Electricity Report

27 April – 03 May 2014

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 27 April to 3 May 2014.

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

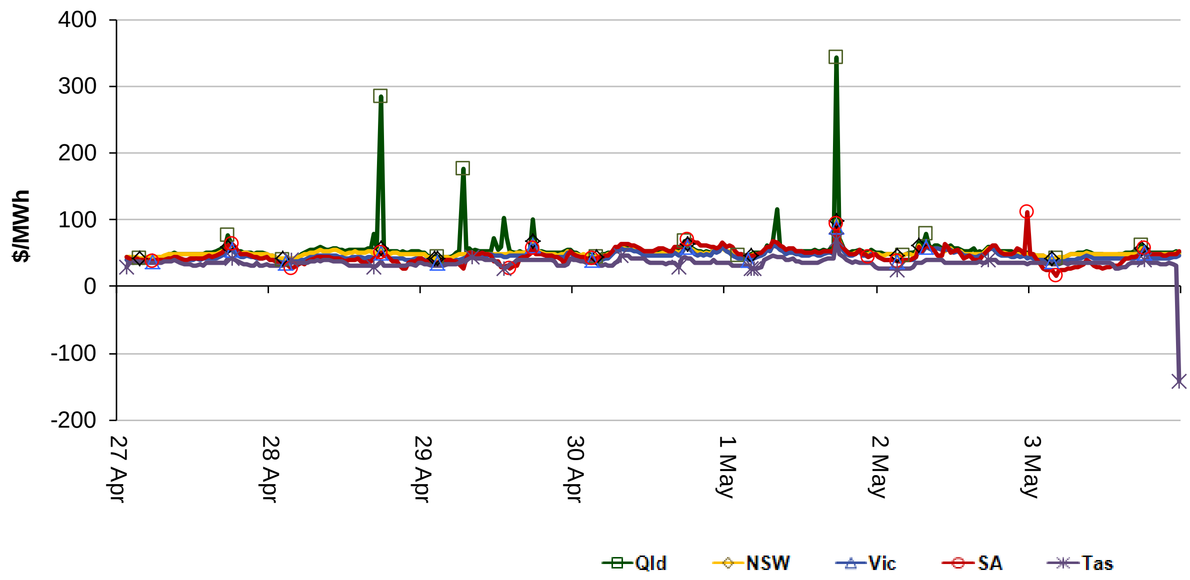


Figure 2 shows the volume weighted average (VWA) prices for the current week (with prices shown in Table 1) and the preceding 12 weeks, as well as the VWA price over the previous 3 financial years.

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

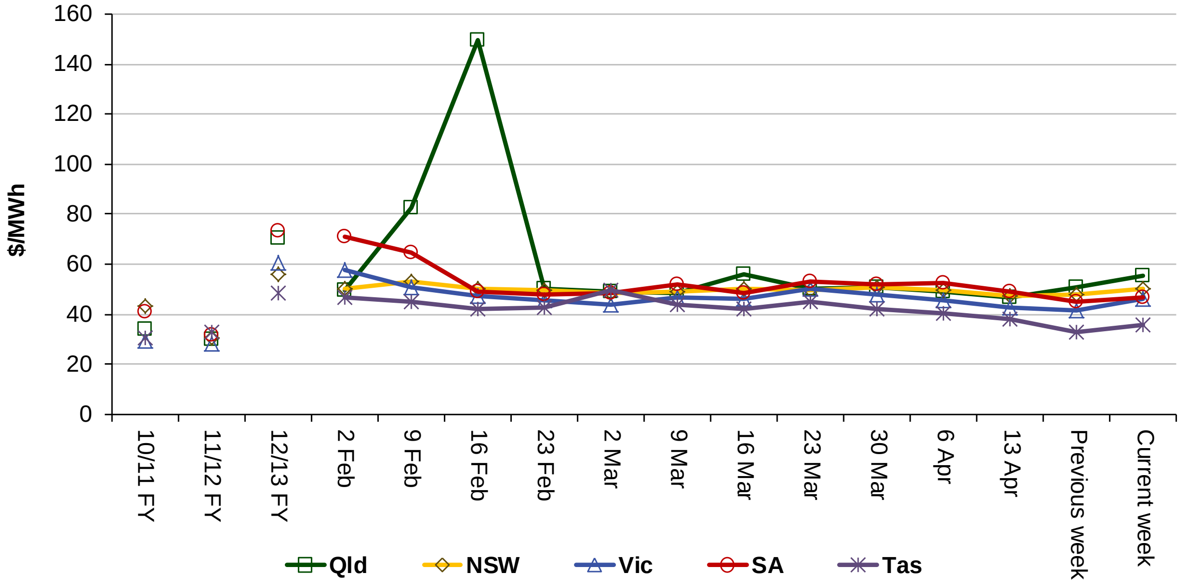


Table 1: Volume weighted average spot prices by region ($/MWh)

Region	Qld	NSW	Vic	SA	Tas
Current week	55	50	46	47	36
12-13 financial YTD	70	56	61	73	49
13-14 financial YTD	62	54	55	71	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 30 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	5	33	0	4
% of total below forecast	15	25	0	18

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

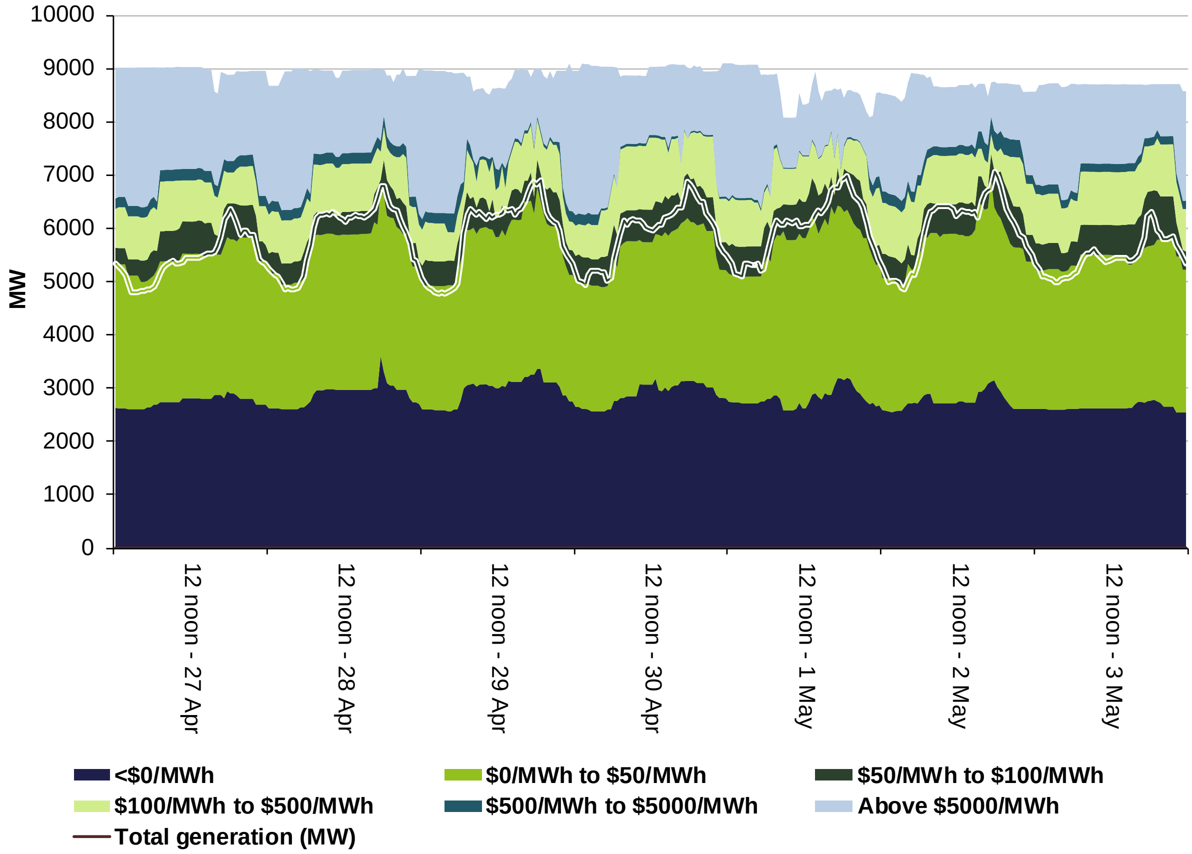


Figure 4: New South Wales generation and bidding patterns

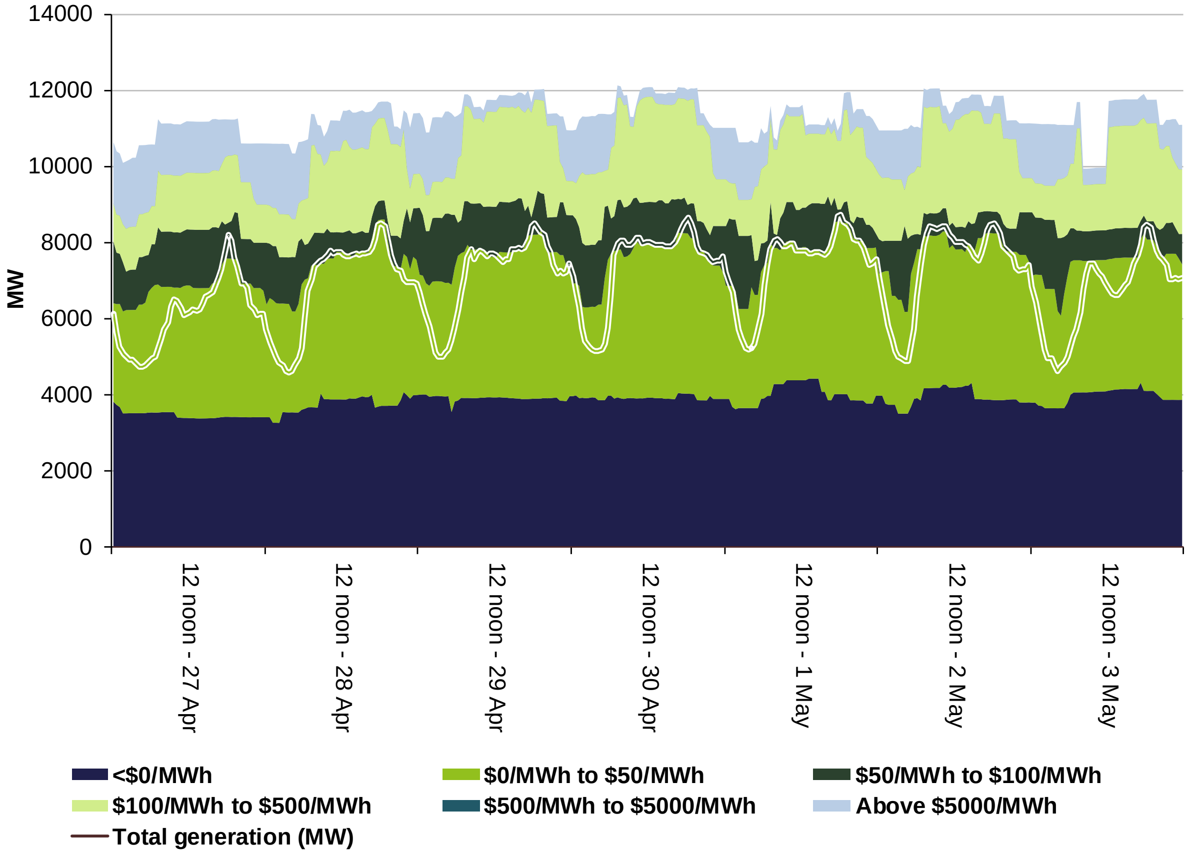


Figure 5: Victoria generation and bidding patterns

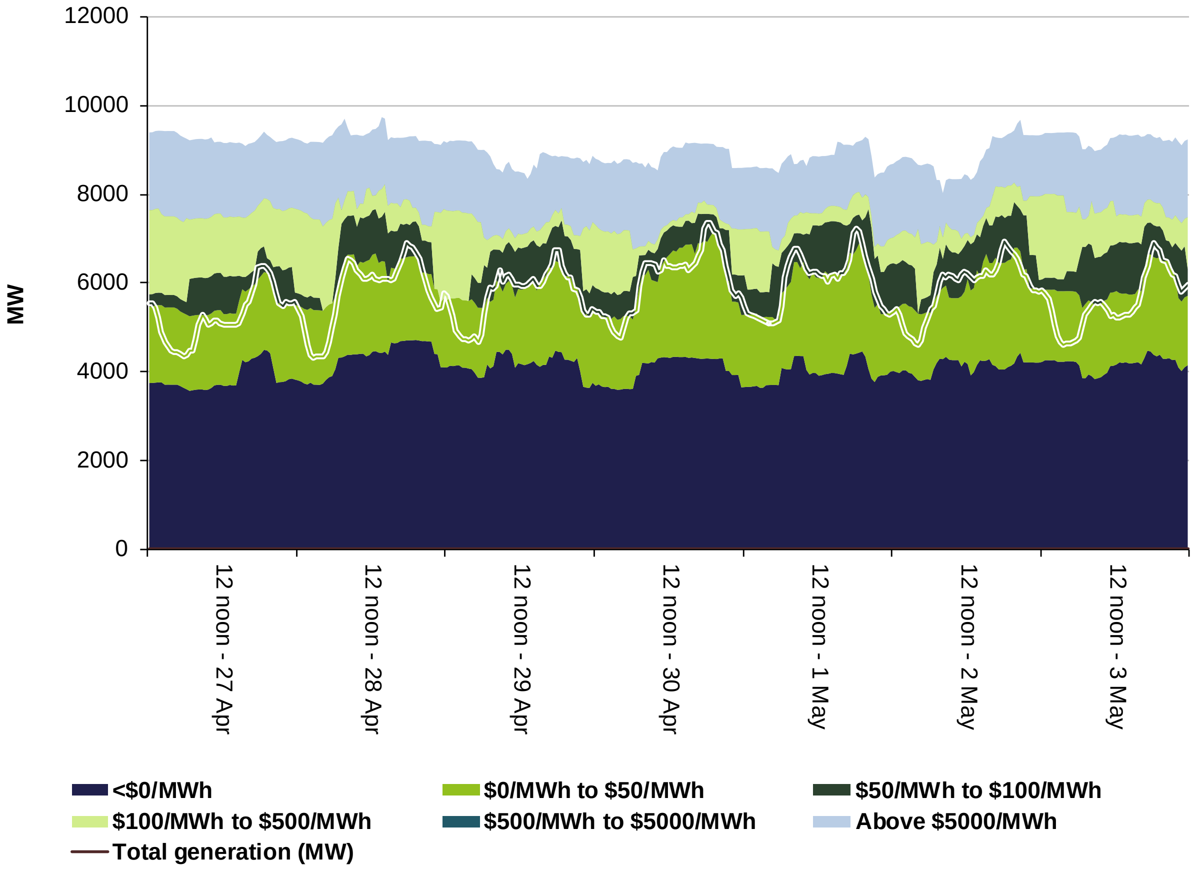
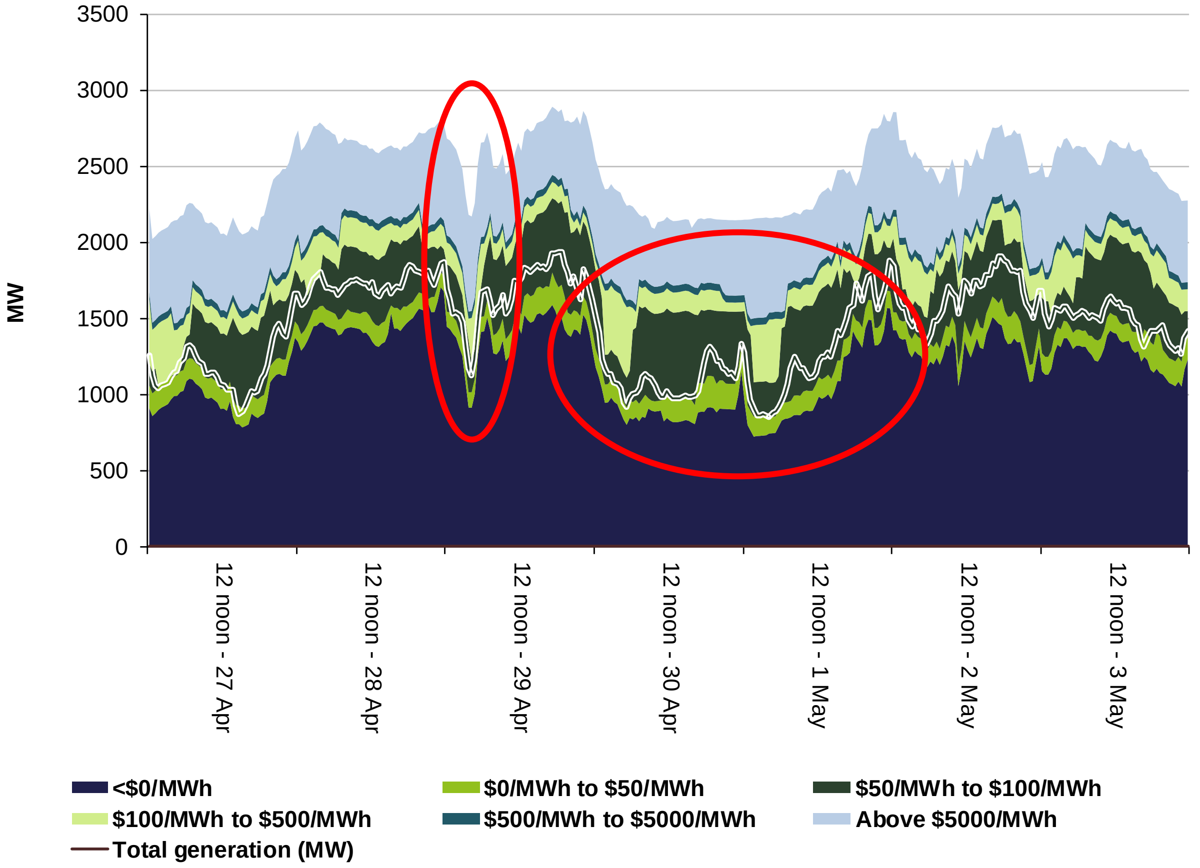
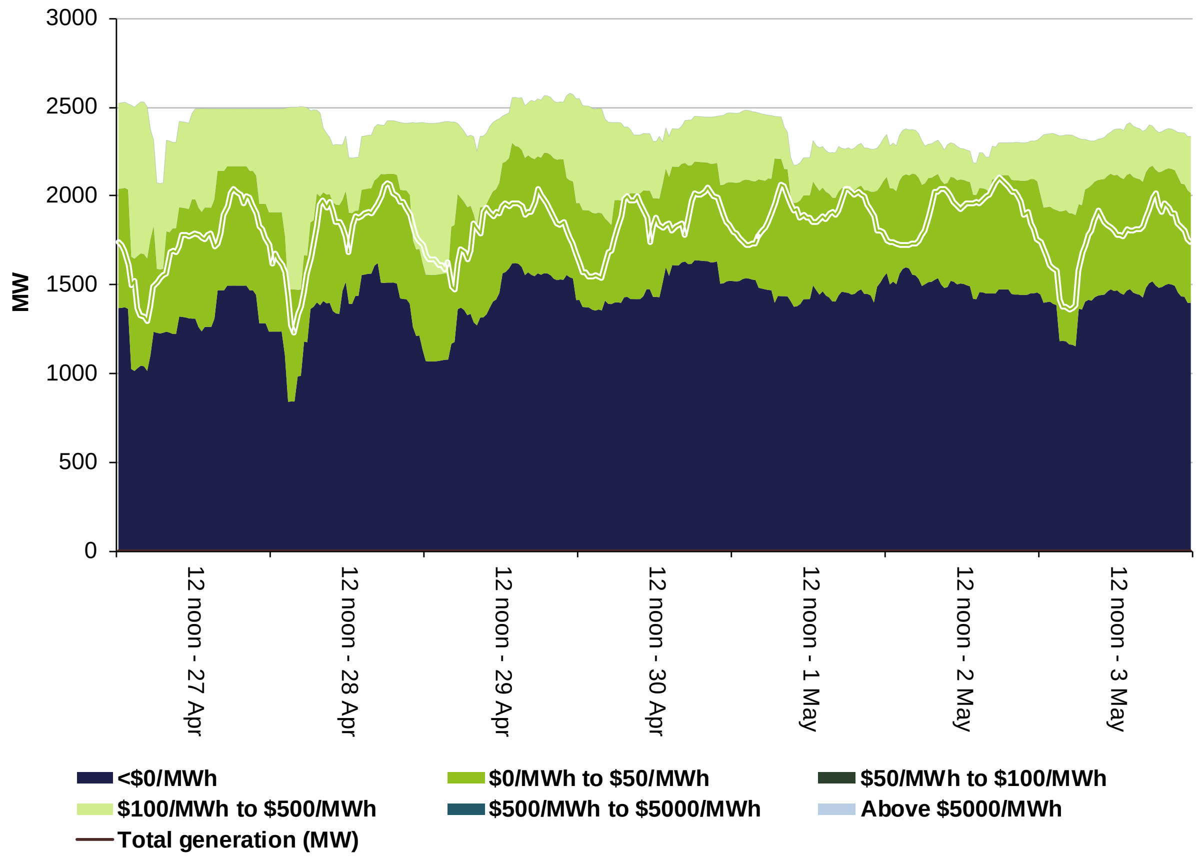


Figure 6: South Australia generation and bidding patterns



The large changes in South Australian generation (circled red in the above figure) are a result of large changes in wind generation in a short period of time. On 29 April wind generation fell 500 MW within two hours and wind generation fell from 1100 MW on 29 April to zero on 30 April.

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.

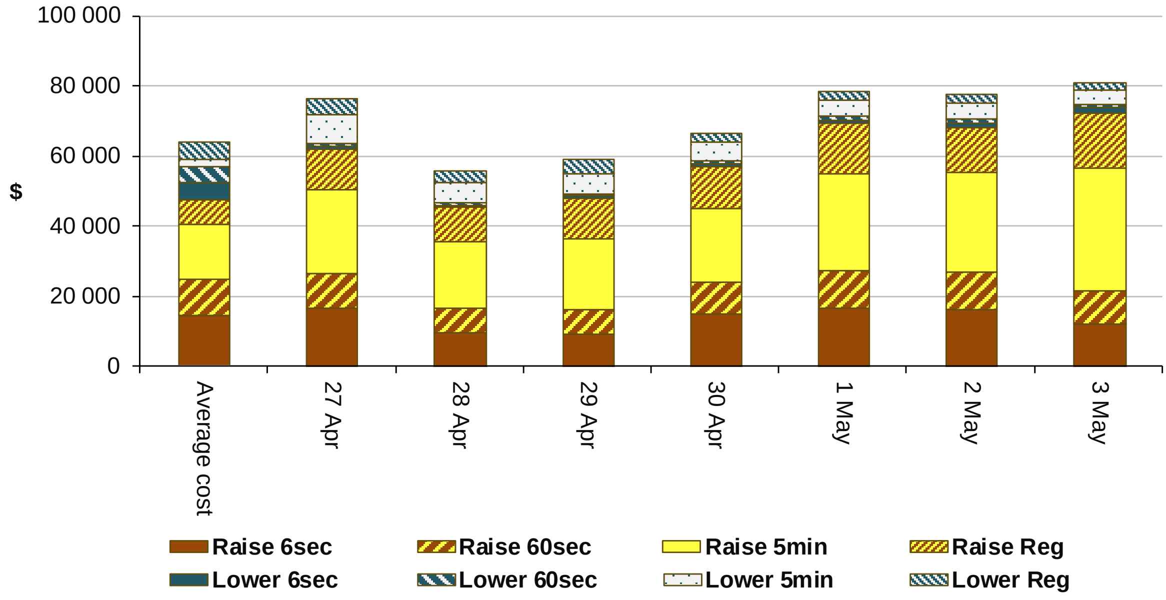
The Electricity Rules stipulate that generators pay for raise contingency services and customers pay for lower contingency services. Regulation services are paid for on a “causer pays” basis determined every four weeks by AEMO.

The total cost of FCAS on the mainland for the week was $445 500 or less than 1 per cent of energy turnover on the mainland.

The total cost of FCAS in Tasmania for the week was $48 500 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.

Queensland

There were two occasions where the spot price in Queensland was greater than three times the Queensland weekly average price of $55/MWh and above $250/MWh.

Table 3: Queensland, Monday 28 April

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 PM	284.08	58.70	68.95	6802	6772	6779	8995	8980	9037

Conditions at the time saw demand and available capacity close to that forecast.

At 5.39 pm, effective for 5.50 pm, 5.55 pm and 6 pm only, CS Energy rebid 490 MW of available capacity across its portfolio from prices less than $53/MWh to close to the price cap. The reason given was “1737A demand higher than forecast-SL”. This saw the dispatch price increase from $64/MWh at 5.45 pm to $1400/MWh at 5.50 pm. At 5.55 pm there was a 72 MW decrease in demand and prices returned to previous levels.

Table 4: Queensland, Thursday 1 May

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 PM	342.97	59.95	60.81	6982	6804	6730	8609	8940	9058

Conditions at the time saw demand 178 MW higher than that forecast four hours ahead. Available capacity was around 330 MW lower than that forecast four hours ahead.

At 2.33 pm Alinta Energy reduced the available capacity of Braemar unit 2 by 161 MW as the unit tripped. Almost all of this capacity was prices below $50/MWh.

At around 5 pm Stanwell's Swanbank E power station tripped reducing capacity by 365 MW, a majority of which was priced below $30/MWh.

Over three rebids from 5.12 pm, first effective from 5.35 pm, CS energy rebid a total of 695 MW of available capacity across its portfolio from prices below $60/MWh to above $12 600/MWh. This saw the dispatch price increase from $63/MWh at 5.35 pm to $1413/MWh at 5.55 pm. At 6 pm demand deceased by 76 MW and prices returned to previous levels.

Table 5: Queensland, Thursday 1 May for the 6 pm trading interval

Time		Participant	Rebid ($/MWh)			
Submitted	Effective		Volume (MW)	From ($/MWh)	To ($/MWh)	Reason
5.12 pm	5.35 pm	CS Energy/ Gladstone	250	<60	>12 700	1711P portfolio rearrangement due to- Wivenhoe 1 rts-SL
5.18 pm	5.35 pm	CS Energy / Wivenhoe	250	<50	12 700	1718P portfolio rearrangement due to- Oakey and MtStuart 2 run –SL
5.42 pm	5.50 pm	CS Energy / Callide and Gladstone	195	<45	>12 900	1741A dispatch price higher than 30 min forecast-SL

Table 6: Tasmania, Sunday 4 May (11.35 pm to midnight dispatch intervals on 3 May)

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	-142.31	26.30	26.30	975	973	997	2336	2395	2408

At around 11.50 pm there was a loss of SCADA between Hydro Tasmania and AEMO. As a result a number of generators in Tasmania were flagged as unavailable for the Frequency Control System Protection Scheme (FCSPS) for the midnight dispatch interval. This resulted in a constraint managing the FCSPS to violate as the export limited reduced from 589 MW at 11.55 pm to 60 MW at midnight but flow reduced from 589 MW to 382 MW because of the rate of change on Basslink.

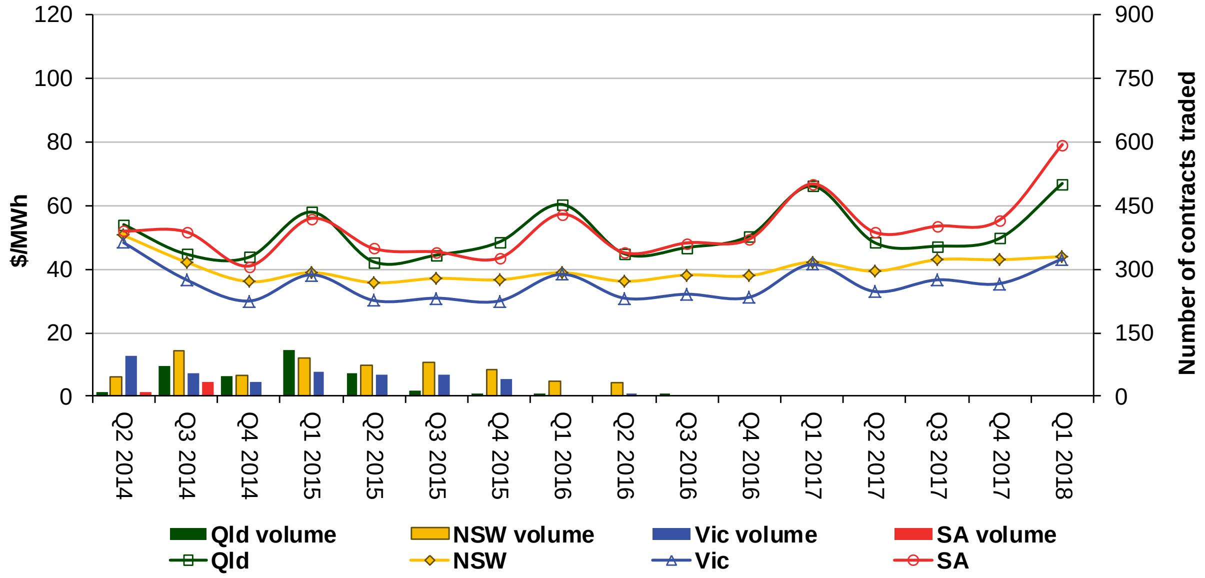
With excess generation capacity in Tasmania, a number of generators received targets to reduce their output and this saw negatively priced generation offers setting the price at the price floor at midnight.

SCADA communications were returned for the following dispatch interval and the export limit and price returned to previous levels.

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.

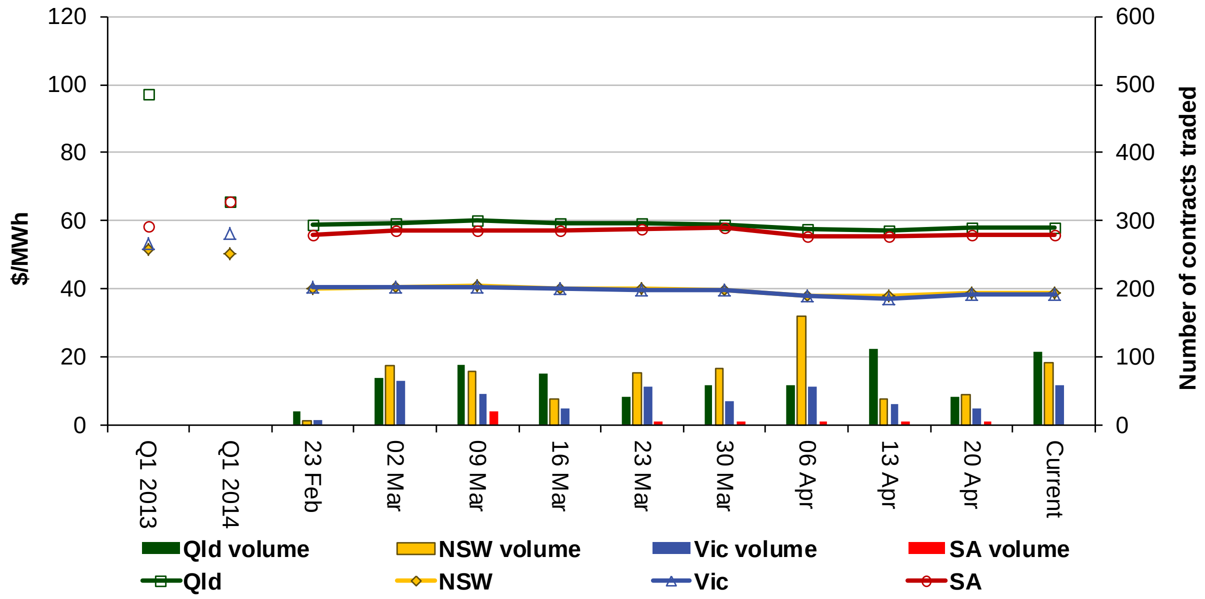
Figure 9: Quarterly base future prices Q2 2014 – Q1 2018



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)



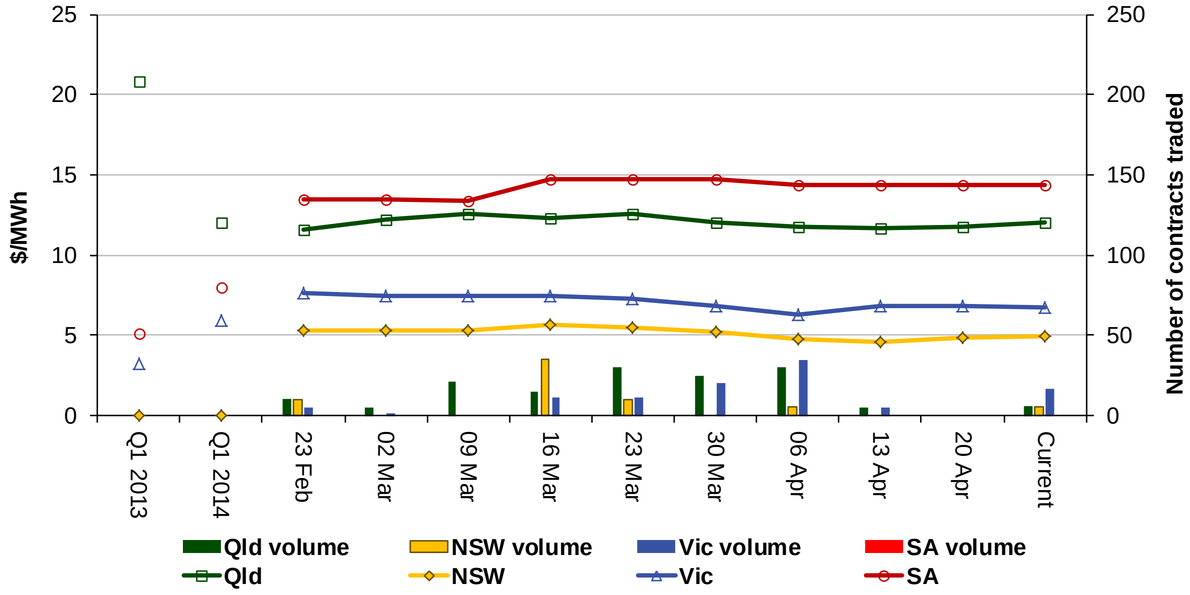
Note: Base contract prices are shown for each of the current week and the previous 9 weeks, with average prices shown for yearly periods 1 and 2 years prior to the current year

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

Australian Energy Regulator

May 2014