

# Electricity Report

16 to 22 November 2014



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 16 to 22 November 2014. The spot price in Queensland reached \$1146/MWh at 6.30 pm on 18 November. On 19 November the Queensland spot price reached \$2380/MWh, \$1966/MWh and \$2328/MWh at 2 pm, 3 pm and 4.30 pm respectively. On 21 November the Queensland spot price reached \$264/MWh, \$299/MWh and \$296/MWh at 4 pm, 4.30 pm and 5 pm respectively, while in New South Wales it reached \$271/MWh at 4 pm and \$300/MWh at 4.30 pm and 5 pm. On 22 November the Queensland spot price reached \$272/MWh at 5 pm.

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

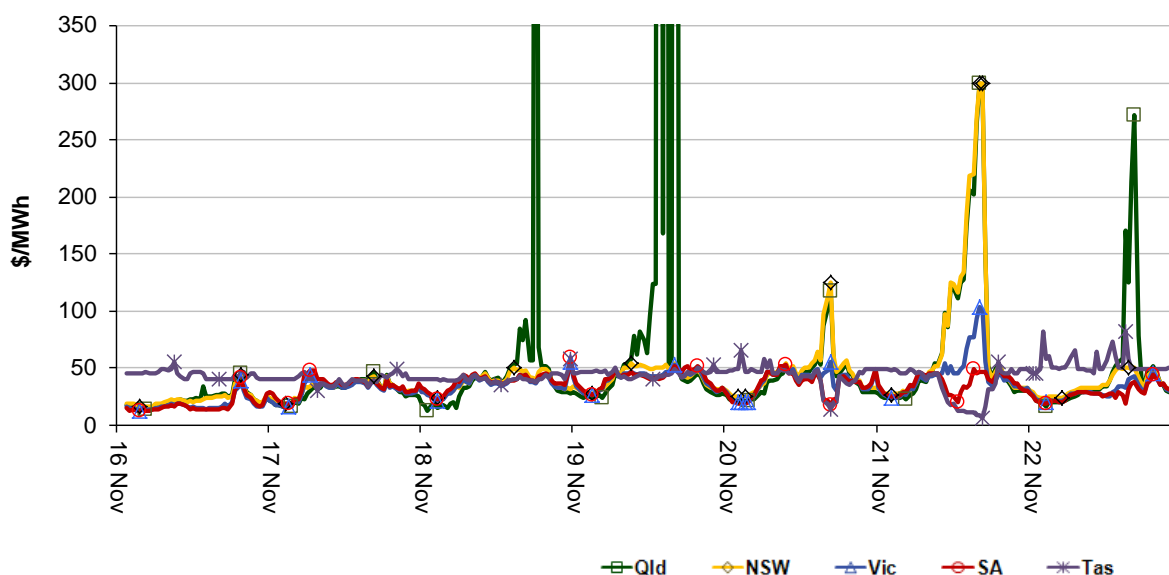
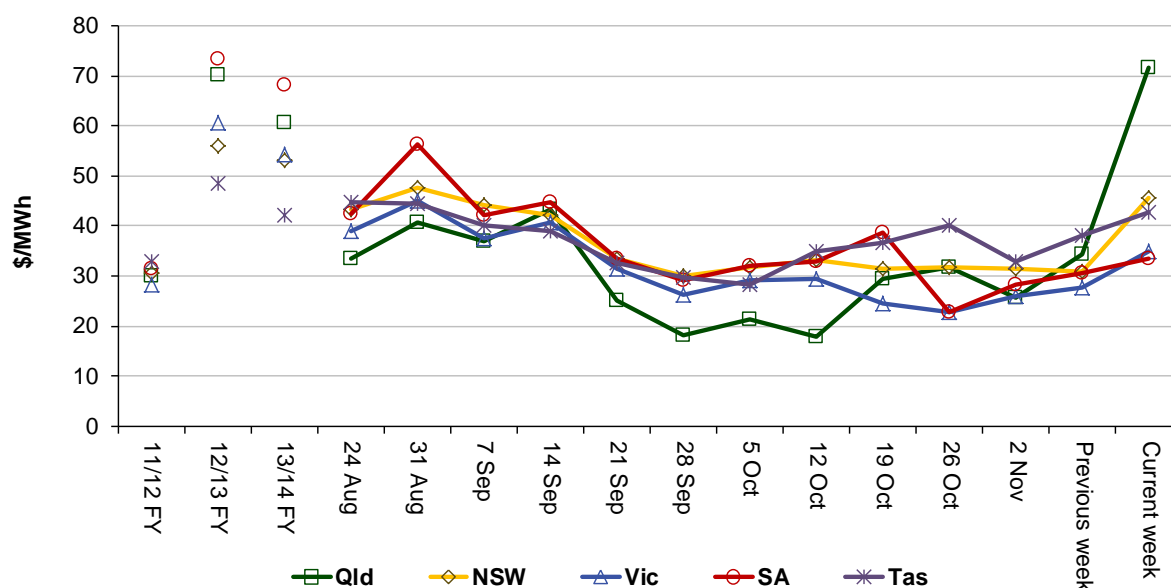


Figure 2 shows the volume weighted average (VWA) prices for the current week (with prices shown in Table 1) and the preceding 12 weeks, as well as the VWA price over the previous 3 financial years.

**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
<b>Current week</b>	72	46	35	34	43
<b>13-14 financial YTD</b>	60	54	53	65	45
<b>14-15 financial YTD</b>	32	38	34	42	36

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 121 trading intervals throughout the week where actual prices varied significantly from forecasts. This compares to the weekly average in 2013 of 97 counts and the average in 2012 of 60. 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**

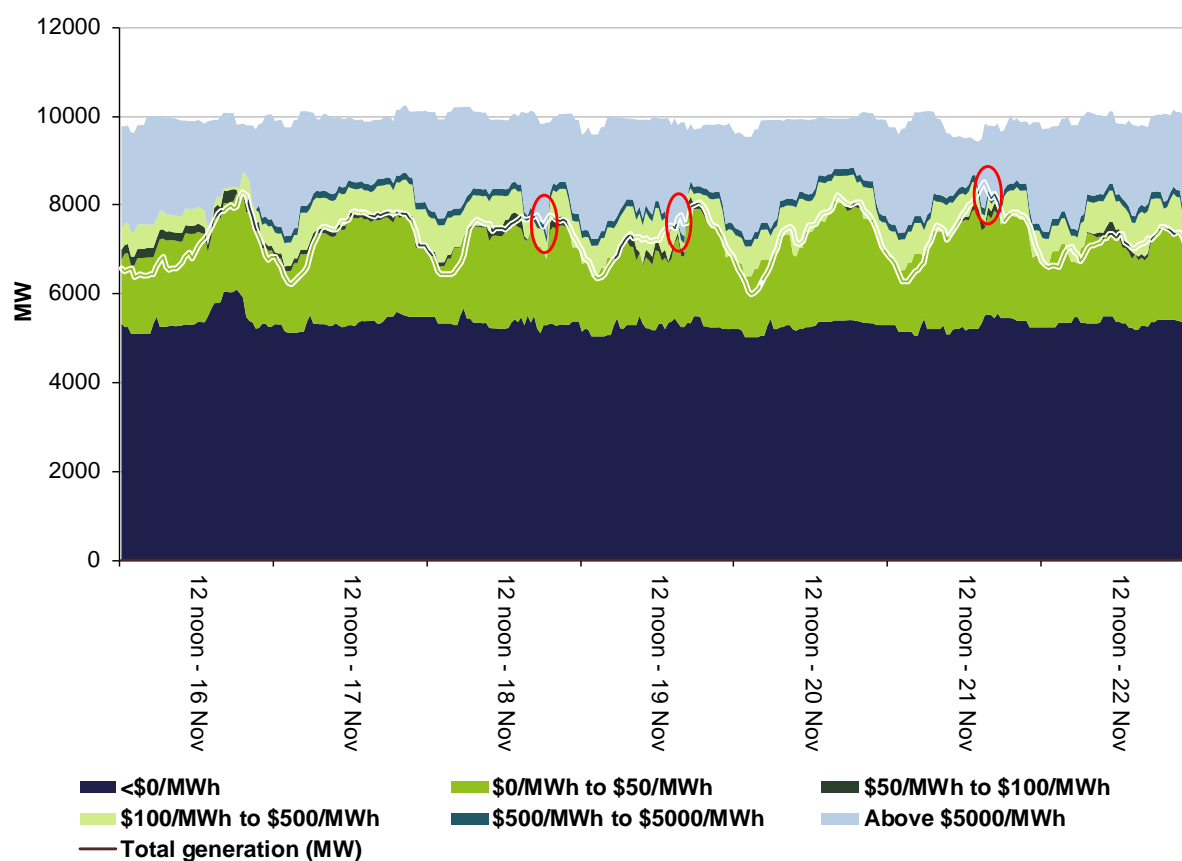
	Availability	Demand	Network	Combination
% of total above forecast	7	38	0	1
% of total below forecast	43	8	0	4

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

## Generation and bidding patterns

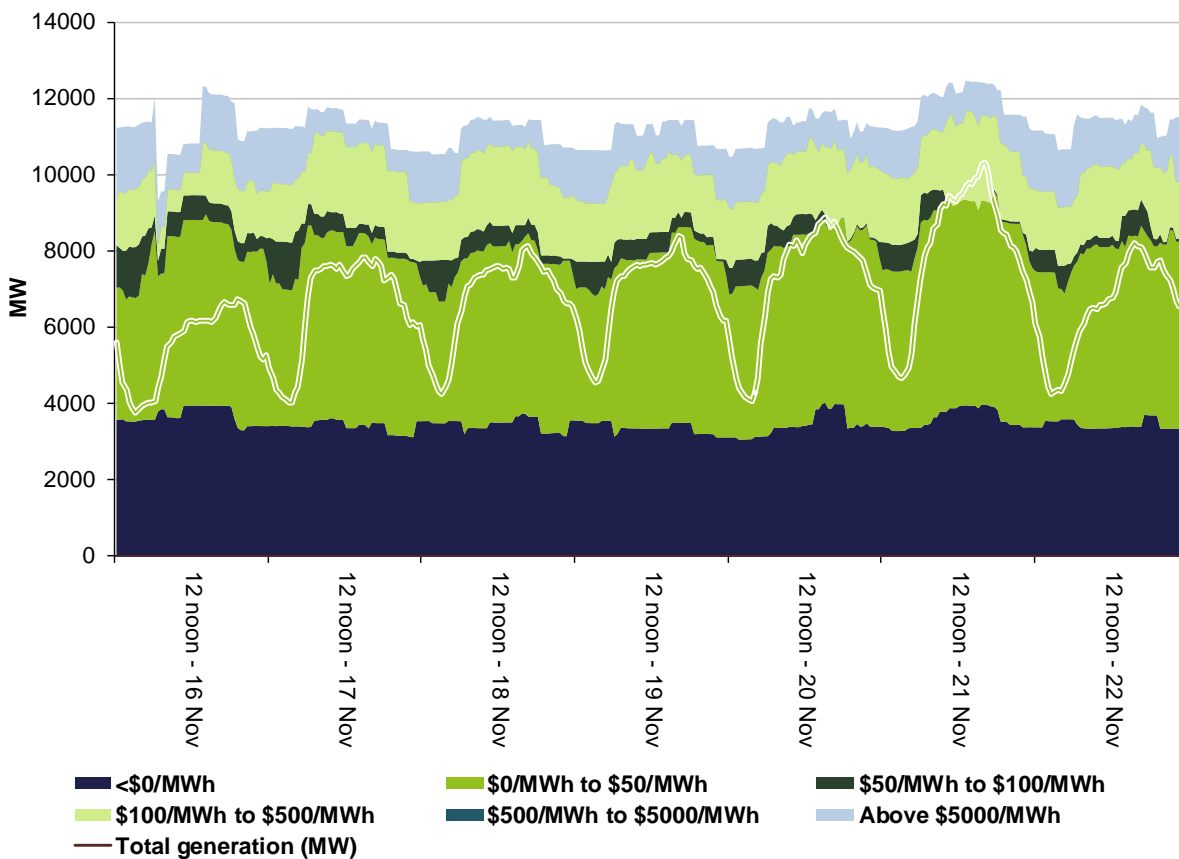
The AER reviews generator bidding as part of its market monitoring to better understand the drivers behind price variations. Figures 3 to 7 show, the total generation dispatched and the amounts of capacity offered within certain price bands for each 30 minute trading interval in each region.

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

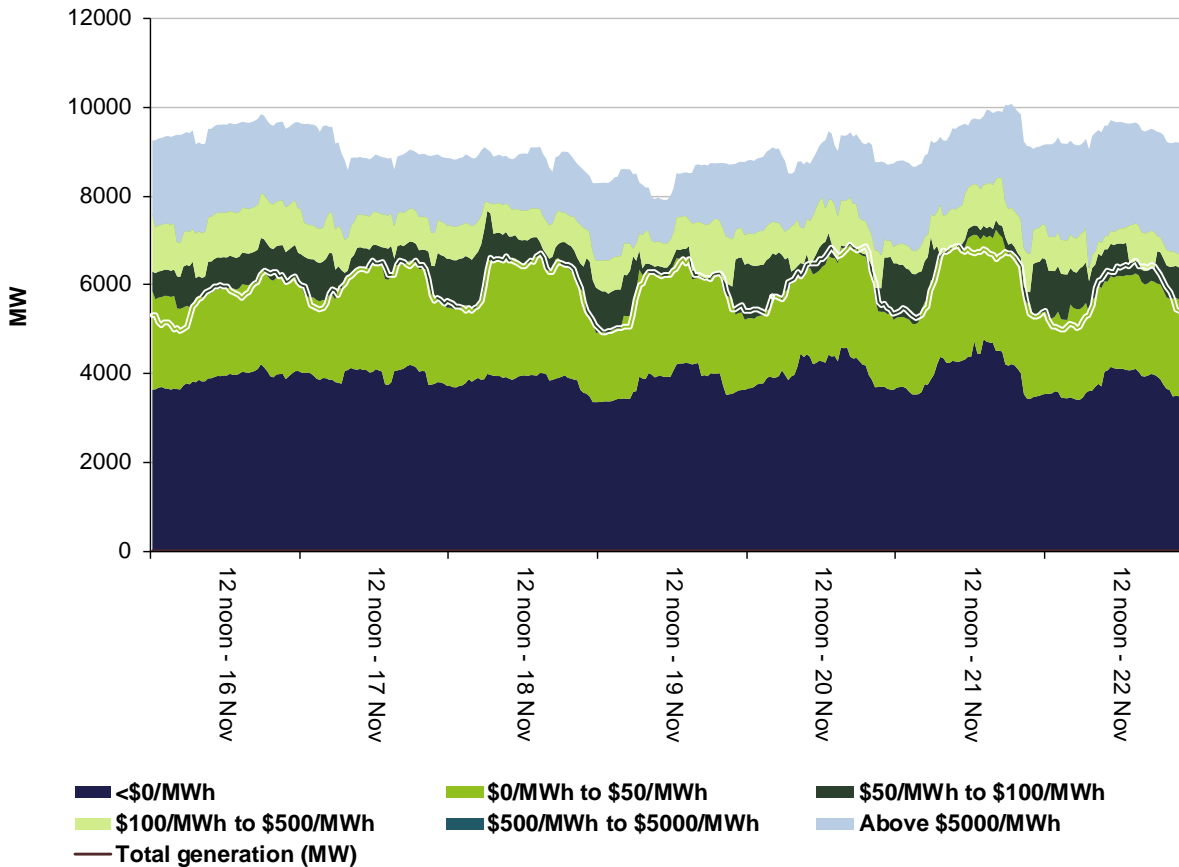


The red circles highlight some of the rebidding discussed in the ‘detailed market analysis’ section below.

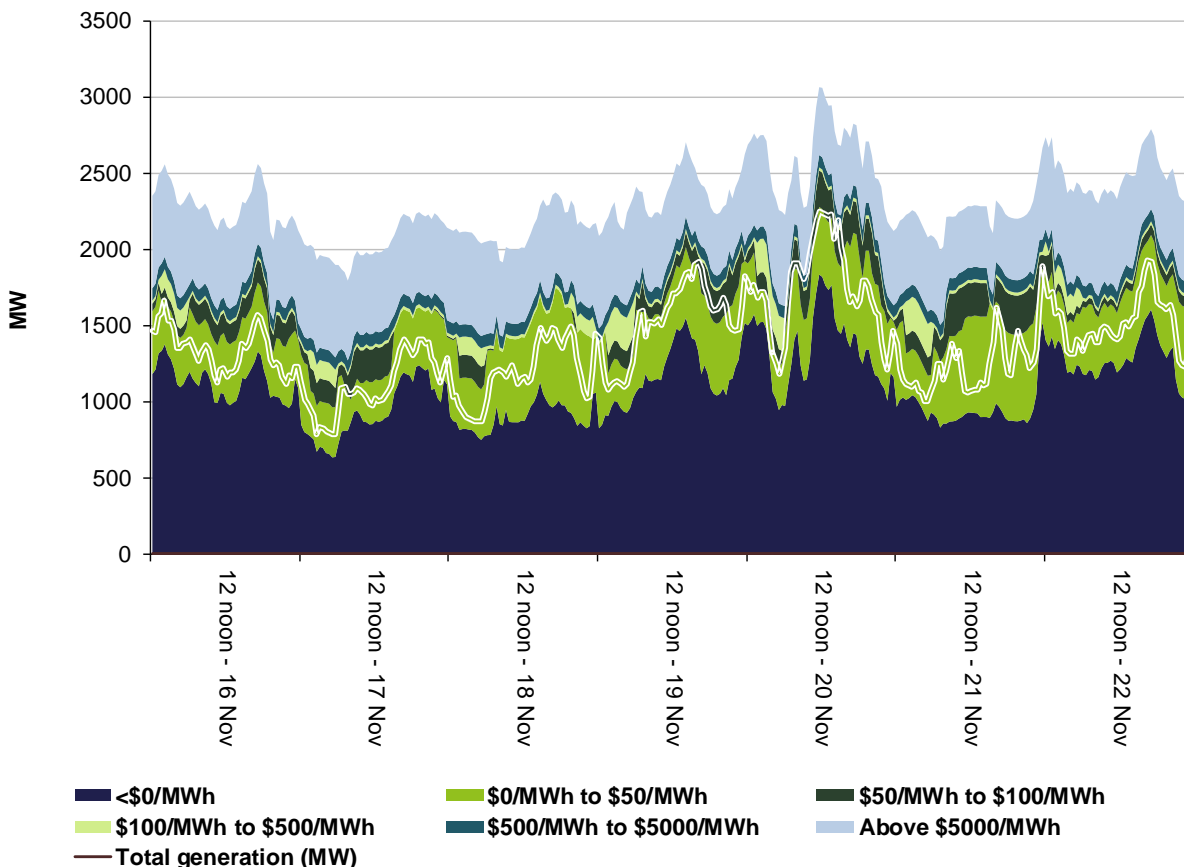
**Figure 4: New South Wales generation and bidding patterns**



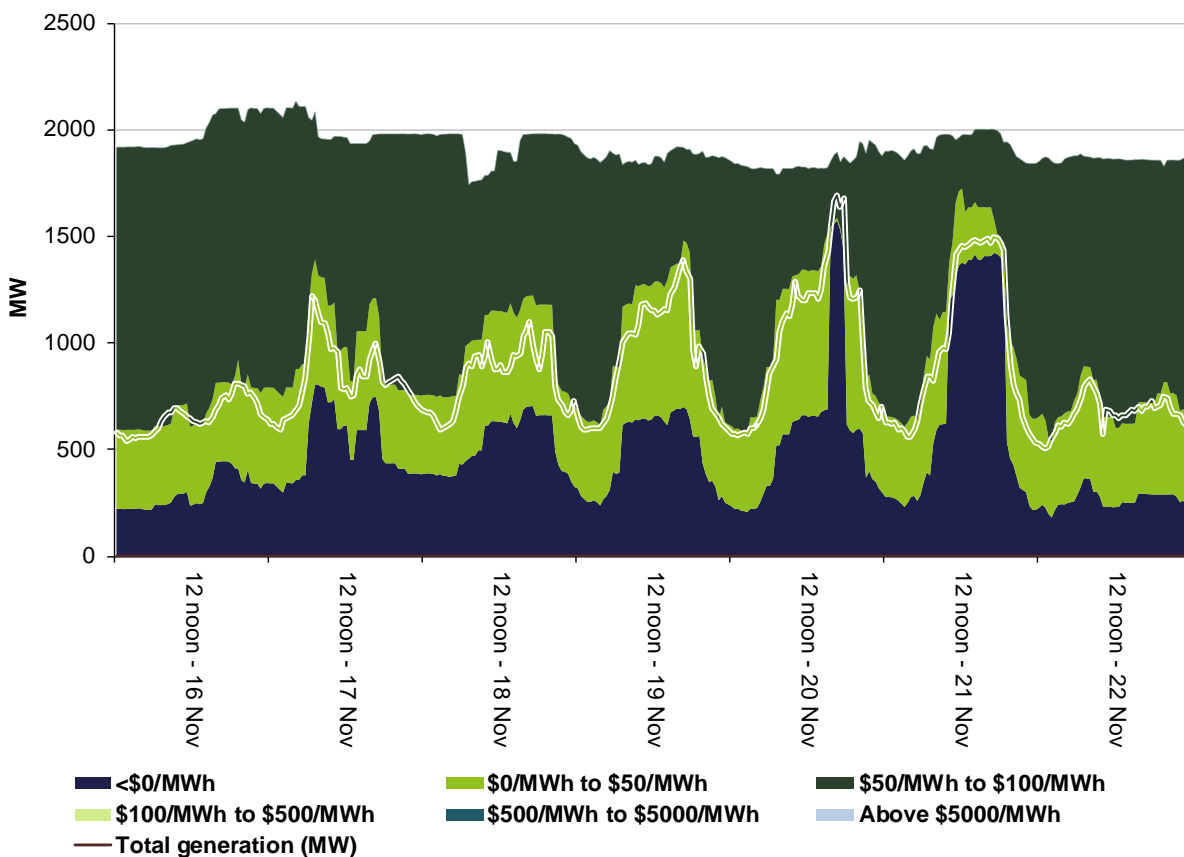
**Figure 5: Victoria generation and bidding patterns**



**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.

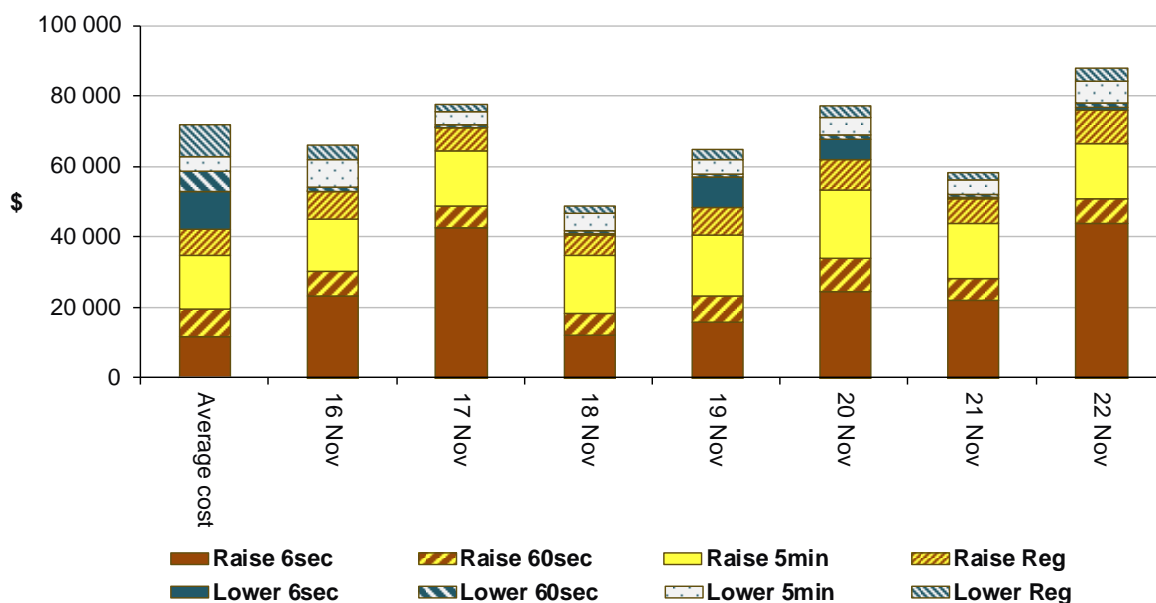
The Electricity Rules stipulate that generators pay for raise contingency services and customers pay for lower contingency services. Regulation services are paid for on a “causer pays” basis determined every four weeks by AEMO.

The total cost of FCAS on the mainland for the week was \$294 500 or less than 1 per cent of energy turnover on the mainland.

The total cost of FCAS in Tasmania for the week was \$185 000 around 2.5 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**



## 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.

There were eight occasions where the spot price in Queensland was greater than three times the Queensland weekly average price of \$72/MWh and above \$250/MWh.

There were three occasions where the spot price in New South Wales was greater than three times the New South Wales weekly average price of \$46/MWh and above \$250/MWh.

### Tuesday, 18 November

#### Queensland

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
6:30 PM	1146.24	34.40	31.57	7410	7191	7208	9831	10 176	10 302

At the time of the high price demand was around 220 MW higher than forecast four hours ahead and availability was 345 MW below that forecast four hours ahead.

At 6.15 pm, effective from 6.25 pm, Stanwell Corporation rebid 761 MW of available capacity across its portfolio from below \$290/MWh to between \$6450/MWh and the price cap. The reason given was “18:15a material change in QLD generation: oakey DI1815”.

At 6.22 pm, effective for the 6.30 pm dispatch interval, Callide Power Trading rebid 30 MW of capacity at Callide C from \$13/MWh to the price cap. The reason given was “1820A price above PD – SL”.

With all low priced capacity either ramp rate limited or fully dispatched, the 5-minute price increased from around \$48/MWh at 6.25 pm to \$6666.66/MWh at 6.30 pm.

There was no other significant rebidding.

Wednesday, 19 November

Queensland

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
2:00 PM	2379.64	120.00	53.33	7563	7481	7318	9955	9936	10 138
3:00 PM	1965.95	164.98	55.99	7528	7488	7360	9952	9936	10 138
4:30 PM	2327.94	52.85	50.36	7455	7448	7491	9867	9952	10 131

During each of the high priced trading intervals, actual demand and generation availability were close to that forecast 4 hours ahead.

### 2 pm trading interval

At 1.43 pm, effective from 1.50 pm, Callide Power Trading rebid 100 MW of available capacity at its Callide C power station from \$13/MWh to the price cap. The reason given was “1342A constraint QNI binding”.

Over two rebids at 1.44 pm and 1.47 pm, effective from 1.55 pm, CS Energy rebid a total of 245 MW of available capacity across its portfolio from below \$30/MWh up to or near the price cap. The reason given was “interconnector constraint-QNI binding-SL”.

At 1.51 pm, effective at 2 pm, Stanwell Corporation rebid 495 MW of available capacity across its portfolio from below \$300/MWh up to or near the price cap. The reason given was “1349 QLD price higher than fcast (\$120V\$298 1355 DI)”.

At 1.52 pm, effective at 2 pm, Callide Power Trading rebid a further 40 MW of available capacity from \$13/MWh to the price cap. The reason given was “1350A chnge in pd forecast IC limit SL”.

As a result of these rebids the 5-minute price increased to \$299/MWh at 1.55 pm before reaching the price cap at 2 pm.

There was no other significant rebidding.

### 3 pm trading interval

At 2.40 pm, effective from 2.50 pm, Callide Power Trading rebid 100 MW of available capacity at Callide C from \$13/MWh to the price cap. The reason given was “1439A constraint QNI binding”.



At 2.42 pm, effective from 2.50 pm, CS energy rebid 90 MW of available capacity at Callide B and Gladstone from below \$30/MWh to the price cap. The reason given was “1442A interconnector constraint –QNI binding-SL”.

At 2.43 pm, effective from 2.50 pm, Stanwell Corporation rebid 495 MW of available capacity from across its portfolio from below \$300/MWh up to or near the price cap. The reason given was “1445A predispatch demand materially different that actual SL”.

At 2.47 pm, effective from 2.55 pm, Millmerran Energy rebid 20 MW of available capacity from \$7/MWh to the price cap. The reason given was “14:46 A change in qld rrp higher than PD”

At 2.49 pm, effective from 2.55 pm, a Callide Power Trading rebid shifted another 40 MW of available capacity at Callide C from \$13/MWh to the price cap. The reason given was “1447A RRP higher than PD forecast QLD”

As a result of these rebids the 5-minute price increased from \$57/MWh at 2.45 pm to \$309/MWh at 2.50 pm, and then to \$10 900/MWh at 2.55 pm.

There was no other significant rebidding.

#### **4.30 pm trading interval**

At 3.59 pm, effective from 4.10 pm, Stanwell rebid 605 MW across its portfolio from below \$300/MWh to the price cap. The reason given was “1600A material change in QNI flow DI1600”.

At 4.11 pm, effective from 4.20 pm, Callide Power Trading rebid 72 MW of available capacity at Callide C from \$13/MWh to the price cap. The reason given was “1610A constraint QNI forecast to bind”.

At 4.12 pm, effective from 4.20 pm, CS Energy rebid 90 MW of available capacity at Callide B and Gladstone from below \$25/MWh to the price cap. At 4.18 pm, effective from 4.25 pm, 150 MW of its available capacity at Gladstone was rebid from below \$25/MWh to the price cap. The reason given was “interconnector constraint-QNI forecast to bind-SL”

At 4.19 pm, effective from 4.25 pm, Millmerran Energy Trader rebid 20 MW of available capacity at Millmerran from below \$7/MWh to the price cap. The reason given was “16:17 A change in QLD PD QNI flow –SL”.

At 4.21 pm, effective for 4.30 pm, Callide Power Trading rebid another 35 MW of available capacity at Callide C from \$13/MWh to the cap. The reason given was “1619A chg 5MIN PD QNI flow – SL”.

At 4.19 pm, effective for 4.30 pm, Stanwell Corporation rebid a further 151 MW of its capacity across its portfolio from below \$23/MWh to the cap. The reason given was “1620A material change in QNI flow DI1620”.

As a result of these rebids the dispatch price increased from \$58/MWh at 4.20 pm to \$247/MWh at 4.25 pm and then to the price cap at 4.30 pm.

There was no other significant rebidding.

Friday, 21 November

**New South Wales**

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
<b>4:00 PM</b>	270.66	118.82	264.08	11 725	11 578	11 616	12 390	12 375	12 366
<b>4:30 PM</b>	299.80	118.23	175.40	11 586	11 373	11 564	12 369	12 090	12 357
<b>5:00 PM</b>	299.80	77.14	124.98	11 407	11 312	11 322	12 326	12 091	12 350

**Queensland**

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
<b>4:00 PM</b>	263.74	108.34	247.27	7624	7641	7592	9819	9954	10 114
<b>4:30 PM</b>	299.05	106.16	164.98	7710	7634	7636	9783	9944	10 164
<b>5:00 PM</b>	295.92	69.26	118.55	7756	7617	7652	9779	10 007	10 204

Prices in Queensland and New South Wales were aligned through this period and were slightly higher than forecast. Demand in New South Wales and Queensland was high and above forecast driven by high temperatures in both regions. Total available generation across both regions was close to forecast.

With tight supply conditions in both regions small changes in demand and generator availability caused dispatch prices to fluctuate between \$120/MWh and \$300/MWh in both Queensland and New South Wales between 3.30 pm and 5 pm.

Queensland

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
5:00 PM	271.72	52.52	44.57	7399	7335	7307	9760	9987	10 146

Conditions at the time saw demand close to forecast and availability around 230 MW lower than forecast four hours ahead.

At 2.31 pm, effective from 2.40 pm, Stanwell Corporation rebid 145 MW of capacity at Swanbank E from prices below \$10/MWh to above \$300/MWh. The reason given was “1400A change in QLD generation”. This resulted in the forecast price increasing to \$200/MWh at 3 pm. An increase in forecast demand saw the forecast price for 5 pm further increase to \$295/MWh, and, absent any further changes in conditions, became the actual price level.

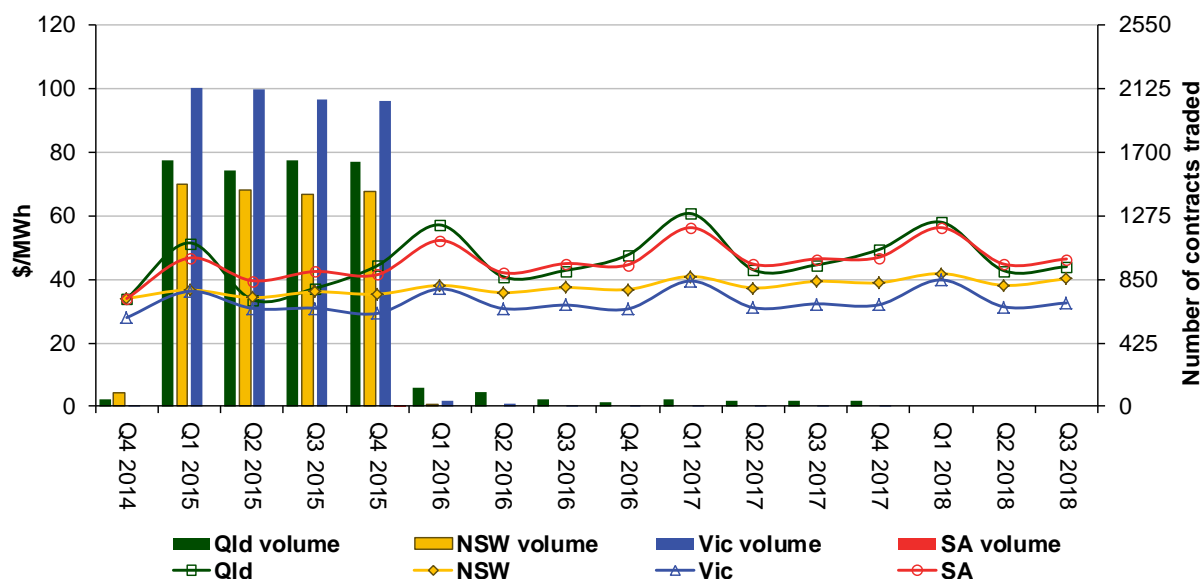
There was no other significant rebidding.

### Financial markets

*Note: The high volume of trades in figure 9, 10, and 11 are due to options on calendar year base load expiring on Wednesday 19 November.*

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.

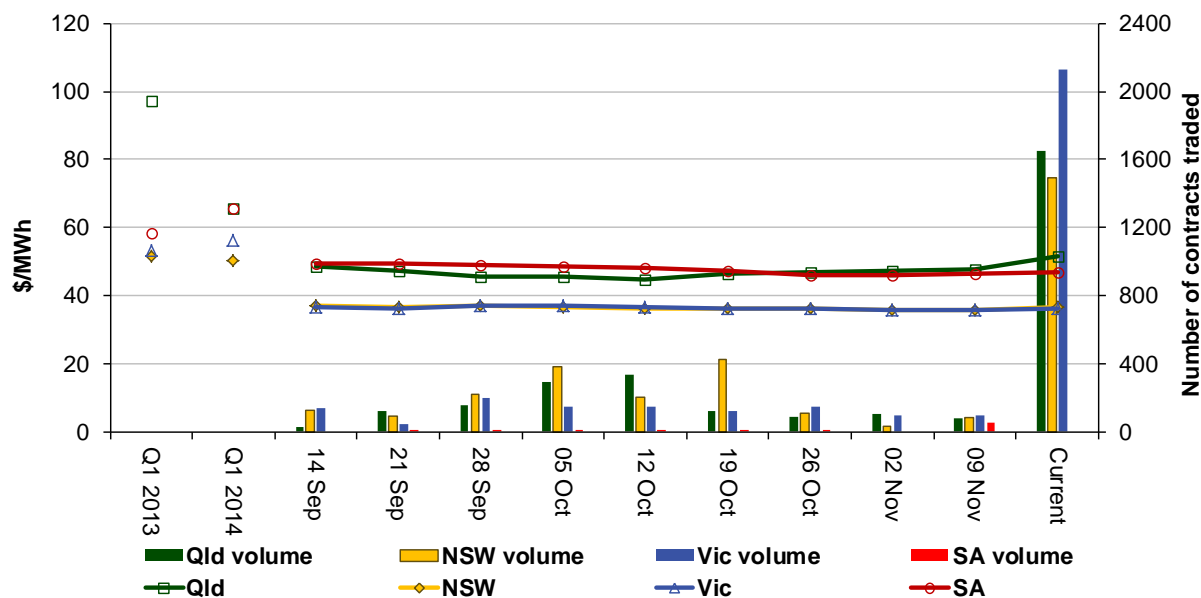
**Figure 9: Quarterly base future prices Q4 2014 – Q3 2018**



Source: [ASXEnergy.com.au](http://ASXEnergy.com.au)

Figure 10 shows how the price for each regional Quarter 1 2015 base contract has changed over the last 10 weeks (as well as the total number of trades each week). The closing quarter 1 2013 and quarter 1 2014 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 2015 base contracts over the past 10 weeks (and the past 2 years)**



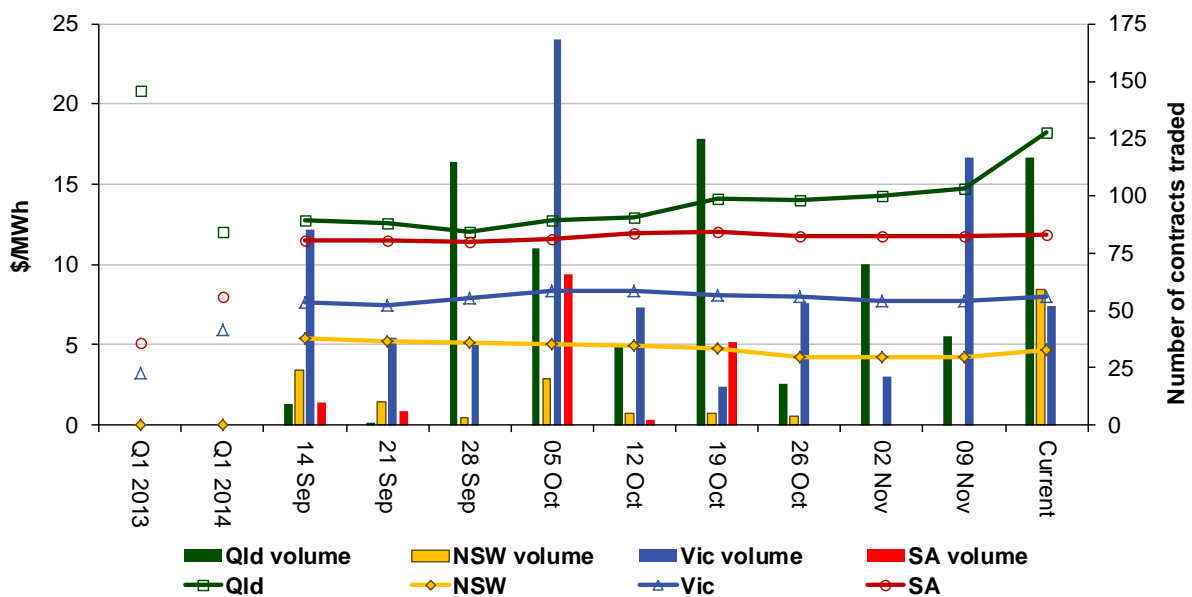
Note: Base contract prices are shown for each of the current week and the previous 9 weeks, with average prices shown for yearly periods 1 and 2 years prior to the current year

Source: [ASXEnergy.com.au](http://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 2015 cap contract has changed over the last 10 weeks (as well as the total number of trades each week). The closing quarter 1 2013 and quarter 1 2014 prices are also shown.

**Figure 11: Price of Q1 2015 cap contracts over the past 10 weeks (and the past 2 years)**



Source: [ASXEnergy.com.au](http://ASXEnergy.com.au)

**Australian Energy Regulator**

**December 2014**