

# Electricity Report

21 to 27 July 2013



## Introduction

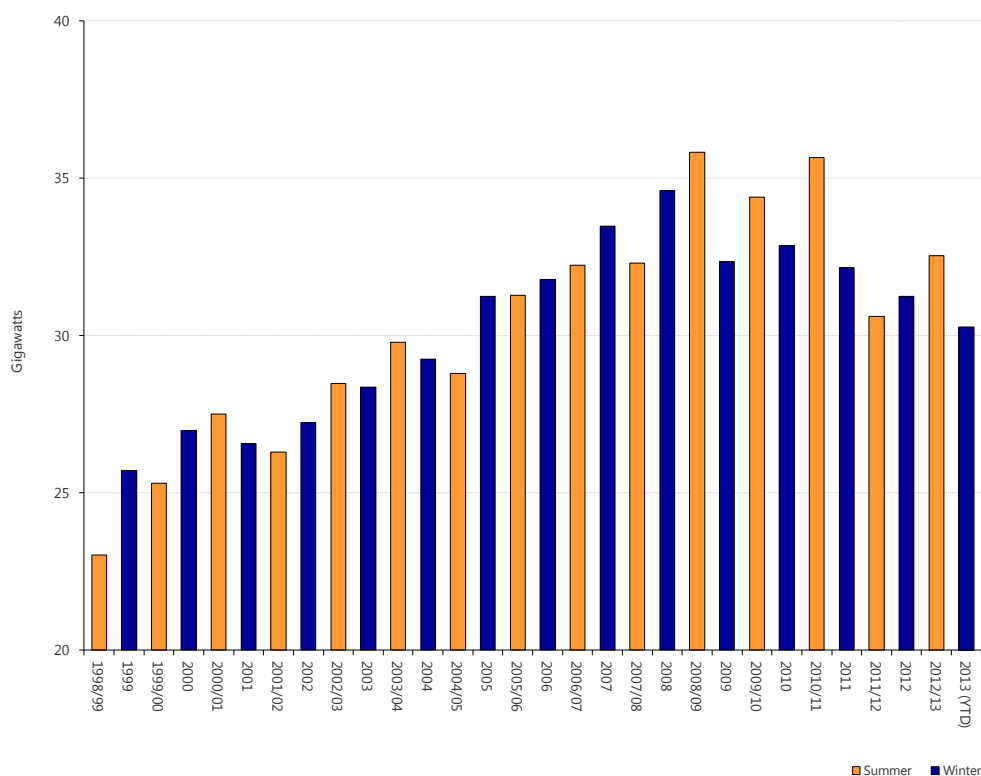
The AER is required to publish the reasons for significant variations between forecast and actual price and is responsible for monitoring activity and behaviour in the National Electricity Market. The Electricity Report forms an important part of this work. The report contains information on significant 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.

## Weekly spotlight

In addition to monitoring outcomes in the NEM on a weekly basis, the AER also monitors long term trends in the energy sector. The AER's website brings together many of the statistics, tables, and data from AER publications such as the State of the Energy Market report.

One of the trends we monitor is the level of peak demand, which has been the subject of interest in the electricity sector over the last eighteen months. The spotlight figure below details seasonal peak demand across the NEM for both the winter and summer periods since the NEM began.

### Spotlight figure: Seasonal peak demand (NEM)



Note: Tasmania joined the NEM in May 2005.

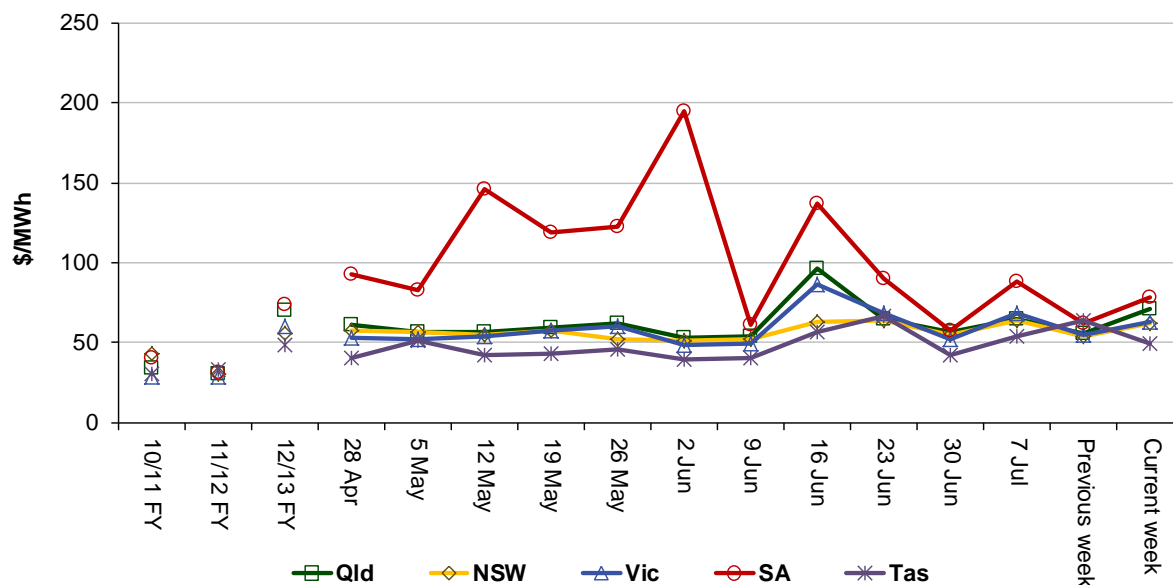
The figure shows a steady increase in peak demand for both winter and summer from 1998 up to around 2009. From 2009, peak demand remained steady before trending downwards in recent years. Winter peak demand in 2012, for example, was the lowest since 2004.

More statistics can be found in the [performance of the energy sector](#) section of our website.

## 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
<b>Current week</b>	71	62	63	78	50
<b>12-13 financial YTD</b>	65	68	77	83	61
<b>13-14 financial YTD</b>	62	59	60	72	52

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 113 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**

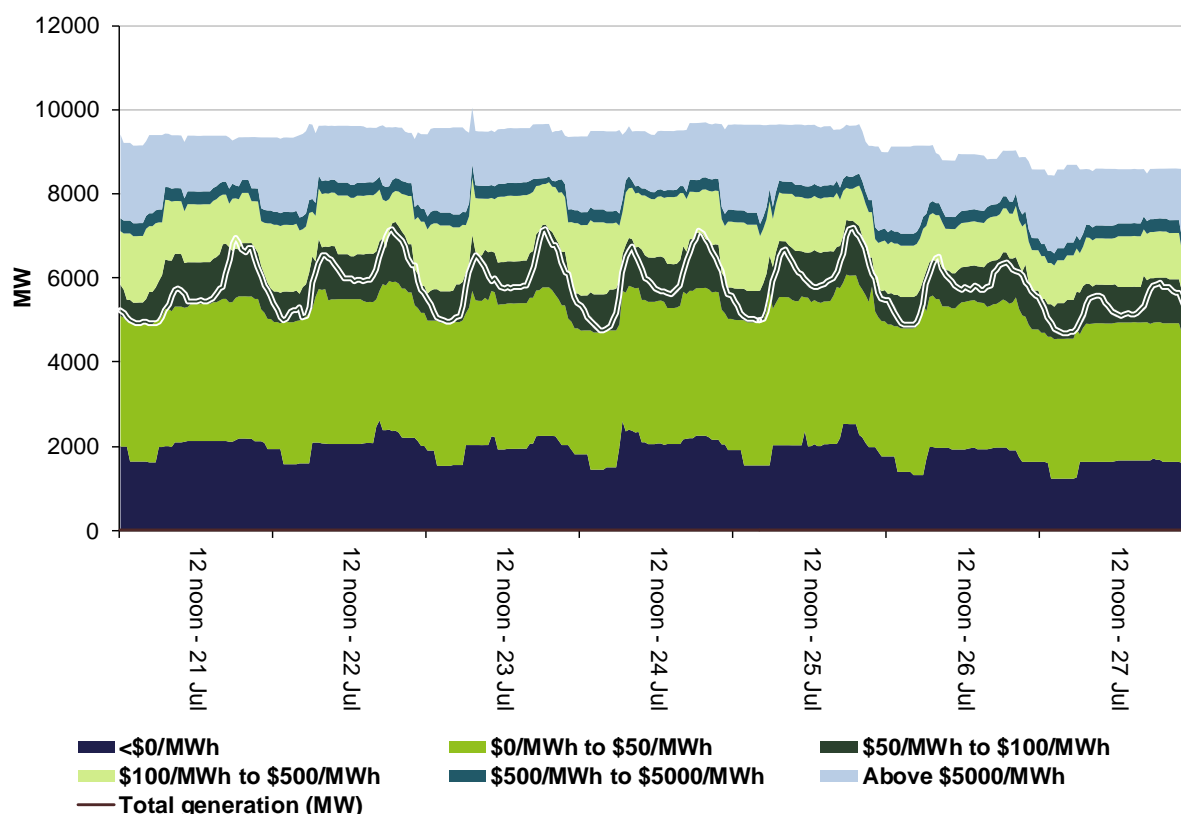
Reason for variation	Availability	Demand	Network	Combination
% of total above forecast	2	6	0	2
% of total below forecast	22	45	0	23

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

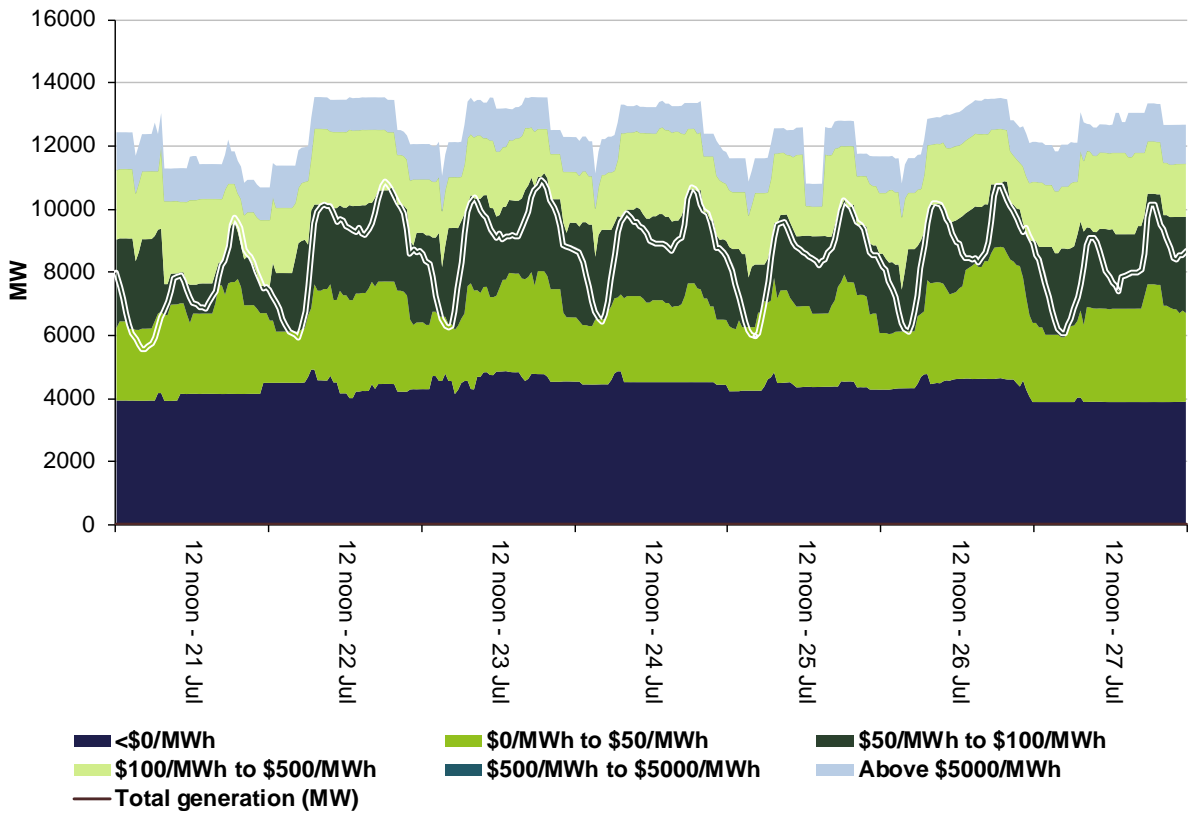
## Generation and bidding patterns

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.

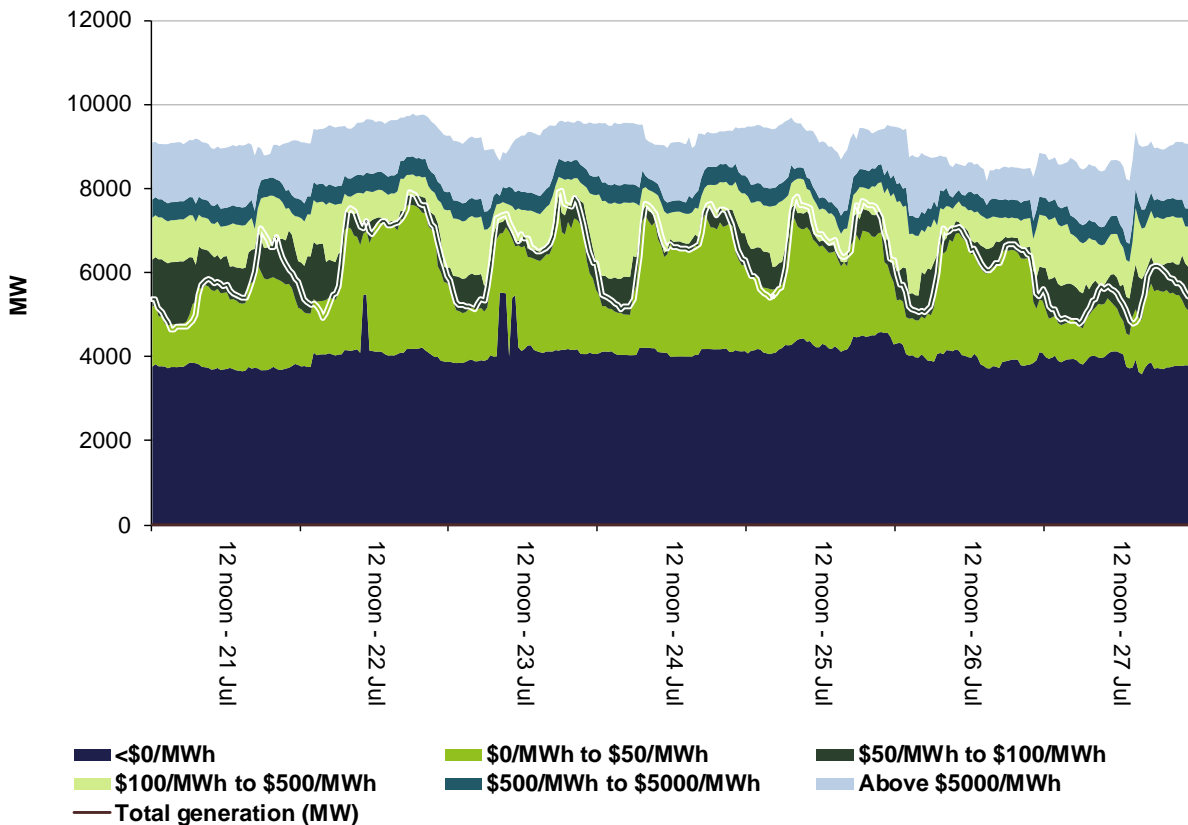
**Figure 2: Queensland generation and bidding patterns**



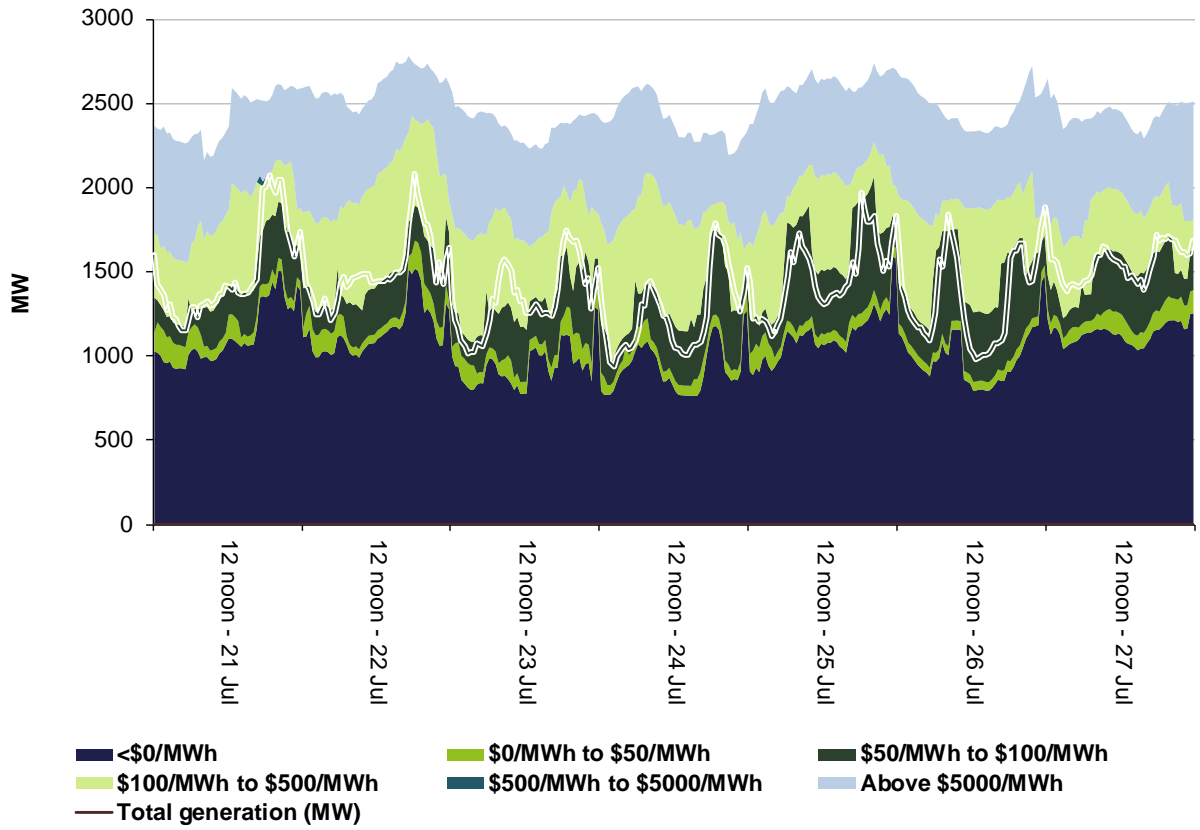
**Figure 3: New South Wales generation and bidding patterns**



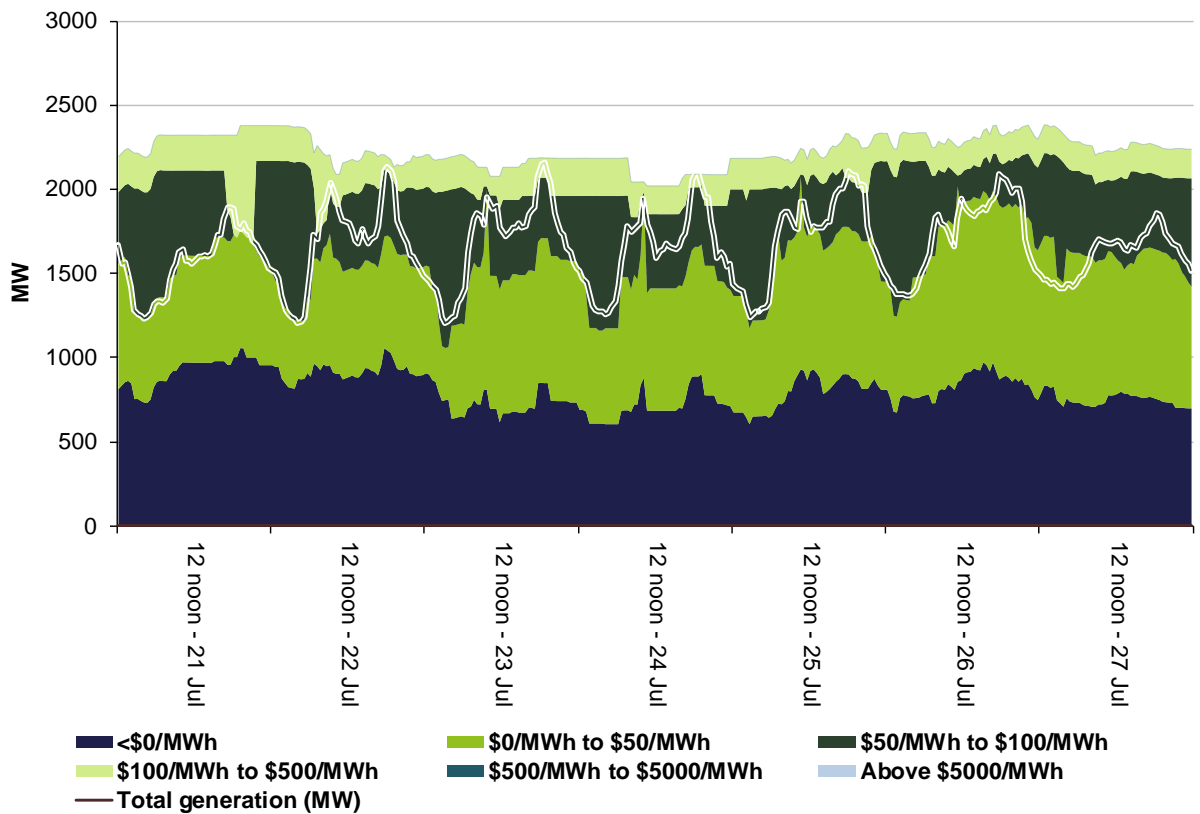
**Figure 4: Victoria generation and bidding patterns**



**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:

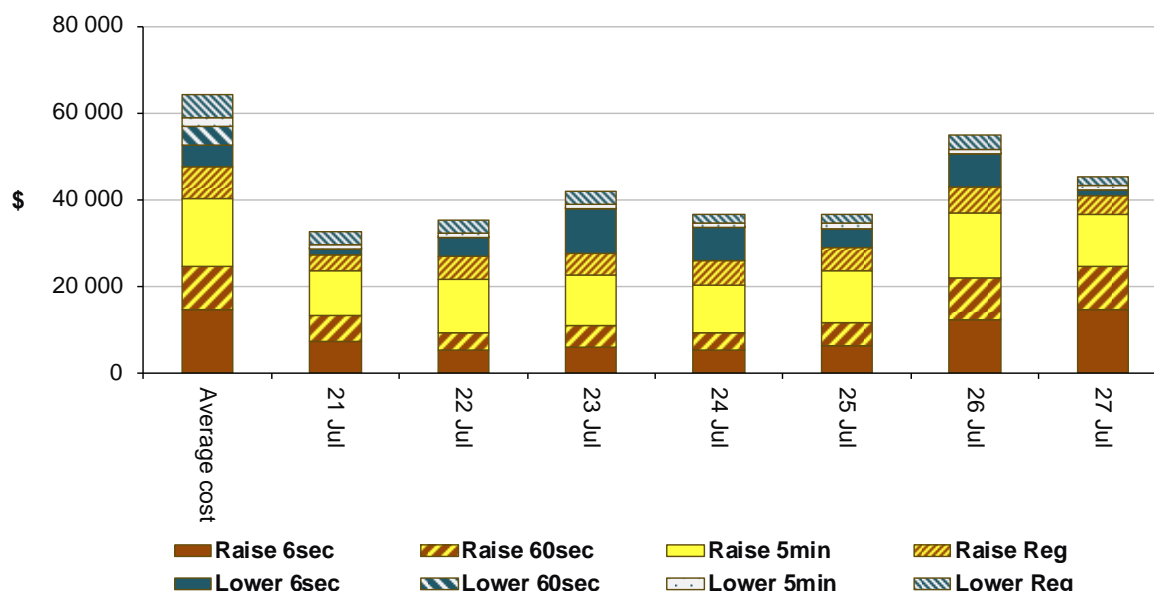
- *fast services*, which arrest a frequency deviation within the first 6 seconds of a contingent event (raise and lower 6 second)
- *slow services*, which stabilise frequency deviations within 60 seconds of the event (raise and lower 60 second)
- *delayed services*, which return the frequency to the 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 \$276 000 or less than 1 per cent of energy turnover on the mainland. In Tasmania (which requires dedicated services for much of the time) the total cost for the week was \$57 500 or less than one per cent of energy turnover in Tasmania.

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 such occasion during this week, which occurred in Queensland on Wednesday 24 July. The table below shows the actual Queensland price, demand and available capacity outcomes compared to those forecast 4 and 12 hour ahead.

**Table 3: Queensland, Wednesday 24 July**

6:30 AM	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	2243.81	56.12	66.21
Demand (MW)	5750	5680	5709
Available capacity (MW)	9601	9489	9659

Conditions at the time saw demand 70 MW and available capacity 112 MW greater than that forecast four hours ahead. At 6.08 am, effective at 6.10 am, CS Energy rebid 120 MW at Gladstone from prices below \$55/MWh to above \$12 700/MWh. The reason given was “Portfolio rearrangement due to-cb2 return–SL”.

Over two rebids at 6.02 am and 6.17 am, effective from 6.10 am and 6.25 am respectively, CS Energy reduced the availability of Kogan Creek by a total of 138 MW. All of this capacity was priced below \$40/MWh. This saw Kogan Creek output decreased from around 720 MW at 6.05 am to 587 MW at 6.25 am. The reasons given were “Testing –F/F out of service – SL” and “Technical issues –runback due to F/F issue – SL”. These rebids were only effective for the 6.30 am trading interval.

At 6.30 am demand in Queensland increased by 164 MW (from 5828 MW at 6.25 am to 5992 MW at 6.30 am), while the export limit on QNI reduced by 78 MW into Queensland (from 330 MW to 258 MW). The reduction in limit occurred when a constraint used to manage voltage stability on the loss of Kogan Creek bound.

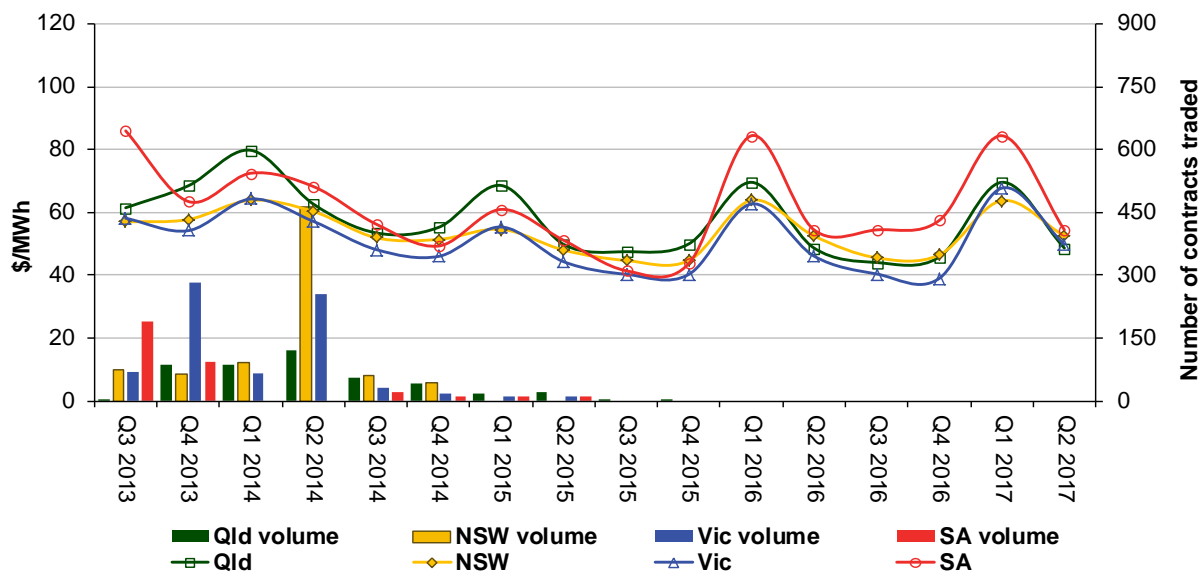
Generators with low priced capacity were either ramp rate limited or limited by their fast start inflexibility profile, hence higher priced generation was dispatched, setting the price at \$13 005/MWh at 6.30 am. By 6.35 am, with some generators no longer ramp rate limited and a step increase in low price capacity available at Kogan Creek, prices reduced to below \$76/MWh.

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.

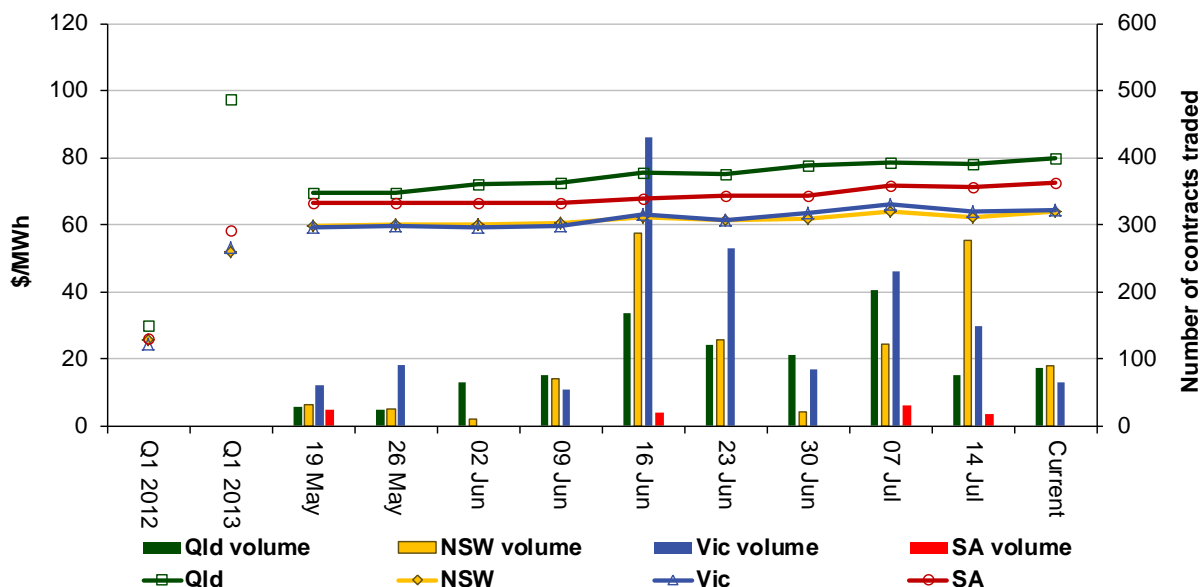
**Figure 8: Quarterly base future prices Q3 2013 – Q2 2017**



Source: [ASXEnergy.com.au](http://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

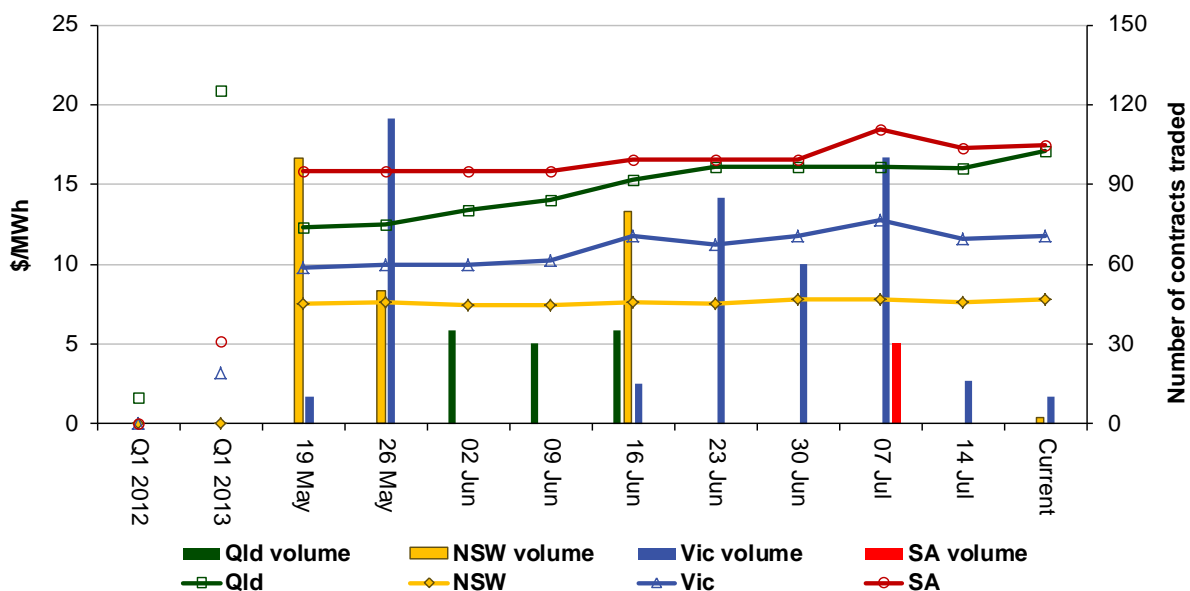
Source: [ASXEnergy.com.au](http://ASXEnergy.com.au)



Prices of other financial products (including longer-term price trends) are available in the [Performance of the Energy Sector](#) section of our website.

Figure 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](http://ASXEnergy.com.au)

**Australian Energy Regulator**  
**August 2013**