

Electricity Report

28 June – 4 July 2015



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.

Increases in Price Cap and Cumulative Price Threshold

In line with the Australian Energy Market Commission's *Reliability standard and reliability settings review 2014*, from 1 July 2015 the Market Price Cap (MPC) increased from \$13 500/MWh to \$13 800/MWh (in line with the increase in the consumer price index) and as a result the Cumulative price threshold (CPT) increased from \$201 900 to \$207 000.

Spot market prices

Figure 1 shows the spot prices that occurred in each region during the week 28 June to 4 July 2015. The spot price exceeded the AER reporting threshold in South Australia on 2 and 3 July, as discussed in the *Detailed market analysis of significant price events* section.

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

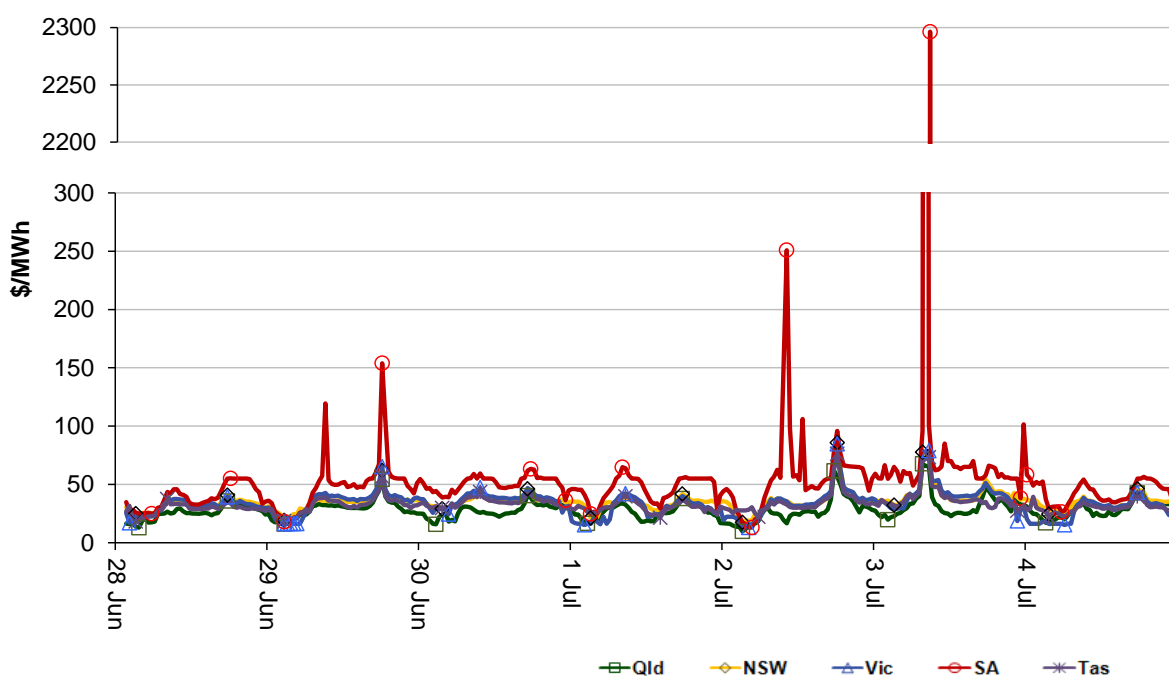


Figure 2 shows the volume weighted average (VWA) prices for the current week (with prices shown in Table 1) and the preceding 12 weeks, as well as the VWA price over the previous 3 financial years.

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

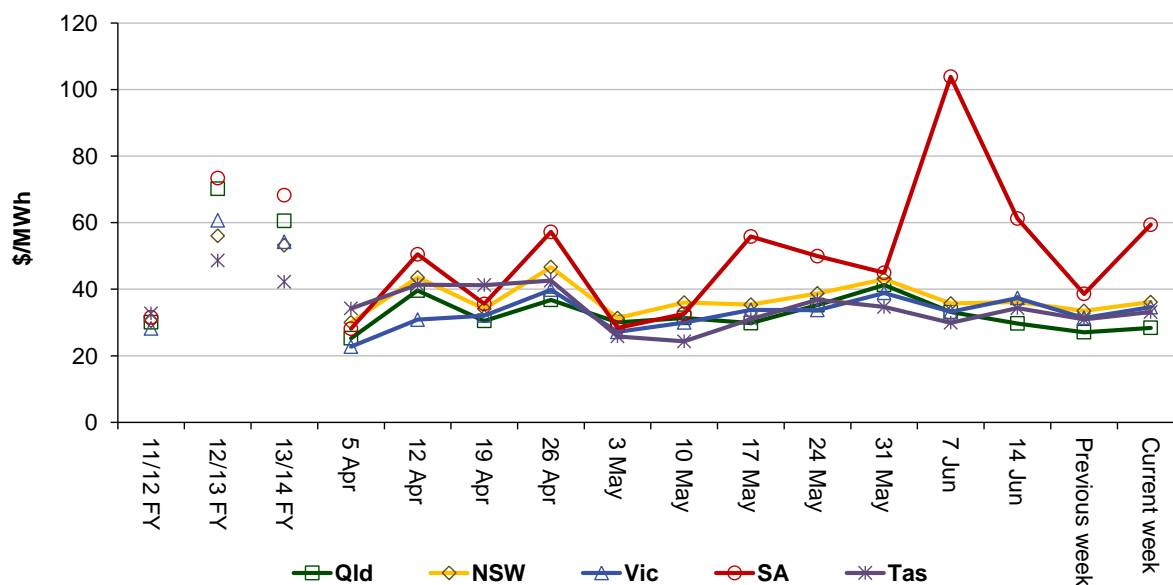


Table 1: Volume weighted average spot prices by region (\$/MWh)

Region	Qld	NSW	Vic	SA	Tas
Current week	28	36	35	59	33
13-14 financial YTD	60	53	54	68	42
14-15 financial YTD	61	36	32	43	37

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 77 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	7	54	0	2
% of total below forecast	23	13	0	1

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

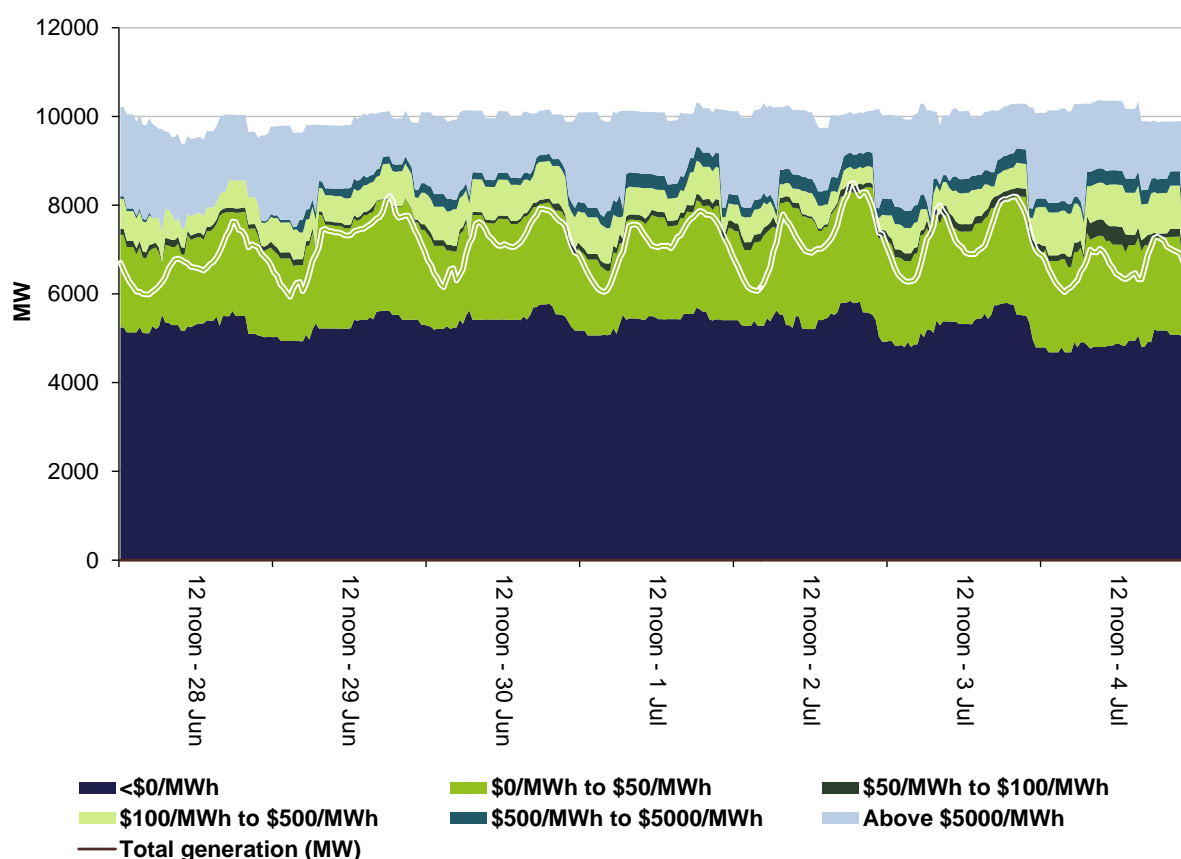


Figure 4: New South Wales generation and bidding patterns

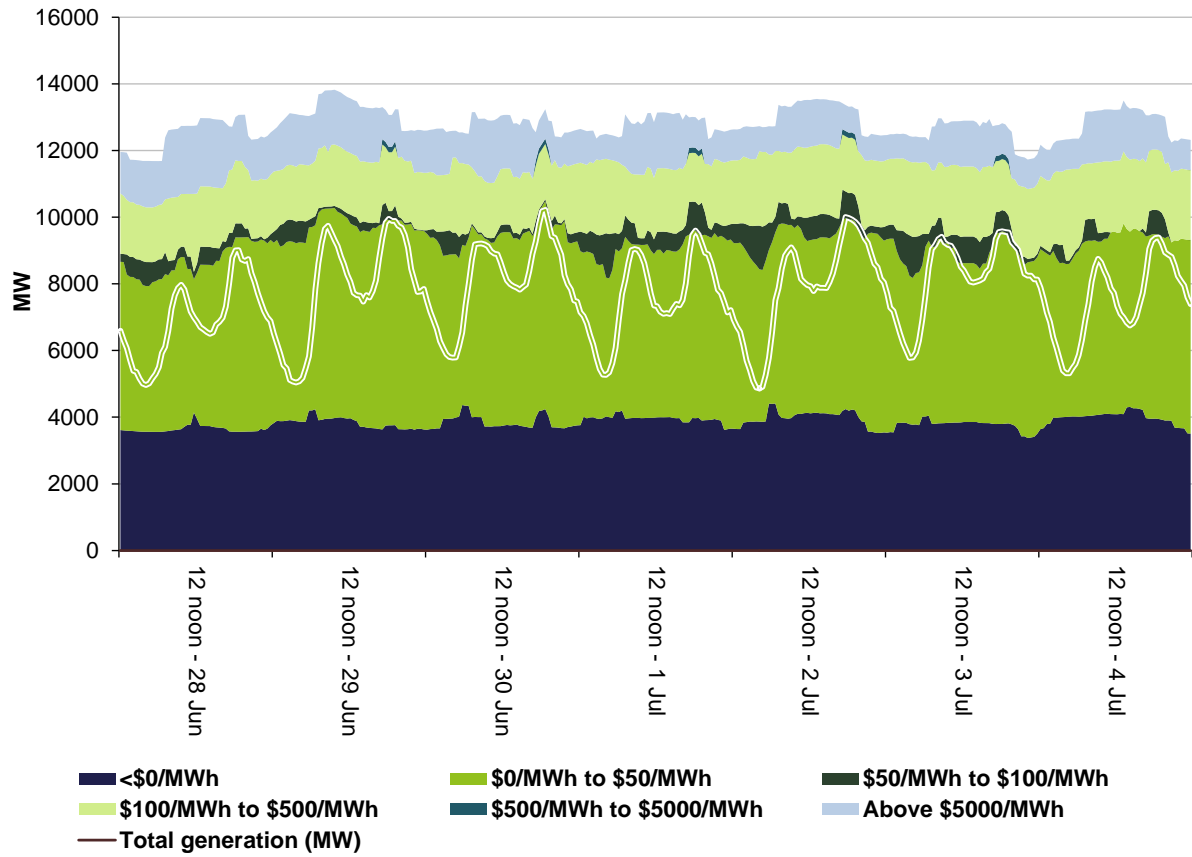


Figure 5: Victoria generation and bidding patterns

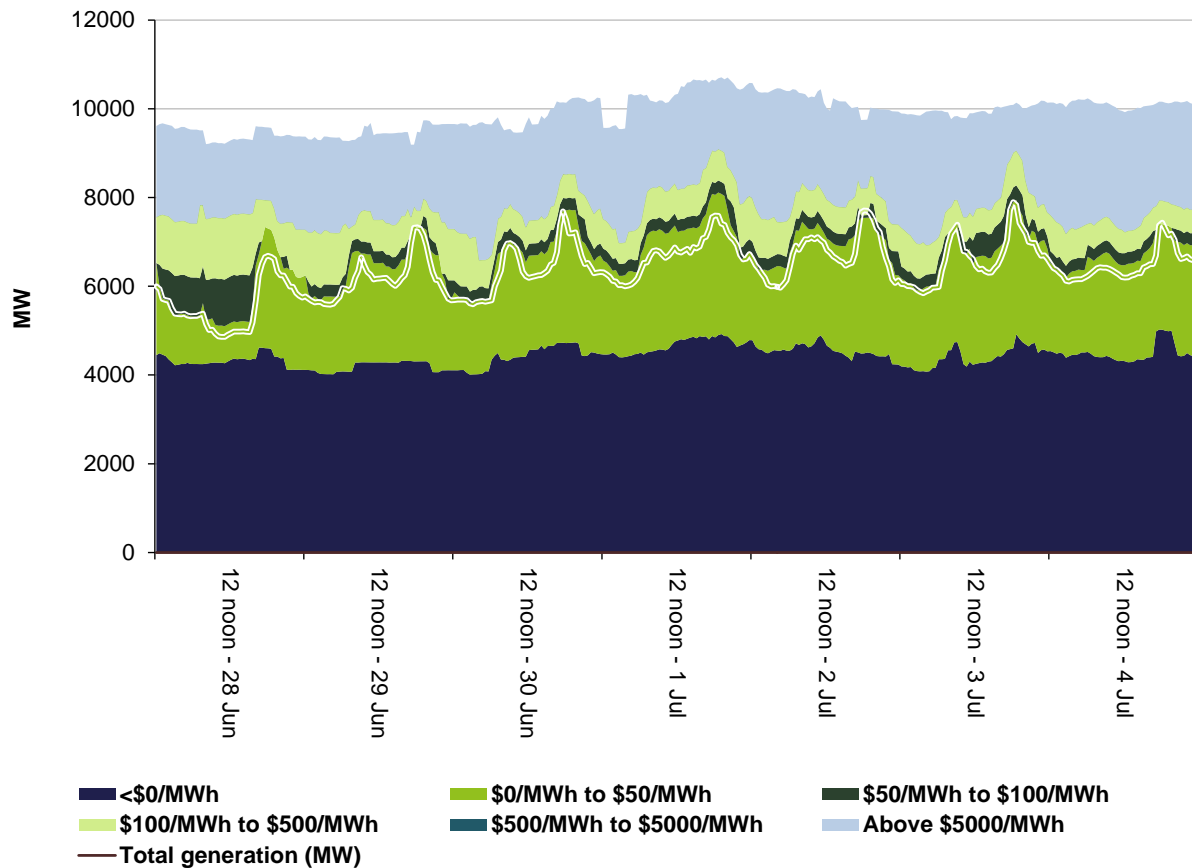


Figure 6: South Australia generation and bidding patterns

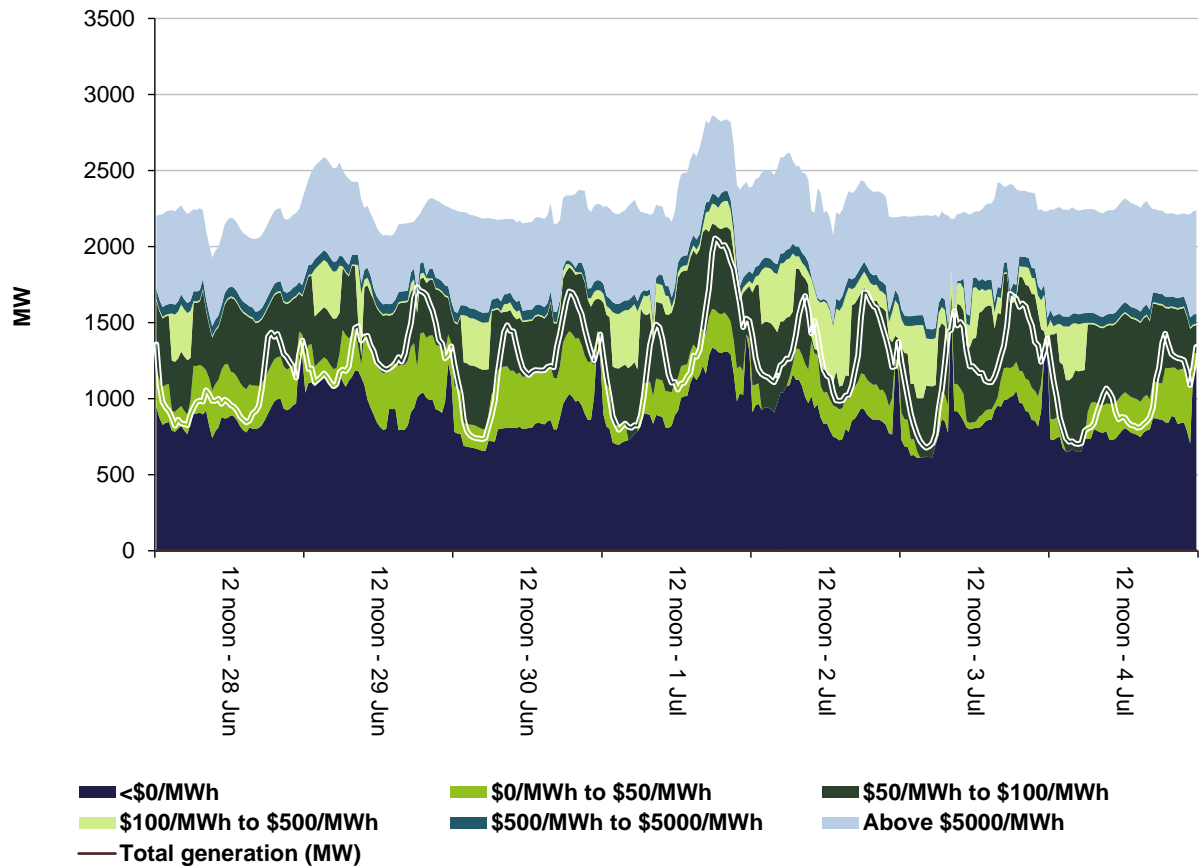
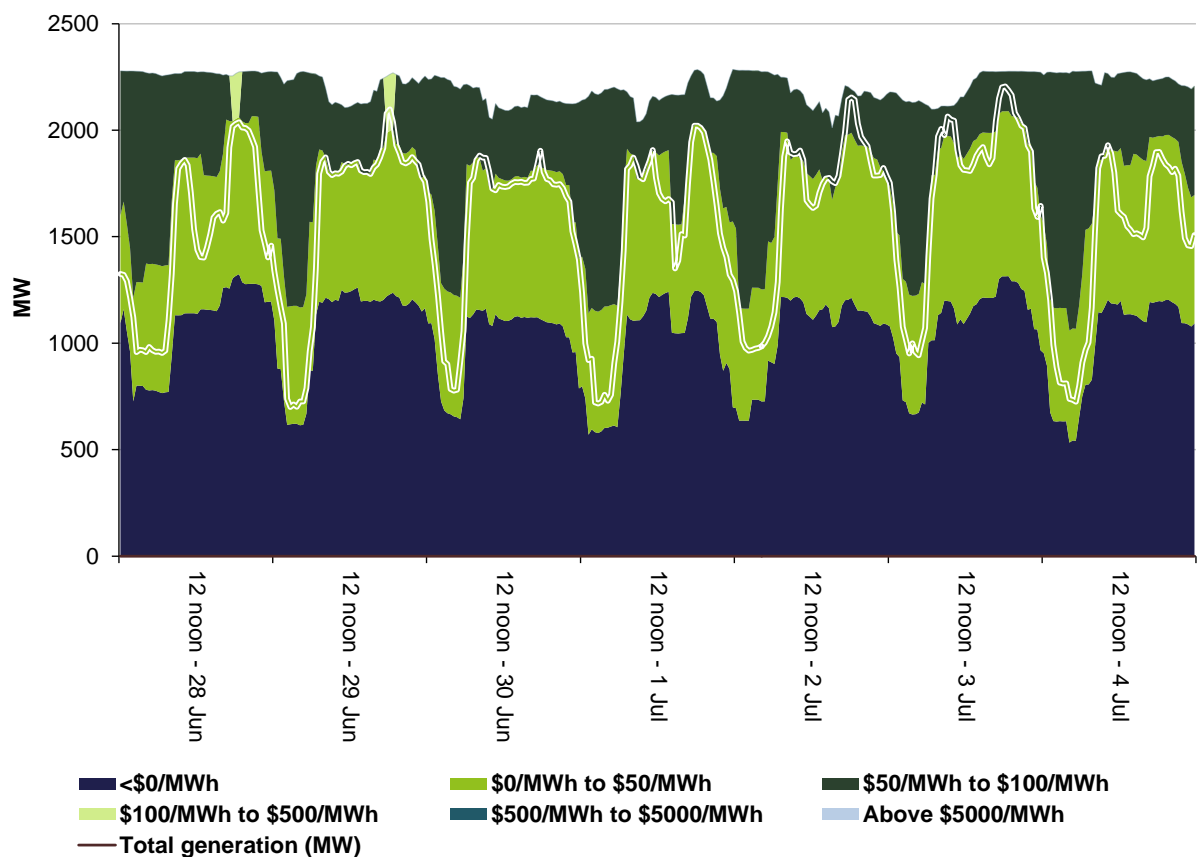


Figure 7: Tasmania generation and bidding patterns



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.

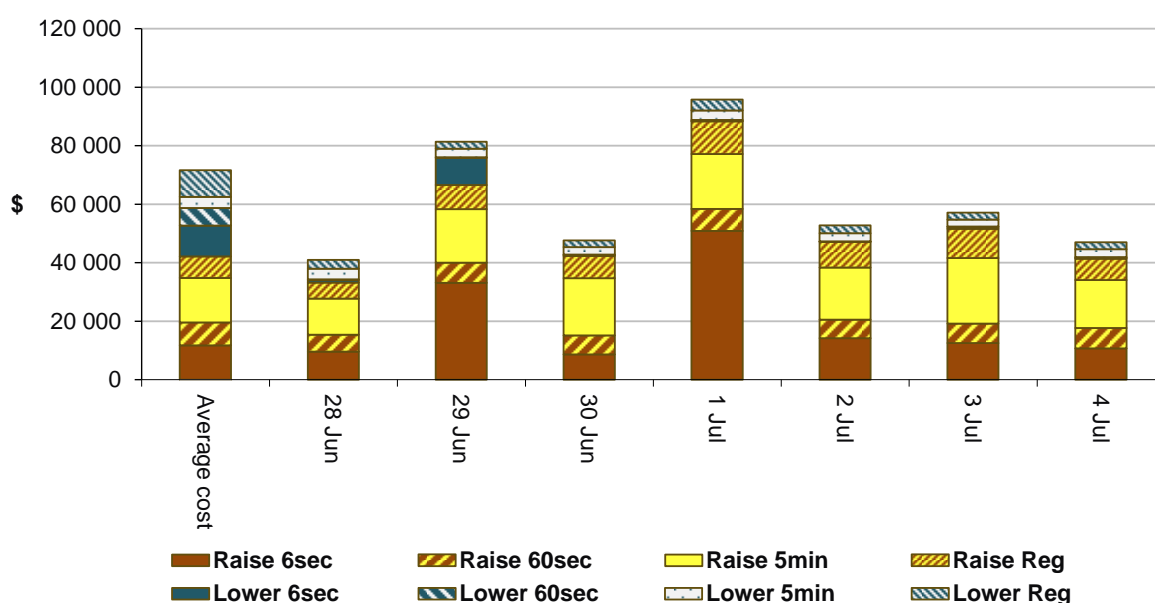
The Electricity Rules stipulate that generators pay for raise contingency services and customers pay for lower contingency services. Regulation services are paid for on a “causer pays” basis determined every four weeks by AEMO.

The total cost of FCAS on the mainland for the week was \$300 000 or less than 1 per cent of energy turnover on the mainland.

The total cost of FCAS in Tasmania for the week was \$122 500 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.

South Australia

There were two occasions where the spot price in South Australia was greater than three times the South Australia weekly average price of \$59/MWh and above \$250/MWh.

Thursday, 2 July

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

10.30 am	250.82	54.99	54.99	1640	1635	1655	2222	2349	2280
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Four hours ahead, demand and Interconnector flows were close to forecast, while available capacity was over 100 MW lower than forecast.

Table 4: Rebids for the 10.30 am trading interval

Submit time	Time effective	Participant	Station	Capacity rebid (MW)	Price from (\$/MWh)	Price to (\$/MWh)	Rebid reason
9.18 am		AGL	Torrens Island	330	<65	351	0905~P~020 reduction in avail cap~201 gas conservation-SL
9.32 am		Origin	Ladbroke	158	<200	N/A	0930A avoid uneconomic start SL
9.54 am		Alinta	Northern	30	46	13 334	0945~A~Hallett started~
10.03 am	10.10 am	EA	Hallett	15	>361	-1000	10:03 A adj bands due to mat change in SA 5MPD price SL
10.10 am	10.20 am	EA	Hallett	35	-1000	361	10:09 a bands adj mat chng SA 5mpd price 350.99 vs 45.99 @1015

The above rebids reduced the amount of low-priced capacity available during this period creating a steep supply curve in South Australia.

The Heywood interconnector was limited to around 280 MW four hours ahead, as forecast. Ramping constraints were invoked from 10 am to manage the planned outage of the Murraylink interconnector from 10.35 am. The ramping constraints caused the import limit into South Australia across Murraylink to reduce from 160 MW at 9.55 am to zero by 10.15 am, remaining there for the rest of the trading interval.

The reduction in imports and low price capacity (through rebidding) caused the dispatch price to reach \$350/MWh at 10.05 am. However, rebidding to the price floor by Energy

Australia at Hallett caused the dispatch price to fall to below \$55/MWh for the 10.10 am and 10.15 am dispatch intervals, before increasing again to \$350/MWh from 10.20 am to the end of the trading interval when Energy Australia rebid capacity from the price floor to above \$360/MWh.

Friday, 3 July

Table 5: 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
8.30 am	2296.32	66.69	64.94	1884	1923	1898	2199	2214	2273

Conditions at the time saw demand and available capacity close to that forecast. There was only 48 MW of wind generation in South Australia at the time.

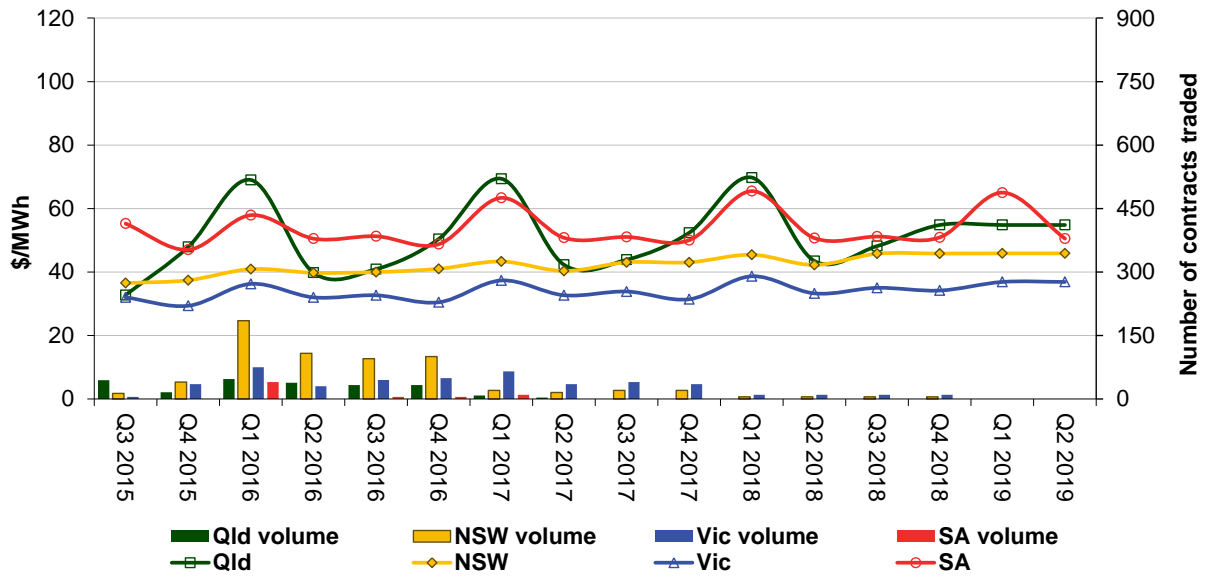
At 7.58 am, effective from 8.05 am, Alinta Energy rebid 223 MW of available capacity at Northern Power Station from prices below \$55/MWh to \$13 334/MWh. The reason given was “0755~A~DISPATCH \$142 V 5PD \$93.06~”. This rebid resulted in a steep supply curve in South Australia (little capacity priced between \$55/MWh and \$12 000/MWh), meaning small changes in demand, rebids or interconnector flows could lead to large changes in price.

The dispatch price increased from \$154/MWh at 8.05 am to \$13 334/MWh at 8.10 am following a slight increase in demand and a reduction in wind powered generation. The price was set by Northern Power station. Alinta Energy subsequently reversed the rebid at Northern Power Station which resulted in the dispatch price returning to previous levels from 8.15 am for the remainder of the trading interval.

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.

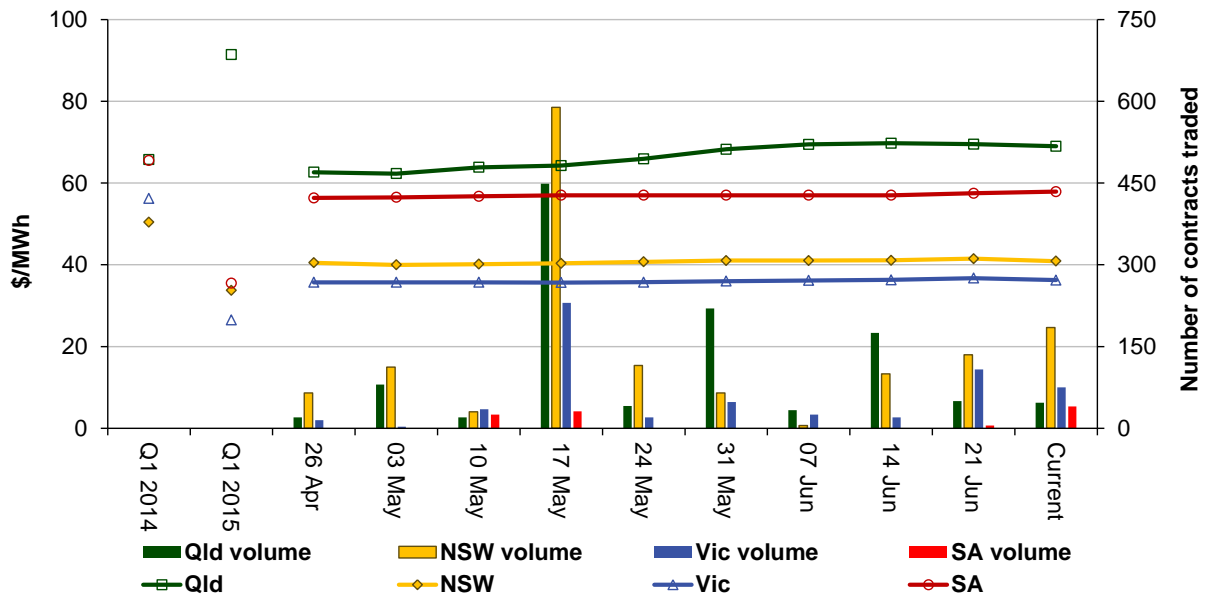
Figure 9: Quarterly base future prices Q3 2015 – Q2 2019



Source: ASXEnergy.com.au

Figure 10 shows how the price for each regional Quarter 1 2016 base contract has changed over the last 10 weeks (as well as the total number of trades each week). The closing quarter 1 2014 and quarter 1 2015 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 2016 base contracts over the past 10 weeks (and the past 2 years)

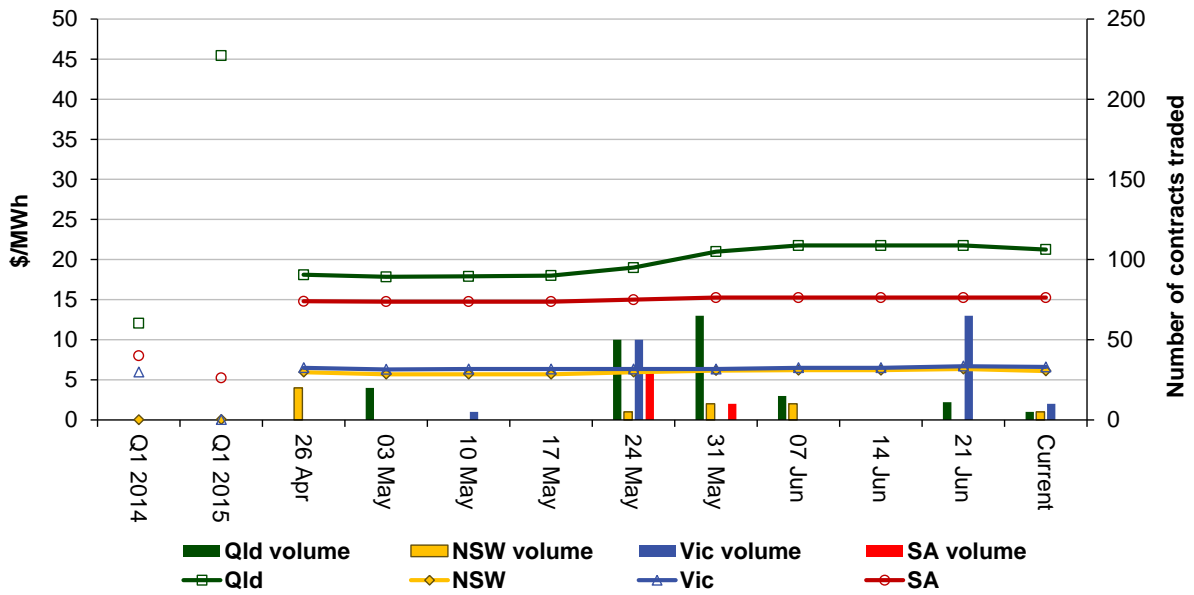


Note: Base contract prices are shown for each of the current week and the previous 9 weeks, with average prices shown for yearly periods 1 and 2 years prior to the current year.

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 2016 cap contract has changed over the last 10 weeks (as well as the total number of trades each week). The closing quarter 1 2014 and quarter 1 2015 prices are also shown.

Figure 11: Price of Q1 2016 cap contracts over the past 10 weeks (and the past 2 years)



Source: ASXEnergy.com.au

Australian Energy Regulator

July 2015