

Electricity Report

17 to 23 November 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)

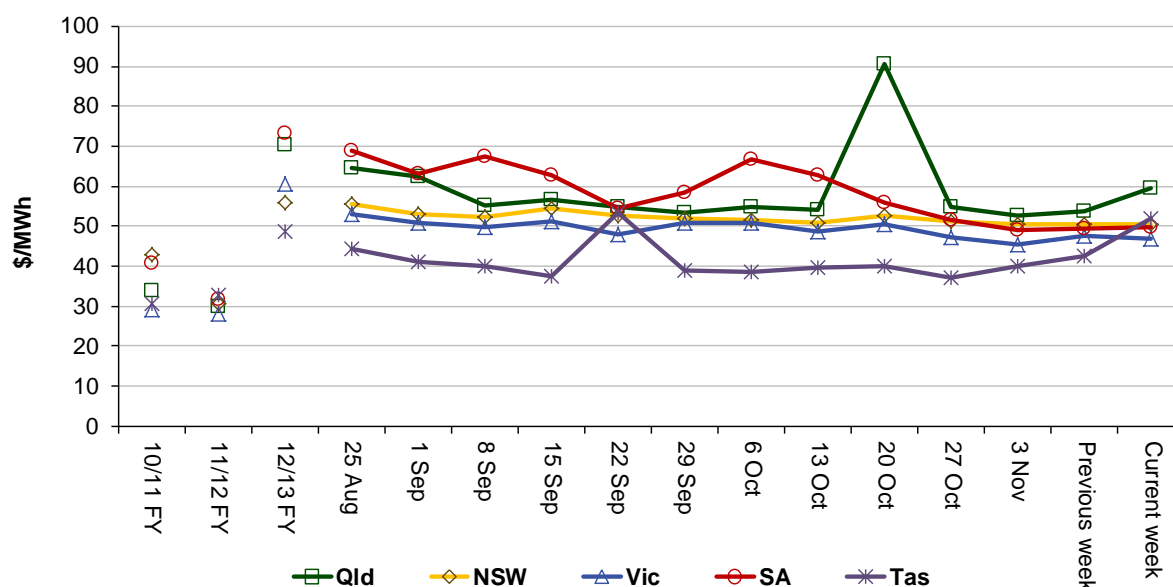


Table 1: Volume weighted average spot prices by region (\$/MWh)

Region	Qld	NSW	Vic	SA	Tas
Current week	59	51	47	50	52
12-13 financial YTD	56	59	59	63	48
13-14 financial YTD	60	54	53	65	45

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 35 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	55	7	2
% of total below forecast	34	0	0	0

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

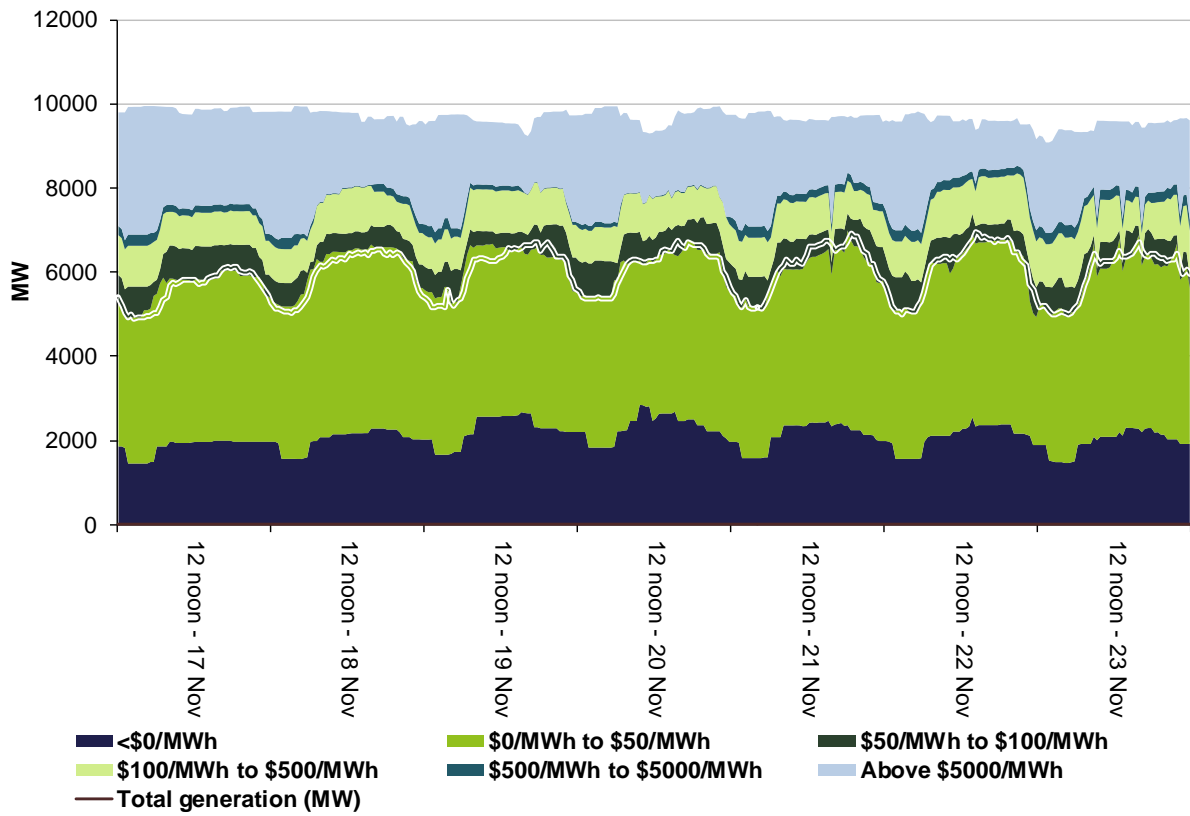


Figure 3: New South Wales generation and bidding patterns

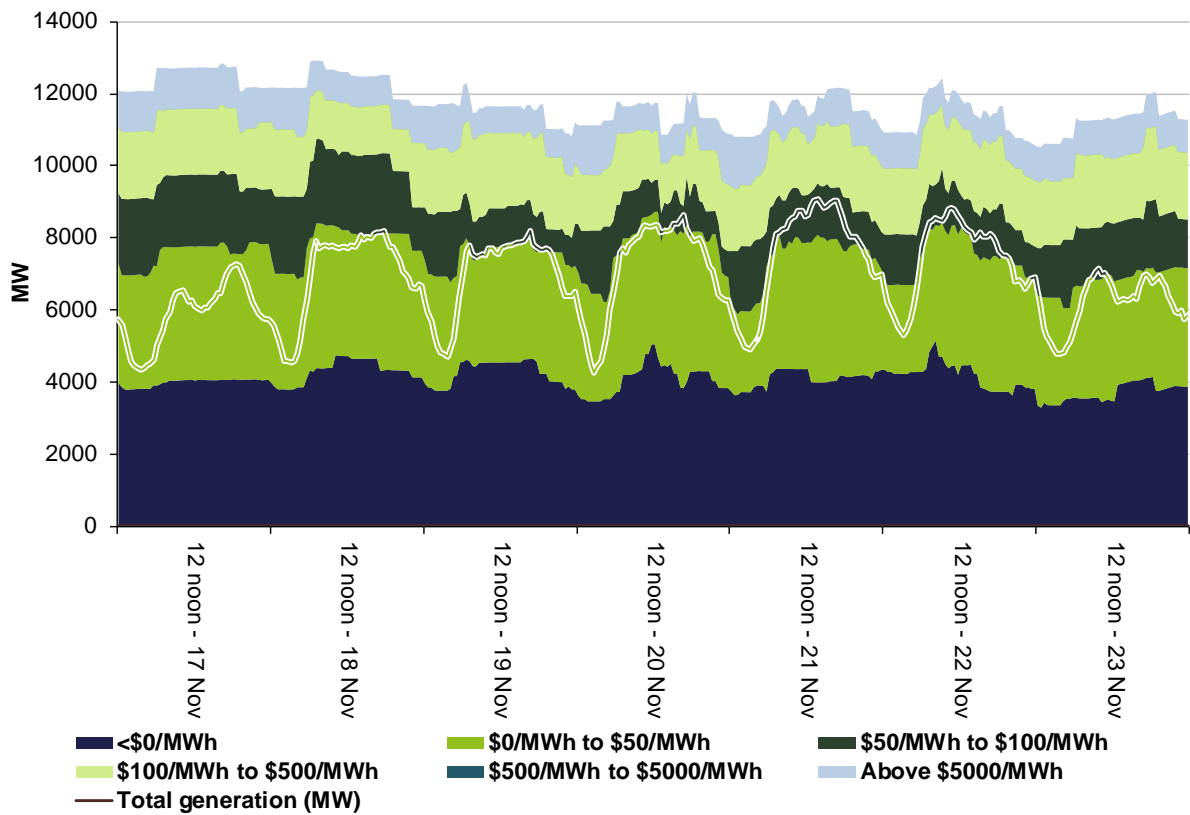


Figure 4: Victoria generation and bidding patterns

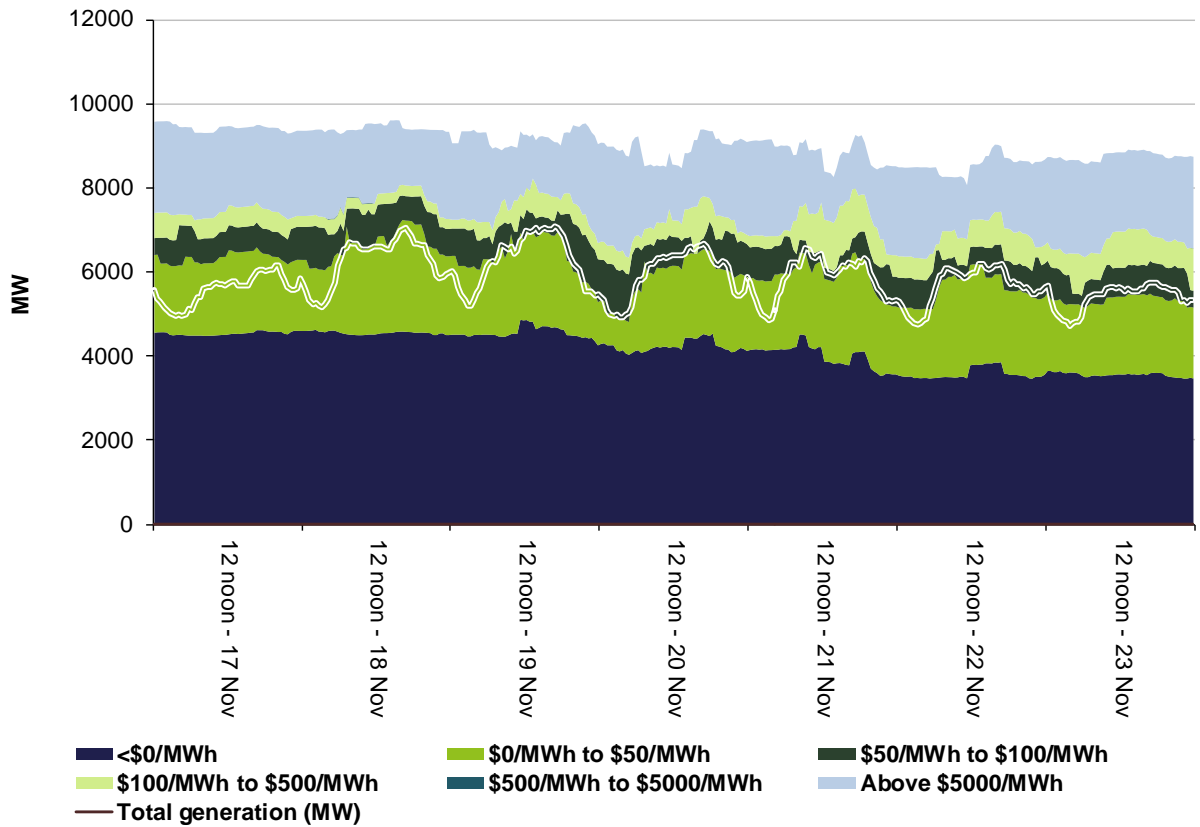


Figure 5: South Australia generation and bidding patterns

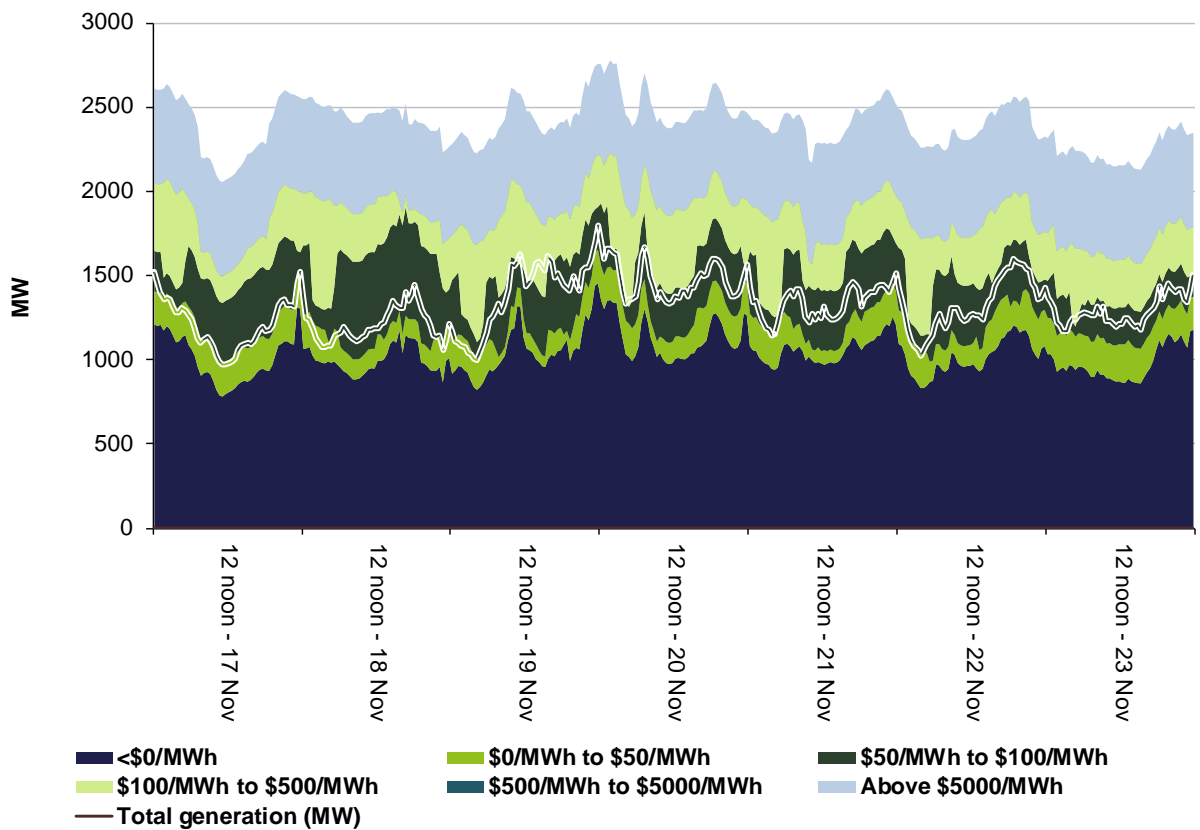
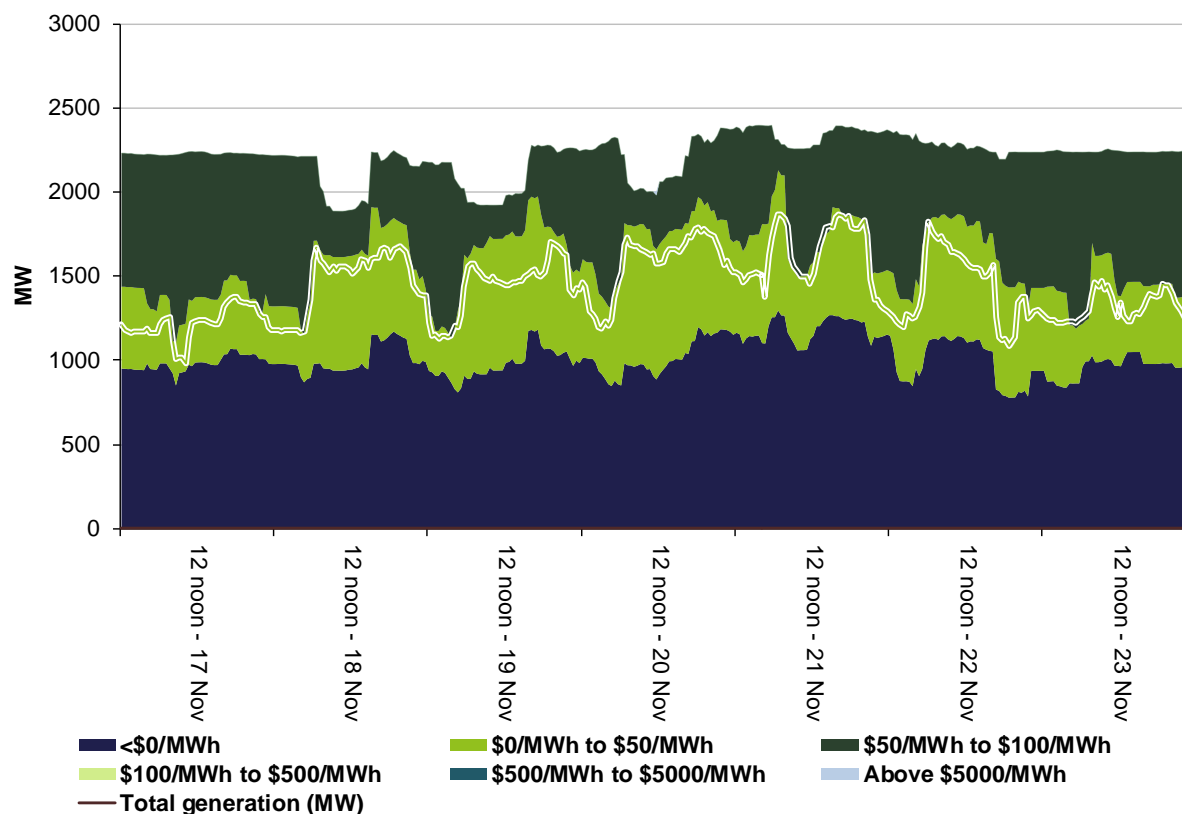


Figure 6: Tasmania generation and bidding patterns



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.

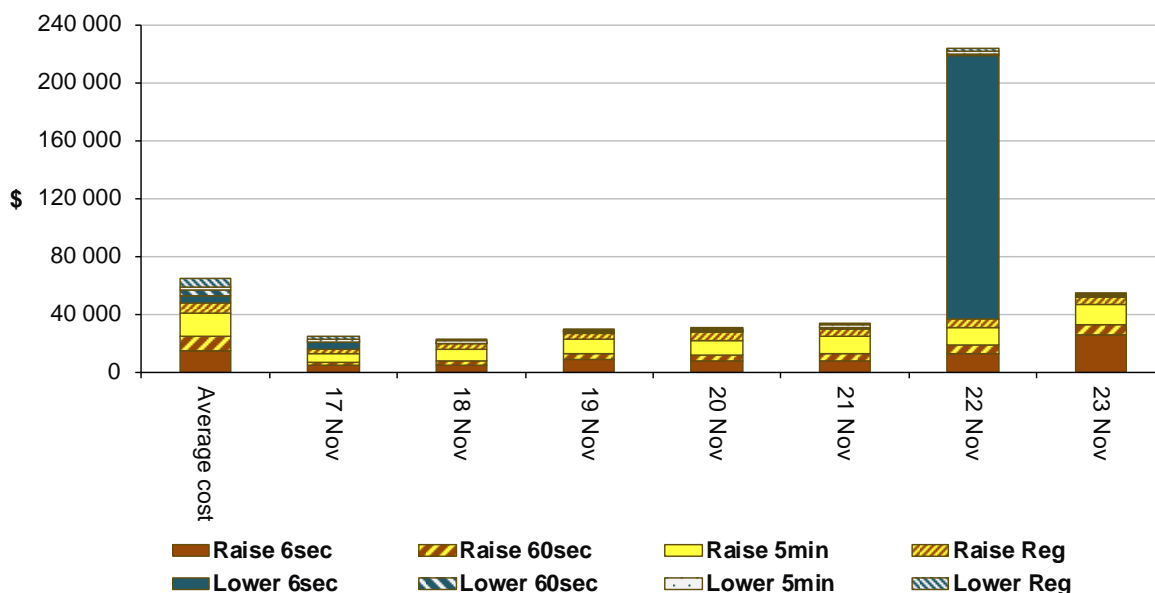
The total cost of FCAS on the mainland for the week was \$191 500 or less than 1 per cent of energy turnover on the mainland.

The total cost of FCAS in Tasmania for the week was \$226 500 or around 2.5 per cent of energy turnover in Tasmania. The majority of this cost occurred on 22 November for lower 6 second services. At 4.50 pm Basslink entered the no-go zone. This means that Tasmania had to source its FCAS locally as it could not be sourced across Basslink. This saw the local requirement for lower 6 second services increase from zero at 4.45 pm to 166 MW at 4.50 pm. With only around 15 MW of lower 6 second services available at prices less than the price cap, high-price capacity was dispatched which

saw the price reach the cap at 4.50 pm. The total cost of the local lower 6 second services for the 5 minute period from 4.50 pm reached \$180 835.

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 Queensland was greater than three times the Queensland weekly average price of \$59/MWh and above \$250/MWh.

Table 3: Queensland, Thursday 21 November

4 PM	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	2234.81	54.81	57.33
Demand (MW)	6852	6764	6905
Available capacity (MW)	9700	9806	9726

Conditions at the time saw demand and available capacity close to forecast.

With the Terranora interconnector still unavailable (on a planned outage since 8 August) and voltage collapse constraints from the loss of the Liddell to Muswellbrook line limited QNI to around 460 MW. At the time, there was reduced import capability into Queensland.

At 3.34 pm, effective from 3.45 pm, Stanwell Corporation rebid a total of 1127 MW of capacity across its portfolio from prices mainly below \$90/MWh to the price cap. The reason given was "1533A QLD demand PD5MIN > PD30MIN@1533 for 1600TI - SL".

From 3.55 pm there was an 80 MW increase in 5 minute demand. With low-priced capacity either ramp rate limited or trapped in FCAS high-priced capacity was dispatched in its place, which saw the 5 minute price increase from \$66/MWh at 3.55 pm to the price cap at 4 pm (when QNI reached its limit).

Prices returned to around \$60/MWh at 4.05 pm, as the majority of capacity from Stanwell's 3.34 pm rebid was only effective for the 4 pm trading interval.

There was no other significant rebidding.

There were two occasions where the spot price in Tasmania was greater than three times the Tasmanian weekly average price of \$52/MWh and \$250/MWh.

Table 4: Tasmania, Friday, 22 November

4.30 PM	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	2220.32	46.21	47.28
Demand (MW)	1143	1130	1152
Available capacity (MW)	2237	2252	2251
5 PM	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	259.76	46.32	46.50
Demand (MW)	1064	1134	1166
Available capacity (MW)	2237	2246	2252

Conditions at the time saw demand and available capacity close to that forecast.

At 2.15 pm, the loss of the Farrell-Sheffield parallel 220 kV lines was declared a credible contingency due to lightning. At 4.30 pm, the loss of the Hadspen to George Town 220 kV lines or Palmerston to Hadspen 220kV lines were reclassified as credible contingencies due to lighting. The constraint invoked to manage this affects all generation in Tasmania with the exception of Tamar Valley generation (which was offline at the time).

At 4.30 pm, a constraint managing the load on one of the Palmerston to Hadspen 220 kV lines (in the event of a trip on the parallel line) was invoked. This constraint violated immediately when the generation requirements were unable to be met. This resulted in a number of generators being trapped or stranded in FCAS.

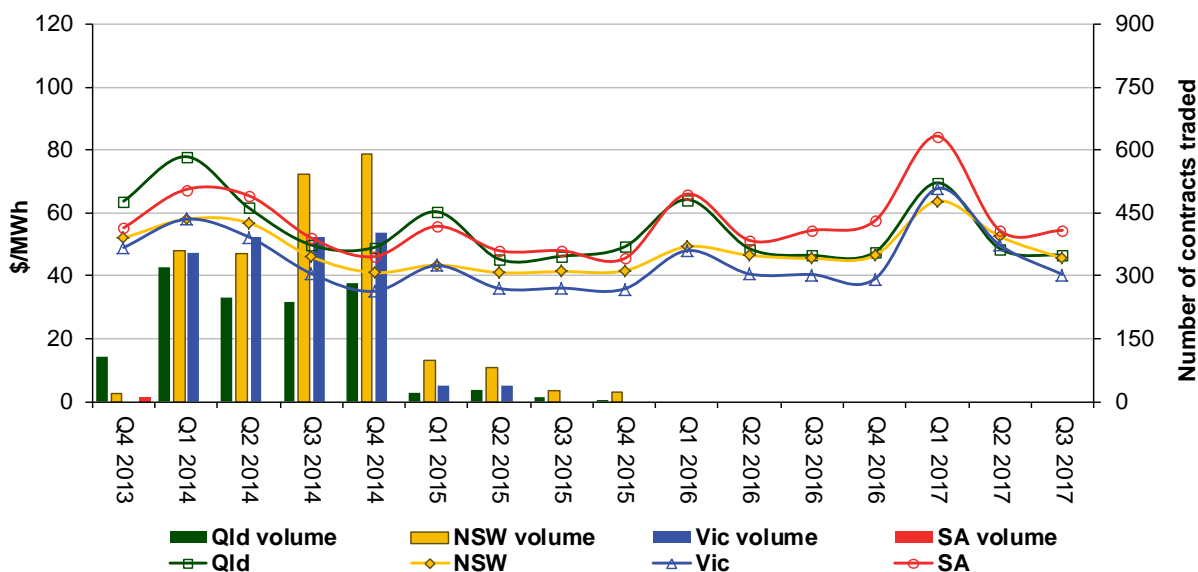
From 4.30 pm to 5 pm the constraint reduced a number of the local generating units by a total of around 400 MW and ramped up other generators. The reduction in generation led to flows to Victoria on Basslink reducing from 448 MW at 4.25 pm to 247 MW at 4.30 pm. Although the flows out of Tasmania reduced, this saw the 5 minute price reach the price cap at 4.30 pm and stay above \$400/MWh until 4.45 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.

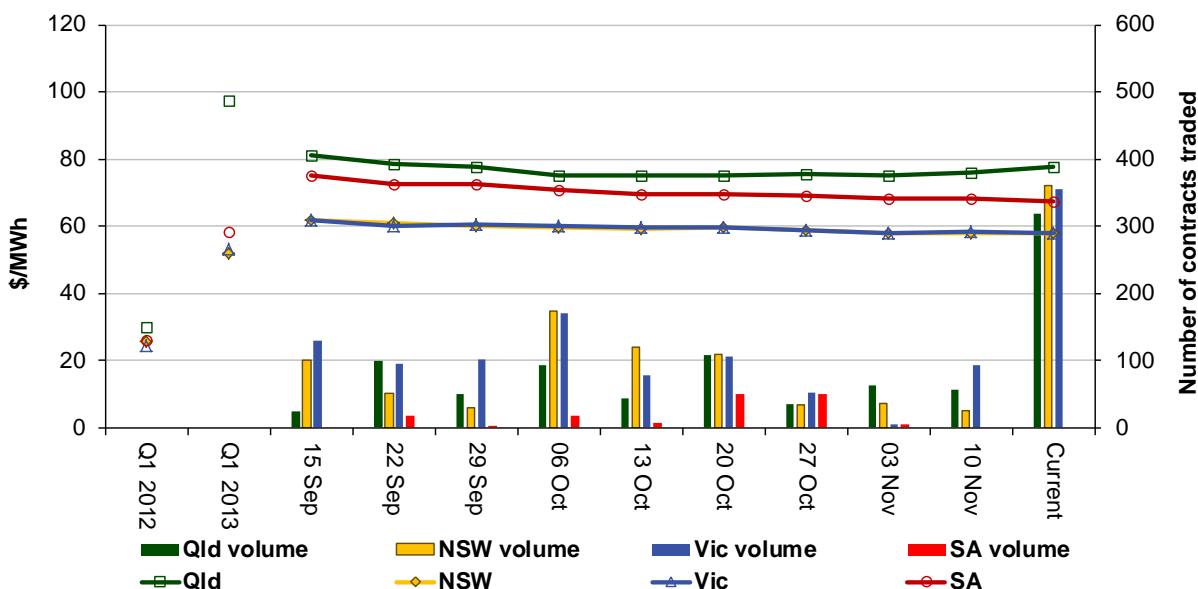
Figure 8: Quarterly base future prices Q4 2013 – Q3 2017



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)



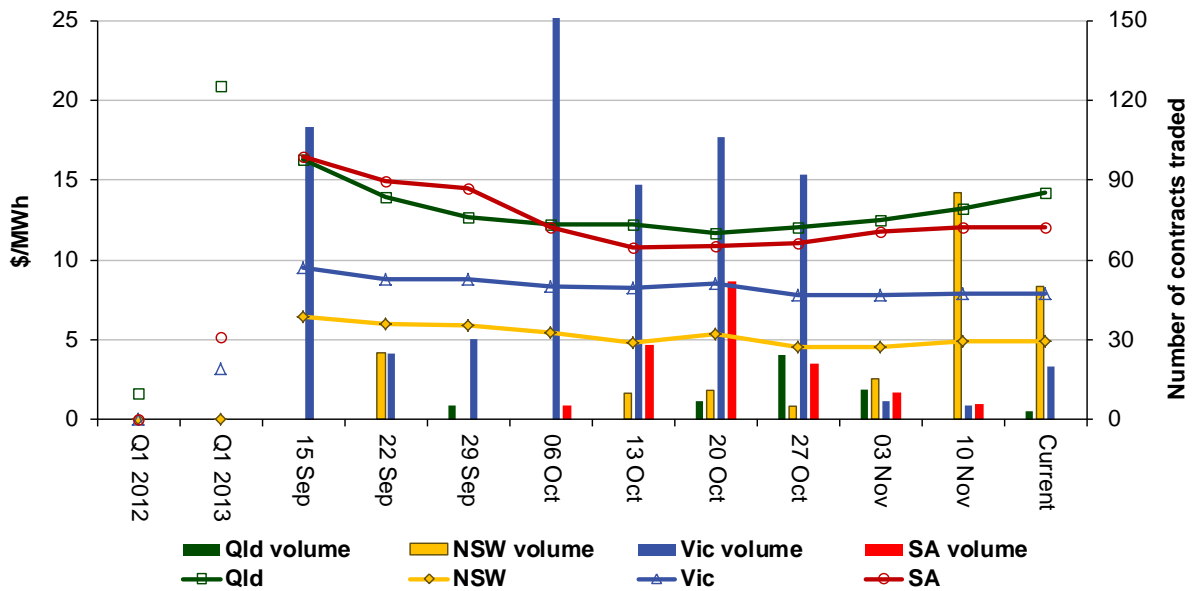
Note: Base contract prices are shown for each of the current week and the previous 9 weeks, with average prices shown for yearly periods 1 and 2 years prior to the current year

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
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