Electricity Report

9 to 15 February 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 26 January to 1 February 2014. This figure shows that there were a number of times that the reading interval price was notably higher in both South Australia and Queensland.

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

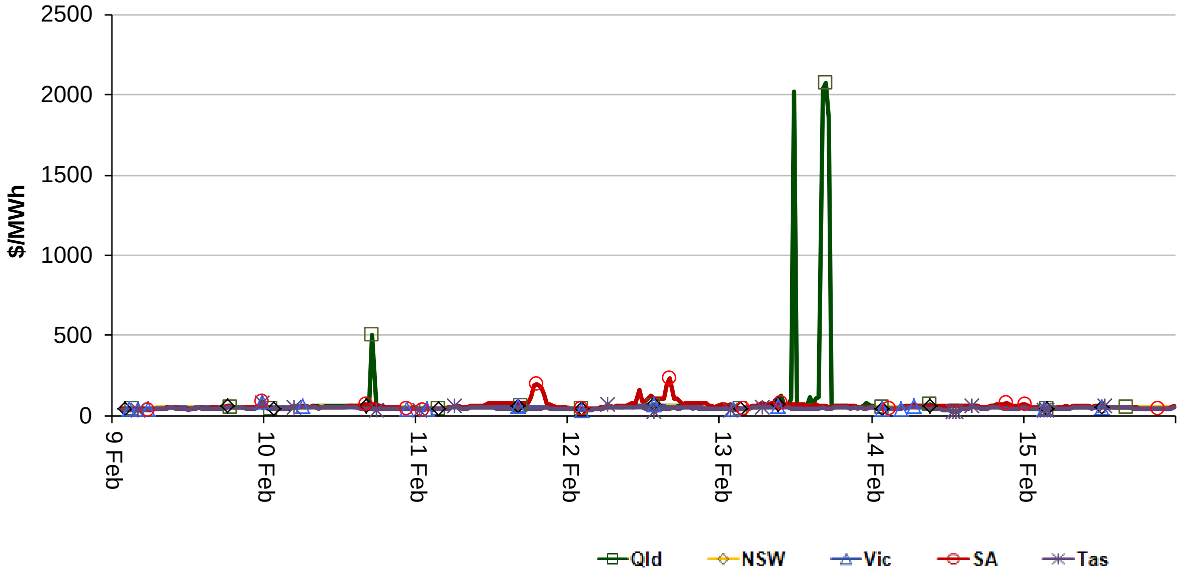


Figure 2 shows the volume weighted average (VWA) prices for the current week (with prices shown in Table 1) and the preceding 12 weeks, as well as the VWA price over the previous 3 financial years.

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

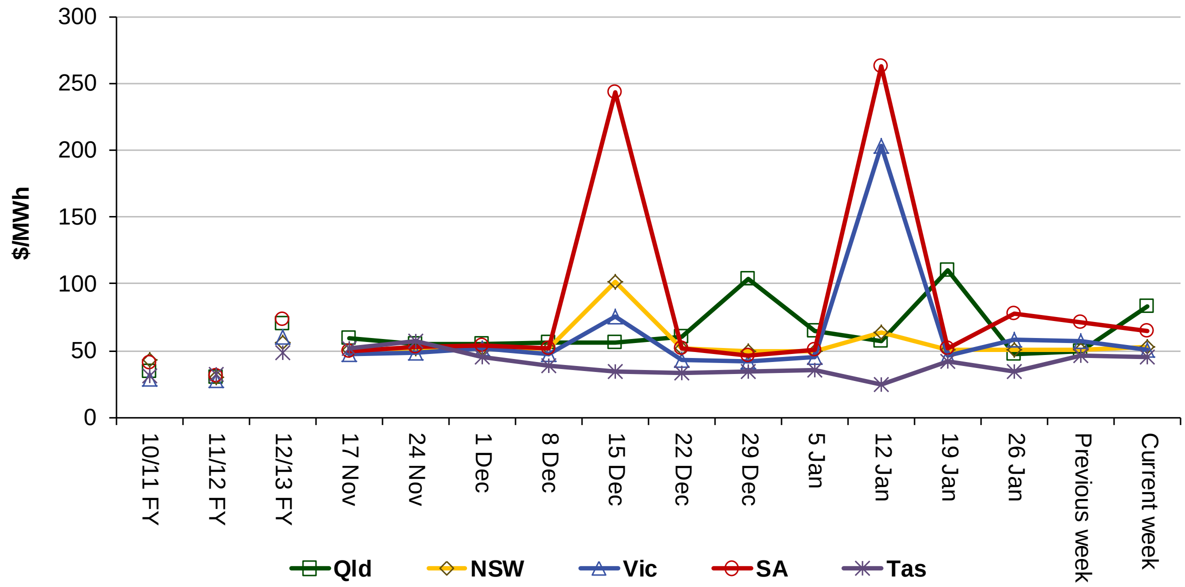


Table 1: Volume weighted average spot prices by region ($/MWh)

Region	Qld	NSW	Vic	SA	Tas
Current week	83	53	51	65	45
12-13 financial YTD	70	56	61	73	49
13-14 financial YTD	64	54	56	74	43

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 115 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	12	0	3
% of total below forecast	33	40	0	4

Note: Due to rounding, the total may not be exactly 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

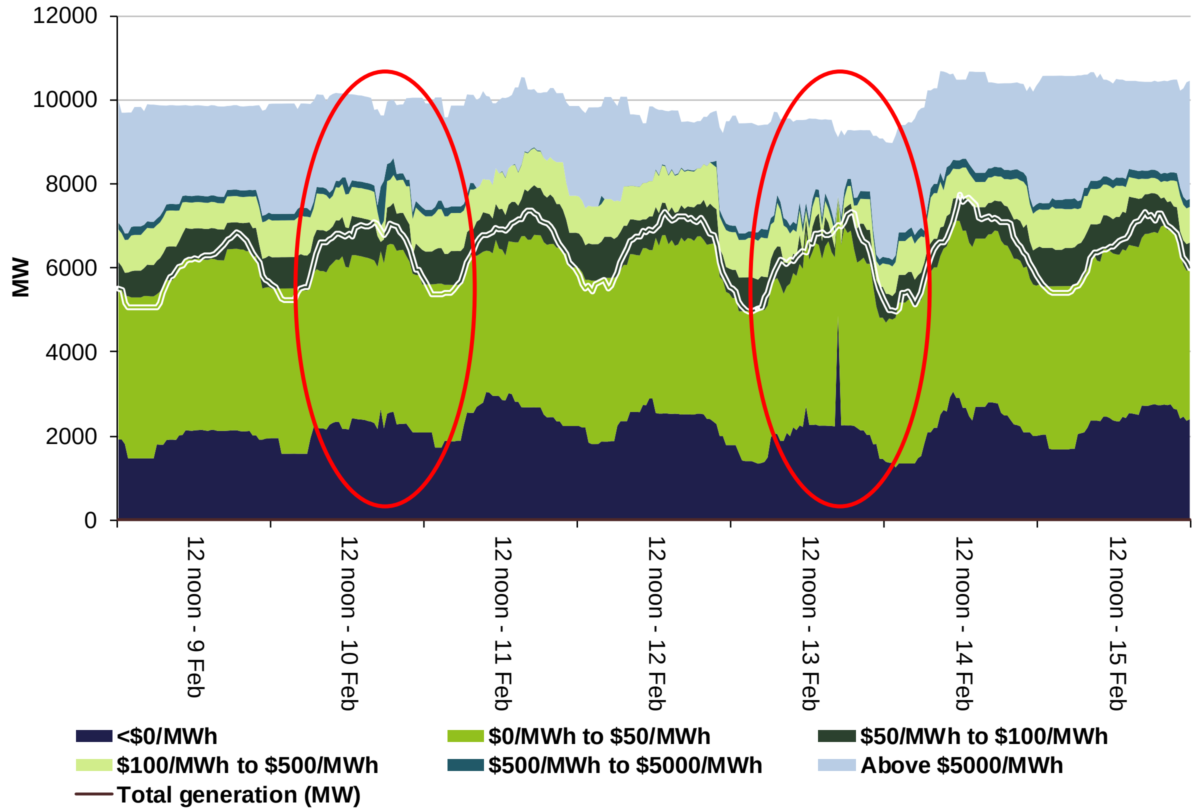


Figure 4: New South Wales generation and bidding patterns

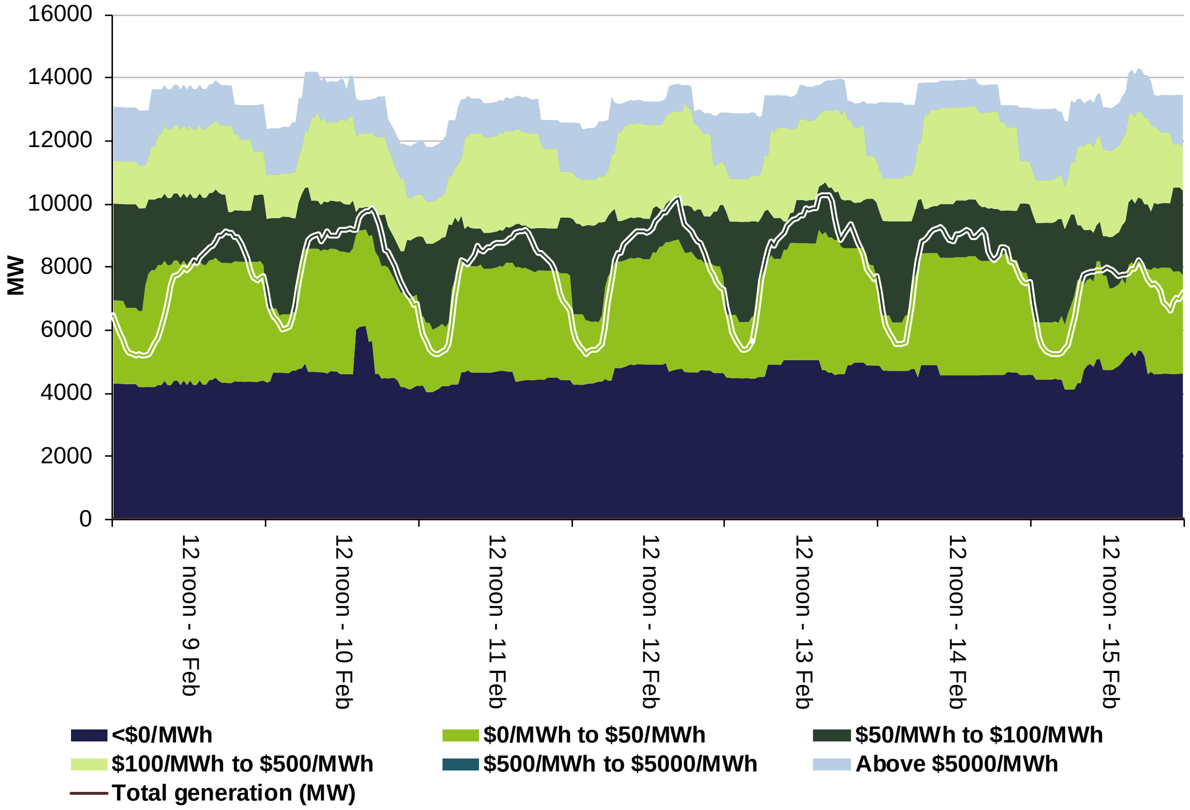


Figure 5: Victoria generation and bidding patterns

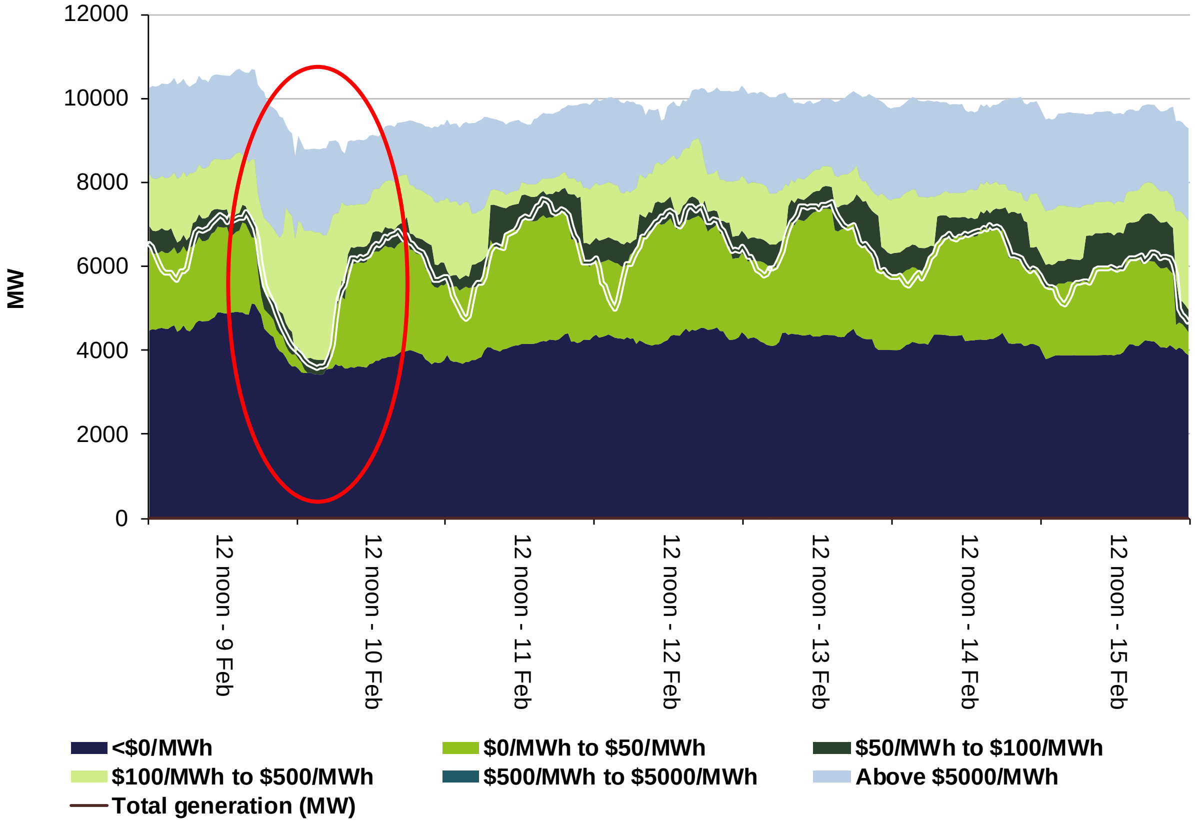


Figure 6: South Australia generation and bidding patterns

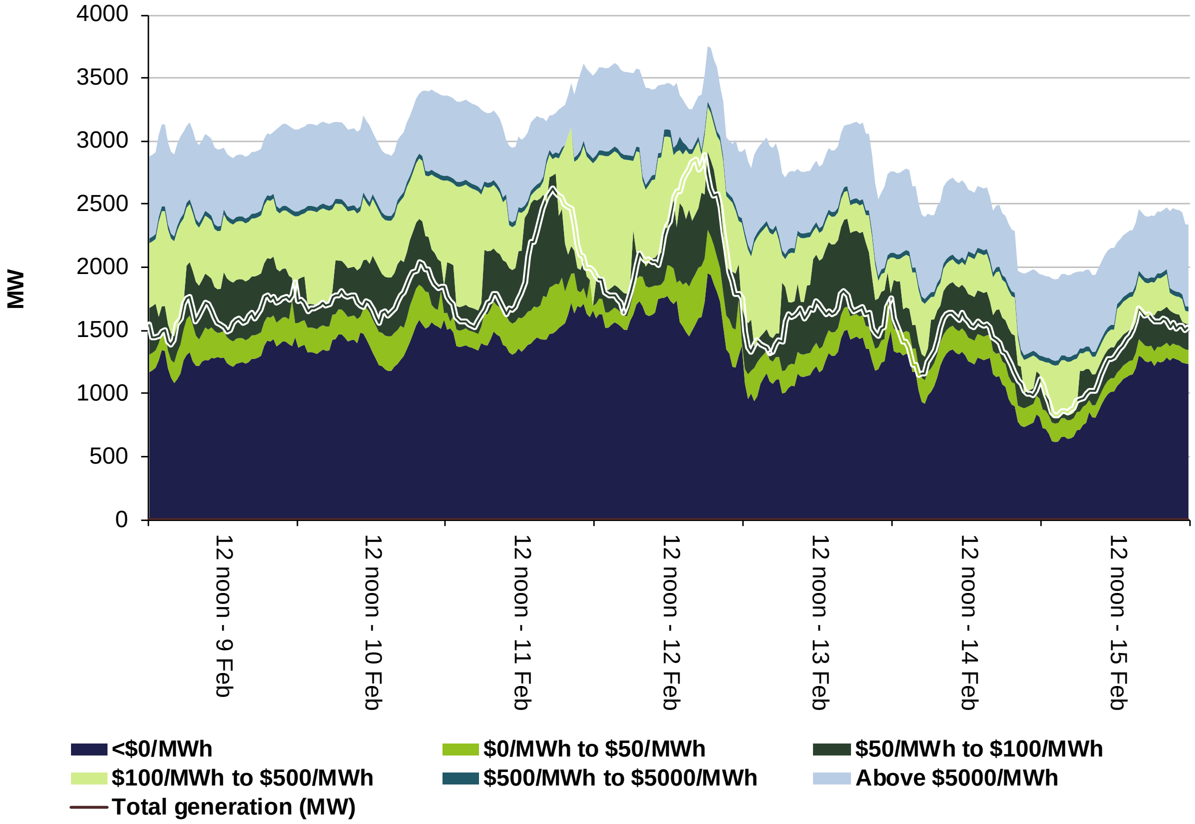
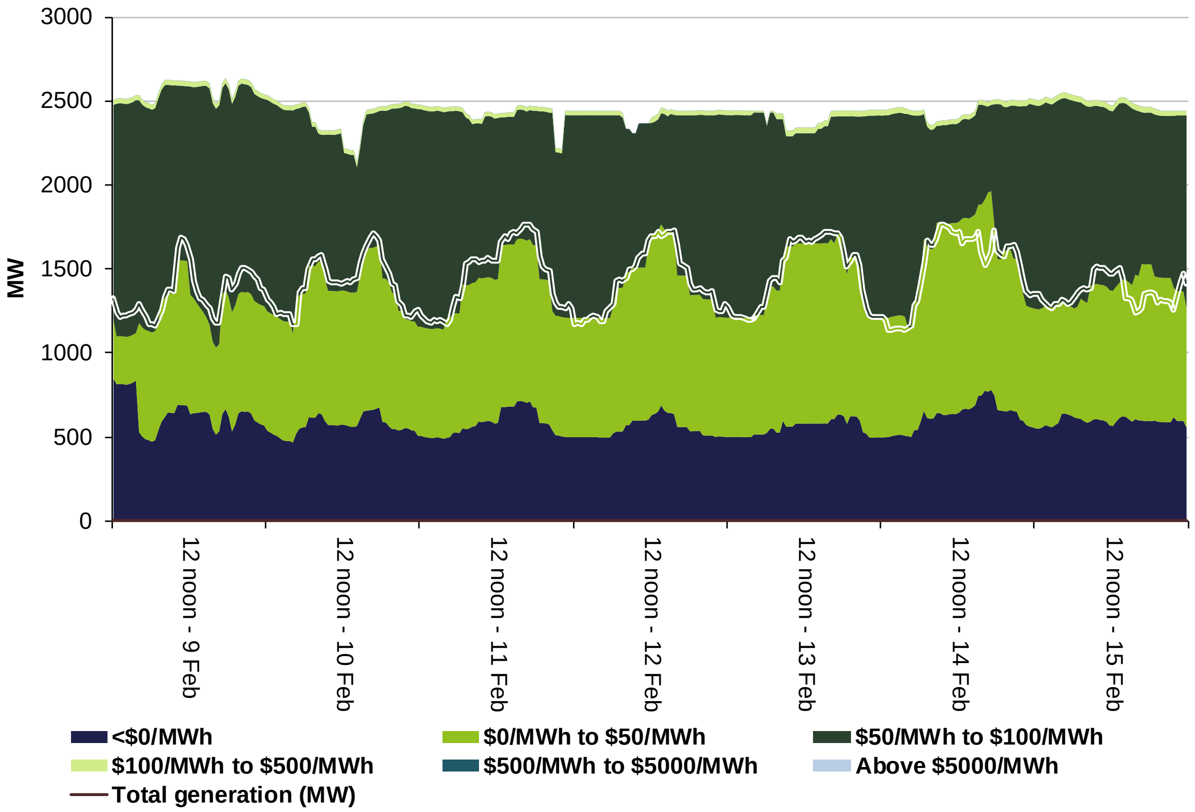


Figure 7: Tasmania generation and bidding patterns



The red circles in Figures 3 coincide with the prices explained in the *Detailed market analysis of significant price events* section below.

The red circle in Figure 5 reflects the change in offered capacity by AGL at Loy Yang due to unexpected plant limitations. AGL rebid 730 MW from prices below $40/MWh to $316/MWh.

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.

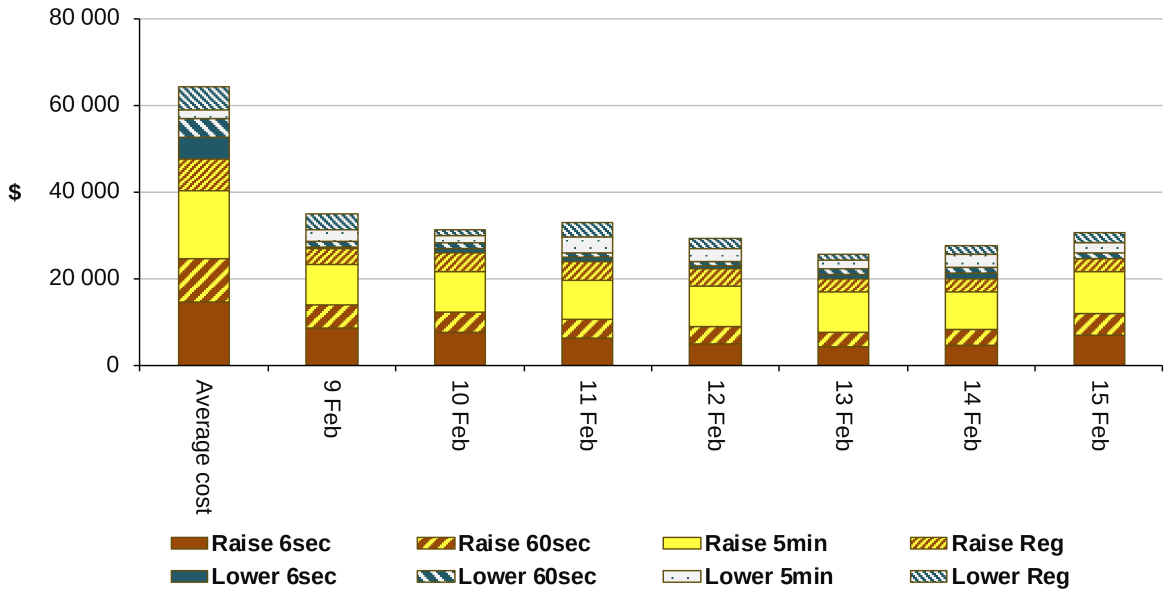
The Electricity Rules stipulate that generators pay for raise contingency services and customers pay for lower contingency services. Regulation services are paid for on a “causer pays” basis determined every four weeks by AEMO.

The total cost of FCAS on the mainland for the week was $192 500 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 or less than 1 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 five occasions where the spot price in Queensland was greater than three times the Queensland weekly average price of $83/MWh and above $250/MWh.

Table 3: Queensland, Monday 10 February

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
5.30 pm	506.28	56.89	73.60	6912	7033	7311	9772	10 132	10 143

Demand and available capacity were around 120 MW and 360 MW less than that forecast four hours ahead.

At 5.11 pm, effective for the 5.20 pm to 5.30 pm dispatch intervals, CS Energy rebid 435 MW of capacity across its portfolio from prices below $150/MWh to above $1300/MWh - reason:“1708A Interconnector constraint – QNI close to bind – SL”. This rebid saw the output at Callide B and Gladstone reduced by around 160 MW in 5 minutes.

At 5.11 pm, effective for the 5.20 pm to 5.30 pm dispatch intervals, Callide Power Trading rebid 160 MW of Callide C capacity from the price floor to the price cap – reason:“1710A QNI close to binding”.

These rebids, and ramp up limits on a number of Queensland generators saw the dispatch price increased from $59/MWh at 5.15 pm to $1400/MWh at 5.20 pm. After this demand fell by around 180 MW and the price dropped to below $65/MWh.

At 5.20 pm, effective only for 5.30 pm, Alinta Energy reduced the available capacity at Braemar unit 3 by 159 MW all priced at $229/MWh – reason:“1719A avoid uneconomic dispatch@17.20” and the price rose back to $1400/MWh at 5.30 pm. At 5.35 pm, prices were $58/MW when CS Energy and Callide 5.11 pm rebids were no longer effective.

Table 4: Queensland, Thursday 13 February

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
12 noon	2023	60.04	56.93	6461	6531	6613	9498	9705	10 126

Demand was 119 MW greater than that forecast four hours ahead and available capacity 210 MW less than that forecast four hours ahead.

At 7.48 am, Millmerran unit 2 tripped from 185 MW, all of this capacity was priced at the price floor.

At 11.45 am, effective for the 11.55 am and 12 pm dispatch intervals, CS Energy rebid 405 MW of capacity across its portfolio from prices below $60/MWh to above $11 500/MWh – reason: “1138A MPP_2 Offline –SL”.

At the same time and for the same dispatch intervals Callide Power trading rebid 113 MW of capacity at Callide C unit 3 from the price floor to the price cap – reason: “1142A MPP_2_offline”.

At 11.51 am, effective for only the 12 pm dispatch interval, CS Energy rebid 500 MW of capacity at Wivenhoe from prices above $11 500/MWh to zero – reason: “1151A dispatch price higher than 30min forecast –SL”.

The effect of these rebids was a short term price spike from $60/MWh at 11.50 am to $11 850/MWh at 11.55 am, then reduced to below $49/MWh at 12 noon.

Table 5: Queensland, Monday 10 February

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
4.30 pm	2041	84	72.04	7164	7045	7149	9273	9298	9913
5 pm	2078	84	79.92	7168	7066	7190	9159	9306	9874
5.30 pm	1861	60.90	63.22	7028	7049	7165	9279	9372	9944

Rebids late in each of these trading intervals variously by CS Energy, Stanwell and Callide Power trading caused three price spikes.

Conditions at 4.30 pm

Market conditions were generally close to forecast.

Table 6: Queensland, Monday 10 February for the 4.30 pm trading interval

Time		Participant	Rebid ($/MWh)			
Adduced	Effective		Volume (MW)	From ($/MWh)	To ($/MWh)	Reason
4.20 pm	4.30 pm	CS Energy/ Gladstone	405	60	12 400	1616A MPP_2_offline QNI binding North-SL
4.19 pm	4.30 pm	Callide Power Trading / Callide C	113	50	12 400	1618A MPP_2_offline QNI binding
4.20 pm	4.30 pm	Stanwell / Stanwell	190	90	13 100	1619A Material 5 min demand v 30 min pd 1630-SL

With a total of 708 MW being rebid from low prices to prices close to the market price cap a short term price spike occurred where the price increased from $84/MWh at 4.25 pm to $11 850/MWh at 4.30 pm before reducing to $119/MWh at 4.35 pm, when the above CS Energy and Callide rebids were no longer effective.

Conditions at 5 pm

Table 5: Queensland, Monday 10 February for the 5 pm trading interval

Time			Rebid ($/MWh)			
Adduced	**Effective**	**Participant / Station**	**Volume (MW)**	**From ($/MWh)**	**To ($/MWh)**	**Reason**
4.45 pm	4.55 pm	CS Energy Gladstone	405	60	12 400	1639A MPP_2 _Offline –SL
		CS Energy Wivenhoe	Increased availability by 250 MW at the price cap			1639A MPP_2 _Offline –SL
4.51 pm	5 pm	CS Energy Wivenhoe	500	11 000	0	1650A dispatch price higher than 30min forecast-sl
4.53 pm	5 pm	Stanwell Stanwell	155	12 000	Price floor	1652E correct error prev bid include entire portfolio

The dispatch price increased from $290/MWh at 4.50 pm to $11 851/MWh at 4.55 pm before reducing to $50/MWh at 5 pm.

Conditions at 5.30 pm

At 5.20 pm, effective for the 5.30 pm dispatch interval only, CS Energy rebid 625 MW of capacity at Gladstone from prices below $150/MWh to above $12 700/MWh – reason:“1720A MPP_2_offline-SL”.

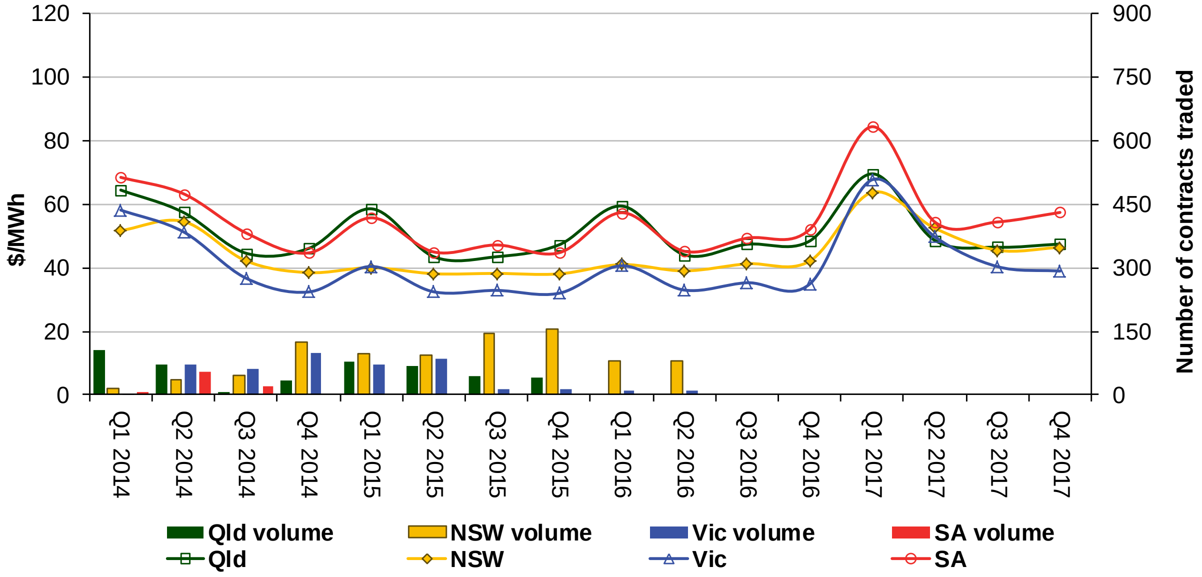
The dispatch price increased from $57/MWh at 5.25 pm to $10 500/MWh at 5.30 pm before reducing to $57/MWh at 5.35 pm.

There was no other significant rebidding.

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.

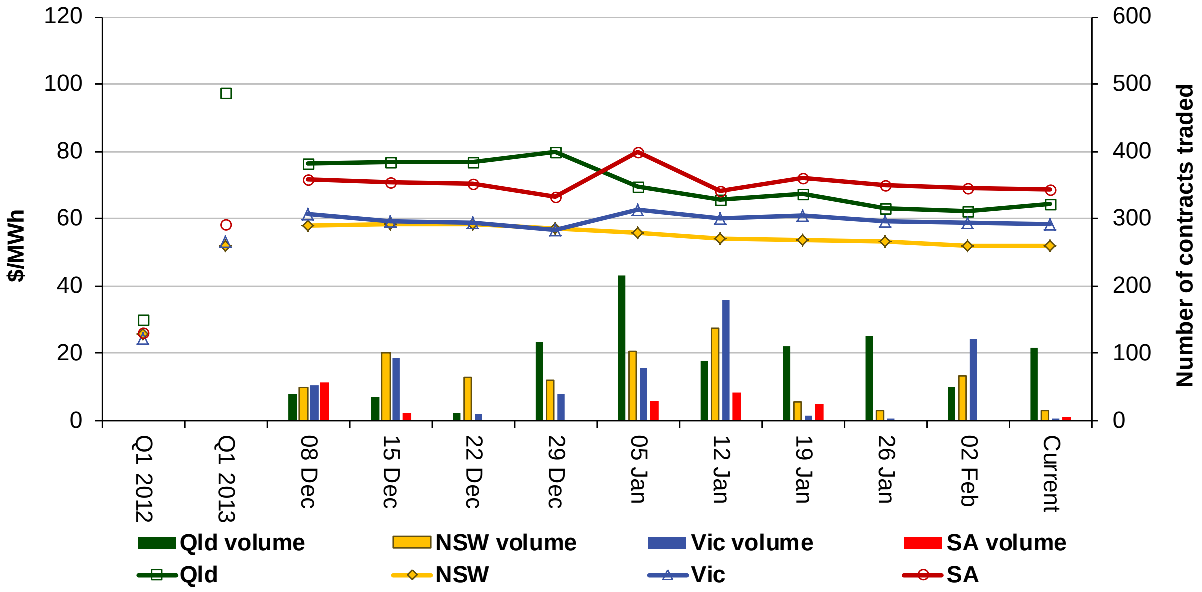
Figure 9: Quarterly base future prices Q1 2014 – Q4 2017



Source: ASXEnergy.com.au

Figure 10 shows how the price for each regional Quarter 1 2014 base contract has changed over the last 10 weeks (as well as the total number of trades each week). The closing quarter 1 2012 and quarter 1 2013 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 2014 base contracts over the past 10 weeks (and the past 2 years)



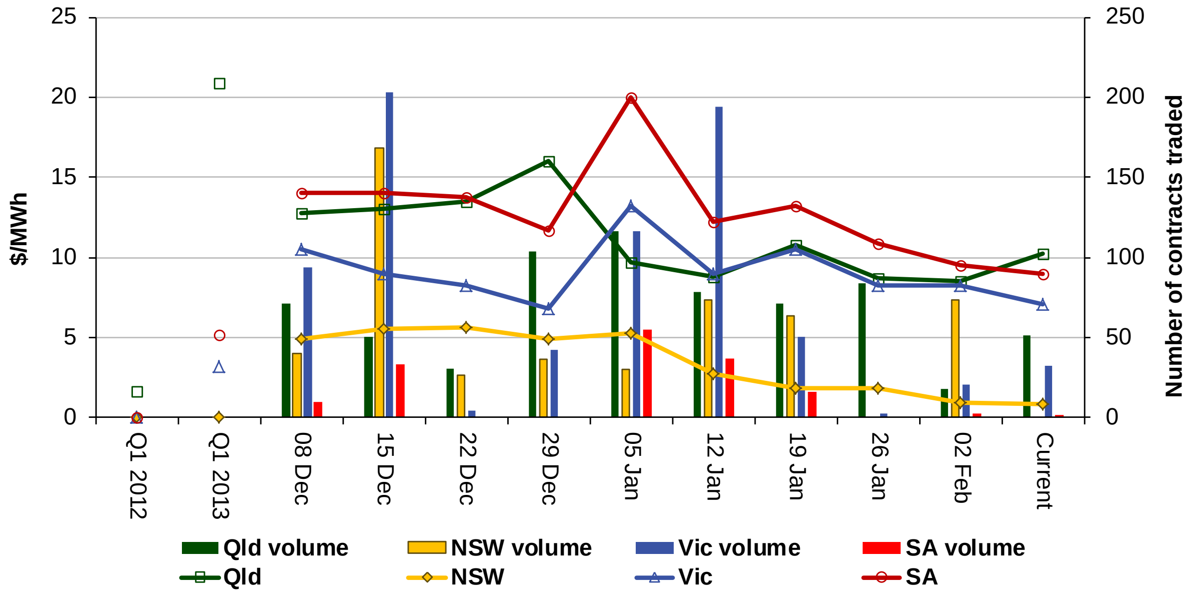
Note: Base contract prices are shown for each of the current week and the previous 9 weeks, with average prices shown for yearly periods 1 and 2 years prior to the current year

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 2014 cap contract has changed over the last 10 weeks (as well as the total number of trades each week). The closing quarter 1 2012 and quarter 1 2013 prices are also shown.

Figure 11: Price of Q1 2014 cap contracts over the past 10 weeks (and the past 2 years)



Source: ASXEnergy.com.au

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