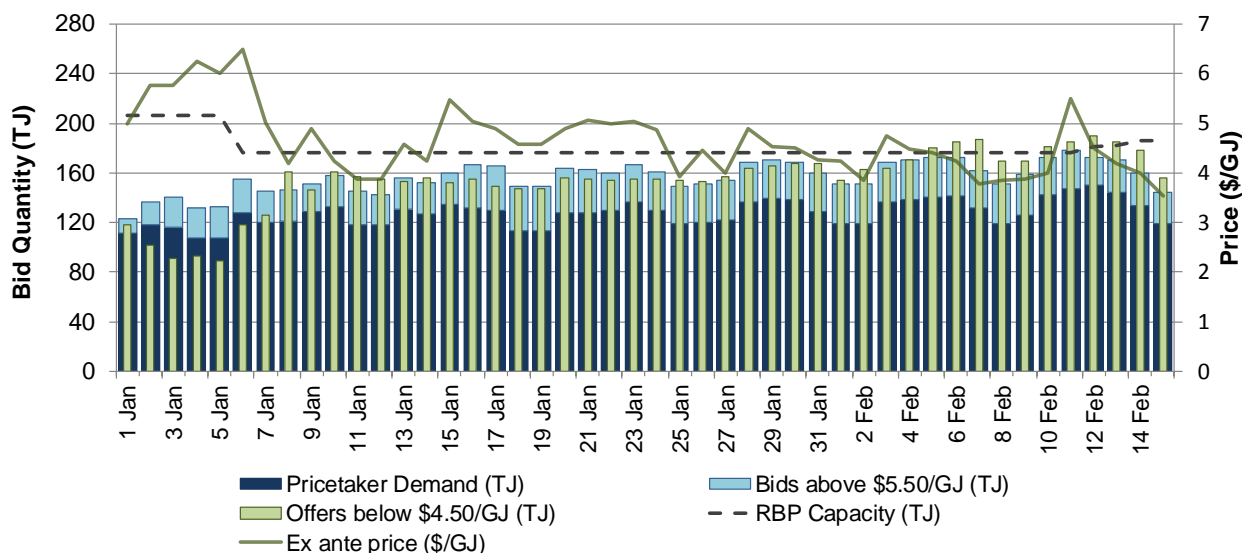
<sup>5</sup> Both ex ante and ex post were set by bids instead of offers (because the bids could not be fully cleared).

<sup>6</sup> Firm shippers are compensated by non-firm shippers whose gas was scheduled (with the volume of displaced gas charged at the capacity price).

<sup>7</sup> The use of the mechanism on 4 November 2010 resulted in capacity payments between participants.

<sup>8</sup> ROS is the pipeline connecting AGL's Camden CSG production to the Sydney hub, and has less relevance in regard to capacity payments as AGL is the only user of the pipeline.

**Figure 6: Brisbane STTM hub demand and RBP capacity**



***MOS overrun on the Moomba to Adelaide Pipeline (MAP) – 14 and 16 February 2014***

Overrun MOS usually occurs when all the MOS offers available in the stack have been exhausted. This generally results in very high prices for the overrun gas (service cost), which has occurred during previous instances of the overrun service requirement.

A problem<sup>9</sup> relating to the allocation of gas on the MAP led to overrun MOS on two occasions this week. This was despite only small net requirements for decrease MOS on the pipeline (less than 4.1 TJ, compared to 22.3 TJ of the service offered in the MOS stack). In this instance, the volume weighted price<sup>10</sup> did not result in significantly larger costs.

**Figure 7: Recent MOS overrun volumes and costs for MAP decrease service**

Date	MOS offers allocated (TJ)	MOS overrun (TJ)	Total Service Cost
14 February	2.143	1.922	\$9730.20
16 February	0.879	0.785	\$1513.11

***Moomba to Sydney Pipeline (MSP) Capacity Reduction***

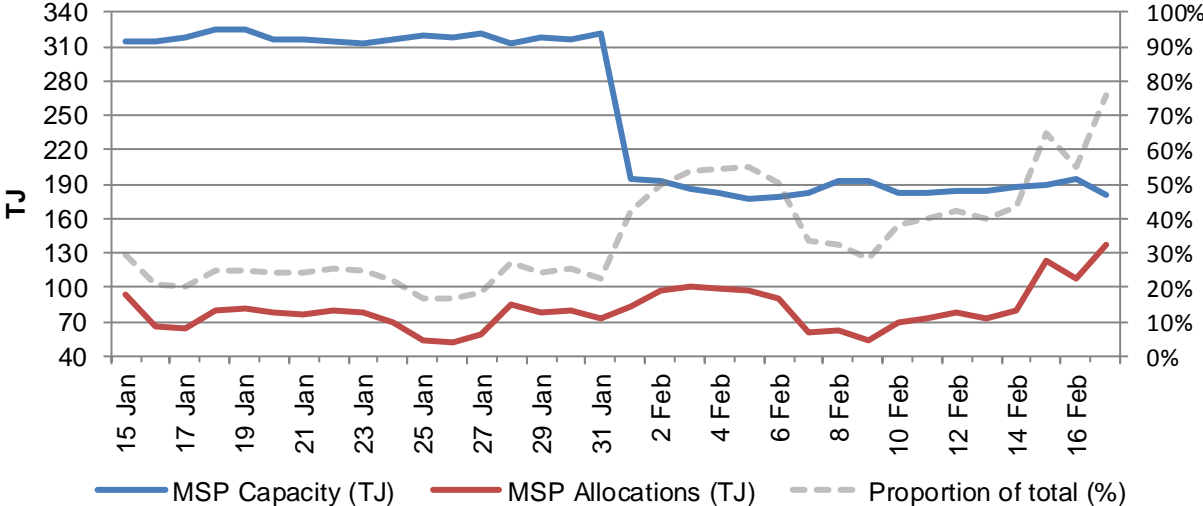
Planned maintenance on the MSP has commenced, reducing its Sydney facility hub capacity from around 315 TJ (or higher) down to an expected range of 165-196 TJ.<sup>11</sup> This reduction relates to works on the Young to Wilson MSP mainline and the Bulla Park to Young MSP mainline. There have been no issues with deliveries to the hub, with the highest proportion of capacity used during the maintenance to date below 76 per cent (137 TJ allocation) when capacity fell to 180 TJ. Usage has mostly remained below 55 per cent, with only two exceptions to date.

<sup>9</sup> The situation has arisen recently in line with lower volumes of low priced gas being offered on the MAP. As a result, whenever participants with offers in the MAP MOS decrease stack are not scheduled to flow sufficient quantities to the hub (enough to match the volume of the required decrease MOS), the MOS cannot be allocated in merit order and steps in the MOS stack are skipped accordingly. When the volumes are allocated to participants not offering MOS, the gas gets assigned as ‘overrun’.

<sup>10</sup> The weighted average cost of the service is used when the amount required is less than the AEMO estimated maximum for that MOS period.

<sup>11</sup> Work is scheduled to be completed by the end of April 2014.

**Figure 8: MSP Capacity reduction and proportion of pipeline hub capacity in use**



# Detailed Market Analysis

9 – 15 February 2014

## 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. However, the volume weighted gas price on a gas day tends towards the 6 am price which is the schedule at which most gas is traded.

The main drivers of price are demand forecasts together with bids to inject or withdraw gas from the market. For each of the five gas day pricing schedules, figures 1.1 to 1.4 below show the daily prices, demand forecasts<sup>12</sup>, and injection/withdrawal bids.<sup>13</sup> 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 bids cleared through the market. Gas is priced five times daily (at 6 am, 10 am, 2 pm, 6 pm and 10 pm) when the first schedule and four reschedules apply, while the last 8-hour schedule has been separated into two 4-hour blocks for a consistent comparison with other scheduled injection volumes. The main drivers of price are demand forecasts and gas bids.<sup>14</sup>

Figure 1.1: Prices by schedule

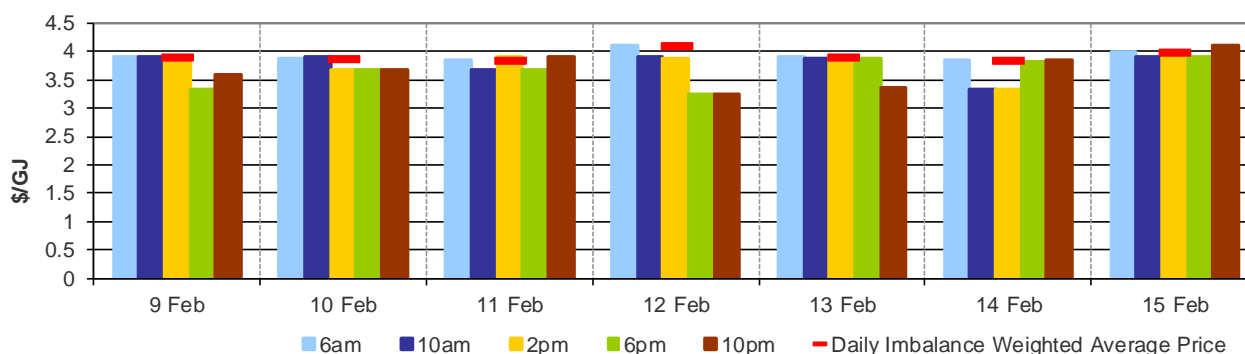
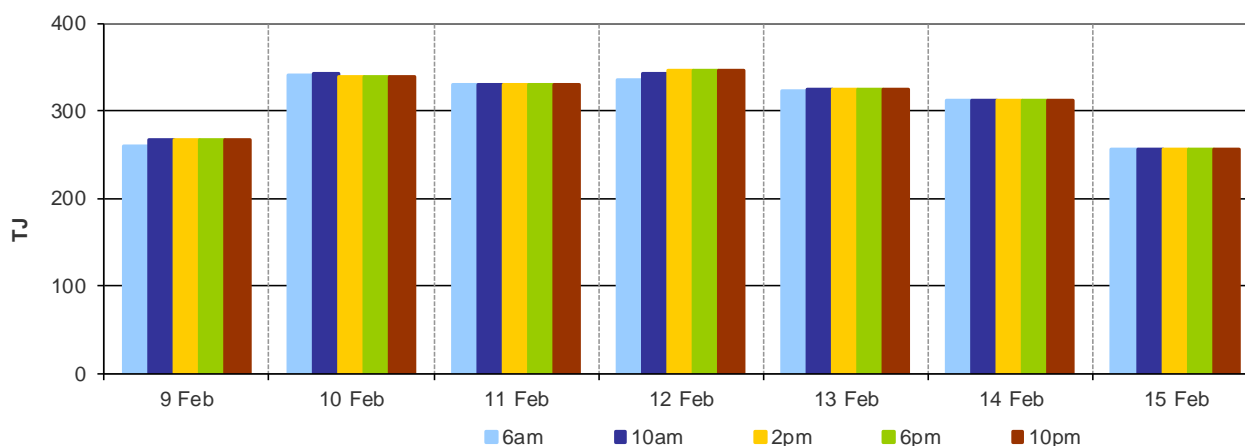


Figure 1.2: Demand forecasts

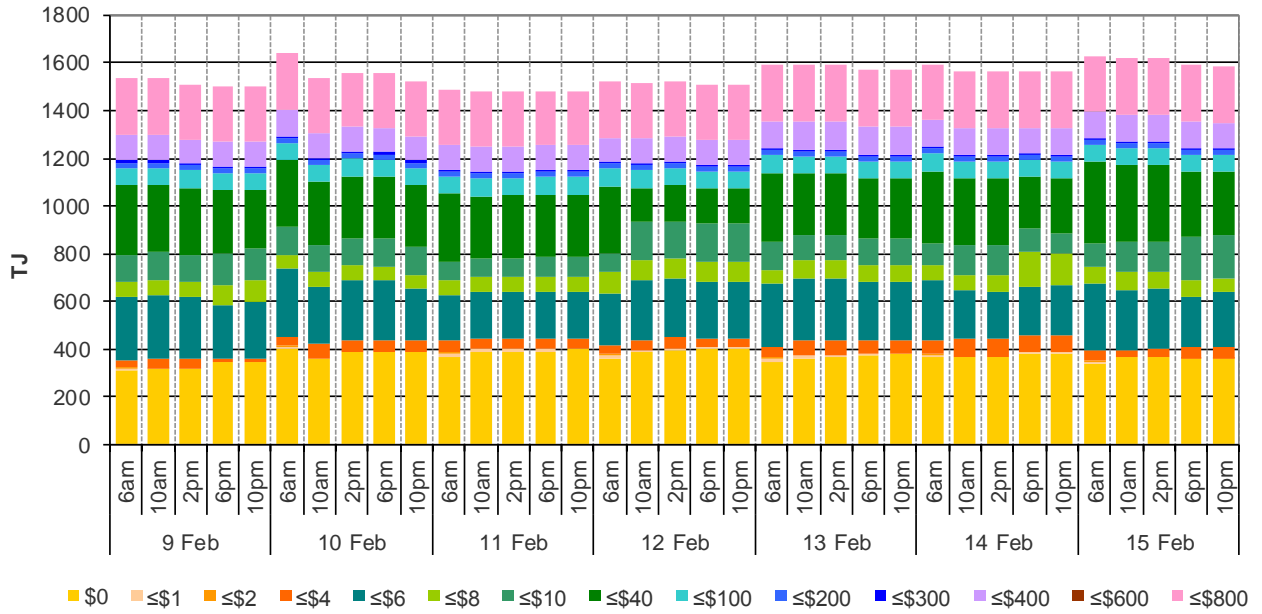


<sup>12</sup> These are Market Participants' aggregate demand forecasts adjusted for any override as applied by AEMO from time to time. The main driver of the amount of gas scheduled on a gas day are these forecasts which are forecasts that cannot respond to price or in other words is gas delivered regardless of the price.

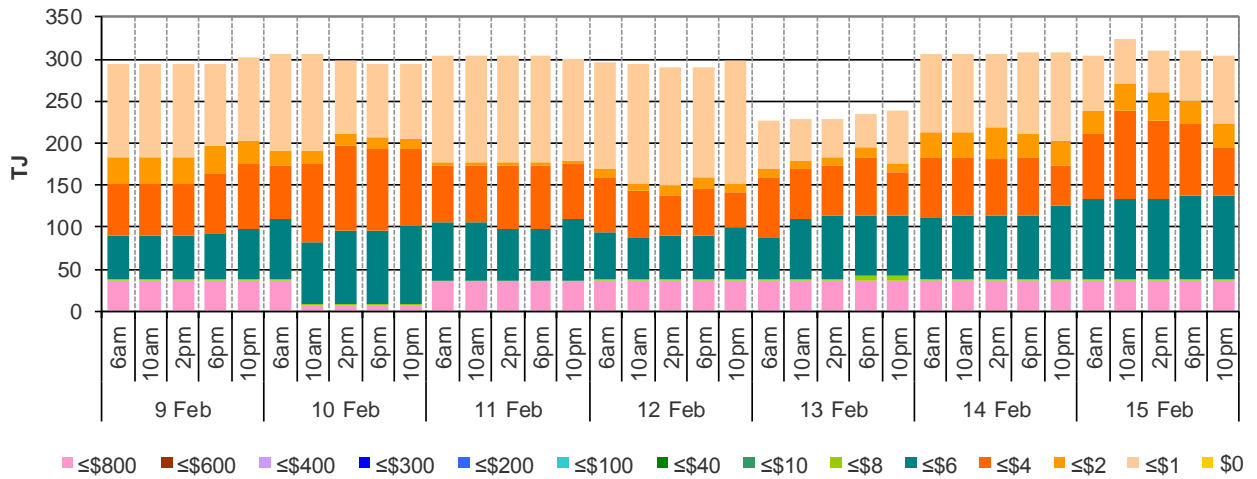
<sup>13</sup> The price might also be affected by transmission or production (contractual) constraints limiting how much gas can be delivered from a locale or System Injection Point (SIP) from time to time.

<sup>14</sup> The price might also be affected by transmission or production (contractual) constraints limiting how much gas can be delivered from a locale or SIP from time to time.

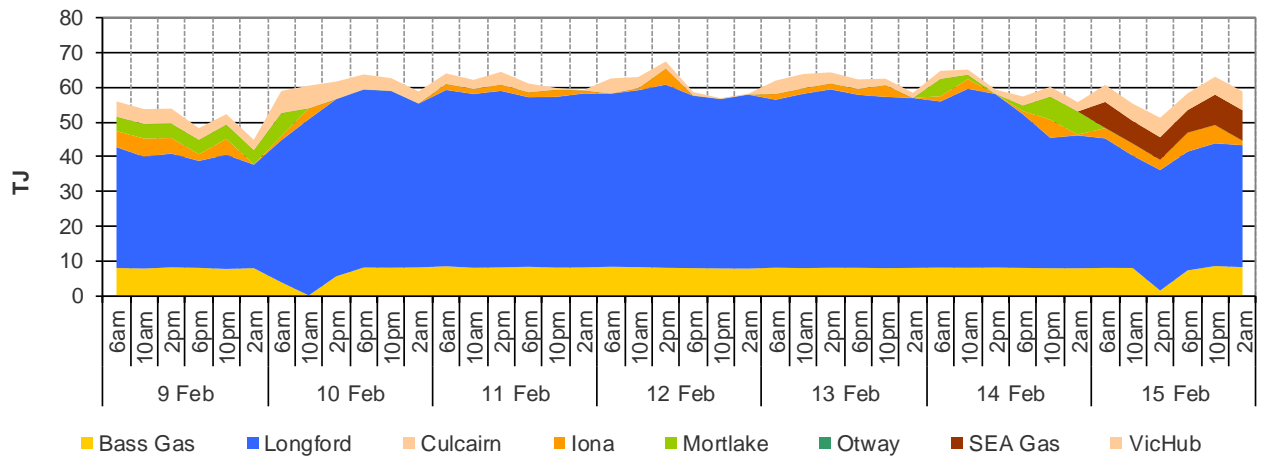
**Figure 1.3: Injection bids by price bands**



**Figure 1.4: Withdrawal bids by price bands**



**Figure 1.5: Metered Injections by System Injection Point**



## 2 Sydney STTM

In each STTM hub, gas is priced once before each gas day (the ex ante price) and once after the gas day (the ex post price). The main drivers of ex ante and ex post prices are demand forecasts, together with participant offers and offers to inject or bids to withdraw gas traded through the hub.<sup>15</sup> Prices before and after the gas day may also vary depending on how much gas is scheduled before the gas day (setting the ex ante price) and how much gas is consumed in the hub on a gas day (setting the ex post price).

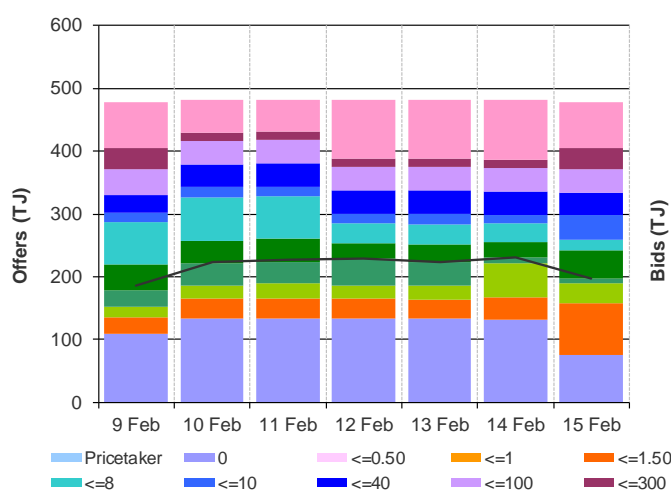
Market Operator Service balancing gas (MOS) payments arise because the amount of gas nominated on pipelines for delivery on a gas day will either exceed or fall short, by some amount, of the amount of gas consumed in the hub. In such circumstances, MOS payments are made to participants for providing a service to park gas on a pipeline or to loan gas from a pipeline to the hub.<sup>16</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, indicating the location and relative quantity of gas offers across pipelines and also the amount of MOS allocated for each pipeline.

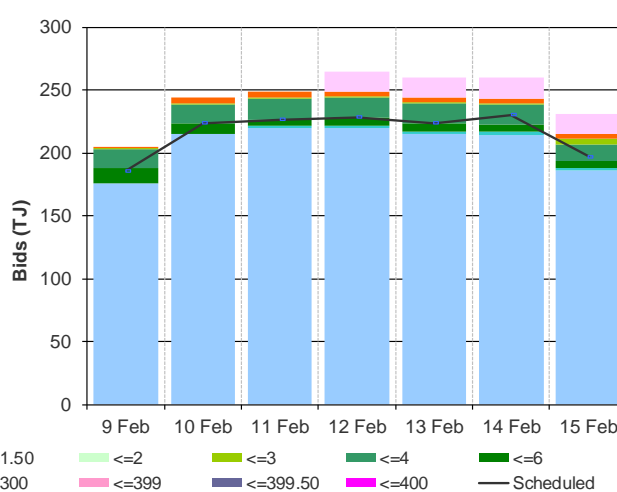
**Figure 2.1: SYD STTM daily ex ante and ex post prices and quantities**

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Ex ante price (\$/GJ)	4.20	4.20	4.20	4.00	4.00	3.90	4.00
Ex ante quantity (TJ)	186	224	227	229	224	231	197
Ex post price (\$/GJ)	4.20	4.16	4.00	4.00	4.00	3.71	2.90
Ex post quantity (TJ)	182	223	223	220	224	219	178

**Figure 2.2 (a): Daily hub offers in price bands (\$/GJ)**



**Figure 2.2 (b): Daily hub bids in price bands (\$/GJ)**

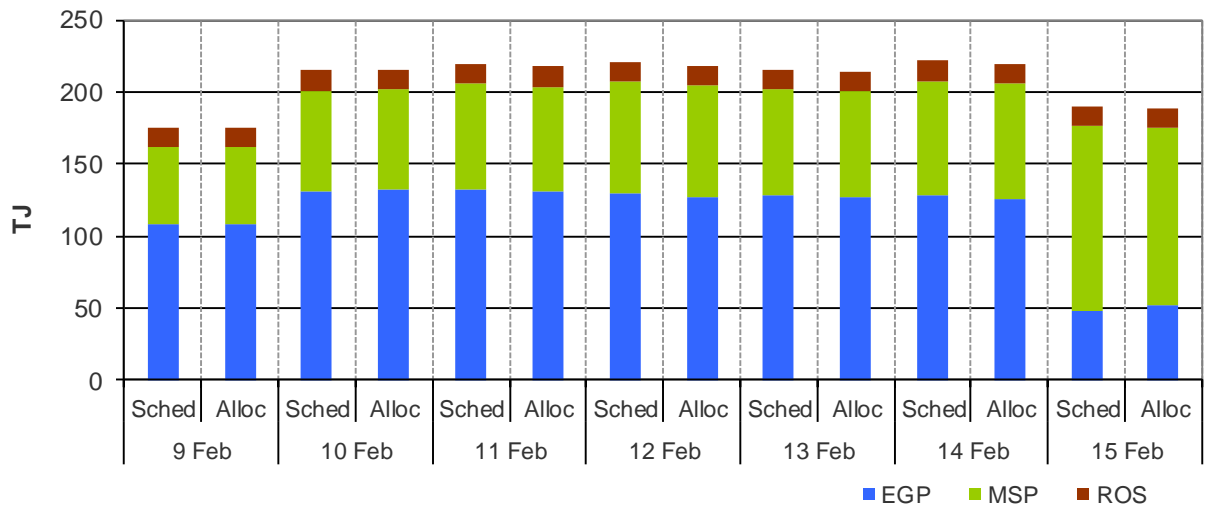


<sup>15</sup> The main driver of the amount of gas scheduled on a gas day is the ‘price-taker’ bid, which is forecast hub demand that cannot respond to price and which must be delivered, regardless of the price.

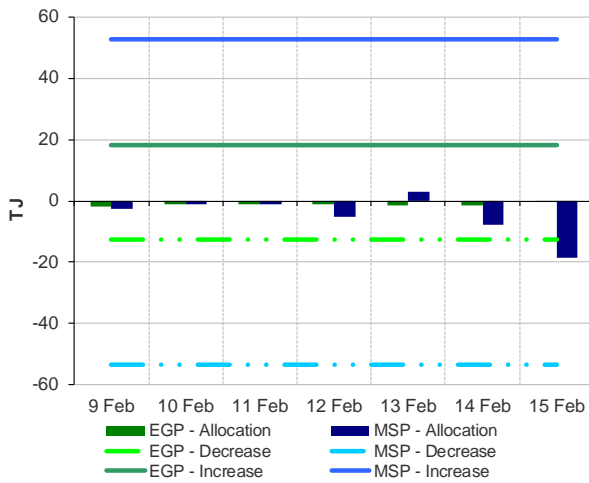
<sup>16</sup> MOS service payments involve a payment for a MOS increase service when the actual quantity delivered exceeds final gas nominations for delivery to a hub, and a payment for a MOS decrease service when the actual quantity delivered is less than final nominations. As well as a MOS ‘service’ 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).



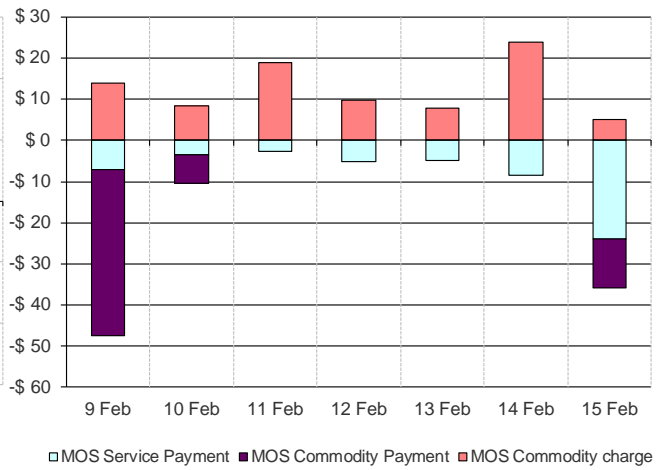
**Figure 2.3: SYD net scheduled and allocated gas volumes (excluding MOS) by STTM facility**



**Figure 2.4 (a): SYD STTM MOS allocations (TJ)**



**Figure 2.4 (b): Service payments and commodity payments/charges (\$'000)**



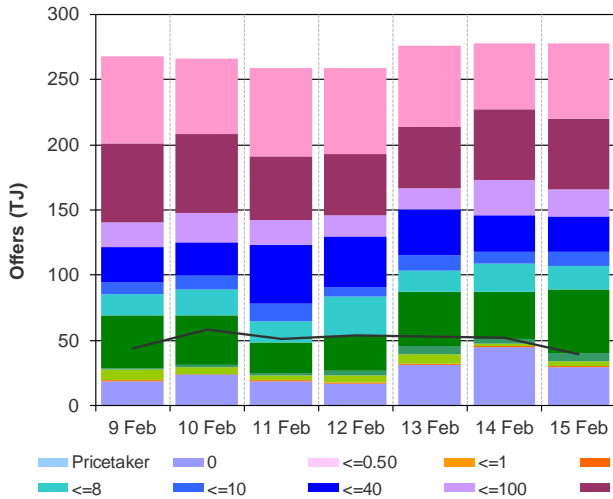
### 3 Adelaide STTM

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.

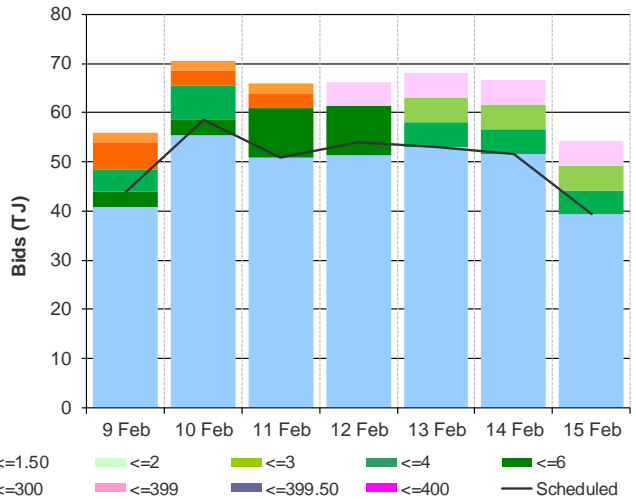
**Figure 3.1: ADL STTM daily ex ante and ex post prices and quantities**

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Ex ante price (\$/GJ)	4.40	4.68	6.58	5.98	4.61	4.12	4.00
Ex ante quantity (TJ)	44	58	51	54	53	52	39
Ex post price (\$/GJ)	4.47	4.61	5.99	5.98	4.31	3.60	4.12
Ex post quantity (TJ)	45	54	39	54	50	47	41

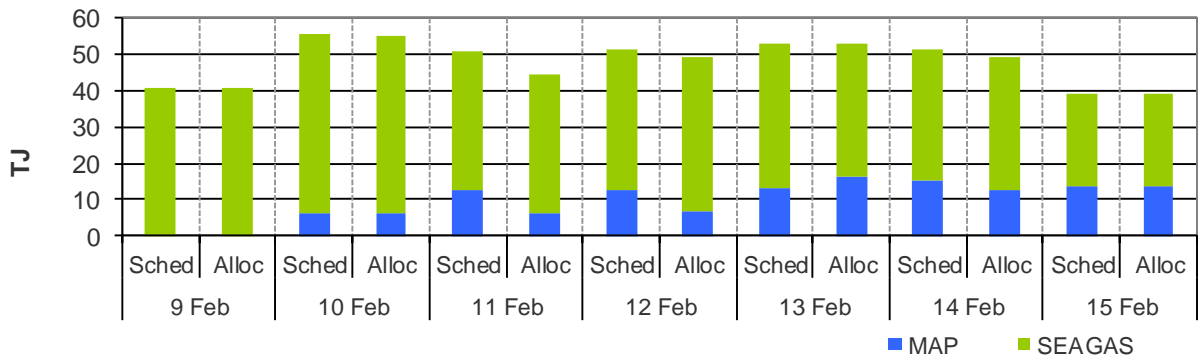
**Figure 3.2 (a): Daily hub offers in price bands (\$/GJ)**



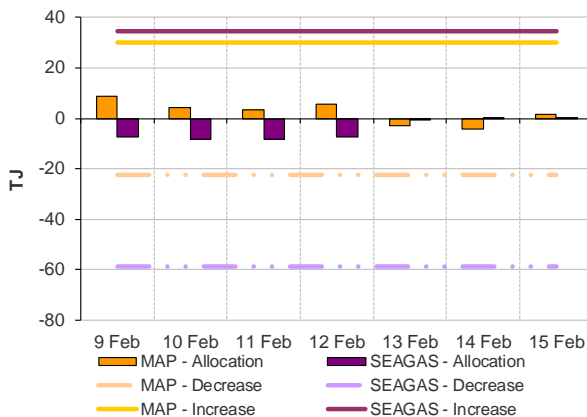
**Figure 3.2 (b): Daily hub bids in price bands (\$/GJ)**



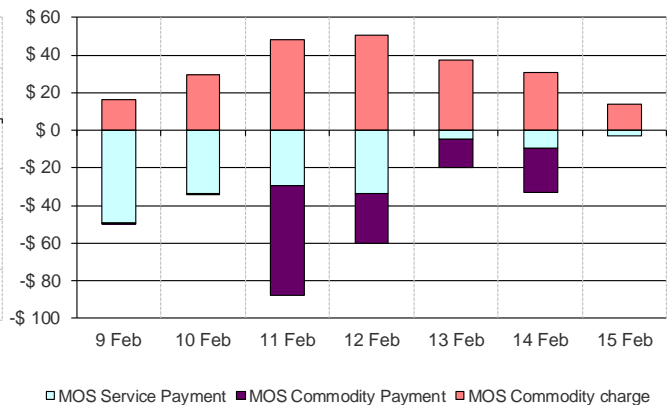
**Figure 3.3: ADL net scheduled and allocated gas volumes (excluding MOS) by STTM facility**



**Figure 3.4 (a): ADL STTM MOS allocations (TJ)**



**Figure 3.4 (b): Service payments and commodity payments/charges (\$000)**



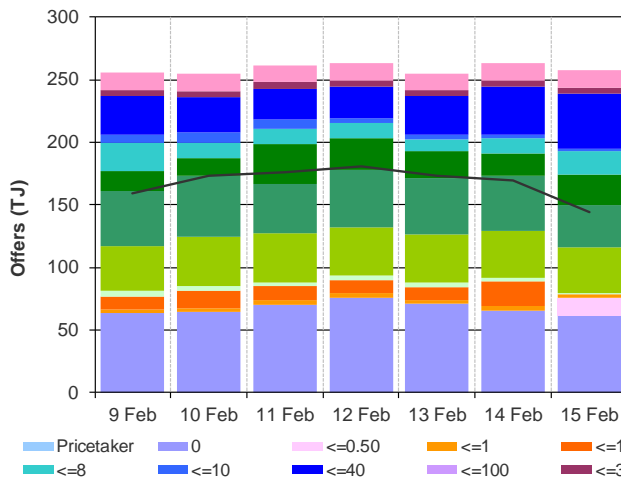
## 4 Brisbane STTM

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.

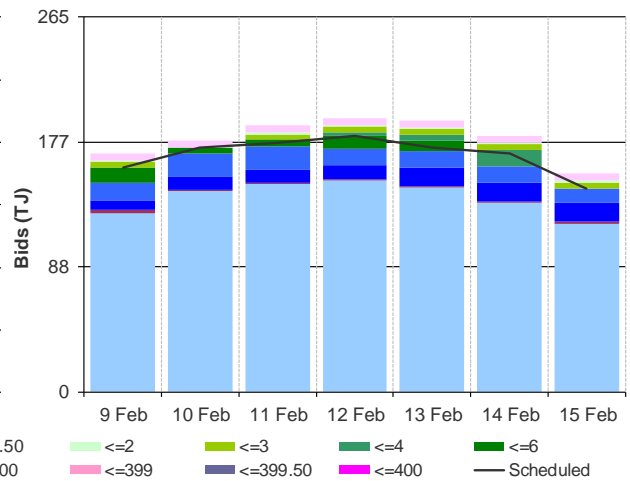
**Figure 4.1: BRI STTM daily ex ante and ex post prices and quantities**

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Ex ante price (\$/GJ)	3.88	3.99	5.50	4.50	4.20	4.00	3.54
Ex ante quantity (TJ)	159	173	176	181	173	169	144
Ex post price (\$/GJ)	3.88	5.50	9.85	4.80	4.28	4.00	4.25
Ex post quantity (TJ)	160	180	182	185	184	171	153

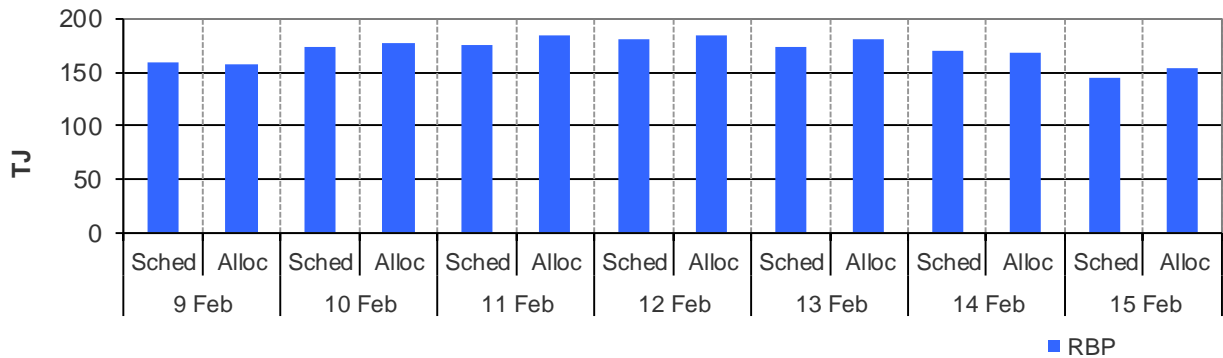
**Figure 4.2 (a): Daily hub offers in price bands (\$/GJ)**



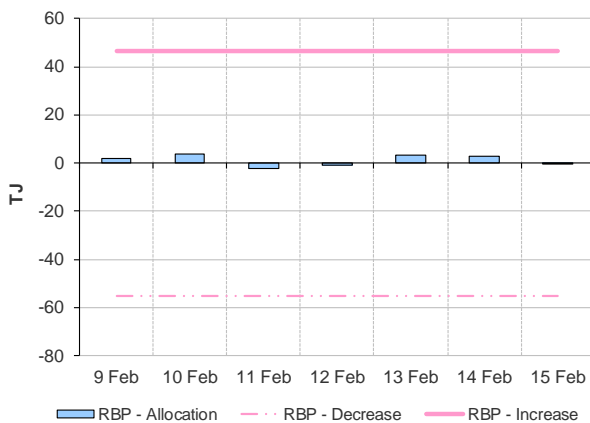
**Figure 4.2 (b): Daily hub bids in price bands (\$/GJ)**



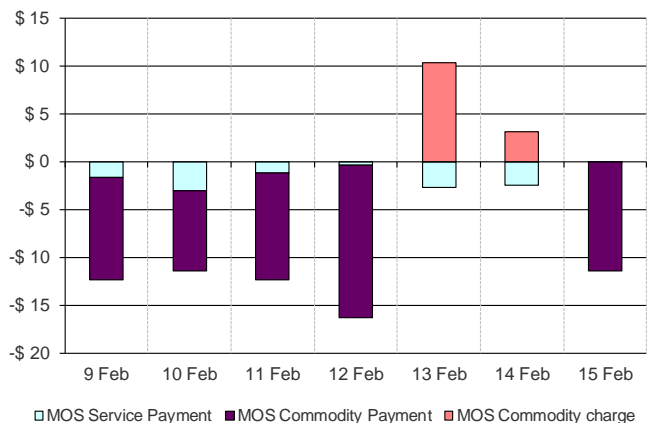
**Figure 4.3: BRI net scheduled and allocated gas volumes (excluding MOS) by STTM facility**



**Figure 4.4 (a): BRI STTM MOS allocations (TJ)**



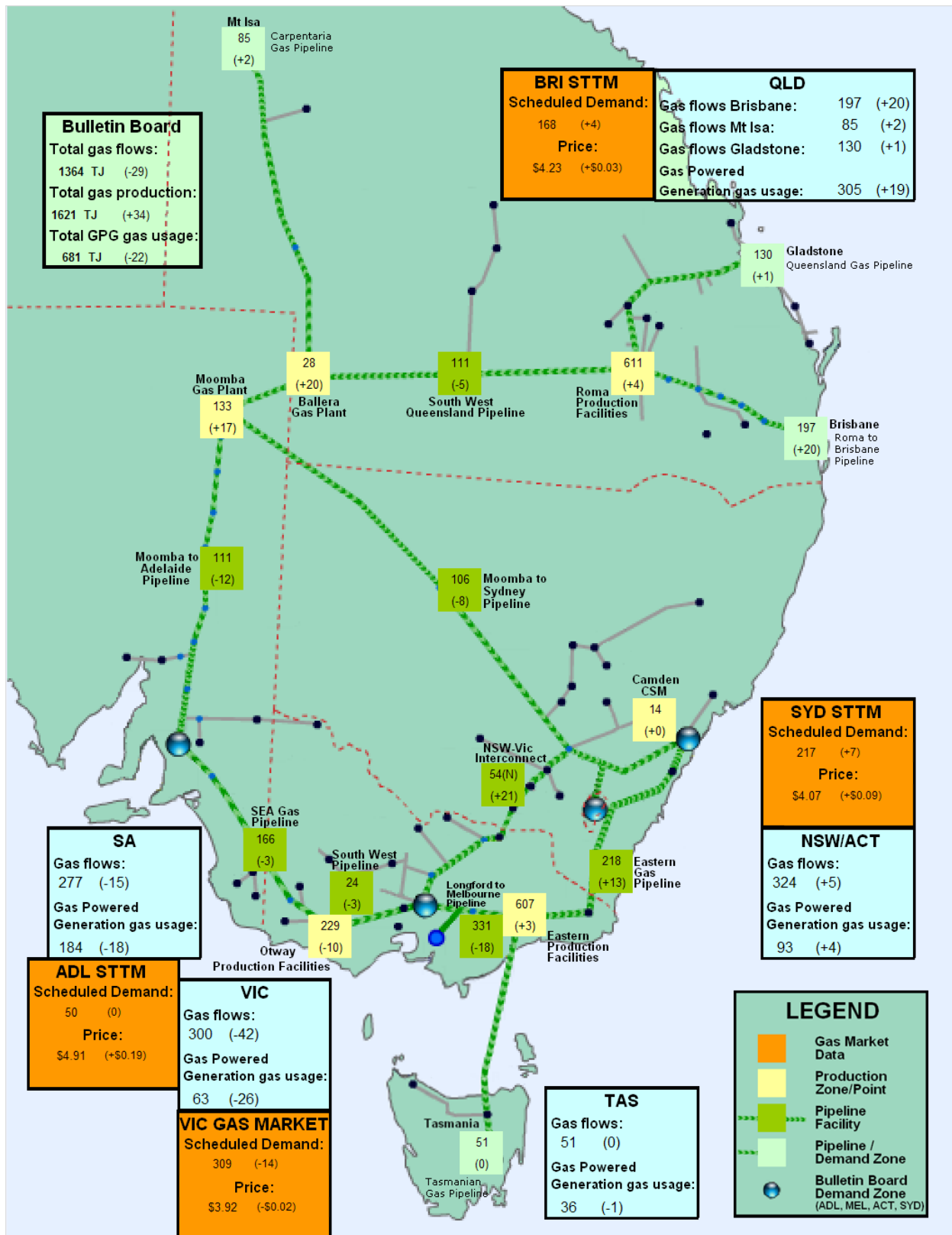
**Figure 4.4 (b): Service payments and commodity payments/charges (\$000)**



## 5 National Gas Bulletin Board

Figure 5.1 shows average daily actual flows for the current week in the aqua boxes<sup>17</sup> from the Bulletin Board (changes from the previous week's average are shown in brackets). Gas powered generation (GPG) gas usage is also shown in each region in the aqua boxes. In the orange boxes average daily scheduled volumes and prices for each gas market are provided.

Figure 5.1: Gas market data (\$/GJ, TJ); Production, Consumption and Pipeline flows (TJ)



<sup>17</sup> Regional Gas Flows: SA = MAP + SEAGAS, VIC = SWP + LMP – negative(NSW-VIC), NSW/ACT = EGP + MSP, TAS = TGP, QLD (Brisbane) = RBP, QLD (Mt Isa) = CGP, QLD (Gladstone) = QGP  
GPG volumes include gas usage that may not show up on Bulletin Board pipeline flows.