

## 13 – 19 September 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 13 to 19 September 2015. There was one occasion in South Australia where the spot price exceeded the AER reporting threshold in South Australia. This is discussed later in this report.

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

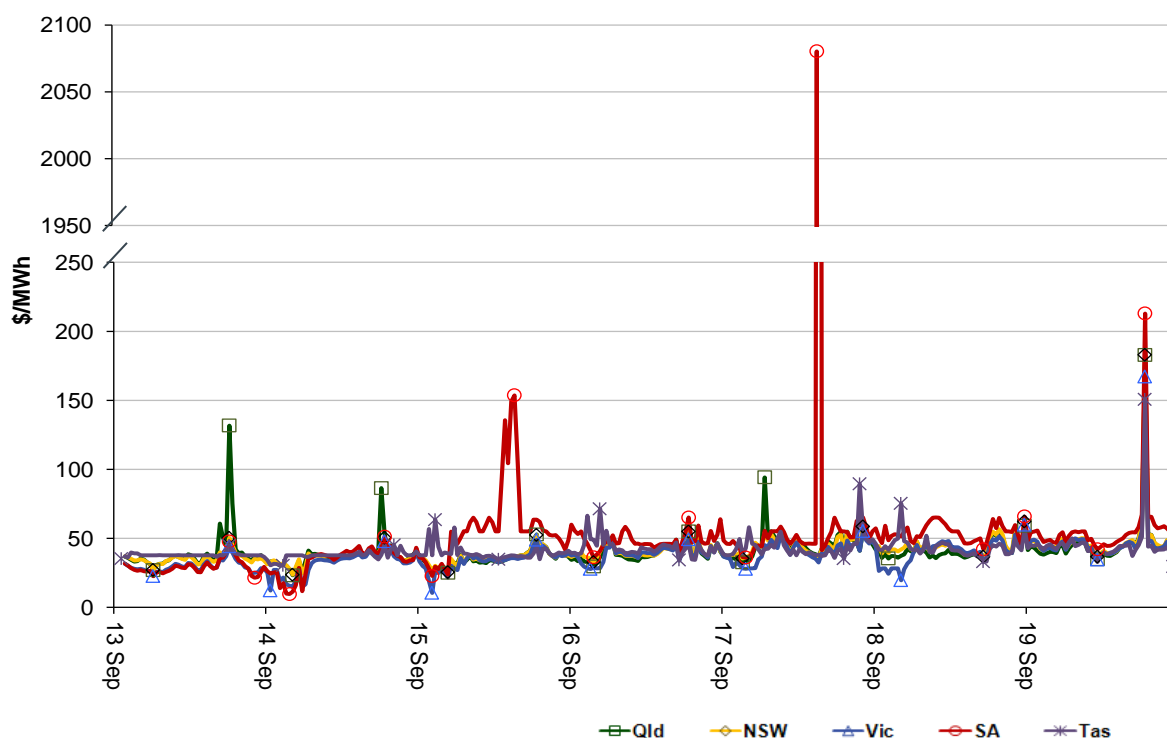
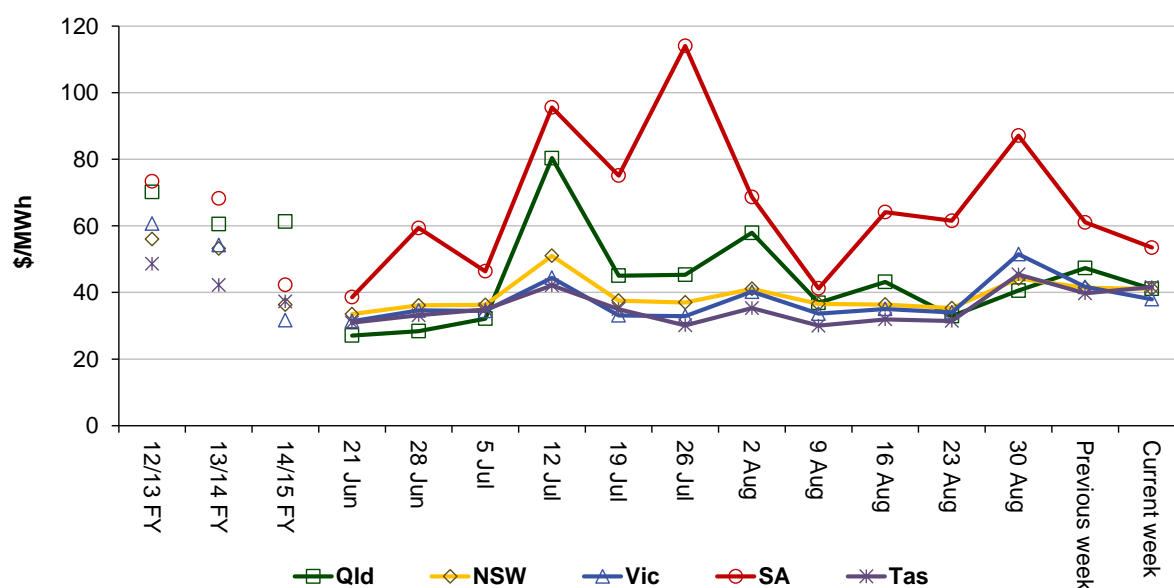


Figure 2 shows the volume weighted average (VWA) prices for the current week (with prices shown in Table 1) and the preceding 12 weeks, as well as the VWA price over the previous 3 financial years.

**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	41	41	38	53	42
14-15 financial YTD	33	41	39	50	37
15-16 financial YTD	45	40	38	70	36

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 62 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	2	37	2	3
% of total below forecast	46	7	0	3

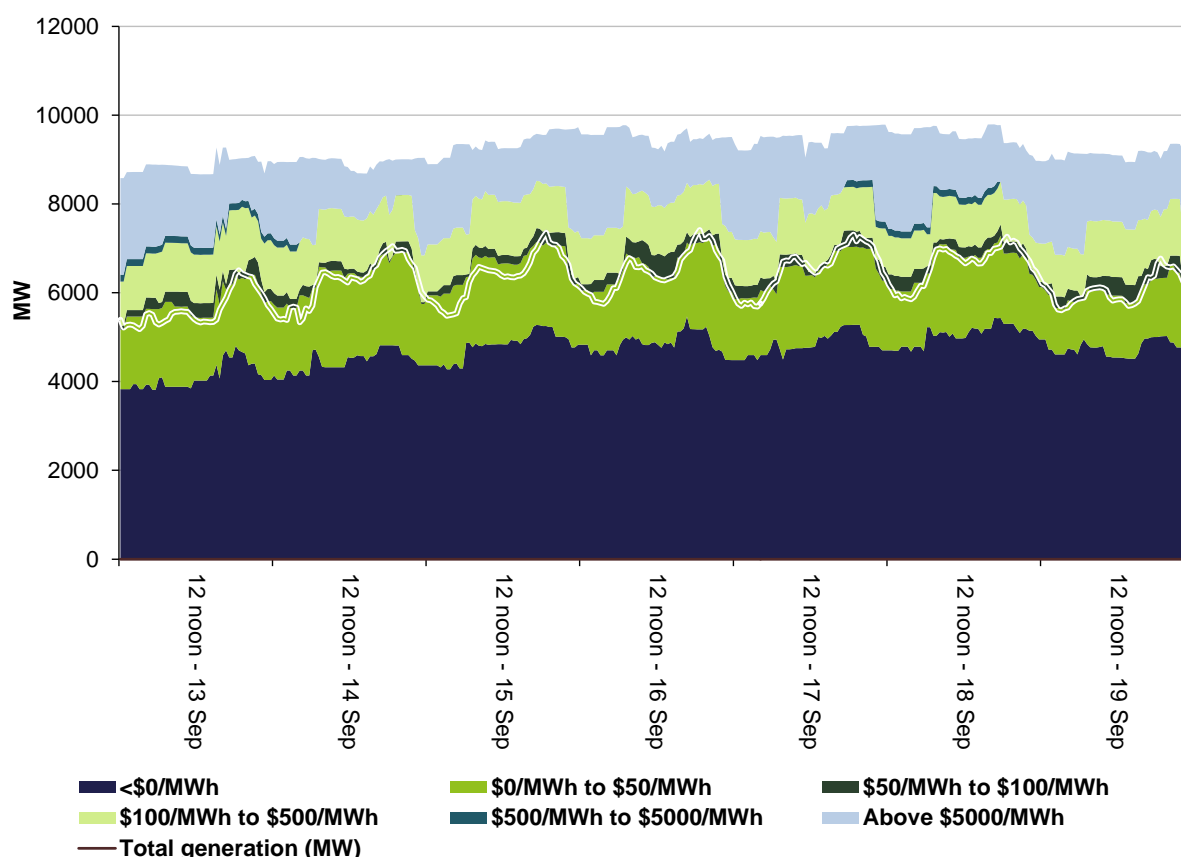
Note: Due to rounding, the total may not be 100 per cent.

## Generation and bidding patterns

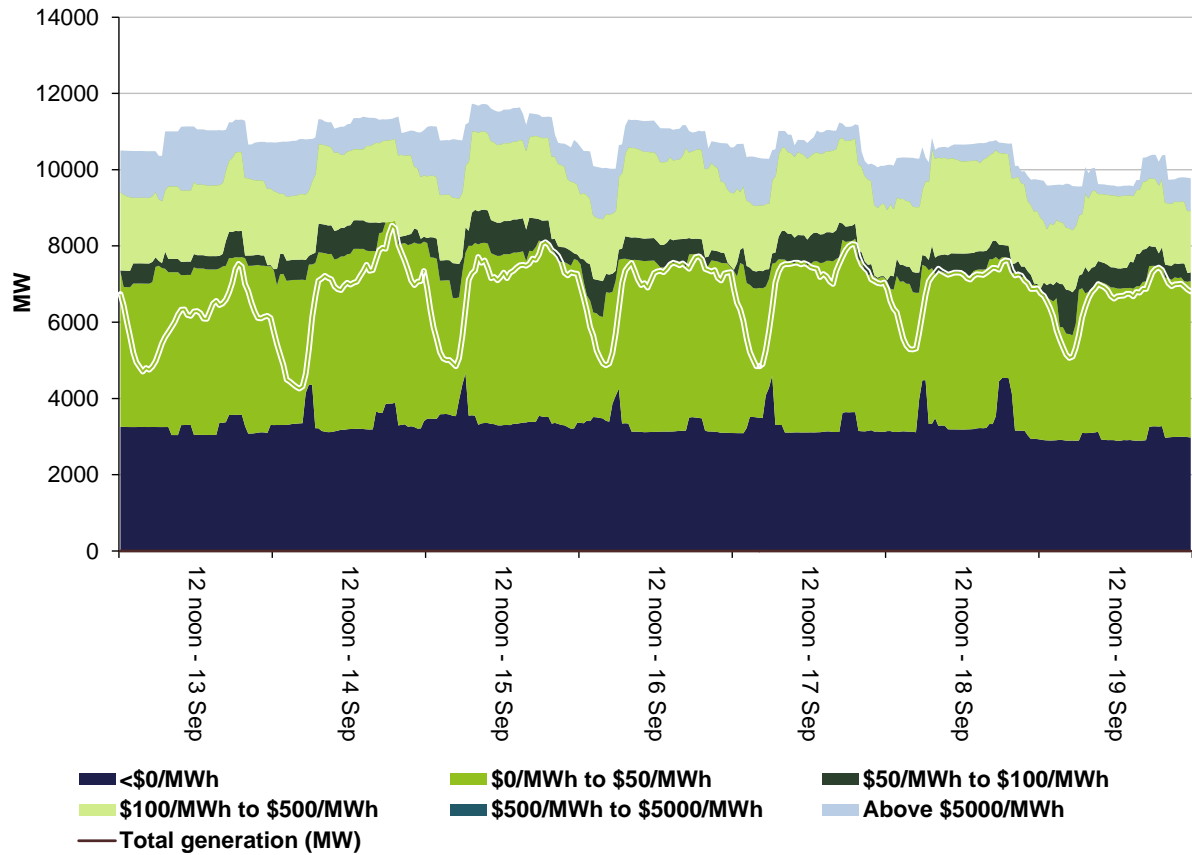
The AER reviews generator bidding as part of its market monitoring to better understand the drivers behind price variations. Figure 3 to

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.

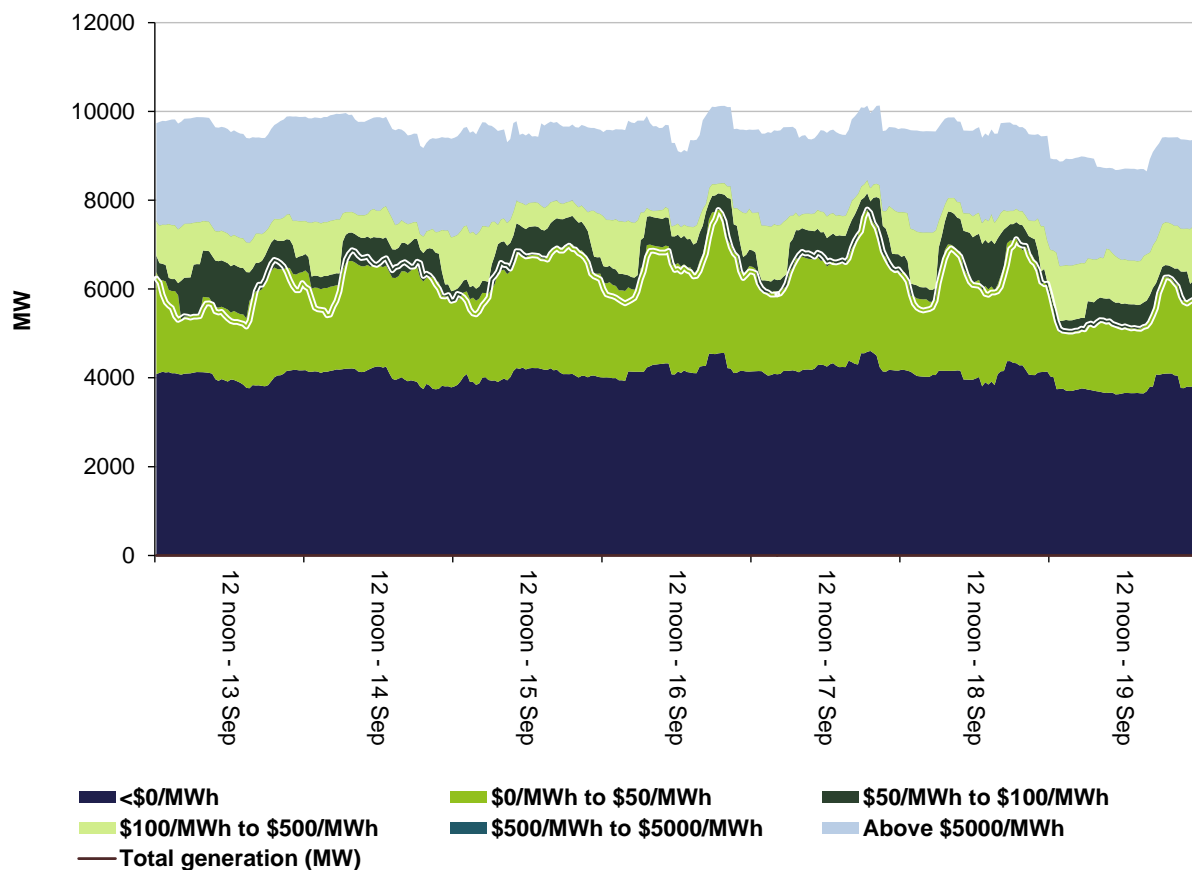
**Figure 3: Queensland generation and bidding patterns**



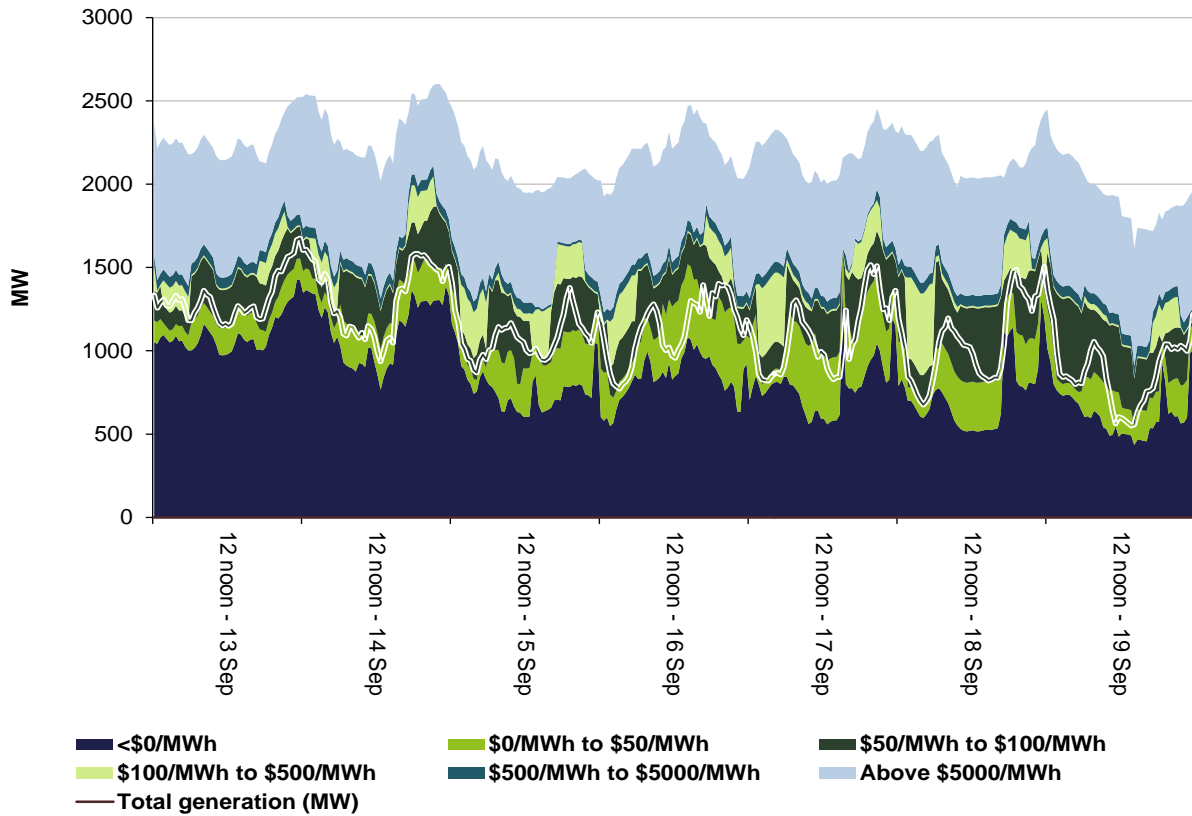
**Figure 4: New South Wales generation and bidding patterns**



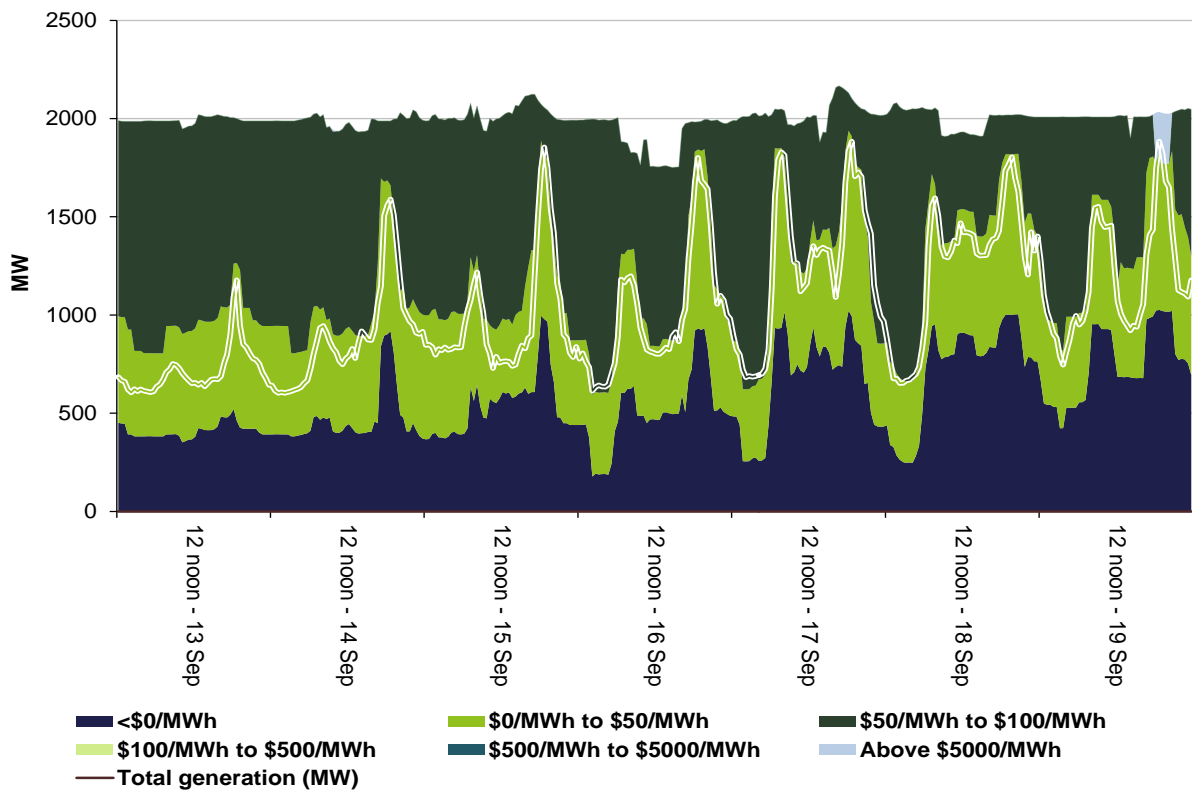
**Figure 5: Victoria generation and bidding patterns**



**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.

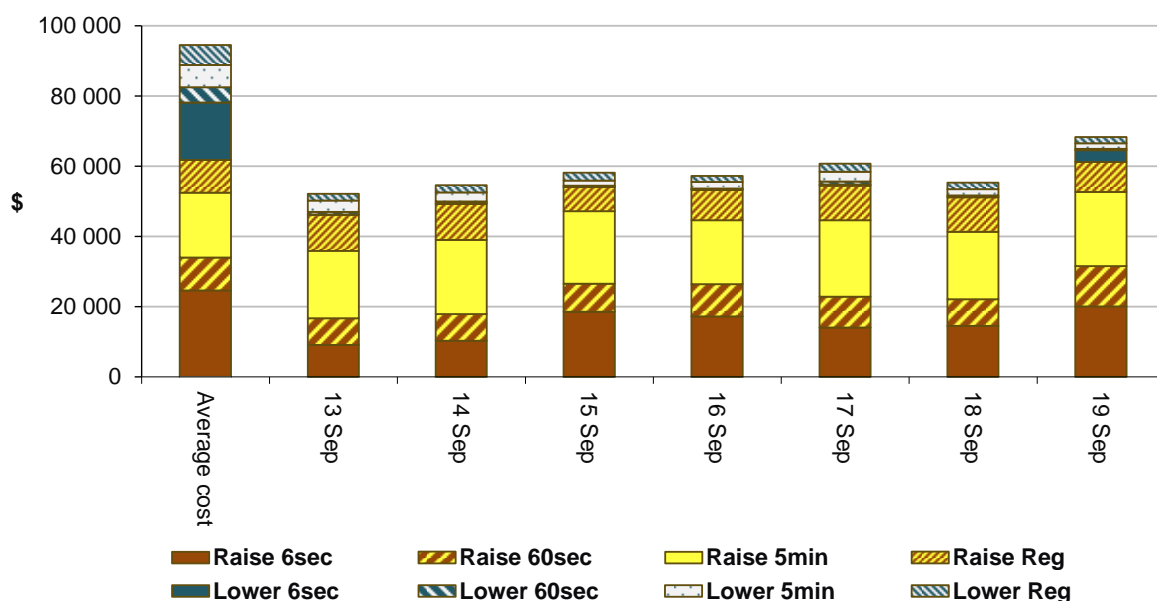
The Electricity Rules stipulate that generators pay for raise contingency services and customers pay for lower contingency services. Regulation services are paid for on a “causer pays” basis determined every four weeks by AEMO.

The total cost of FCAS on the mainland for the week was \$329 500 or less than 1 per cent of energy turnover on the mainland.

The total cost of FCAS in Tasmania for the week was \$77 000 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.

### South Australia

There was one occasion where the spot price in South Australia was greater than three times the South Australia weekly average price of \$53/MWh and above \$250/MWh.

**Thursday, 17 September**

**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
3.30 pm	2080	46	46	1192	1284	1322	2110	2071	2073

Demand and available capacity were close to forecast four hours ahead. Murraylink was on a planned outage between 5 am and 7.30 pm.

At 3.01 pm there was an unplanned outage of the South East - Tailem Bend No.1 275 kV line and the South East No.1 Static Var Compensator. At 3.10 pm and 3.15 pm AEMO invoked constraints to manage the unplanned outages. These constraints immediately violated and limited exports into South Australia across the Heywood interconnector.

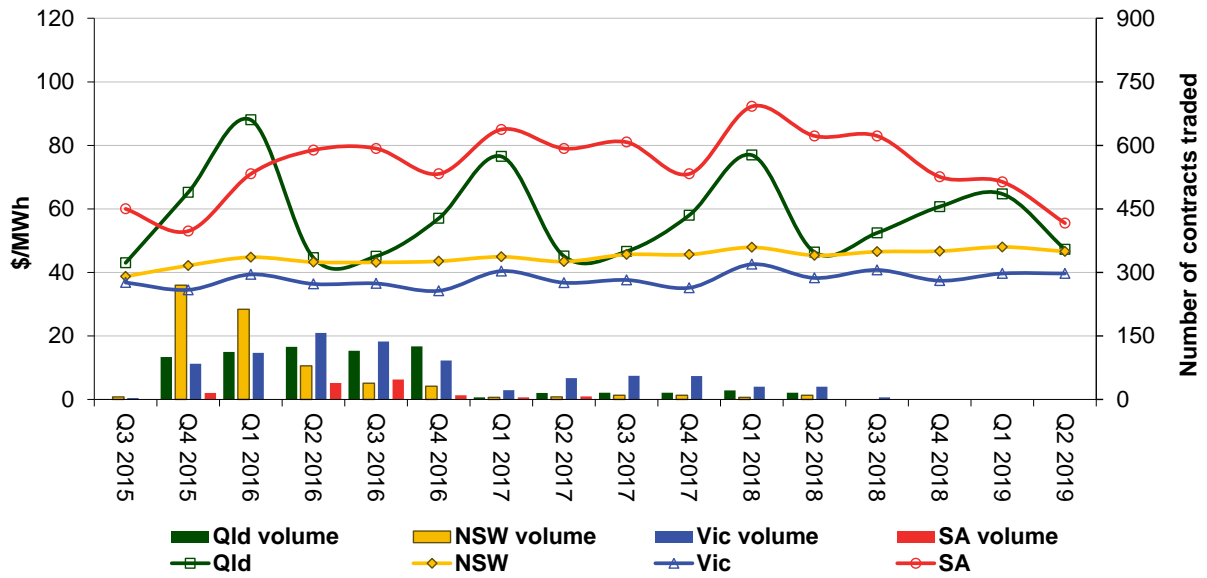
Exports into South Australia reduced from 460 MW at 3.05 pm to 207 MW at 3.10 pm and then to 114 MW at 3.15 pm. With low priced generators ramp rate limited, fully dispatched or unable to start in time, there was insufficient generation to meet demand (there was only 173 MW of wind generation) without having to violate constraints. As a result the dispatch price increased from \$46/MWh at 3.10 pm to \$12 301/MWh at 3.15 pm.

At 3.20 pm the dispatch price fell to \$33/MWh as a result of a reduction in demand of 105 MW (mostly from an increase in non-scheduled generation) and more ramp rate limited plant becoming available.

## 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 10 shows the same information as presented in the previous weekly report (September 6 to September 12). Quarterly base contract prices in South Australia from Q2 2016 to Q4 2018 have increased. An increase in the order of \$20/MWh has occurred for periods for Q2 and Q3 2018. These charts are calculated from data sourced from the ASX. The red bars in these charts, that indicate the number of trades for South Australia, show that there are only a small number of trades in the state out to 2017, but no trades were recorded after that. For periods where there are no trades, the price is calculated from the mid-point of a valid bid-offer spread. The \$20/MWh increase appears to have been driven by an increase in the bid-offer spread that coincides with the announced closure of Alinta's Northern Power Station.

**Figure 9: Quarterly base future prices Q3 2015 – Q2 2019 (current week)**



Source: ASXEnergy.com.au

**Figure 10: Quarterly base future prices Q3 2015 – Q2 2019 (previous week)**

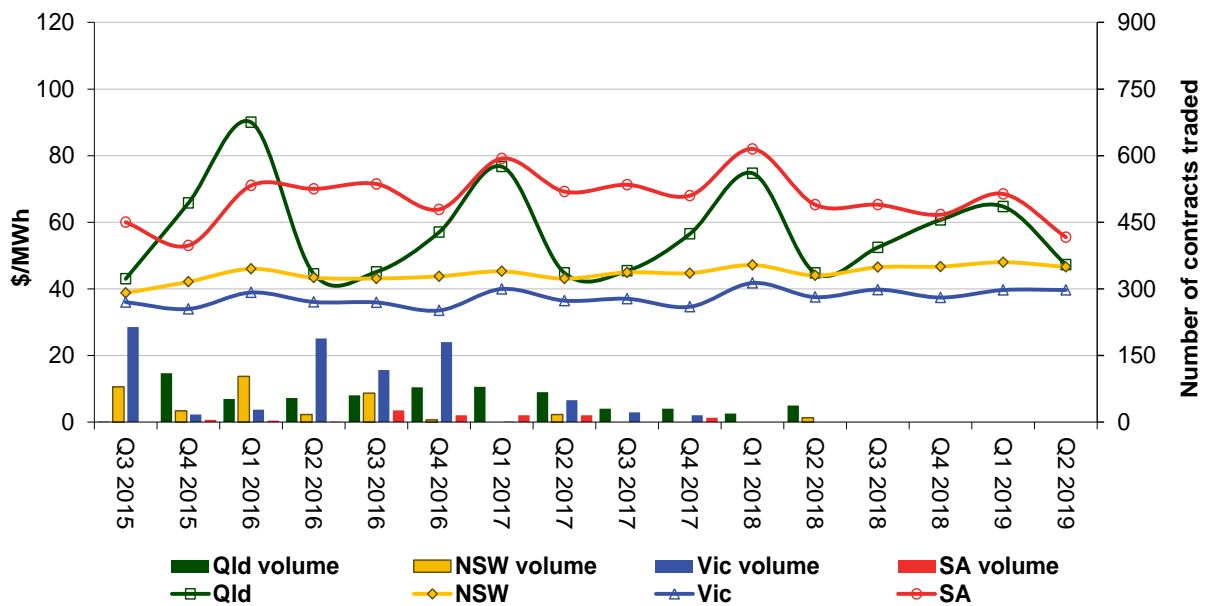
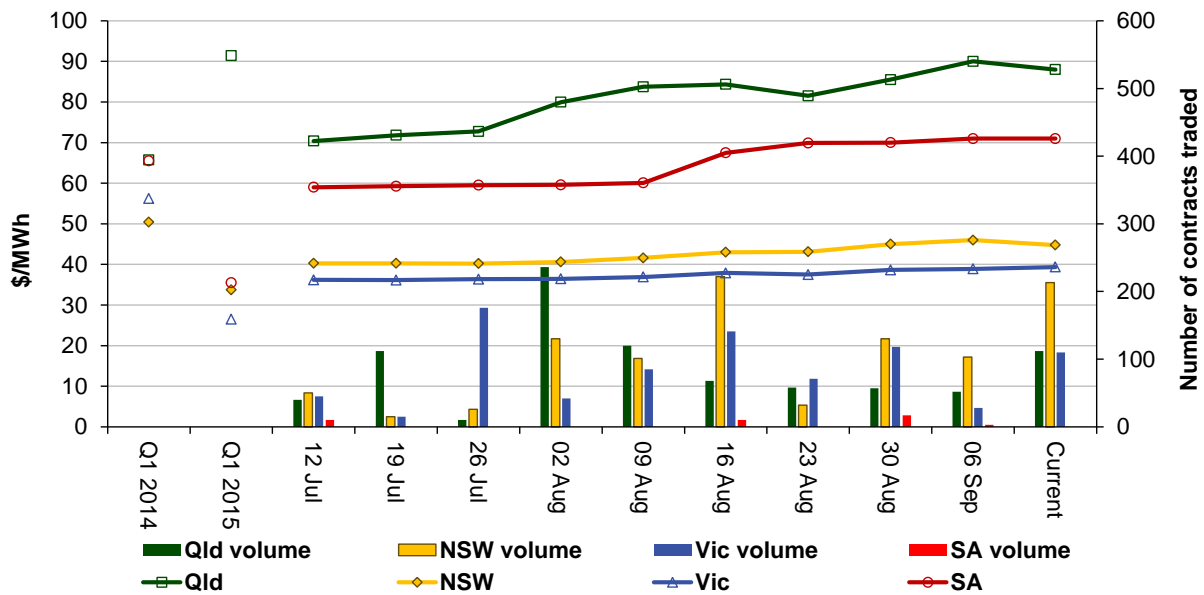


Figure 11 shows how the price for each regional Quarter 1 2016 base contract has changed over the last 10 weeks (as well as the total number of trades each week). The closing quarter 1 2014 and quarter 1 2015 prices are also shown. The AER notes that data for South Australia is less reliable due to very low numbers of trades.



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



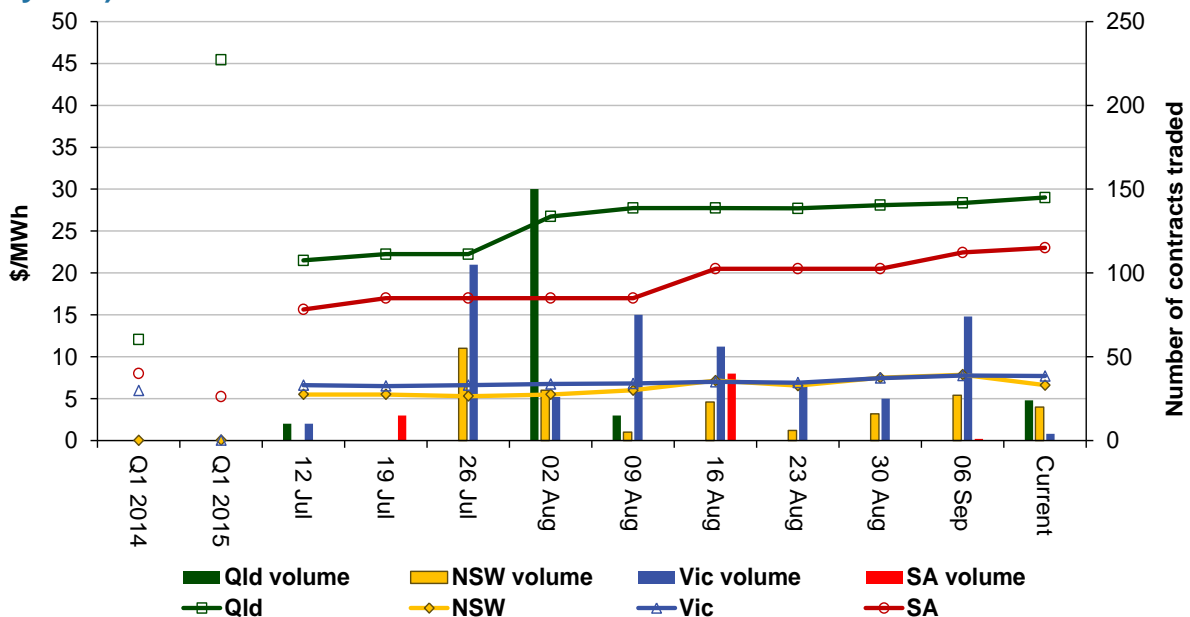
Note. Base contract prices are shown for each of the current week and the previous 9 weeks, with average prices shown for yearly periods 1 and 2 years prior to the current year.

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 12 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 12: Price of Q1 2016 cap contracts over the past 10 weeks (and the past 2 years)**



Source. ASXEnergy.com.au