Electricity Report

15 to 21 June 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 15 to 21 June 2014. The Queensland price spikes on 17 June reached $2271/MWh and 18 June reached $2238/MWh. The South Australia price spike on 22 June midnight reached $2236/MWh.

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

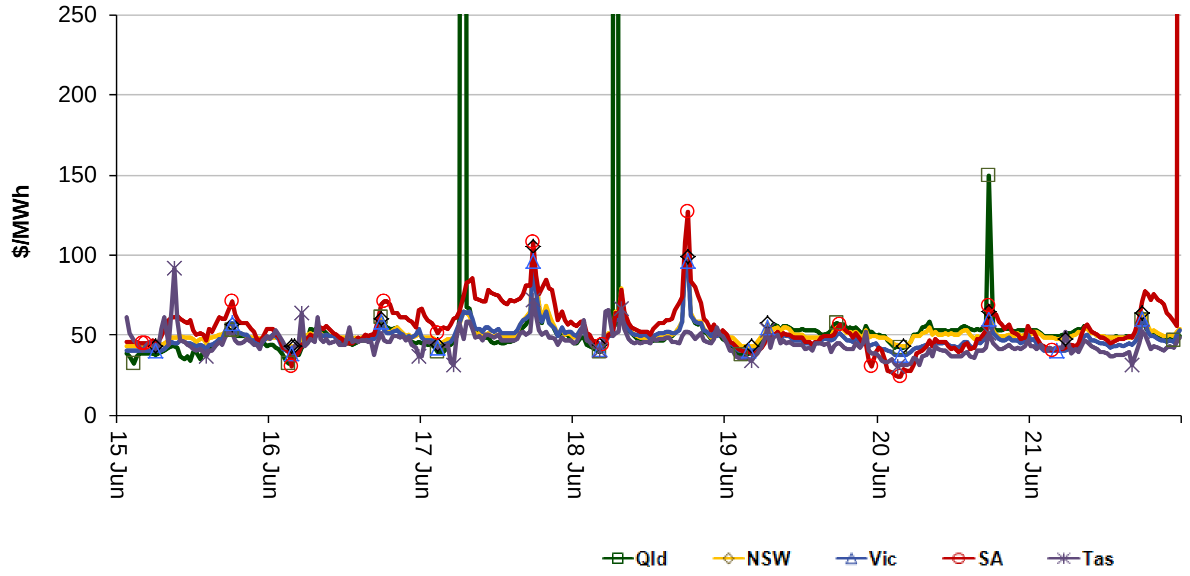


Figure 2 shows the volume weighted average (VWA) prices for the current week (with prices shown in Table 1) and the preceding 12 weeks, as well as the VWA price over the previous 3 financial years.

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

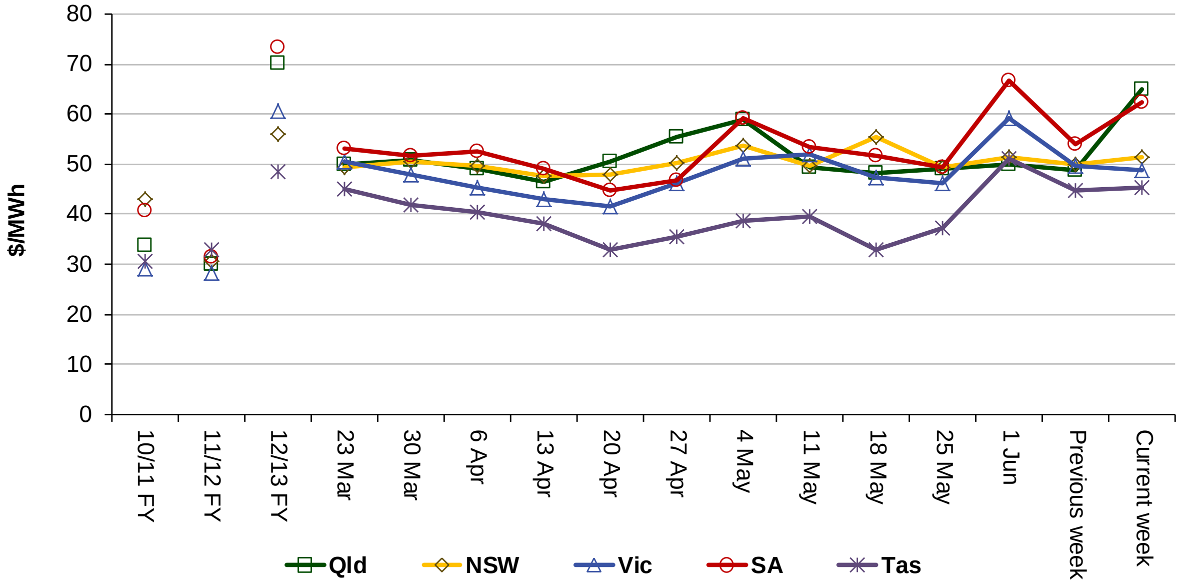


Table 1: Volume weighted average spot prices by region ($/MWh)

Region	Qld	NSW	Vic	SA	Tas
Current week	65	51	49	62	45
12-13 financial YTD	70	56	61	73	49
13-14 financial YTD	61	53	54	68	42

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 24 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

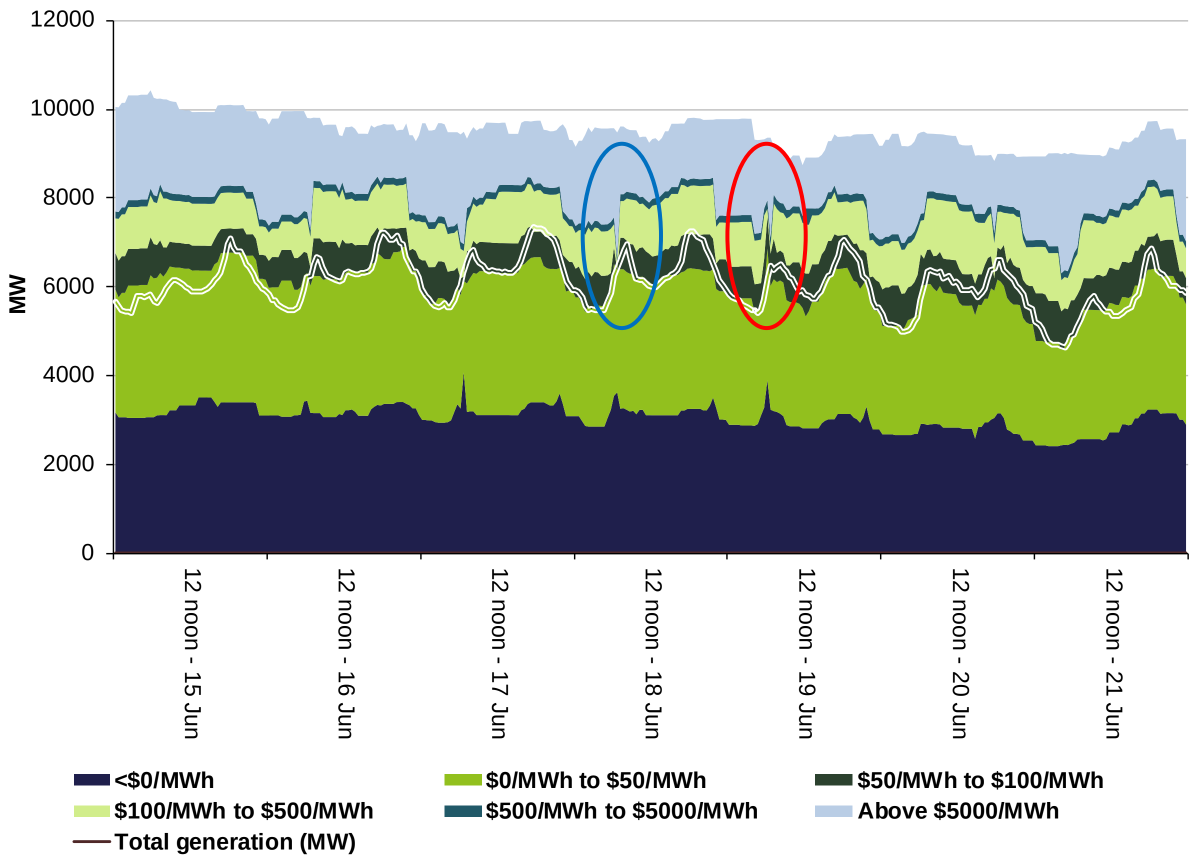
	Availability	Demand	Network	Combination
% of total above forecast	0	35	0	4
% of total below forecast	18	22	0	22

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 blue circle highlights an increase in capacity above $5000/MWh as a result of rebidding by Queensland generators, see the “Detailed market analysis of significant price events” section for further details.

The red circle highlights an increase in capacity above $5000/MWh as a result of day ahead offers by Stanwell.

Figure 4: New South Wales generation and bidding patterns

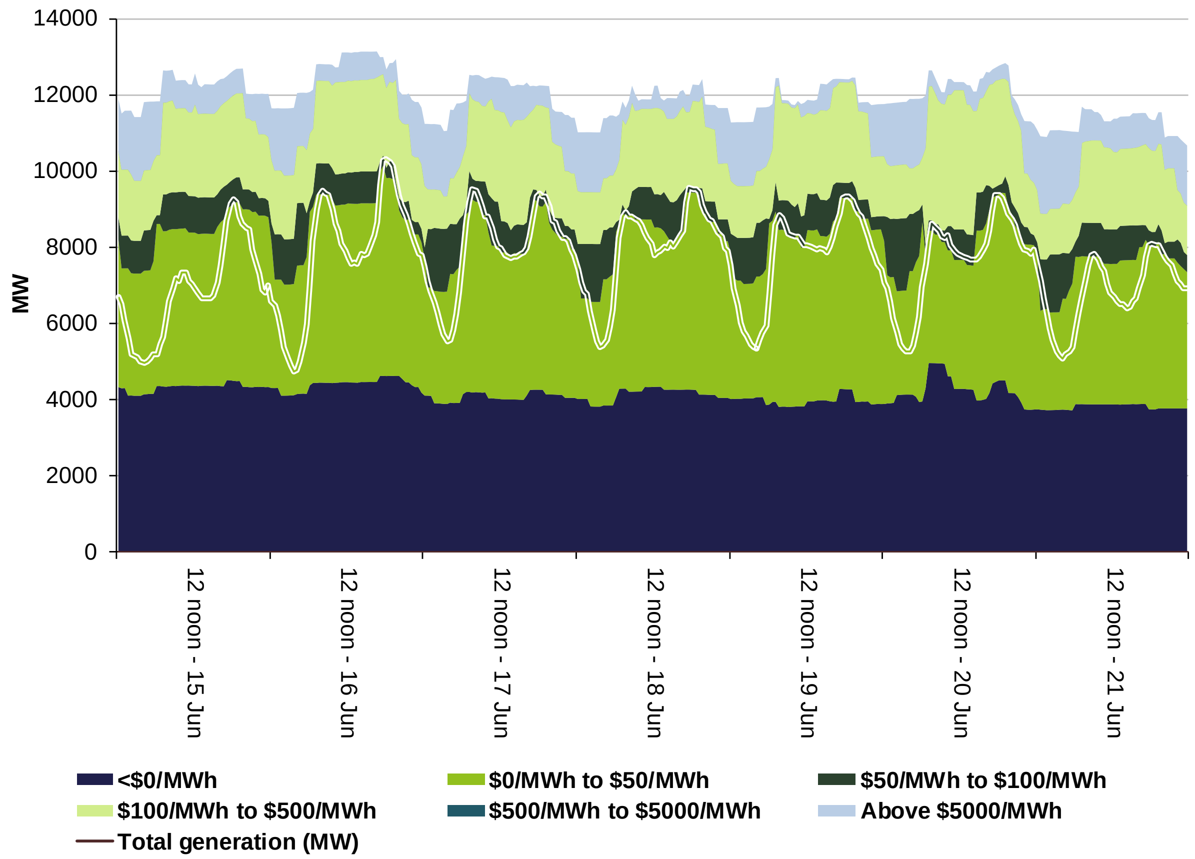
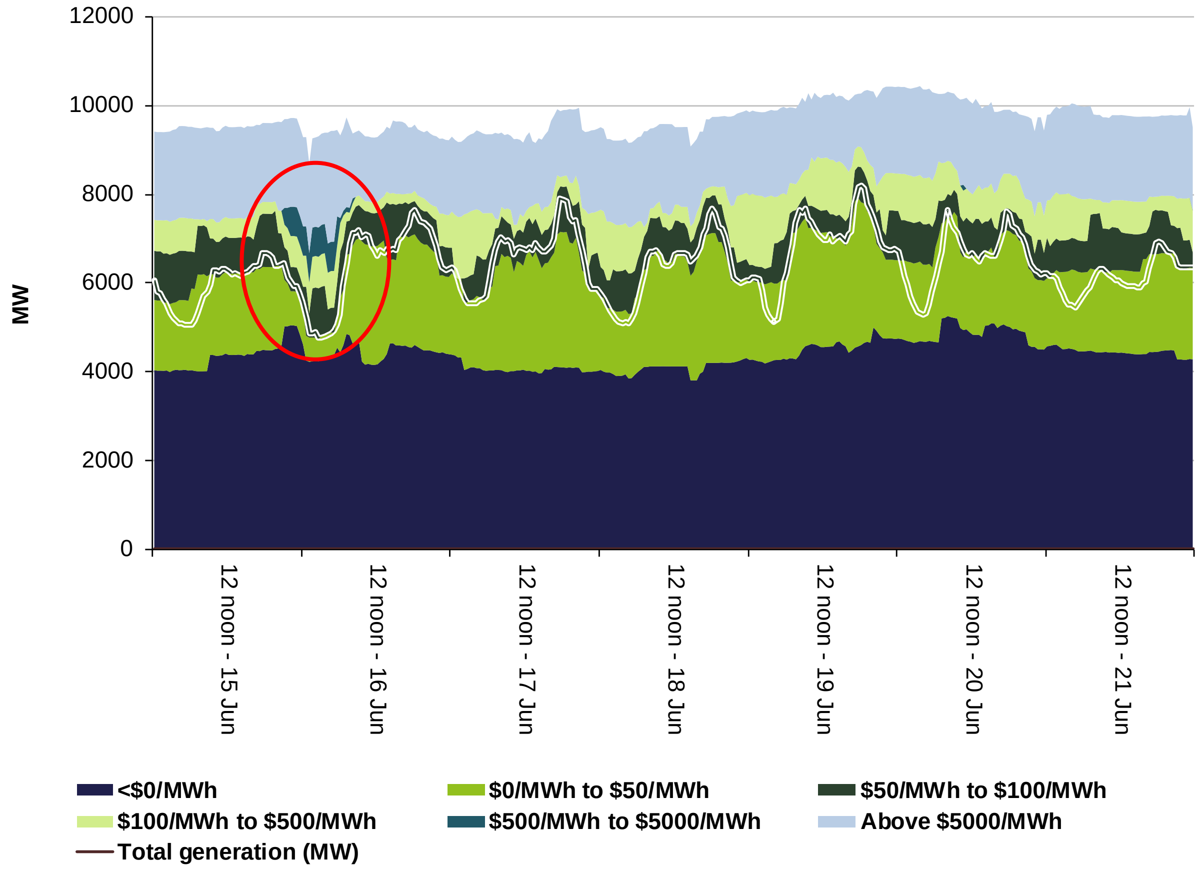


Figure 5: Victoria generation and bidding patterns



Rebidding at Loy Yang A power station shifted available capacity rebid from below $50/MWh to just over $500/MWh across the day on 15 and 16 June. The reasons given for the rebids indicated plant limitations as a result of coal supply.

Figure 6: South Australia generation and bidding patterns

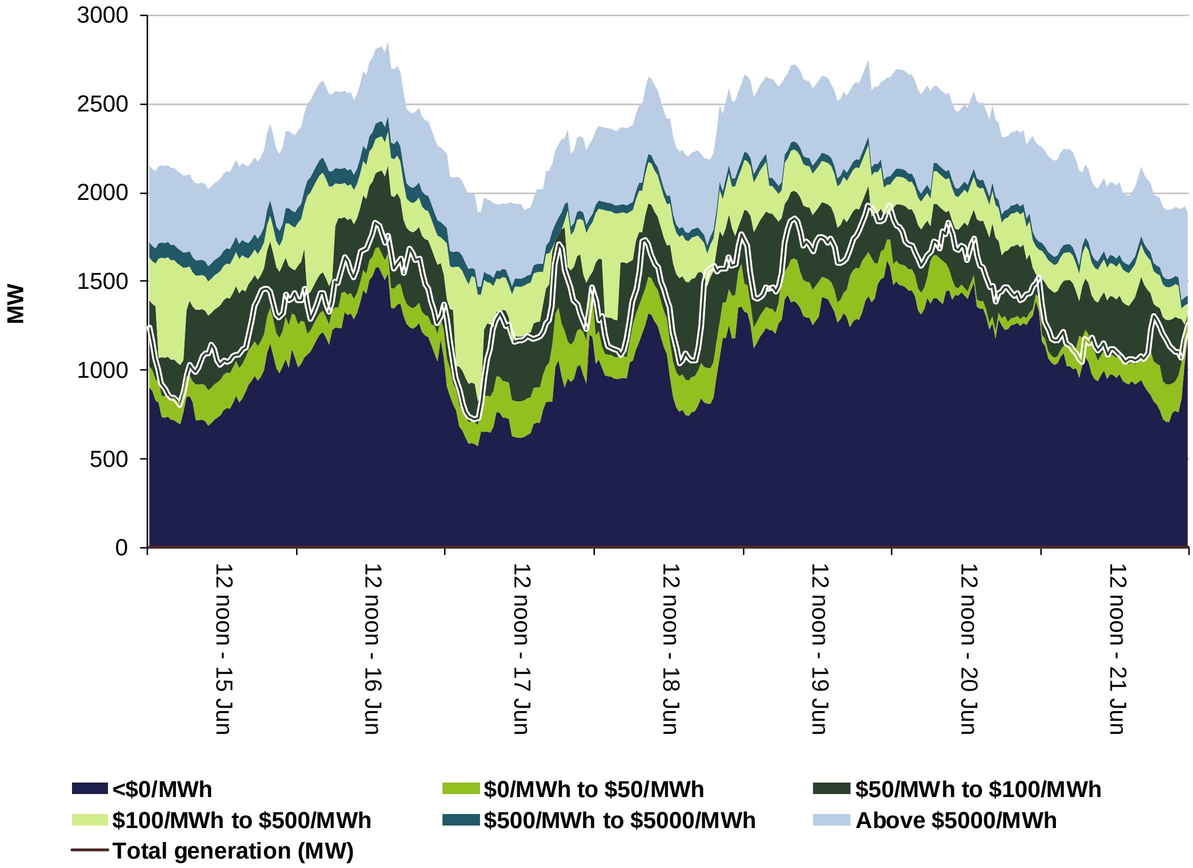
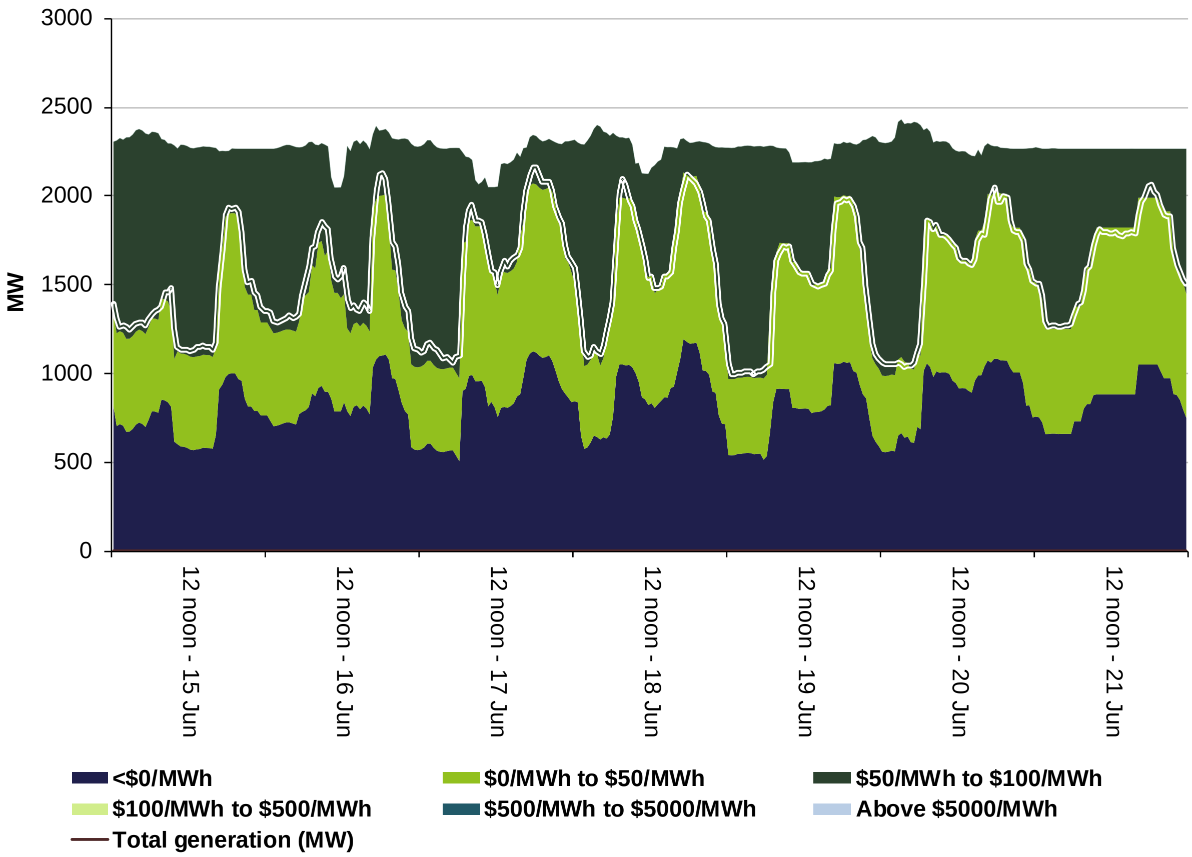


Figure 7: Tasmania generation and bidding patterns



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.

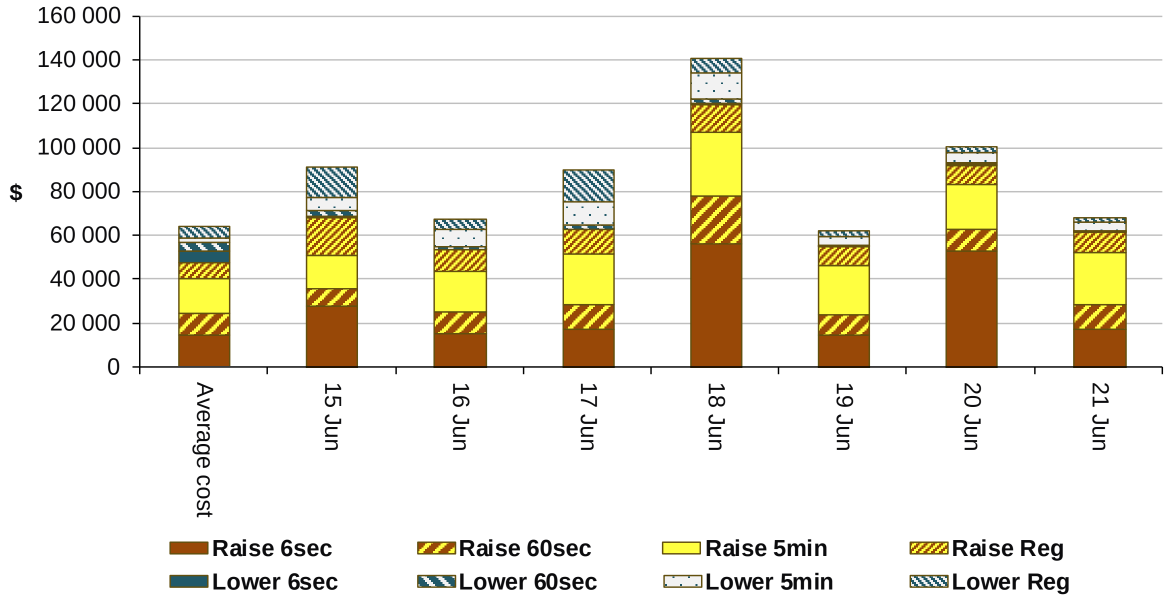
The Electricity Rules stipulate that generators pay for raise contingency services and customers pay for lower contingency services. Regulation services are paid for on a “causer pays” basis determined every four weeks by AEMO.

The total cost of FCAS on the mainland for the week was $454 000 or less than 1 per cent of energy turnover on the mainland.

The total cost of FCAS in Tasmania for the week was $163 500 or around 2 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 two occasions where the spot price in Queensland was greater than three times the Queensland weekly average price of $65/MWh and above $250/MWh.

Table 3: Queensland, Tuesday 17 June

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
7.00 AM	2271.51	54.58	50.41	6366	6187	6230	9506	9609	10 007

Demand was 179 MW greater than that forecast four hours ahead and available capacity 103 MW less than that forecast four hours ahead. The morning peak was higher than usual above 6500 MW by 7 am.

At 6.45 am, effective for 6.55 am and 7 am dispatch intervals, CS Energy rebid 250 MW of available capacity at Gladstone from prices below $150/MWh (a majority of which was priced below $60/MWh) to the price cap. The reason given was “0643A 5min pd price higher than 30min forecast-SL”.

At 6.51 am, effective for 7 am, Alinta Energy rebid 53 MW of available capacity at Braemar unit 1 from prices below $50/MWh to above $9700/MWh. The reason given was “0650A constraint management - N^^Q_NIL_B1@06:51”.

At 6.52 am, effective for 7 am, Stanwell rebid 36 MW of available capacity at Kareeya from prices below zero to the price cap. The reason given was “0652A QNI transmission constraint: SL”.

The five minute price went from $63/MWh at 6.50 am to $298/MWh at 6.55 am (when interconnector flows bound to avoid voltage collapse at Kogan Creek) and then to the price cap at 7 am.

There was no other significant rebidding.

Table 4: Queensland, Wednesday 18 June

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
7.00 AM	2238.78	55.90	52.70	6304	6119	6091	9593	9560	9699

Demand and available capacity were around 185 MW and 33 MW greater than that forecast four hours ahead respectively, with the morning peak demand again higher than usual.

At 6.44 am, effective for 6.55 am and 7 am dispatch intervals, CS Energy rebid 375 MW of available capacity at Gladstone from prices below $57/MWh to the price cap. The reason given was “0643A dispatch price higher than 30min forecast-SL”.

The price spiked to the cap at 6.55 am despite a large (193 MW) step change in interconnector flows into Queensland, as lower priced generation was either off, dispatched at its maximum availability or ramp rate limited.

At 6.53 am, a number of generators rebid large amounts of capacity into lower prices effective from 7 am in response to the high dispatch price, totalling around 600 MW of available generation:

- Arrow rebid 223 MW of capacity at its Braemar power station units 3 and 7 from above $40/MWh to the floor
- AGL rebid 158 MW of capacity at its Oakey power station unit 2 from zero to the floor
- Stanwell rebid 217 MW of capacity at its Barron, Kareeya and Swanbank units from the price cap to below $30/MWh

Prices returned to normal from 7 am when the cheaper offers became effective and interconnector constraints ceased binding. There was no other significant rebidding.

Table 5: South Australia, Sunday 22 June

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
00:00	2236.81	67.44	70.39	1714	1743	1731	1911	2016	2096

Conditions at the time saw available generation 105 MW below that forecast four hours ahead.

On Saturday evening there was a step change in demand from 1540 MW at 11.30 pm to 1825 MW at 11.40 pm associated with the automatic start of electric off peak hot water heaters. Demand then reduced for the remainder of the trading interval, to 1792 MW on Saturday at 11.45 pm and to 1608 MW by midnight.

Similarly, at 11.38 pm, effective from 11.45 pm, Origin Energy rebid 94 MW of generation capacity at its Ladbroke Grove and Quarantine power stations from prices below $300/MWh to the price cap. The reason given was “constraint management - V^SML_NSWRB_2”.

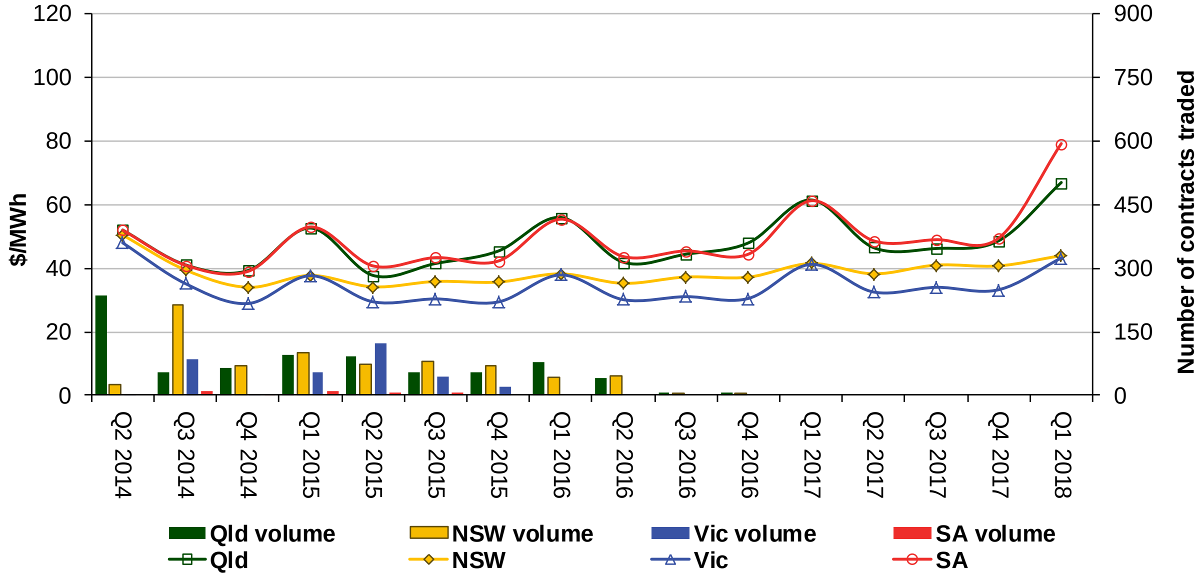
As a result, the 5-minute price increased from $51/MWh at 11.30 pm, spiking to the price cap at 11.45 pm before returning to previous levels as demand reduced. This demand reduction was influenced by an increase in non-scheduled generation from Angaston and Port Stanvac.

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.

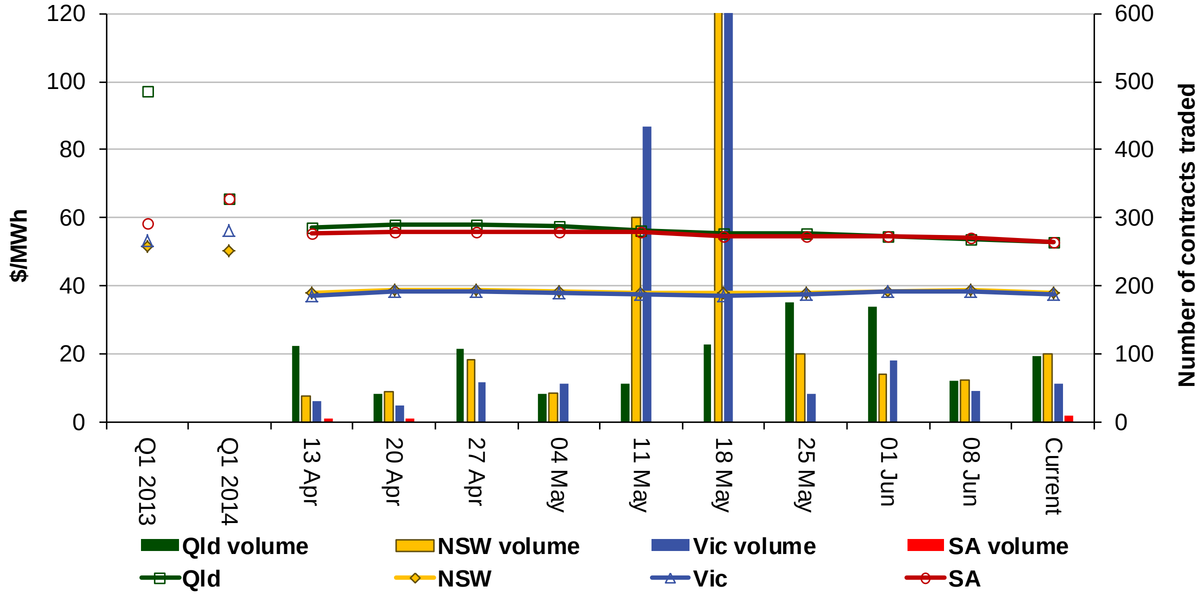
Figure 9: Quarterly base future prices Q2 2014 – Q1 2018



Source: 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)



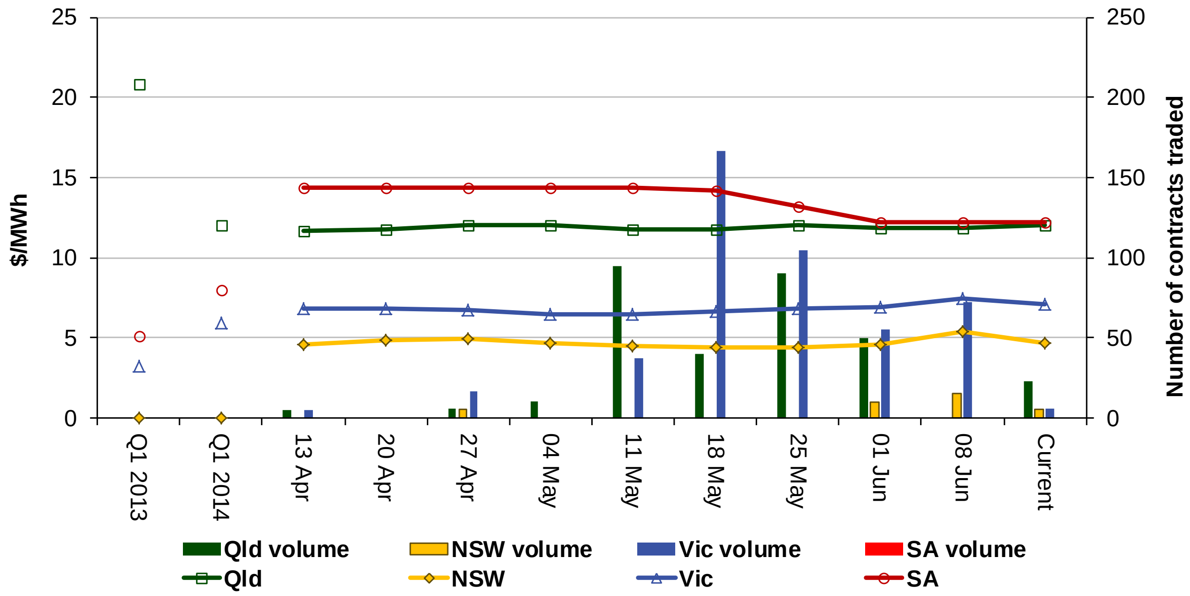
Note: Base contract prices are shown for each of the current week and the previous 9 weeks, with average prices shown for yearly periods 1 and 2 years prior to the current year

Source: ASXEnergy.com.au

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

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