

# Electricity Report 2 – 8 August 2015



AUSTRALIAN ENERGY  
REGULATOR

## Introduction

The AER is required to publish the reasons for significant variations between forecast and actual price and is responsible for monitoring activity and behaviour in the National Electricity Market. The Electricity Report forms an important part of this work. The report contains information on significant price variations, movements in the contract market, together with analysis of spot market outcomes and rebidding behaviour. By monitoring activity in these markets, the AER is able to keep up to date with market conditions and identify compliance issues.

## Spot market prices

Figure 1 shows the spot prices that occurred in each region during the week 2 to 8 August 2015. There were two occasions in South Australia and one occasion in Queensland where the spot price exceeded the AER reporting threshold. These are discussed later in this report. 17 negative spot prices were also recorded in South Australia but these were not less than the  $-\$100/\text{MWh}$  reporting threshold.

Figure 1: Spot price by region ( $\$/\text{MWh}$ )

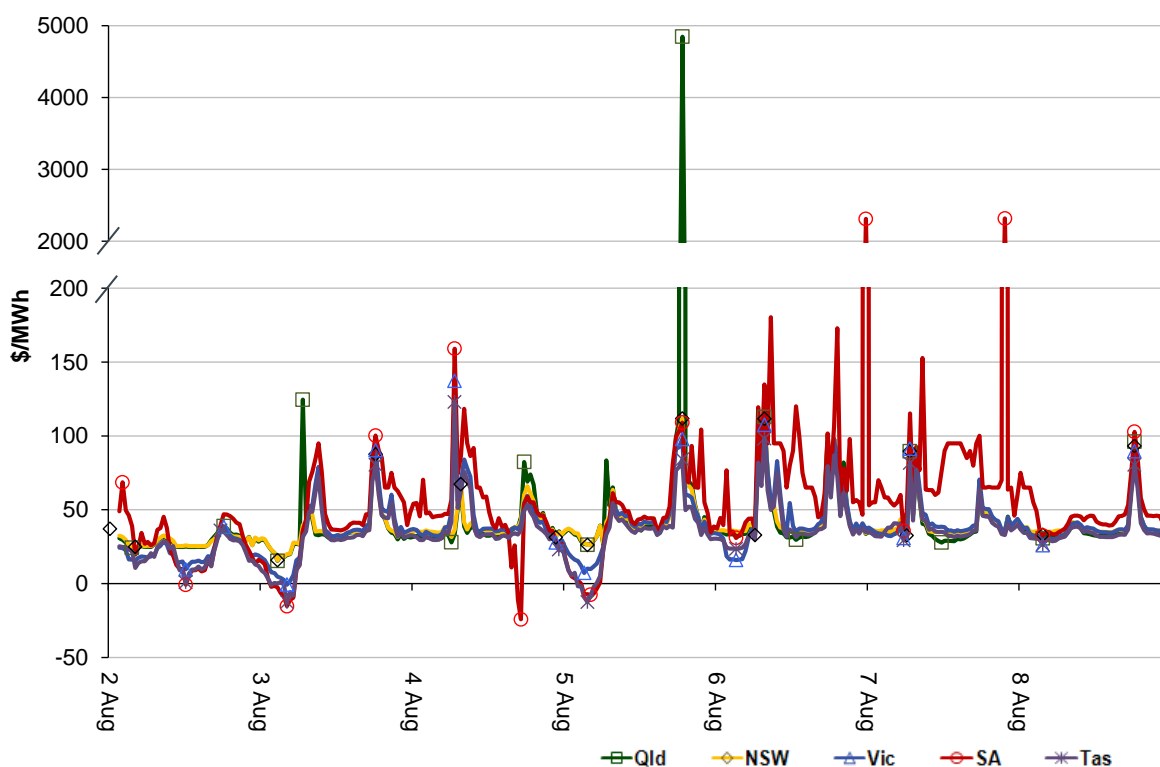
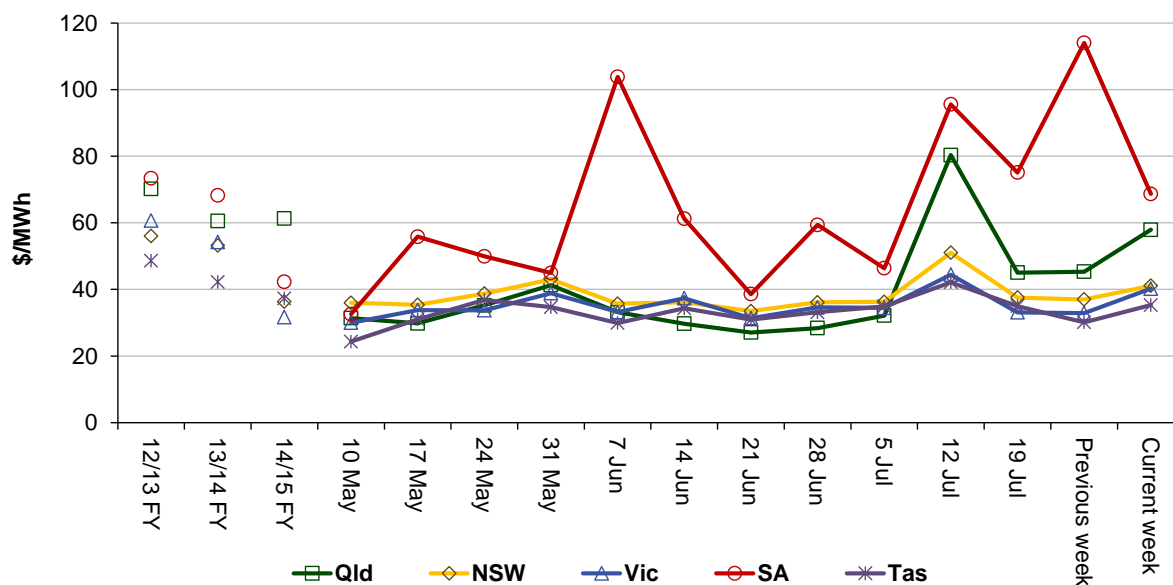


Figure 2 shows the volume weighted average (VWA) prices for the current week (with prices shown in Table 1) and the preceding 12 weeks, as well as the VWA price over the previous 3 financial years.

**Figure 2: Volume weighted average spot price by region (\$/MWh)**



**Table 1: Volume weighted average spot prices by region (\$/MWh)**

Region	Qld	NSW	Vic	SA	Tas
Current week	58	41	40	69	35
14-15 financial YTD	32	41	39	54	34
15-16 financial YTD	50	40	37	79	35

Longer-term statistics tracking average spot market prices are available on the [AER website](#).

## Spot market price forecast variations

The AER is required under the National Electricity Rules to determine whether there is a significant variation between the forecast spot price published by the Australian Energy Market Operator (AEMO) and the actual spot price and, if there is a variation, state why the AER considers the significant price variation occurred. It is not unusual for there to be significant variations as demand forecasts vary and participants react to changing market conditions. A key focus is whether the actual price differs significantly from the forecast price either four or 12 hours ahead. These timeframes have been chosen as indicative of the time frames within which different technology types may be able to commit (intermediate plant within four hours and slow start plant within 12 hours).

There were 157 trading intervals throughout the week where actual prices varied significantly from forecasts. This compares to the weekly average in 2014 of 71 counts and the average in 2013 of 97. Reasons for the variations for this week are summarised in Table 2. Based on AER analysis, the table summarises (as a percentage) the number of times when the actual price differs significantly from the forecast price four or 12 hours ahead and the major reason for that variation. The reasons are classified as availability (which means that there is a change in the total quantity or price offered for generation), demand forecast inaccuracy,

changes to network capability or as a combination of factors (when there is not one dominant reason). An instance where both four and 12 hour ahead forecasts differ significantly from the actual price will be counted as two variations.

**Table 2: Reasons for variations between forecast and actual prices**

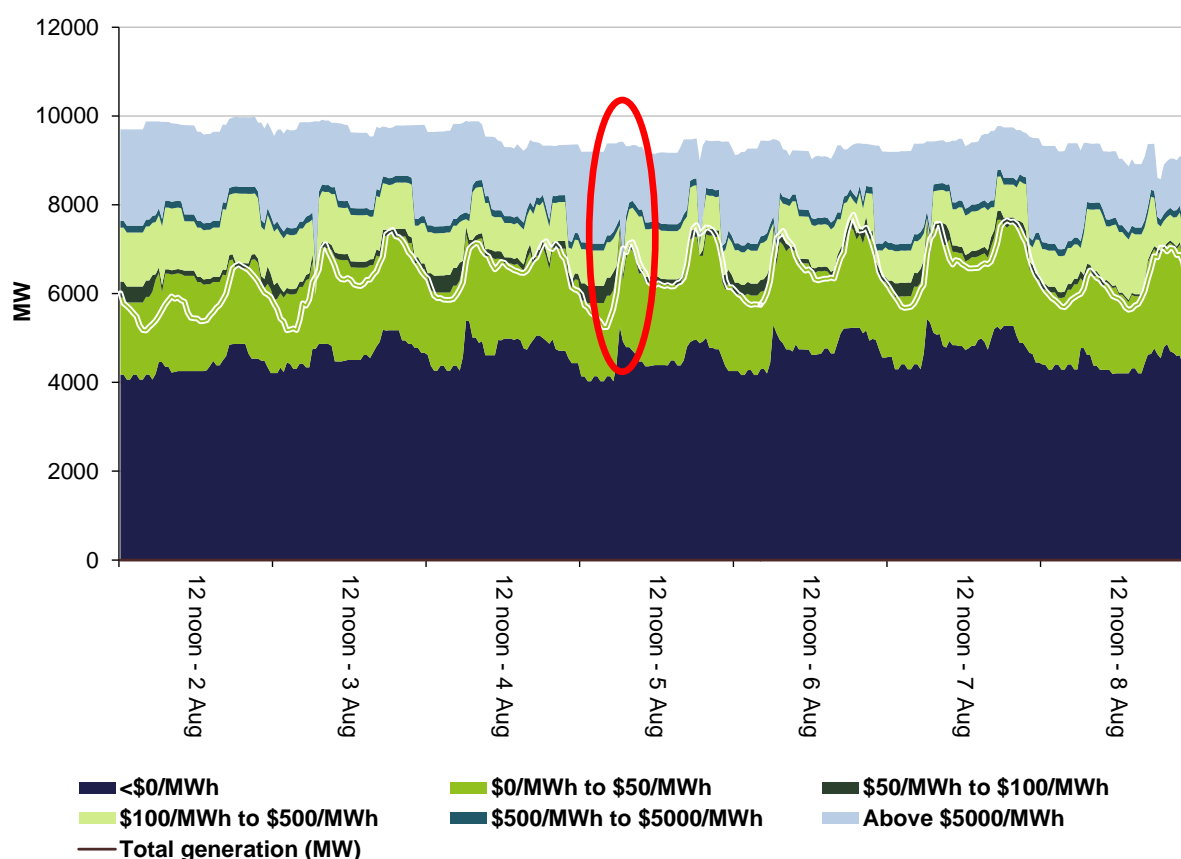
	Availability	Demand	Network	Combination
% of total above forecast	3	39	0	3
% of total below forecast	22	31	0	4

Note: Due to rounding, the total may not be 100 per cent.

## Generation and bidding patterns

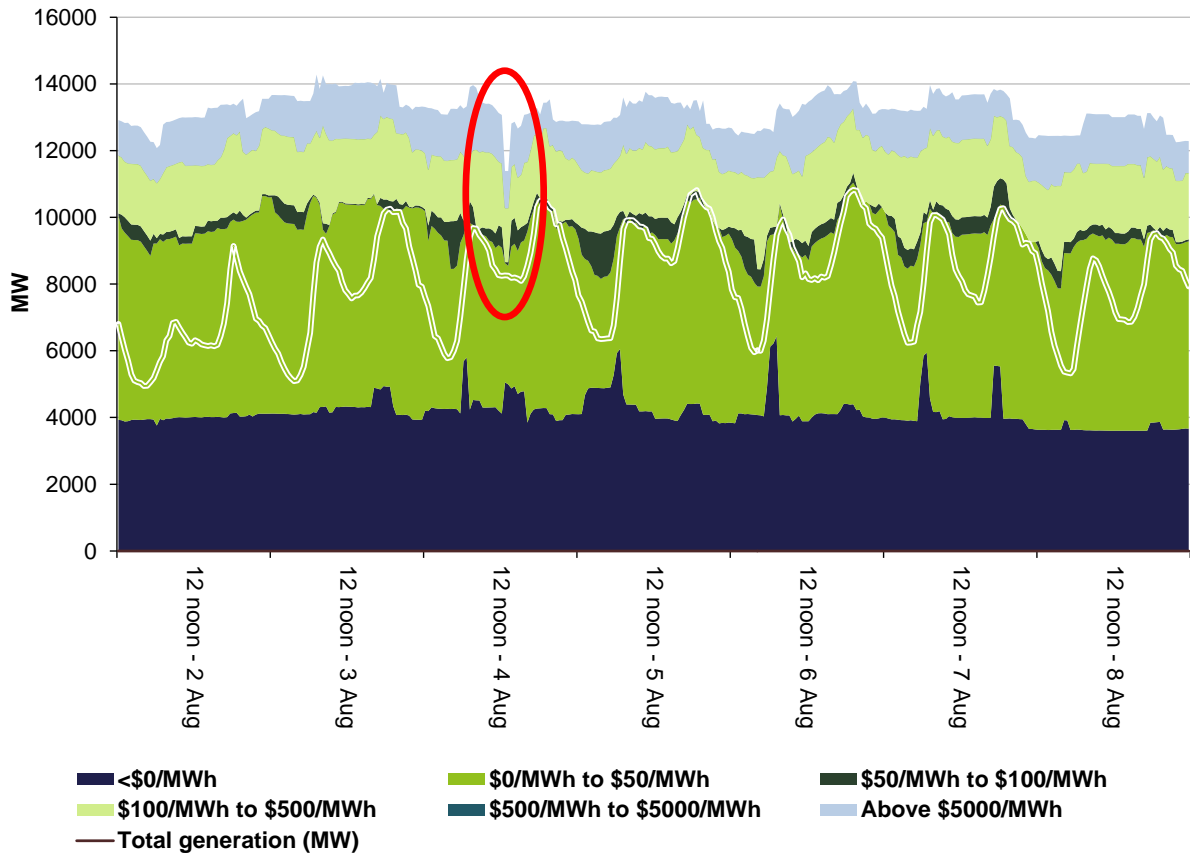
The AER reviews generator bidding as part of its market monitoring to better understand the drivers behind price variations. Figure 3 to Figure 7 show, the total generation dispatched and the amounts of capacity offered within certain price bands for each 30 minute trading interval in each region.

**Figure 3: Queensland generation and bidding patterns**

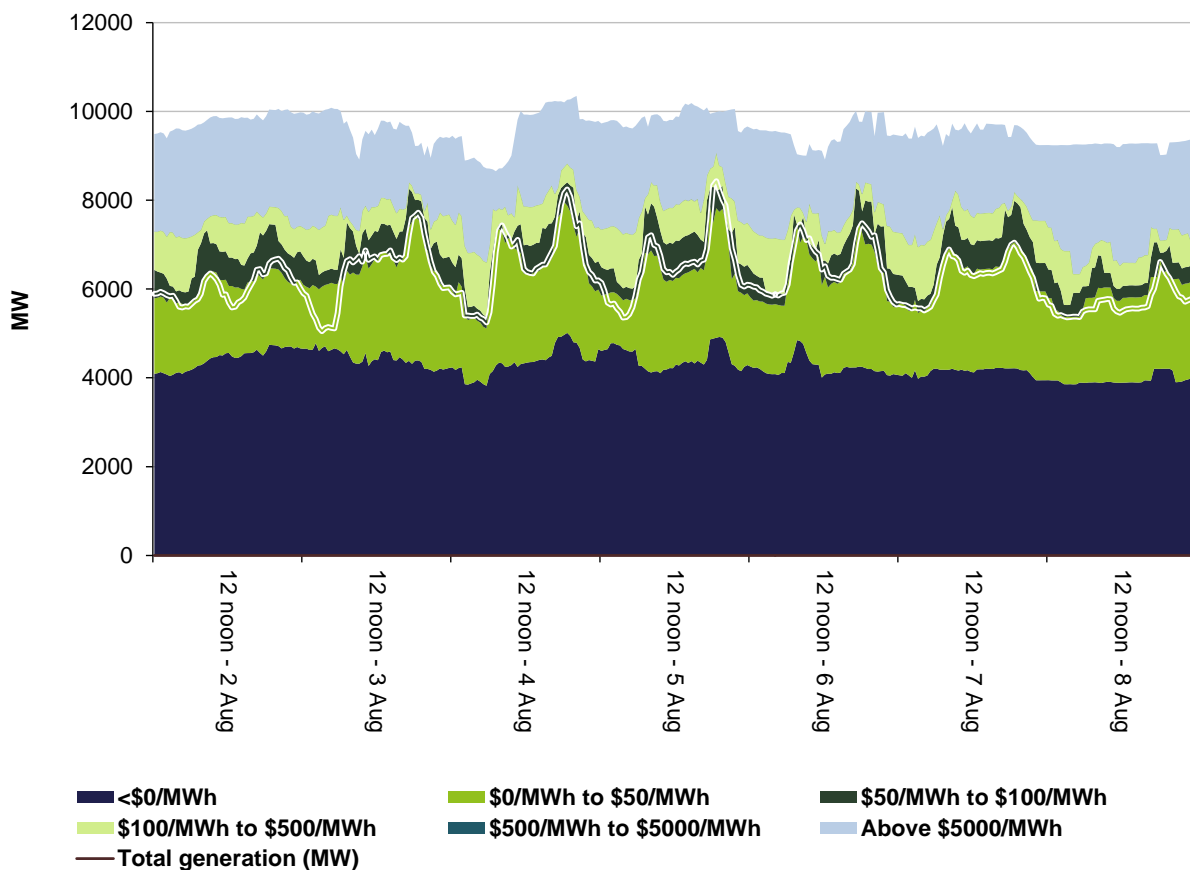


The red ellipse on Figure 3 highlight where rebidding created a price event in Queensland that is discussed later in this report. The short term reduction in available capacity at Eraring in New South Wales, as highlighted the red ellipse on Figure 4, did not result in higher prices.

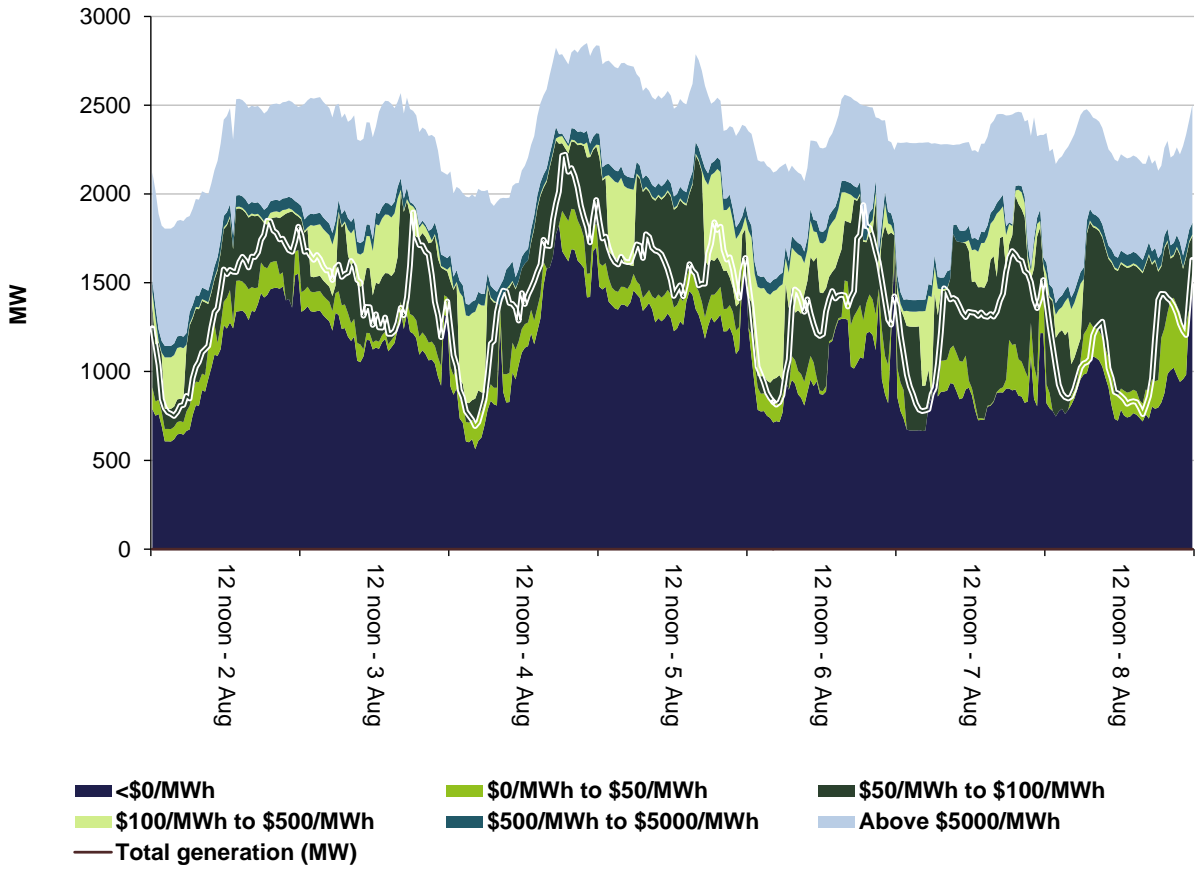
**Figure 4: New South Wales generation and bidding patterns**



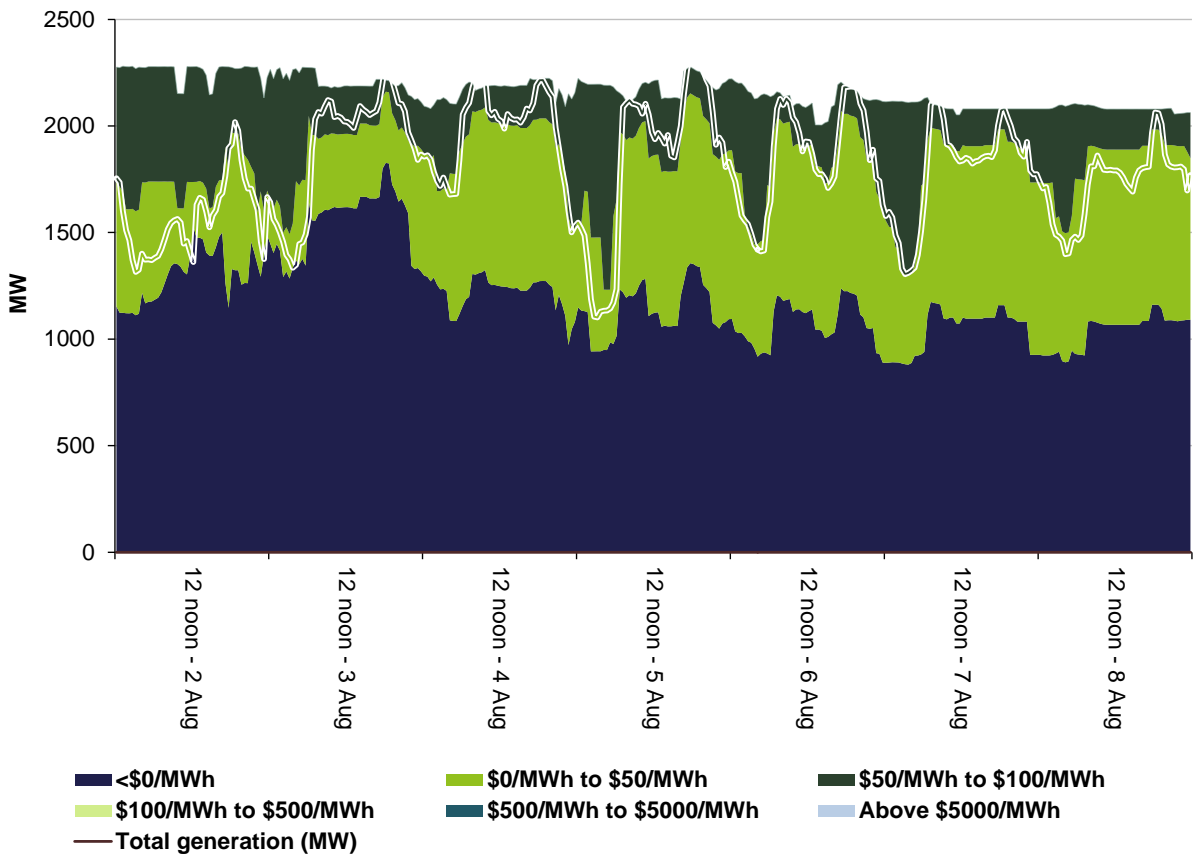
**Figure 5: Victoria generation and bidding patterns**



**Figure 6: South Australia generation and bidding patterns**



**Figure 7: Tasmania generation and bidding patterns**



## Frequency control ancillary services markets

Frequency control ancillary services (FCAS) are required to maintain the frequency of the power system within the frequency operating standards. Raise and lower regulation services are used to address small fluctuations in frequency, while raise and lower contingency services are used to address larger frequency deviations. There are six contingency services:

- fast services, which arrest a frequency deviation within the first 6 seconds of a contingent event (raise and lower 6 second)
- slow services, which stabilise frequency deviations within 60 seconds of the event (raise and lower 60 second)
- delayed services, which return the frequency to the normal operating band within 5 minutes (raise and lower 5 minute) at which time the five minute dispatch process will take effect.

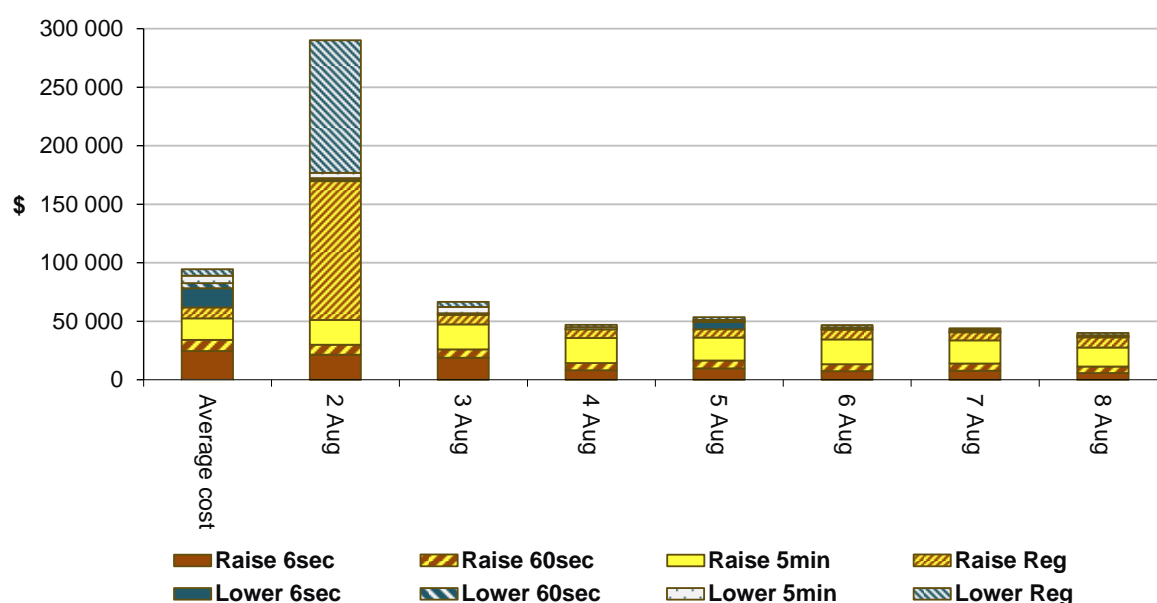
The Electricity Rules stipulate that generators pay for raise contingency services and customers pay for lower contingency services. Regulation services are paid for on a “causer pays” basis determined every four weeks by AEMO.

The total cost of FCAS on the mainland for the week was \$322 000 or less than 1 per cent of energy turnover on the mainland.

The total cost of FCAS in Tasmania for the week was \$265 500 or around 3 per cent of energy turnover in Tasmania.

Figure 8 shows the daily breakdown of cost for each FCAS for the NEM, as well as the average cost since the beginning of the previous financial year.

**Figure 8: Daily frequency control ancillary service cost**



At 10.50 pm and 10.55 pm Basslink was in the “No-Go” zone meaning that FCAS could not be transferred across it. At the same time the Automatic Generation Control on all but one generator in Tasmania was suspended, due to a frequency event, this resulted in a shortage of regulations services. The price of Raise and Lower regulations services exceeded

\$13 100/MW for both 10.50 pm and 10.55 pm before the AGC suspension was lifted and price returned to previous levels.

## Detailed market analysis of significant price events

We provide more detailed analysis of events where the spot price was greater than three times the weekly average price in a region and above \$250/MWh or was below -\$100/MWh.

### Queensland

There was one occasion where the spot price in Queensland was greater than three times the Queensland weekly average price of \$58/MWh and above \$250/MWh.

Wednesday, 5 August

**Table 3: Price, Demand and Availability**

Time	Price (\$/MWh)			Demand (MW)			Availability (MW)		
	Actual	4 hr forecast	12 hr forecast	Actual	4 hr forecast	12 hr forecast	Actual	4 hr forecast	12 hr forecast
7 pm	4847.38	100.87	109.82	7233	7009	7165	9385	9497	9477

Demand was 224 MW higher than forecast four hours ahead and available capacity was close to forecast. Flows were being forced out of Queensland and into New South Wales (counter-price) by network limitations affecting QNI and Terranora but these were lower than was forecast four hours ahead.

**Table 4: Rebids for the 7 am**

Submit time	Time effective	Participant	Station	Capacity rebid (MW)	Price from (\$/MWh)	Price to (\$/MWh)	Rebid reason
6.28 pm	6.35 pm	Stanwell Corporation	Stanwell, Tarong	170	<53	13 800	1830A material change in QNI flow DI1830
6.33 pm	6.40 pm	CS Energy	Gladstone	220	<300	13 800	1831A interconnector constraint-QNI binding north-SL
6.33 pm	6.40 pm	CS Energy	Wivenhoe	250	309	13 800	1831A interconnector constraint-QNI binding north-SL
6.44 pm	6.55 pm	CS Energy	Gladstone	140	<55	13 800	1843A interconnector constraint-QNI binding GPS 3&4 constrained-SL
6.46 pm	6.55 pm	Stanwell Corporation	Kareeya, Barron, Tarong	104	<27	13 800	1845A material change in QNI import limit DI1835
6.47 pm	6.55 pm	ERM Power	Oakey	21	601	13 351	1847A change in QLD price 5M PD VS 30MPD
6.48 pm	6.55 pm	Alinta Energy	Braemar A	-164	332	N/A	1845~F~avoid uneconomic start~

Submit time	Time effective	Participant	Station	Capacity rebid (MW)	Price from (\$/MWh)	Price to (\$/MWh)	Rebid reason
6.52 pm	7 pm	Arrow Energy	Braemar 2	-160	335	N/A	1850A QLD price higher than forecast. avoid uneconomic start SL
6.52 pm	7 pm	ERM Power	Oakey	-150	<295	N/A	1852P unit maintenance

As the above rebids became effective the dispatch price increased. The price increased from \$131/MWh at 6.30 pm to \$295/MWh at 6.35 pm and stayed there until the price increased again at 6.50 pm to \$601/MWh. The last two dispatch intervals were priced at the cap following the withdrawal of low-priced capacity.

### South Australia

There were two occasions where the spot price in South Australia was greater than three times the South Australia weekly average price of \$58/MWh and above \$250/MWh.

### Friday, 7 August

**Table 5: Price, Demand and Availability**

Time	Price (\$/MWh)			Demand (MW)			Availability (MW)		
	Actual	4 hr forecast	12 hr forecast	Actual	4 hr forecast	12 hr forecast	Actual	4 hr forecast	12 hr forecast
Midnight	2310.00	94.79	64.99	1877	1927	1930	2269	2309	2304

Demand and available capacity were close to that forecast four hours ahead.

**Table 6: Rebids for midnight**

Submit time	Time effective	Participant	Station	Capacity rebid (MW)	Price from (\$/MWh)	Price to (\$/MWh)	Rebid reason
11.38 pm	11.45 pm	Alinta Energy	Northern	256	<95	13 334	2335-A~dispatch \$94.79 V 5PD \$64.99~
11.42 pm	11.50 pm	Origin Energy	Ladbroke Grove	-43	95	N/A	2341A avoid uneconomic start - avoid short run SL
11.43 pm	11.50 pm	AGL Energy	Torrens Island	95	<65	>13 500	2340-A~040 chg in AEMO disp~45 price increase vs PD SA \$300 V \$64

Demand increase from 1660 MW at 11.25 pm to 1973 MW at 11.45 pm due to peak hot water load. This, combined with the above rebids, saw the dispatch price increase from \$95/MWh at 11.40 pm to \$300/MWh at 11.45 pm and then to \$13 334/MWh at 11.50 pm.

At 11.55 pm there was a 188 MW decrease in demand (mainly due to an increase in non-scheduled generation) and the dispatch price fell to \$34/MWh.



**Table 7: Price, Demand and Availability**

Time	Price (\$/MWh)			Demand (MW)			Availability (MW)		
	Actual	4 hr forecast	12 hr forecast	Actual	4 hr forecast	12 hr forecast	Actual	4 hr forecast	12 hr forecast
10 pm	2315.18	94.81	94.99	1970	2013	1936	2406	2412	2408

Demand and capacity were close to forecast four hours ahead.

**Table 8: Rebids for 10 pm**

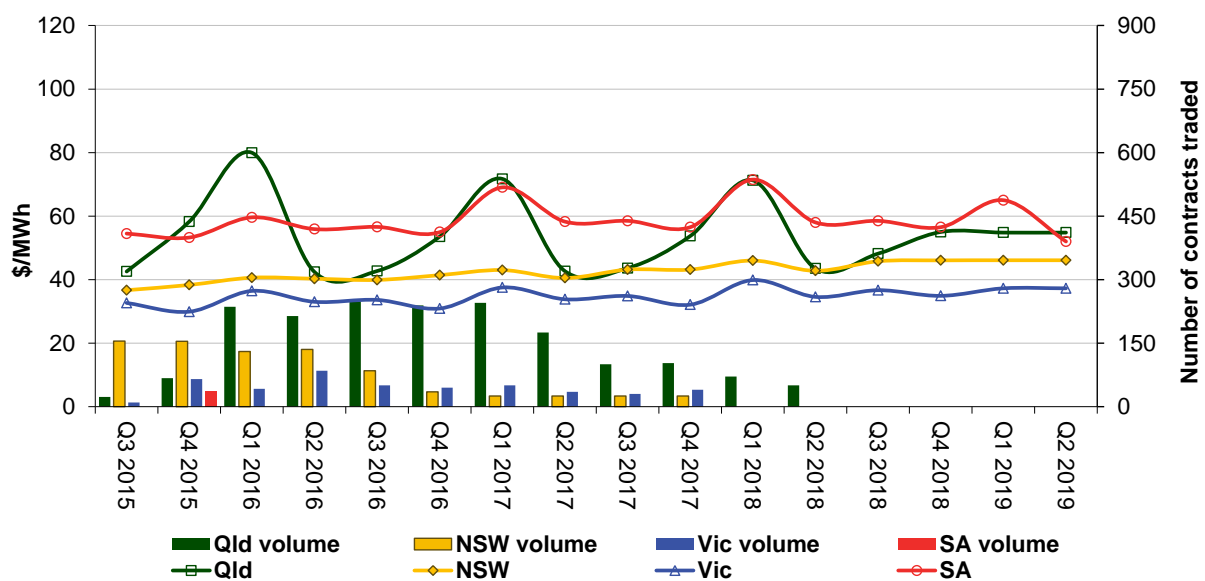
Submit time	Time effective	Participant	Station	Capacity rebid (MW)	Price from (\$/MWh)	Price to (\$/MWh)	Rebid reason
9.48 pm	9.55 pm	AGL Energy	Torrens Island	435	<125	>13 500	2145-A~040 chg in AEMO disp~44 price decrease vs PD SA \$29.8

When AGL’s rebid became effective at 9.55 pm the price increased to \$13 500/MWh from \$65/MWh at 9.50 pm. In response to the high price around 300 MW of high priced capacity was rebid to below zero by Alinta and Energy Australia which resulted in the dispatch price falling to \$41/MWh at 10 pm.

**Financial markets**

Figure 9 shows for all mainland regions the prices for base contracts (and total traded quantities for the week) for each quarter for the next four financial years.

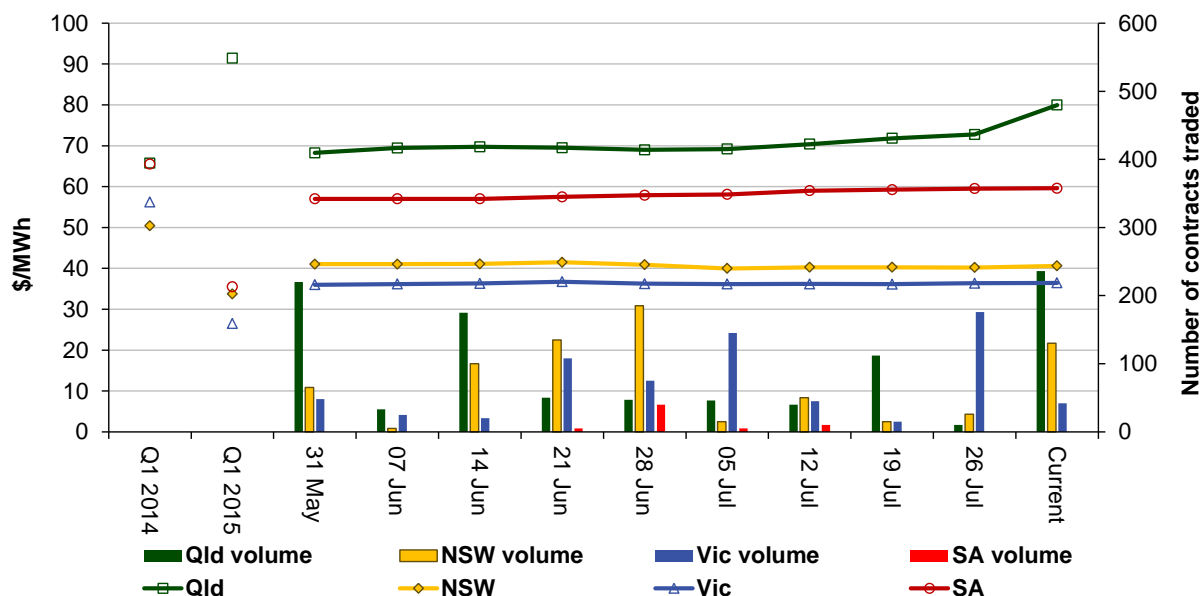
**Figure 9: Quarterly base future prices Q3 2015 – Q1 2019**



Source. ASXEnergy.com.au

Figure 10 shows how the price for each regional Quarter 1 2016 base contract has changed over the last 10 weeks (as well as the total number of trades each week). The closing quarter 1 2014 and quarter 1 2015 prices are also shown. The AER notes that data for South Australia is less reliable due to very low numbers of trades.

**Figure 10: Price of Q1 2016 base contracts over the past 10 weeks (and the past 2 years)**



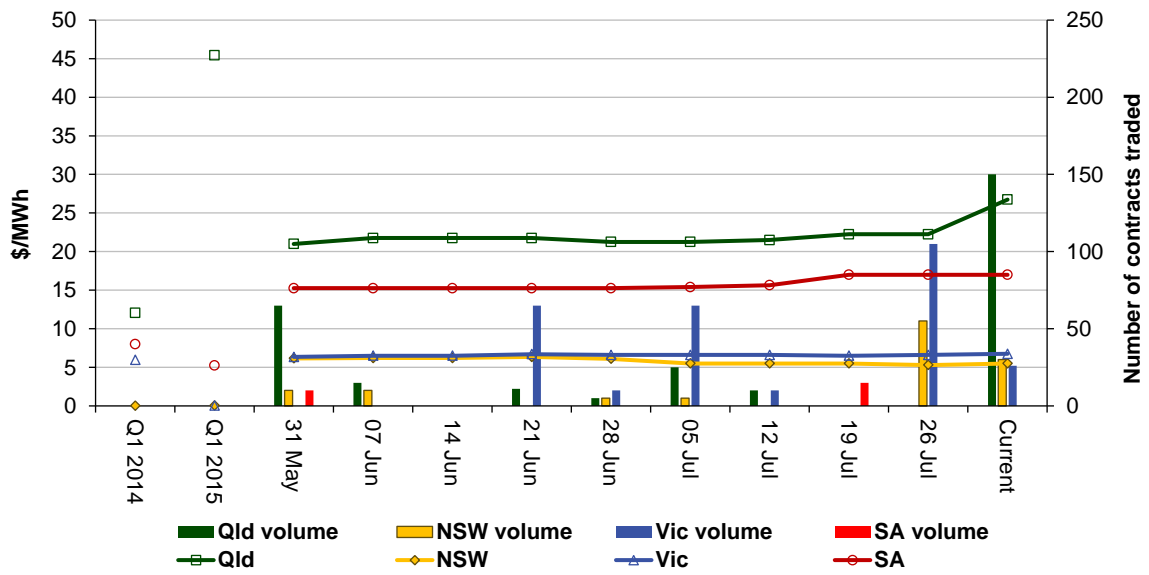
Note. Base contract prices are shown for each of the current week and the previous 9 weeks, with average prices shown for yearly periods 1 and 2 years prior to the current year.

Source. ASXEnergy.com.au

Prices of other financial products (including longer-term price trends) are available in the [Performance of the Energy Sector](#) section of our website.

Figure 11 shows how the price for each regional Quarter 1 2016 cap contract has changed over the last 10 weeks (as well as the total number of trades each week). The closing quarter 1 2014 and quarter 1 2015 prices are also shown.

Figure 11: Price of Q1 2016 cap contracts over the past 10 weeks (and the past 2 years)



Source. ASXEnergy.com.au

Australian Energy Regulator

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