Electricity Report
22 – 28 March 2015

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 22 to 28 March 2015. There were two occasions during the week where the spot price in Queensland was above $250/MWh, as discussed in the *Detailed market analysis of significant price events* section.

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

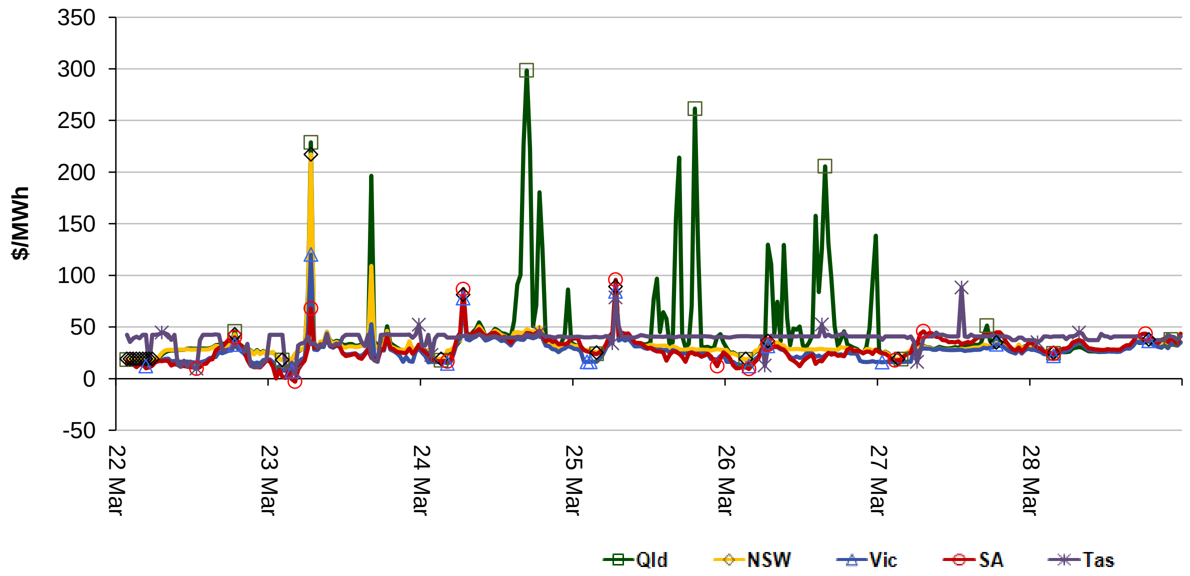


Figure 2 shows the volume weighted average (VWA) prices for the current week (with prices shown in Table 1) and the preceding 12 weeks, as well as the VWA price over the previous 3 financial years.

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

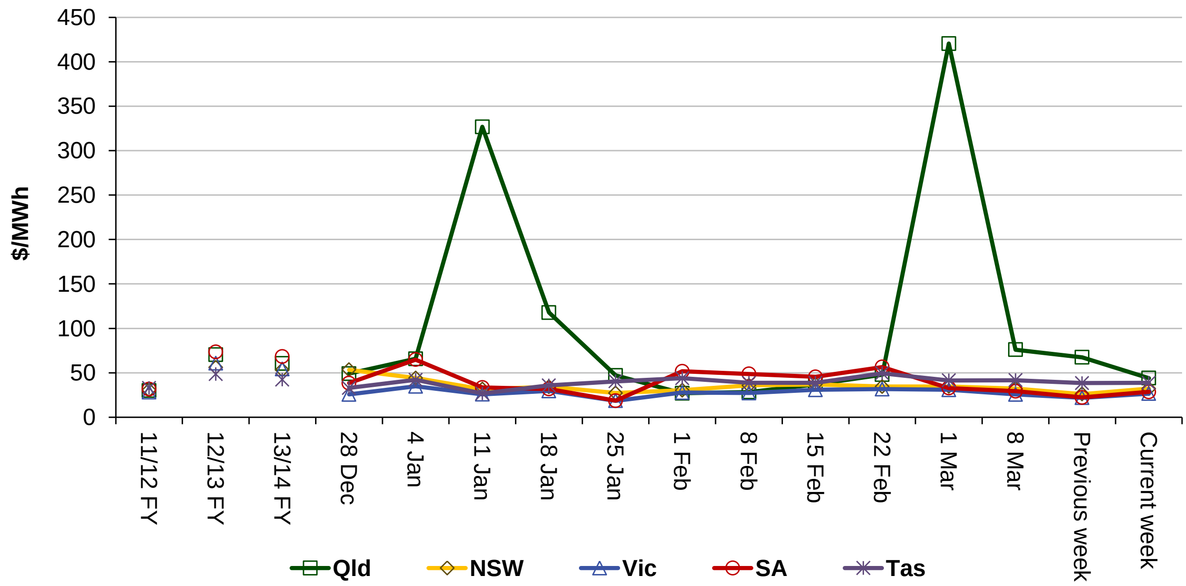


Table 1 : Volume weighted average spot prices by region ($/MWh)

Region	Qld	NSW	Vic	SA	Tas
Current week	44	32	27	29	39
13-14 financial YTD	61	53	54	68	42
14-15 financial YTD	70	36	31	40	38

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 99 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

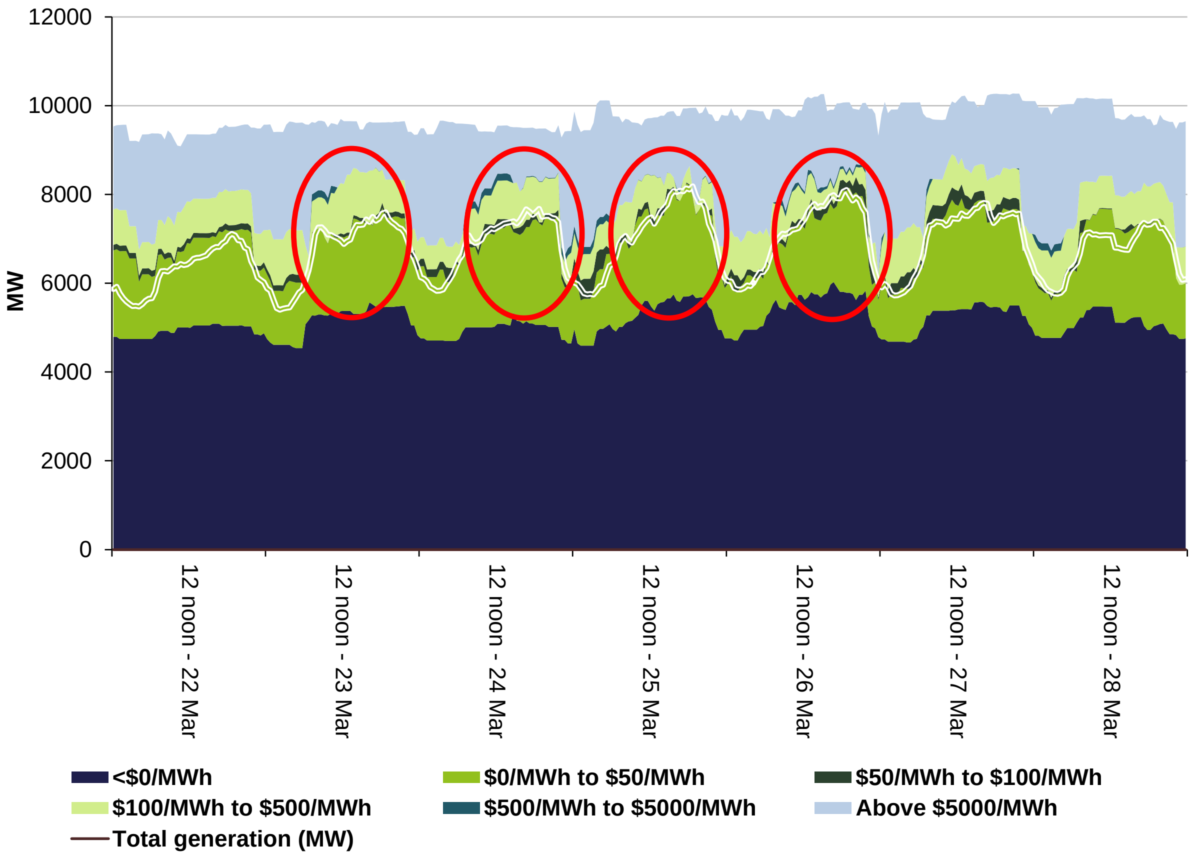
	Availability	Demand	Network	Combination
% of total above forecast	1	58	0	6
% of total below forecast	33	1	0	0

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 ellipses on Figure 3 and Figure 4 highlight periods where rebidding shifted net capacity from low priced bands to high prices. On 23 March, in New South Wales the majority of the late rebidding, corresponding with similar shifts in Queensland, moved capacity up to prices greater than $10 000/MWh. While this was not sufficient to trigger our reporting threshold it increased dispatch prices in a number of intervals, materially resulting in a spot price of around $220/MWh at 7.00 am and around $200/MWh at 2.30 pm.

Figure 4 : New South Wales generation and bidding patterns

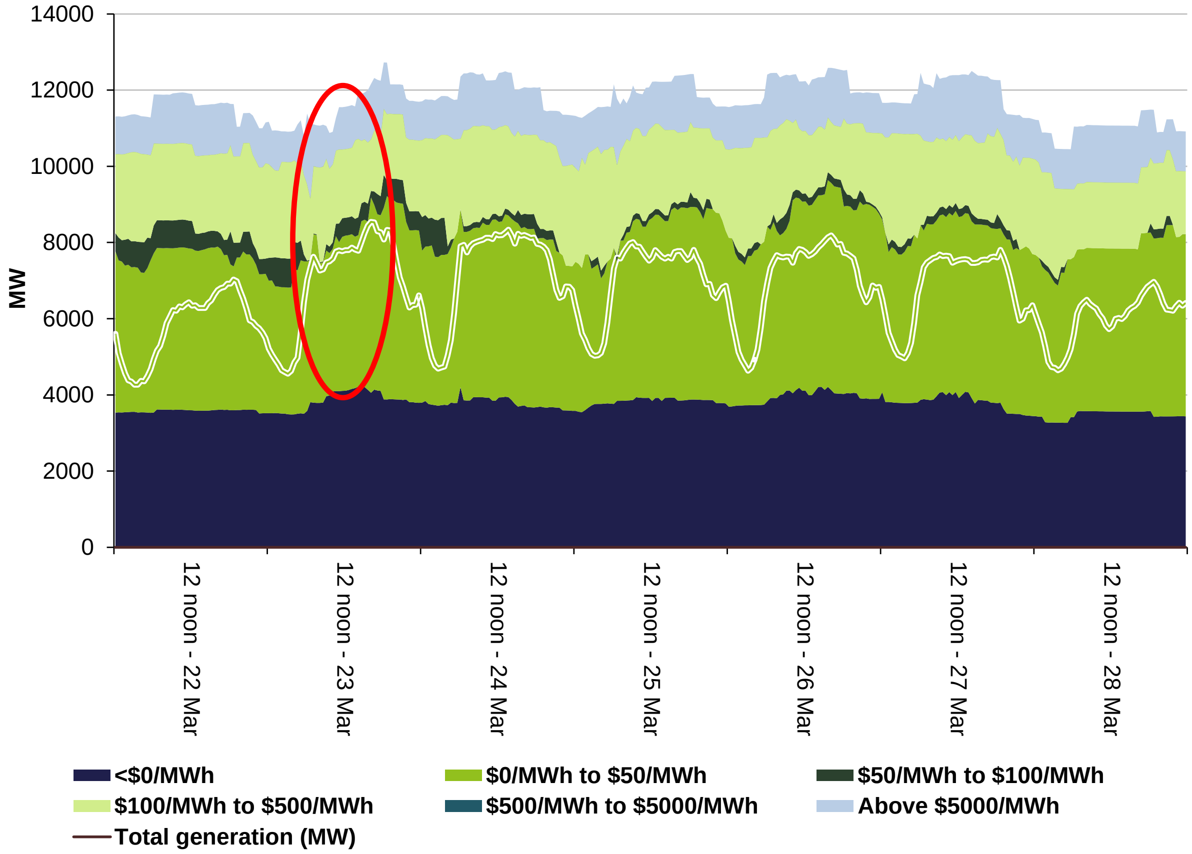


Figure 5 : Victoria generation and bidding patterns

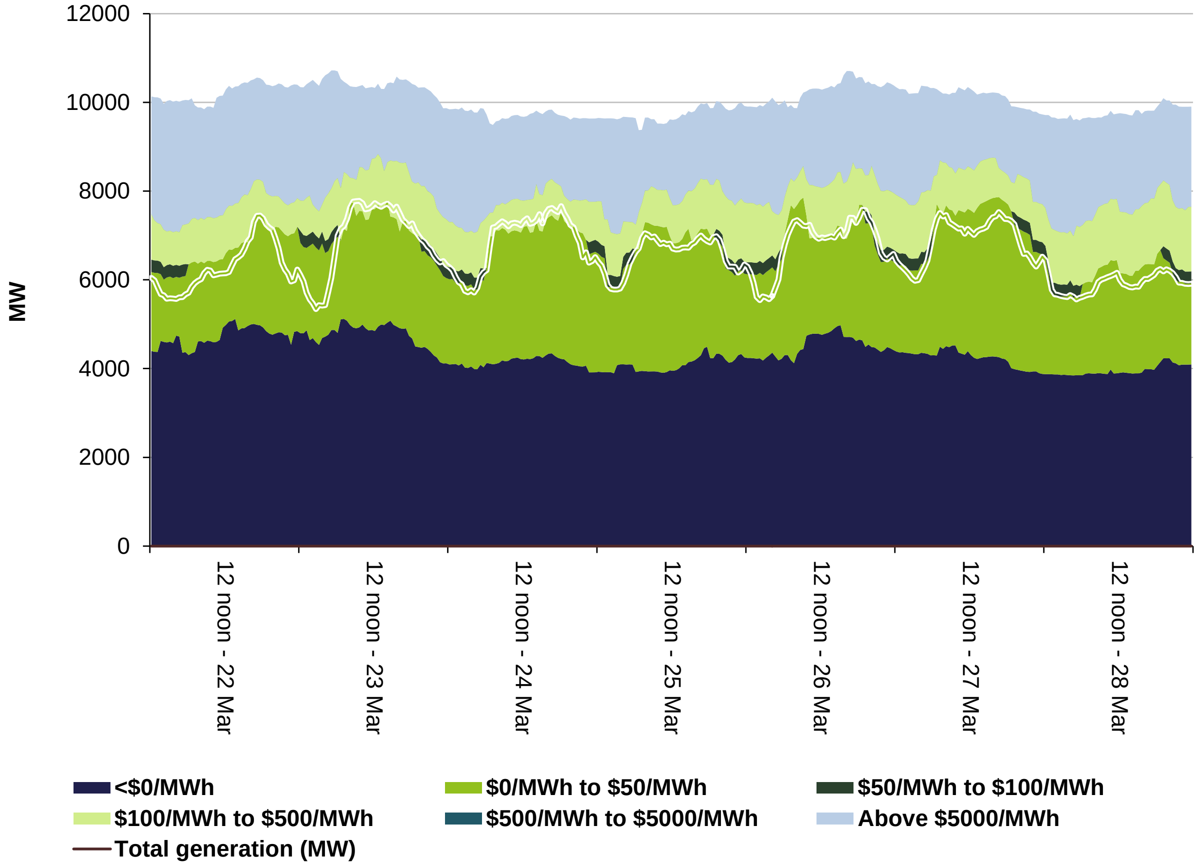


Figure 6: South Australia generation and bidding patterns

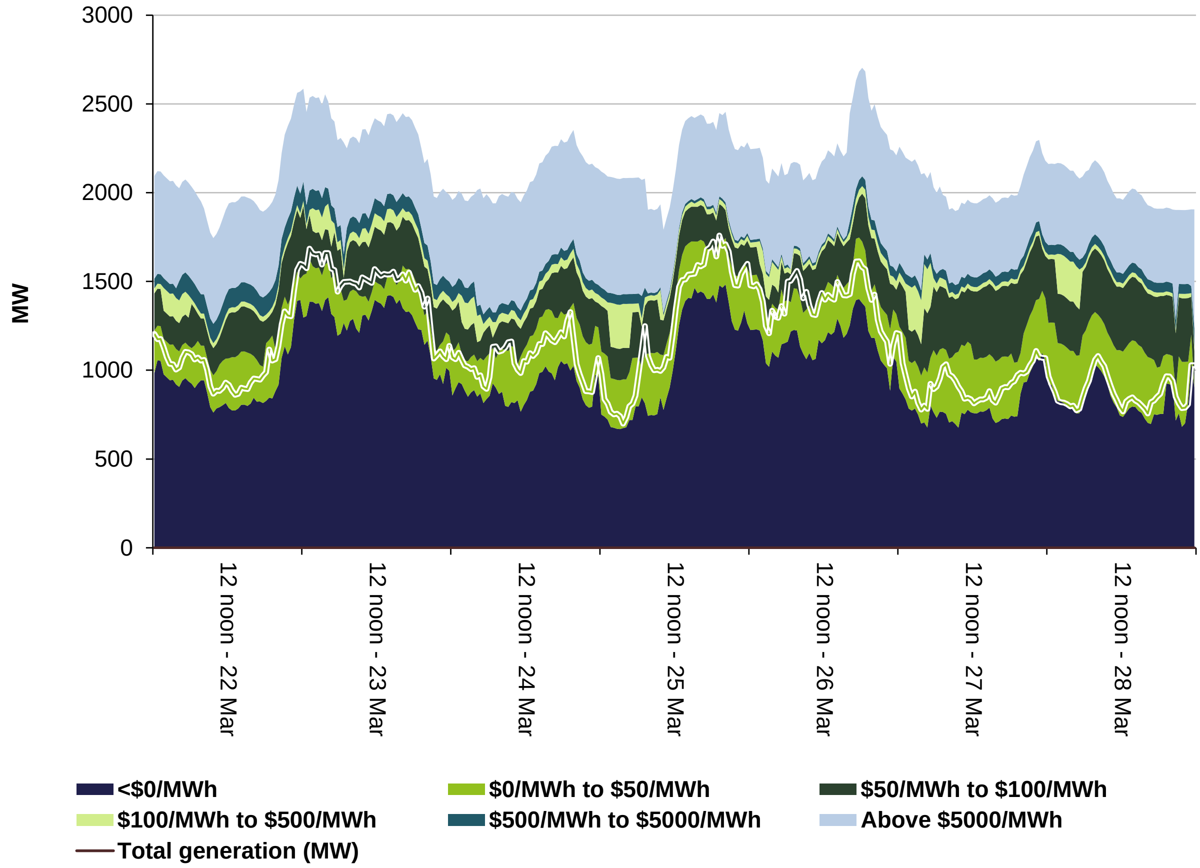
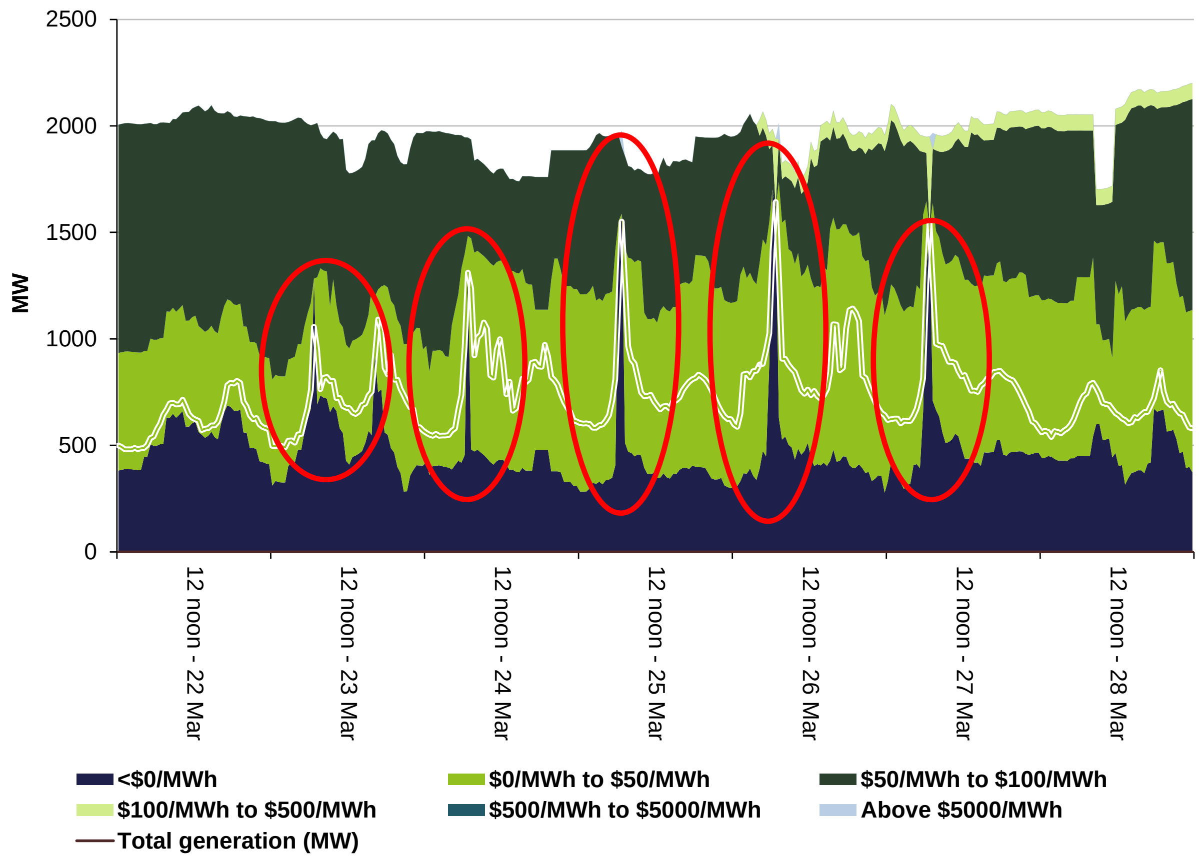


Figure 7: Tasmania generation and bidding patterns



The five red ellipses on Figure 7 highlight periods where Hydro Tasmania rebid significant volumes of capacity from higher prices down to prices close to zero, resulting in an increase in hydro generation in Tasmania and a reversal of flows on Basslink from import to export. The rebid reasons for these events reference transmission constraints being different to forecast and broadly coincided with higher prices on the mainland in Queensland and New South Wales.

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 $286 500 or less than 1 per cent of energy turnover on the mainland.

The total cost of FCAS in Tasmania for the week was $110 500 or less than 1.6 per cent of energy turnover in Tasmania.

Figure 8 : Daily frequency control ancillary service cost

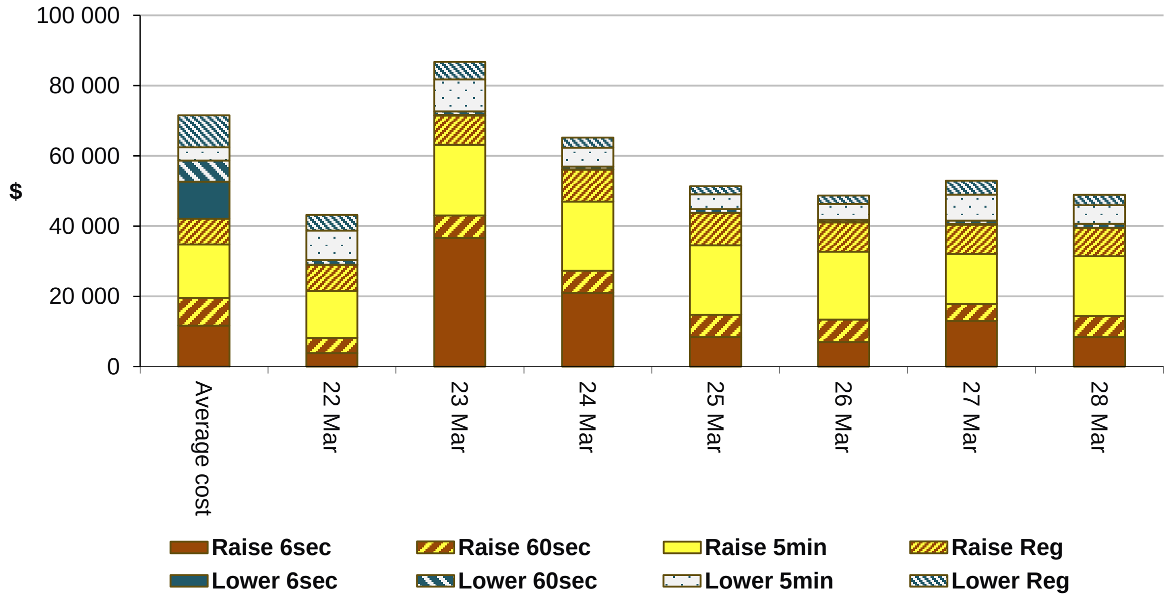


Figure 8 shows the daily breakdown of cost for each FCAS for the NEM, as well as the average cost since the beginning of the previous financial year.

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 $44/MWh and above $250/MWh.

Tuesday 24 March

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
5 pm	299	59	96	7687	7485	7559	9499	9563	9598

Conditions at the time saw demand more than 200 MW higher than that forecast four hours ahead, while available capacity was only slightly below forecast levels.

Additional supply from New South Wales was limited by system normal constraints managing voltage stability on the loss of Kogan Creek, and the limits on Directlink.

Forecast spot prices started increasing in pre dispatch runs from one hour ahead when expected demand rose to levels above 7600 MW.

Numerous plant in Queensland moved small volumes across the forecast price threshold and technical issues at Callide B resulted in a progressive reduction in its available capacity. At 3.59 pm, Stanwell rebid 220 MW of available capacity at its Stanwell and Tarong generating units from below $30/MWh to above $298/MWh. The reason given was “1559A QLD 5MIN DEMAND ABOVE 30MIN PD @ 1550HRS”.

When demand in Queensland began to exceed 7600 MW from 4.15 pm, 5-minute prices rose to around $300/MWh over 13 consecutive dispatch intervals until 5.20 pm when demand reduced to just over 7500 MW.

There was no other significant rebidding.

Wednesday 25 March

Table 4: 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
7.30 pm	261.52	29.40	31.01	7991	7786	8080	9953	9976	10 071

Conditions at the time saw demand more than 200 MW higher than that forecast four hours ahead, while available capacity was only slightly below forecast levels.

Additional supply from New South Wales was limited by system normal constraints managing voltage stability on the loss of Kogan Creek, and the outage of two Directlink cables.

High spot prices were not forecast in pre dispatch runs. Participant rebidding close to the start of the trading interval and during the trading interval reduced the volume of generation priced below $500/MWh by more than 300 MW. The resulting steep supply curve (with only 36 MW available between $50/MWh and $200/MWh over the period) created a situation where small changes to demand or available capacity had a more significant impact.

Table 5: Rebids for 7.30 pm

Time in	Time effective	Participant	Station	Capacity rebid (MW)	Price from ($/MWh)	Price to ($/MWh)	Rebid reason
3.34 pm		Callide Power Trading	Callide C	23	<20	13 500	1533A CHANGE IN 5MIN PD DEMAND - SL
6.53 pm		Callide Power Trading	Callide C	50	<20	13 500	1852A RRP ABOVE PD
6.49 pm		Millmerran Energy Trader	Millmerran	195	7	13 500	18:48 A RRP ABOVE PD
Multiple rebids **6.45 pm to 6.55 pm**	7.05 pm	Stanwell Corporation	Stanwell and Tarong	265	<29	12950	1840A QNI BINDING NORTH - SCL IT ISSUE BIDDING VIA AEMO'S SYSTEM
6.56 pm	7.05 pm	ERM Power	Oakey	140	>288	0	1856F CHANGE IN PD: FCAST PRICE INC::CHANGE MW DISTRIB.
6.57 pm	7.05 pm	AGL Energy	Yabulu	73	422	13243	1855~A~050 CHG IN AEMO PD~PRICE INCREASE VS PD QLD 12950
7.07 pm	7.15 pm	ERM Power	Oakey	140	0	288	1907P FUEL MANAGEMENT::CHANGE MW DISTRIB.
7.11 pm	7.20 pm	CS Energy	Gladstone, Wivenhoe	225	<300	>10 900	1910A INTERCONNECTOR CONSTRAINT-BINDING NORTH-SL
7.17 pm	7.25 pm	Stanwell Corporation	Kareeya	68	-1	12 950	1916A QLD 5MIN PRICE FCAST HIGHER- DI1920 VDI1915

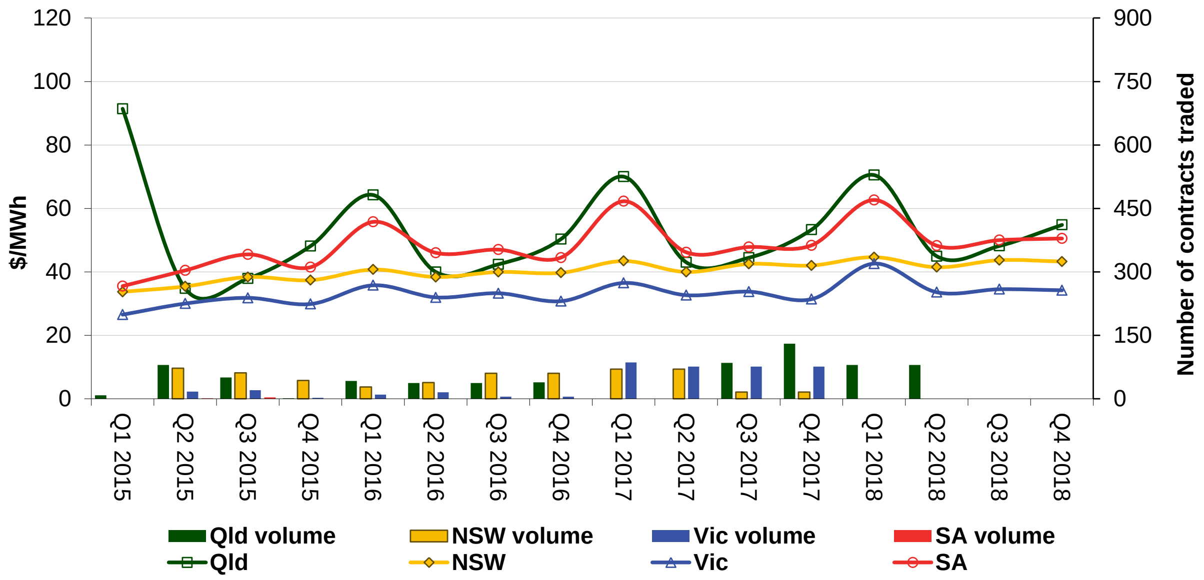
As a number of participants’ rebids became effective 5-minute prices increased despite declining demand, with a number of generators at their maximum availability and other units trapped or stranded in FCAS over the period.

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.

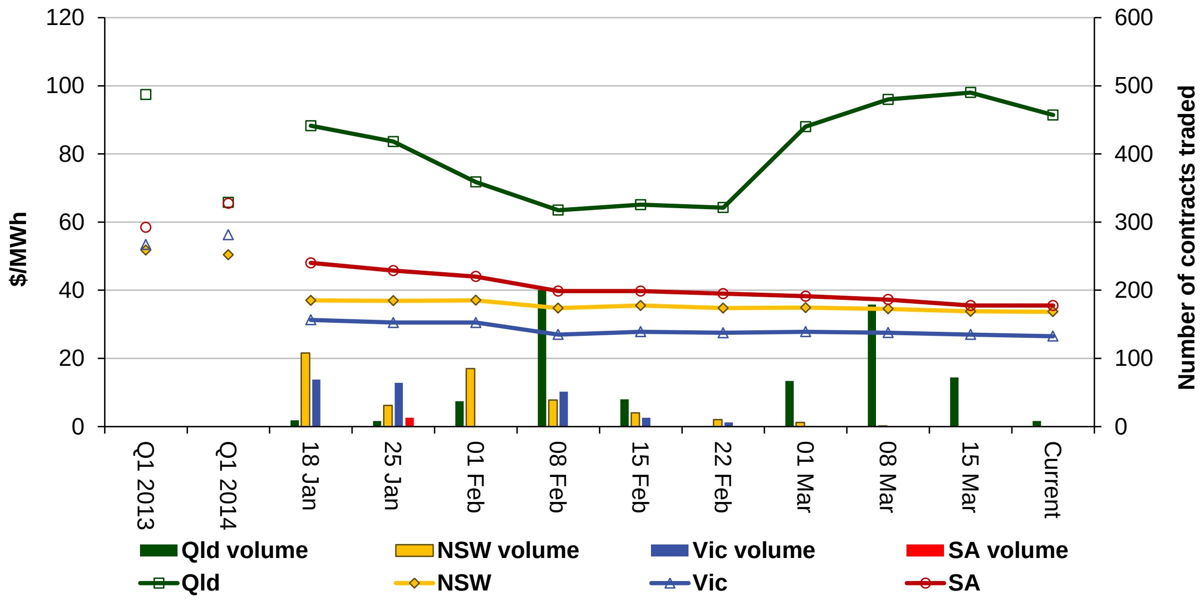
Figure 9 : Quarterly base future prices Q1 2015 – Q4 2018



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)



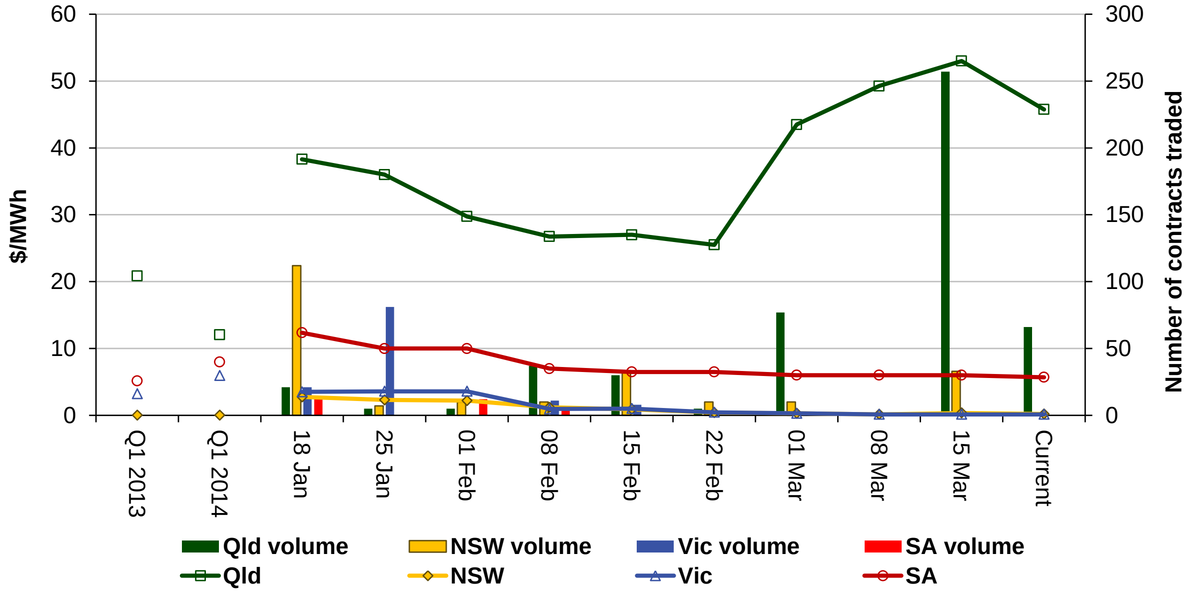
Note: Base contract prices are shown for each of the current week and the previous 9 weeks, with average prices shown for yearly periods 1 and 2 years prior to the current year.

Source: ASXEnergy.com.au

Prices of other financial products (including longer-term price trends) are available in the [Industry Statistics](#) 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. Despite being close to the end of the quarter, prices in Queensland remain elevated and volumes are still being traded.

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

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