Electricity Report
29 September to 5 October 2013

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

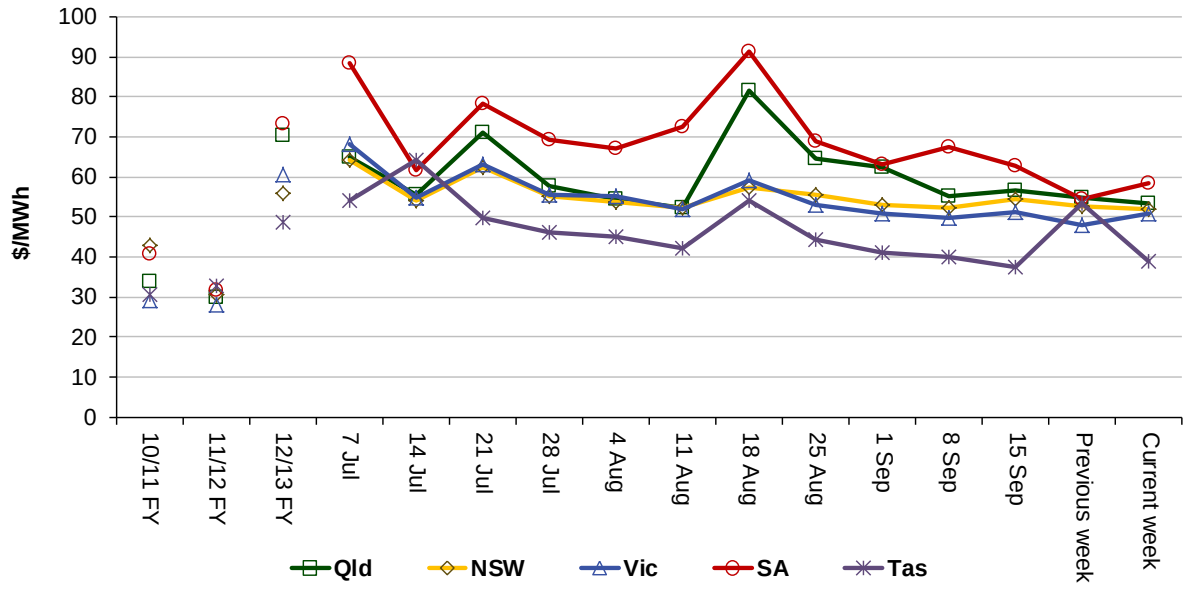


Table 1: Volume weighted average spot prices by region ($/MWh)

Region	Qld	NSW	Vic	SA	Tas
Current week	54	52	51	59	39
12-13 financial YTD	57	60	62	67	49
13-14 financial YTD	60	55	55	69	47

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 92 trading intervals throughout the week where actual prices varied significantly from forecasts. This compares to the weekly average in 2012 of 60 counts and the average in 2011 of 78. 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

Reason for variation	Availability	Demand	Network	Combination
% of total above forecast	2	5	2	3
% of total below forecast	53	31	0	4

Note: Due to rounding, the total may not be exactly 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 2 to 6 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 2: Queensland generation and bidding patterns

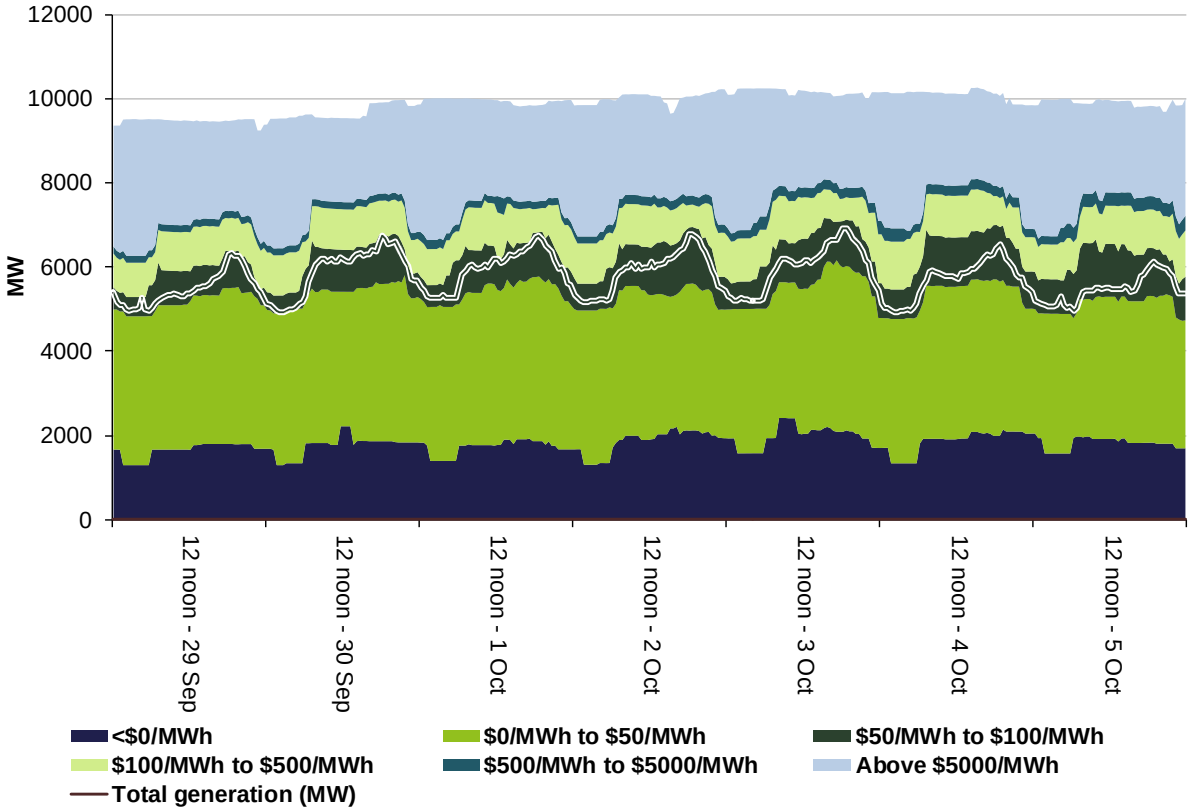


Figure 3: New South Wales generation and bidding patterns

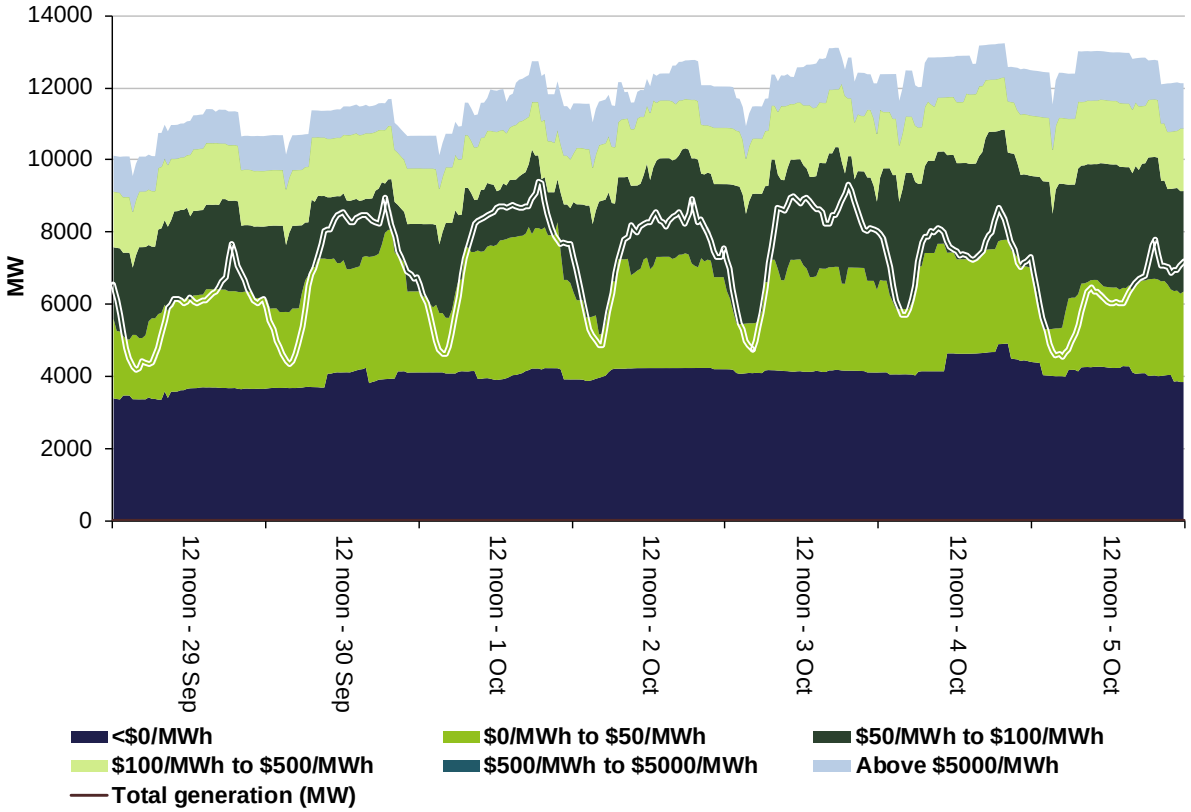


Figure 4: Victoria generation and bidding patterns

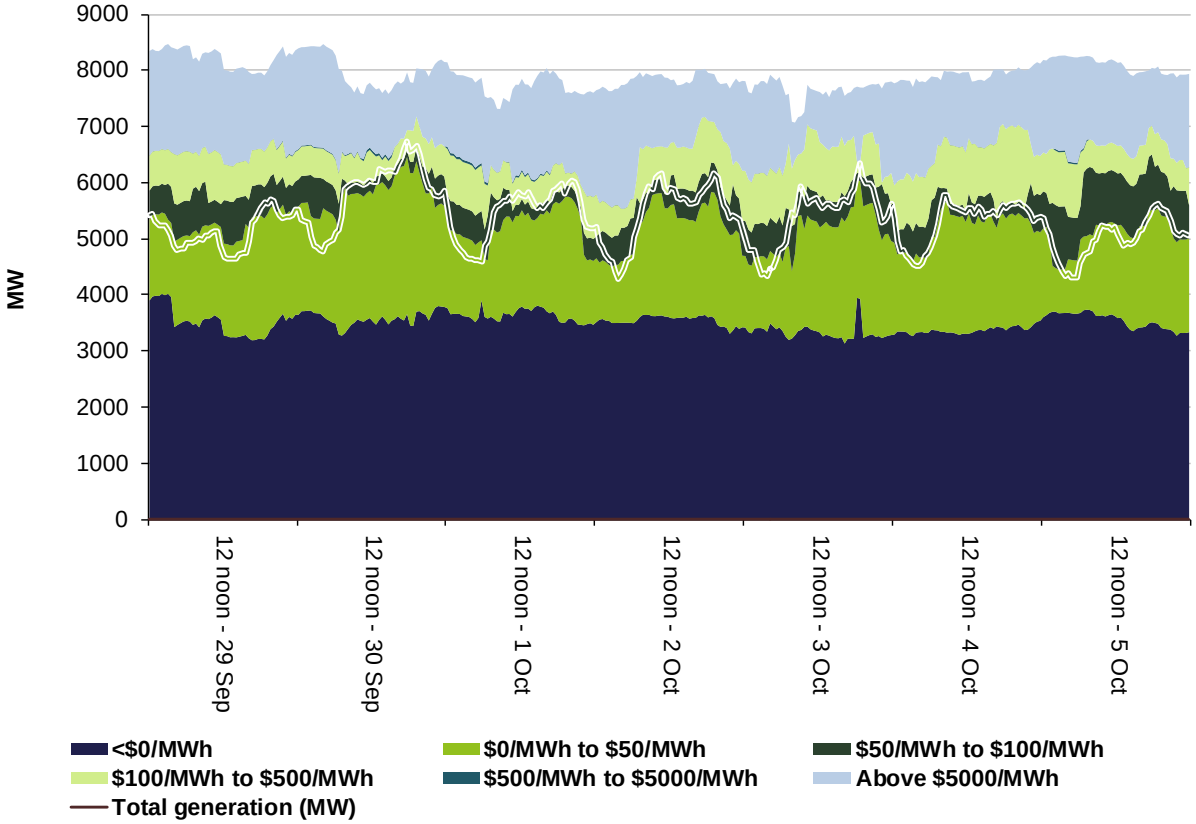


Figure 5: South Australia generation and bidding patterns

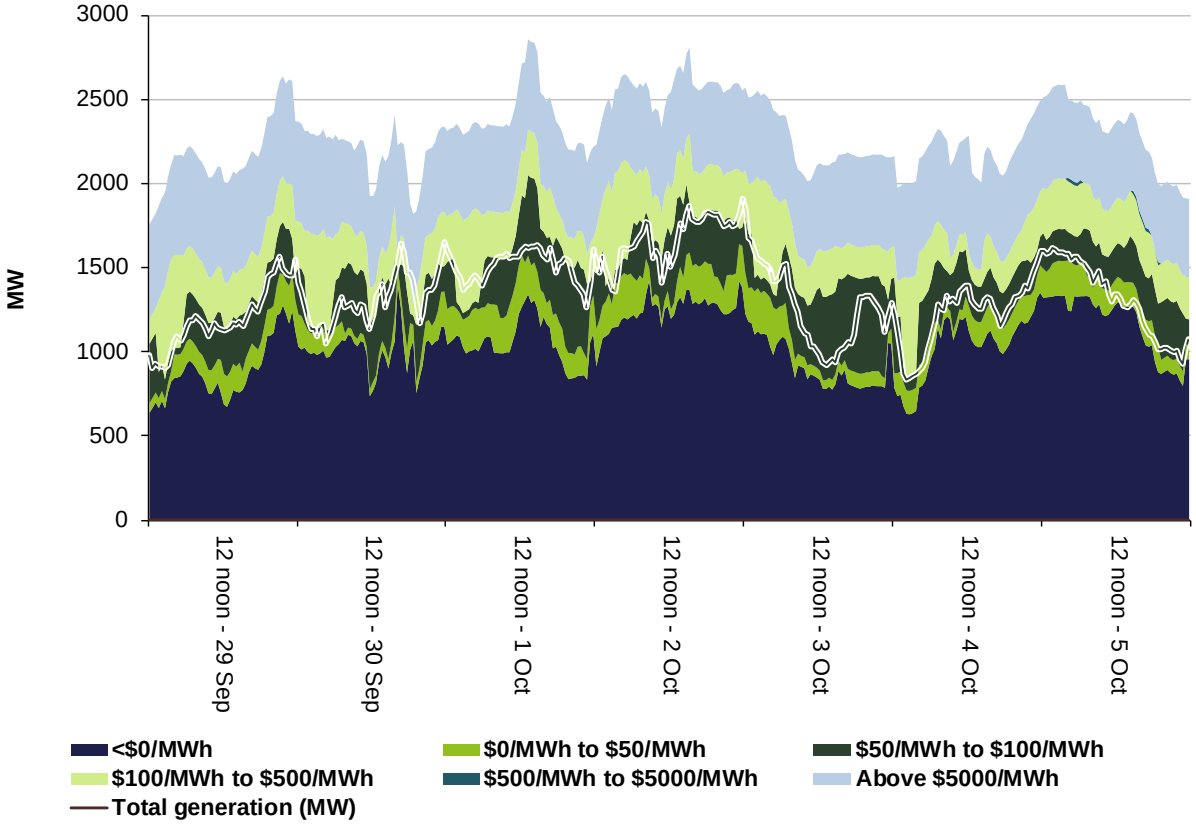
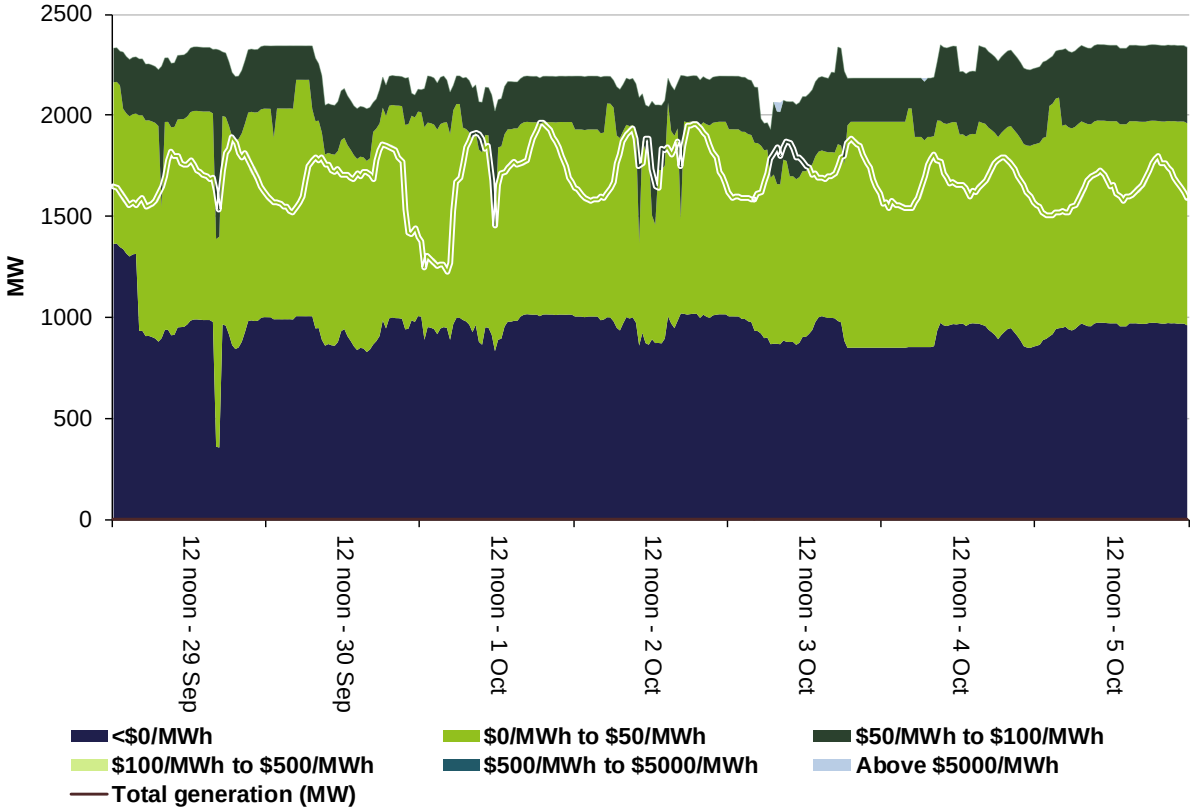


Figure 6: Tasmania generation and bidding patterns



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 $1 874 500 or around 1 per cent of energy turnover on the mainland. As shown in figure 7, the majority of this cost occurred on Tuesday 1 October. In South Australia on this day the price for:

- lower 6 second services and lower 60 second services reached the price cap ($13 100/MW) for nine consecutive dispatch intervals
- lower 5 minute services exceeded $9000/MW for four consecutive dispatch intervals, and

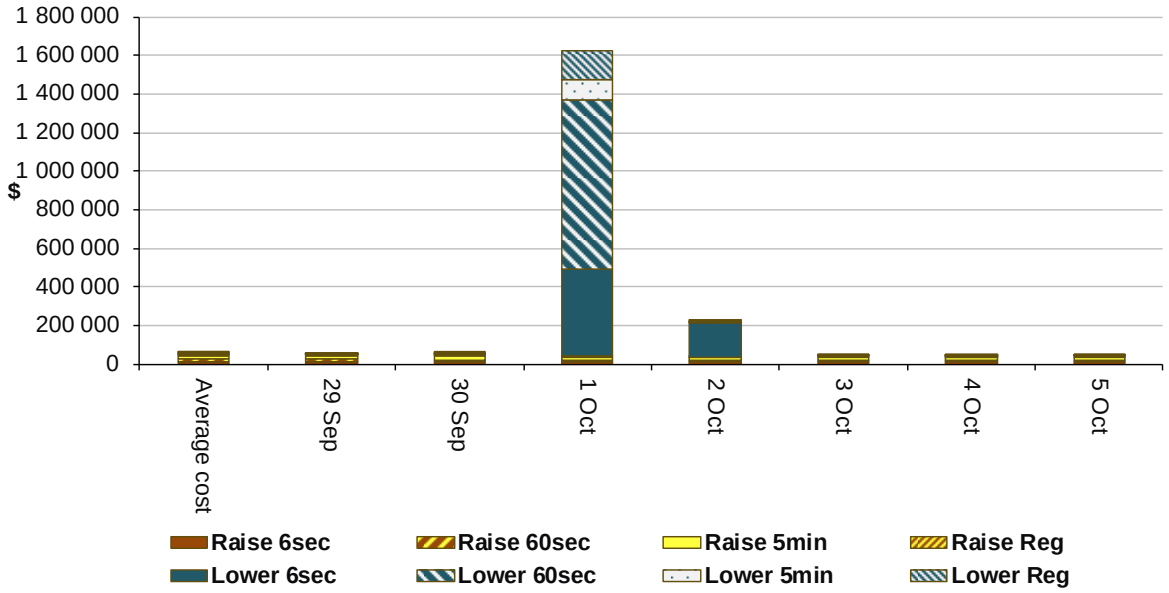
- lower regulation services exceeded $9000/MW for five consecutive dispatch intervals (reaching the price cap for one dispatch interval).

The total cost of lower services in South Australia on the day was around $1 580 000. The prices for lower 6 second and lower 60 second services on the day triggered the requirement for the AER to publish a prices above $5000/MW report into the event (in accordance with clause 3.13.7(e) of the Electricity Rules). The events of this day will be discussed in detail in this report.

In Tasmania (which requires dedicated services for much of the time) the total cost for the week was $217 000 or around 3 per cent of energy turnover in Tasmania. The majority of FCAS costs in Tasmania were incurred on 2 October when the cost of lower 6 second services reached almost $178 000. The price of these services reached the price cap at 10.30 am driven by network constraints which prevented the transfer of FCAS from the mainland on Basslink, requiring these services to be sourced locally.

Figure 7 shows the daily breakdown of costs for each service, as well as the average daily costs for the previous financial year.

Figure 7: 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 was one occasion 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.

Table 3: South Australia, Monday 30 September

6 PM	Actual	4 hr forecast	12 hr forecast
Price ($/MWh)	1952.55	65.95	56.87
Demand (MW)	1411	1500	1486
Available capacity (MW)	2076	2230	2437

Demand at the time was close to that forecast four hours ahead and available capacity was 154 MW lower than forecast four hours ahead.

A system normal constraint managing post contingent flows on the Snuggery to Keith 132 kV transmission line (in the event of a trip on the South East to Tailem Bend No.1 275 kV line) was binding most of the afternoon, limiting imports across Heywood below what was forecast.

At 9.45 am Alinta Energy reduced the available capacity of Northern unit 2 from 273 MW to zero (250 MW of capacity was priced below $80/MWh. The reason given was “0942P change in avail tube leak@09:43”.

At 4.35 pm, effective from 4.50 pm, EnergyAustralia rebid 12 MW of available capacity at Hallett from prices below $300/MWh to the price cap. The reason given was “16:35 a band adj mat chg SA gen and price at 1630 sl”.

These rebids exacerbated the tight supply conditions in South Australia, resulting in no available capacity being offered between $300/MWh and $10 000/MWh.

Between 5.35 pm and 6 pm wind generation in South Australia reduced from 820 MW to 482 MW. The reduction in wind generation was mainly due to various wind farms feathering or braking their turbines in response to stormy conditions in South Australia.

Five minute demand increased by 27 MW from 5.55 pm to 6 pm. The increase in demand combined with the reduction in wind generation could not be met by generators in South Australia as they were either ramp rate limited, constrained down or offline. Imports across the Heywood interconnector increased to meet the increase in demand but exceeded the limit of 156 MW by 1 MW which saw the above constraint violate and the 5 minute price increase to $11 108/MWh at 6 pm.

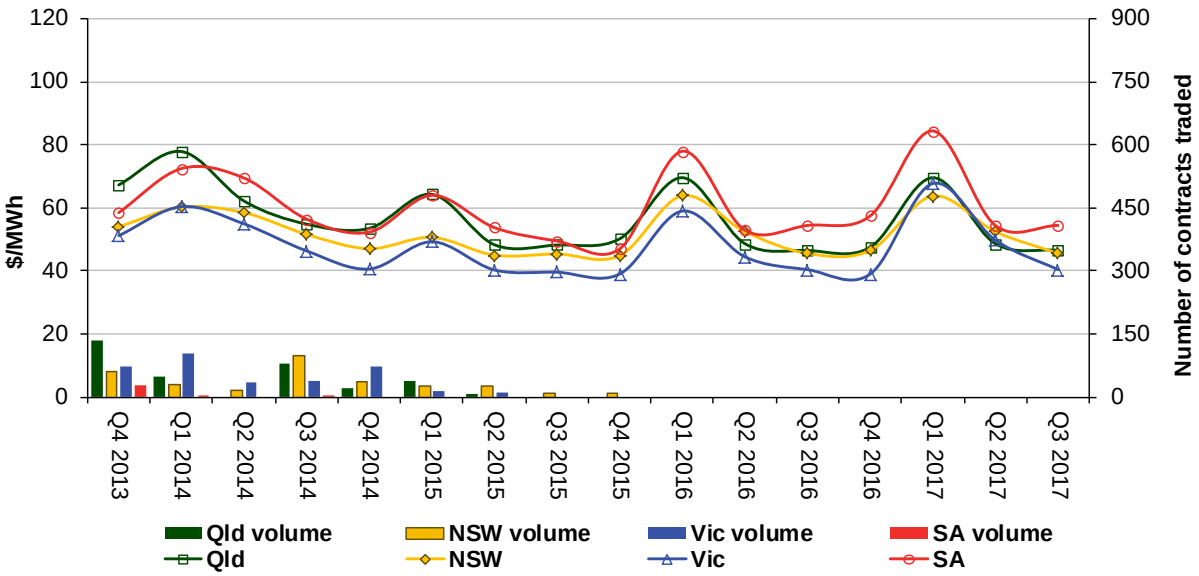
In the following dispatch interval demand fell by around 180 MW (100 MW of which was non-scheduled generation at Angaston and Port Stanvac coming on-line, which is treated as a reduction in demand), which saw prices fall to $62/MWh at 6.05 pm.

There was no other significant rebidding.

Financial markets

Figure 8 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.

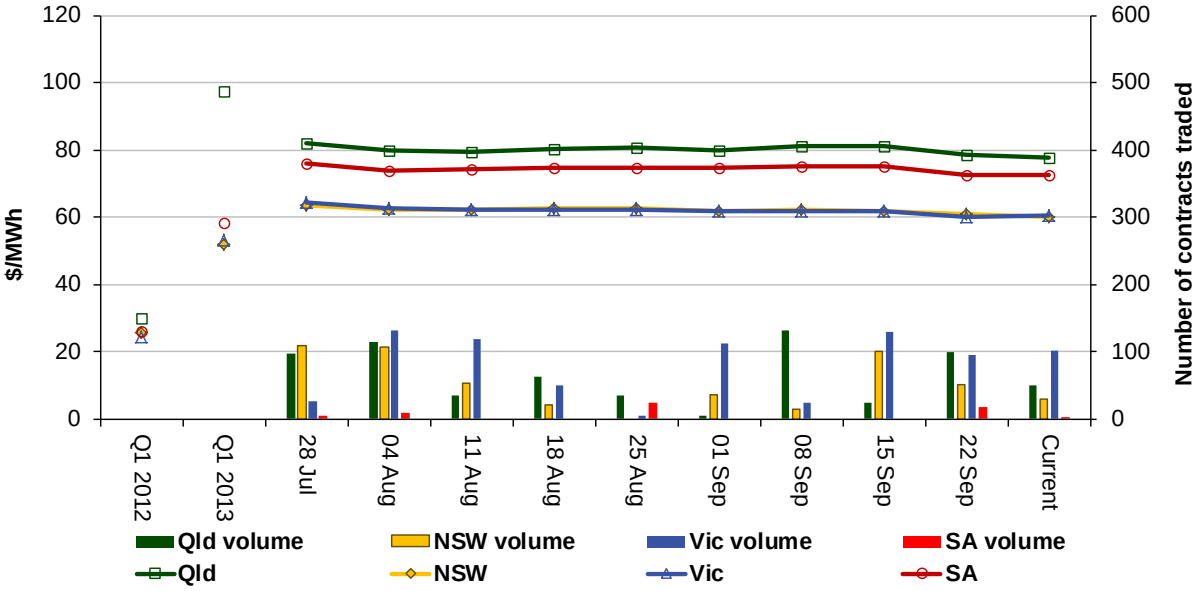
Figure 8: Quarterly base future prices Q4 2013 – Q3 2017



Source: ASXEnergy.com.au

Figure 9 shows how the price for each regional Quarter 1 2014 base contract has changed over the last 10 weeks (as well as the total number of trades each week). The closing Quarter 1 2012 and Quarter 1 2013 prices are also shown.

Figure 9: Price of Q1 2014 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

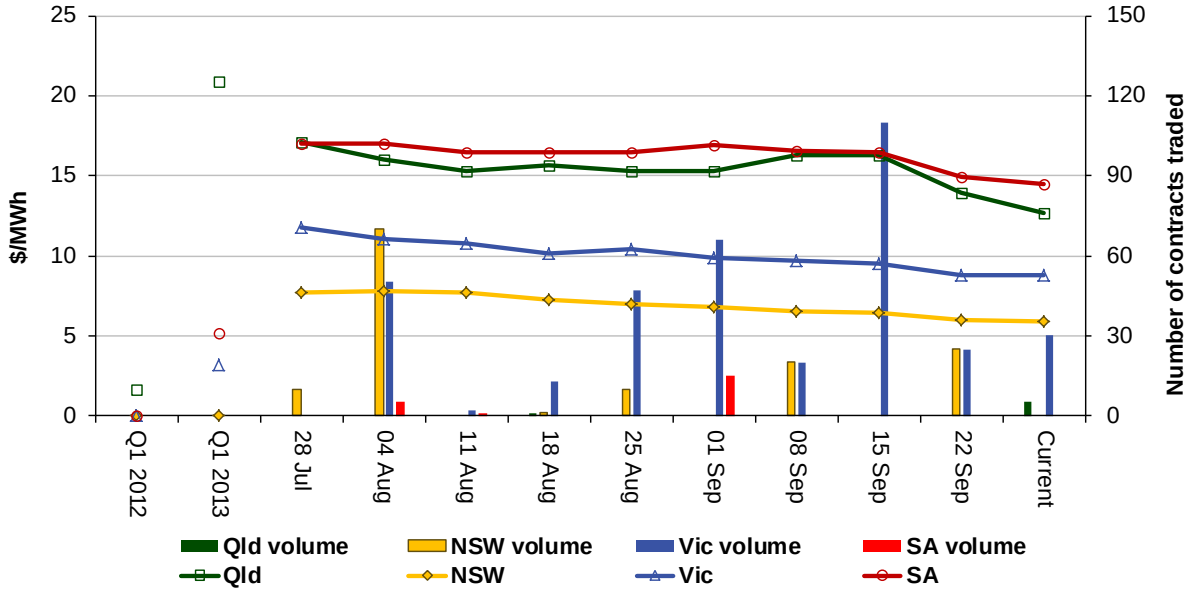
Source: ASXEnergy.com.au

Prices of other financial products (including longer-term price trends) are available in the Industry Statistics section of our website.

Figure 10 shows how the price for each regional Quarter 1 2014 cap contract has changed over the last 10 weeks (as well as the total number of trades each week). The closing Quarter 1 2012 and

Quarter 1 2013 prices are also shown. The cap contracts limit exposure to extreme spot prices (above $300/MWh) and is an indicator of the cost of risk management.

Figure 10: Price of Q1 2014 cap contracts over the past 10 weeks (and the past 2 years)



Source: ASXEnergy.com.au

Australian Energy Regulator

October 2013