Electricity Report

19 - 25 January 2014

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)

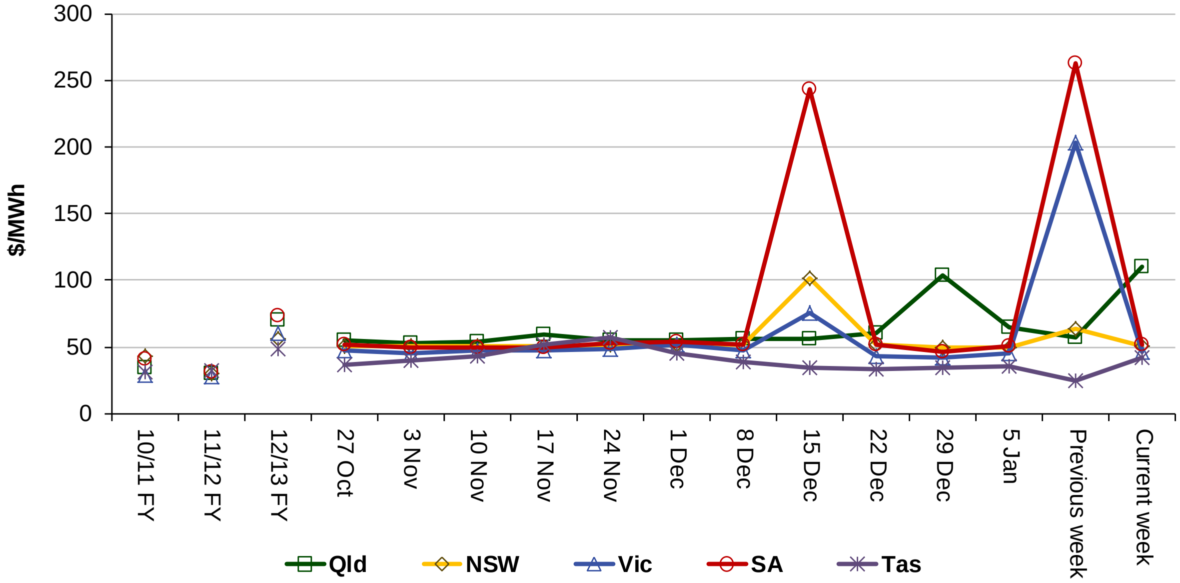


Table 1: Volume weighted average spot prices by region ($/MWh)

Region	Qld	NSW	Vic	SA	Tas
Current week	111	50	47	52	42
12-13 financial YTD	70	56	61	73	49
13-14 financial YTD	63	55	59	78	43

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 57 trading intervals throughout the week where actual prices varied significantly from forecasts. This compares to the weekly average in 2013 of 97 counts and the average in 2012 of 60. 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	3	15	0	23
% of total below forecast	1	53	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.

The red ellipses on figure 2 highlight the periods in Queensland where bids reduced the low priced available capacity.

Figure 2: Queensland generation and bidding patterns

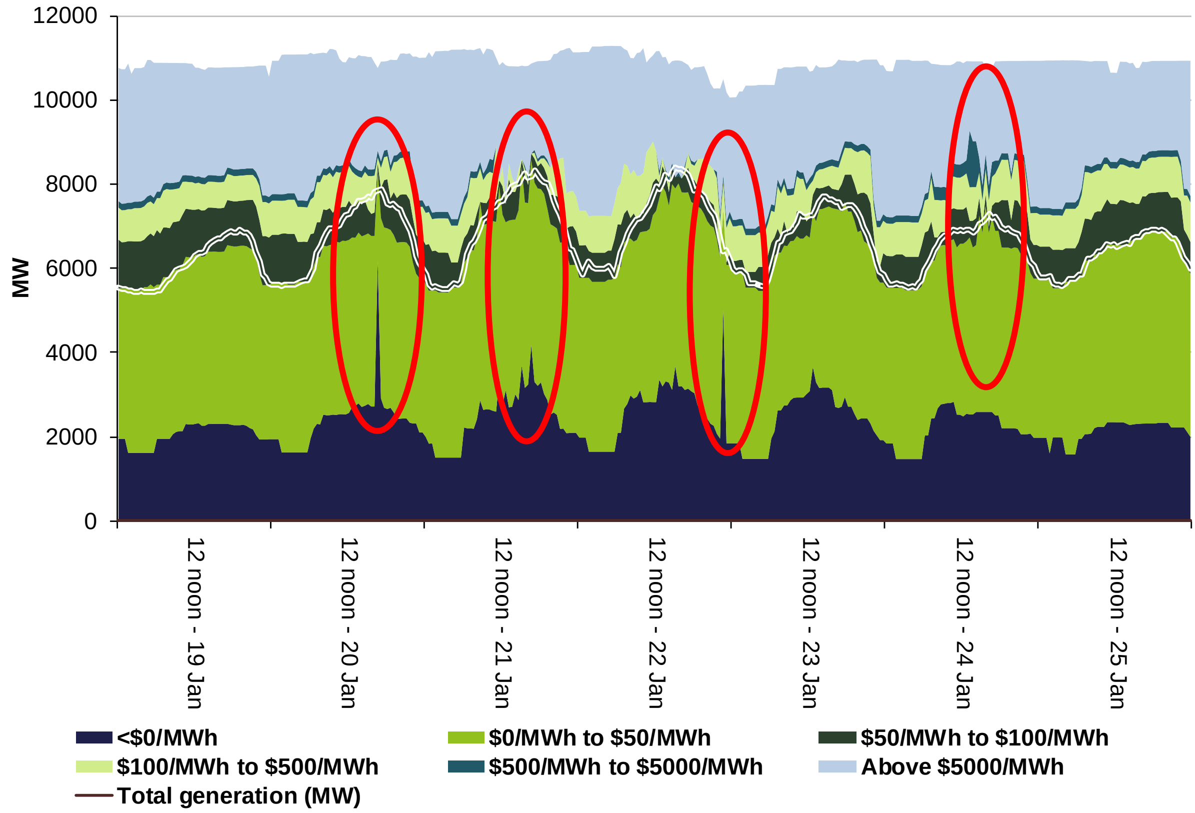


Figure 3: New South Wales generation and bidding patterns

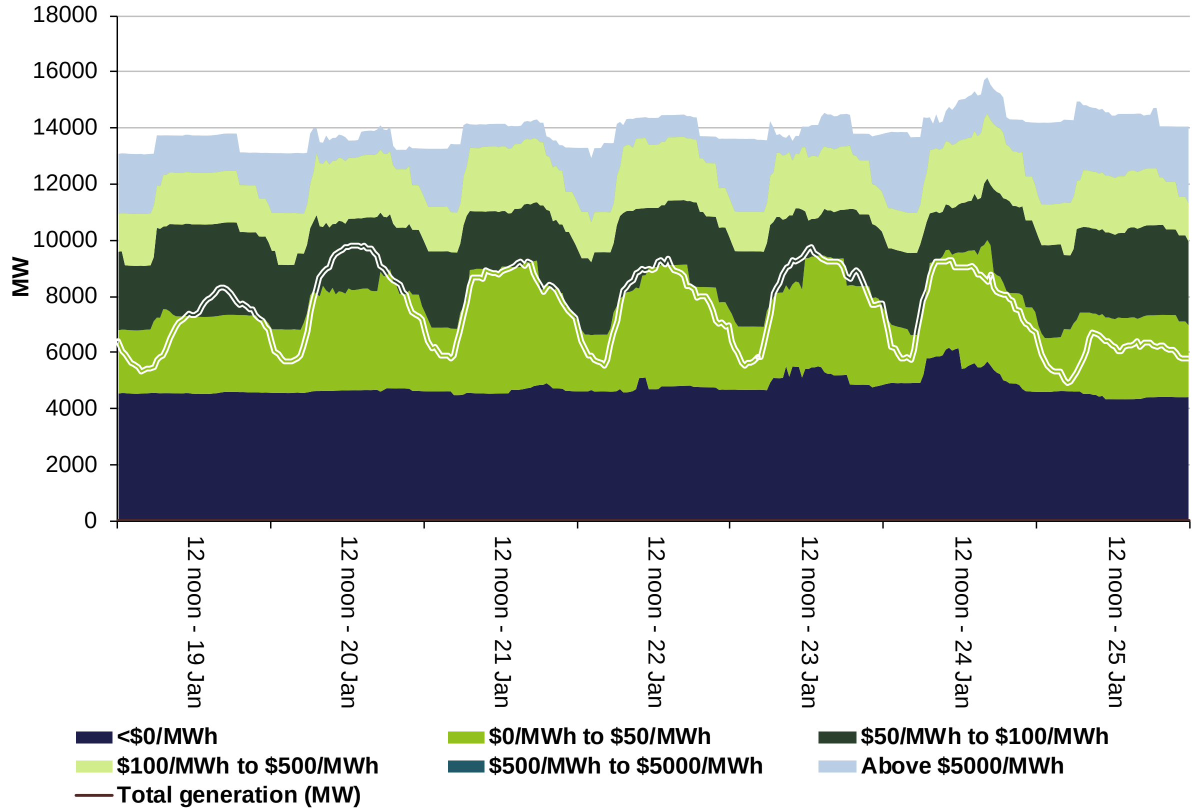


Figure 4: Victoria generation and bidding patterns

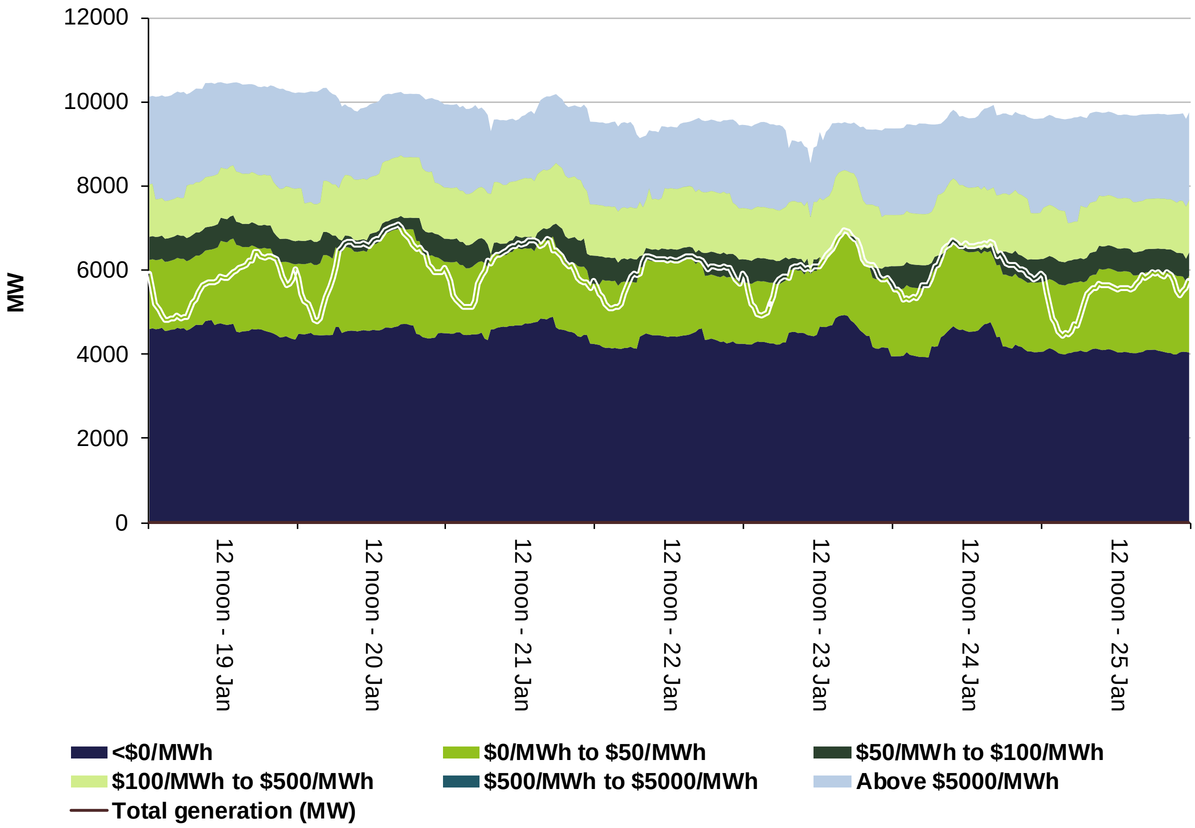


Figure 5: South Australia generation and bidding patterns

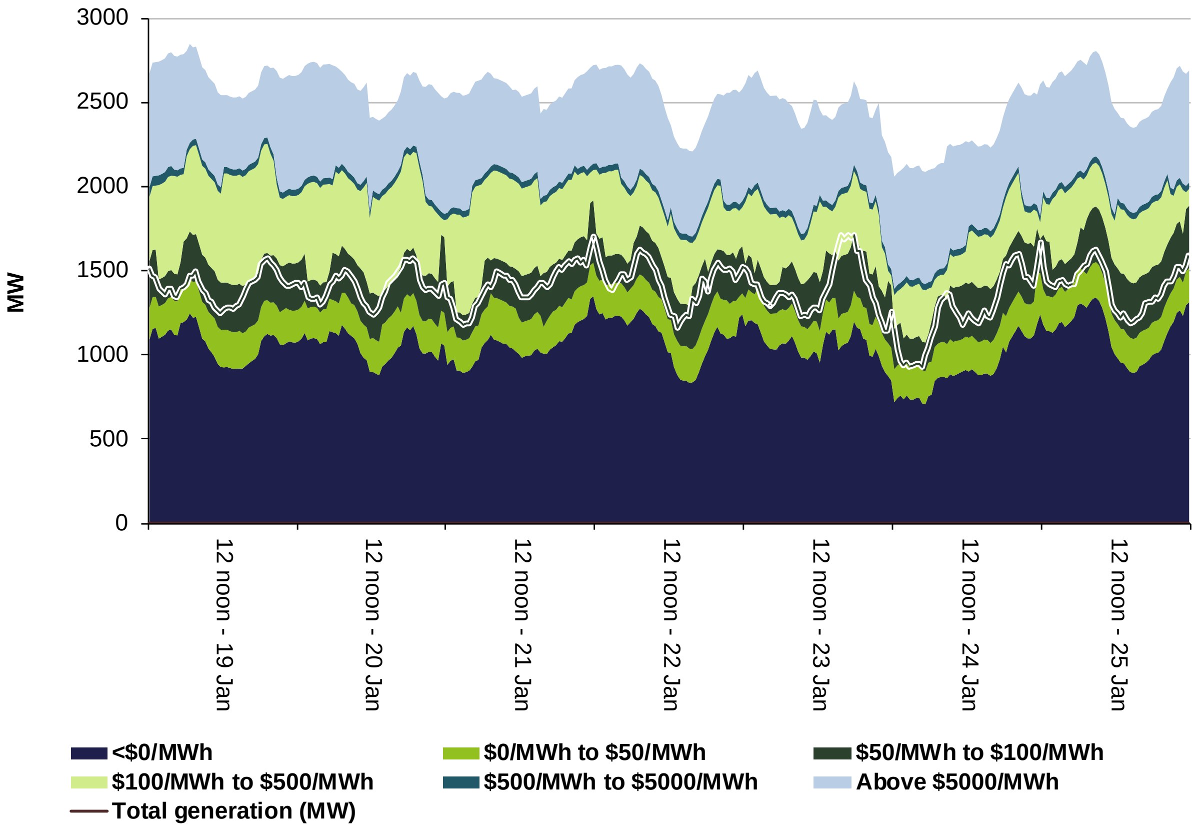
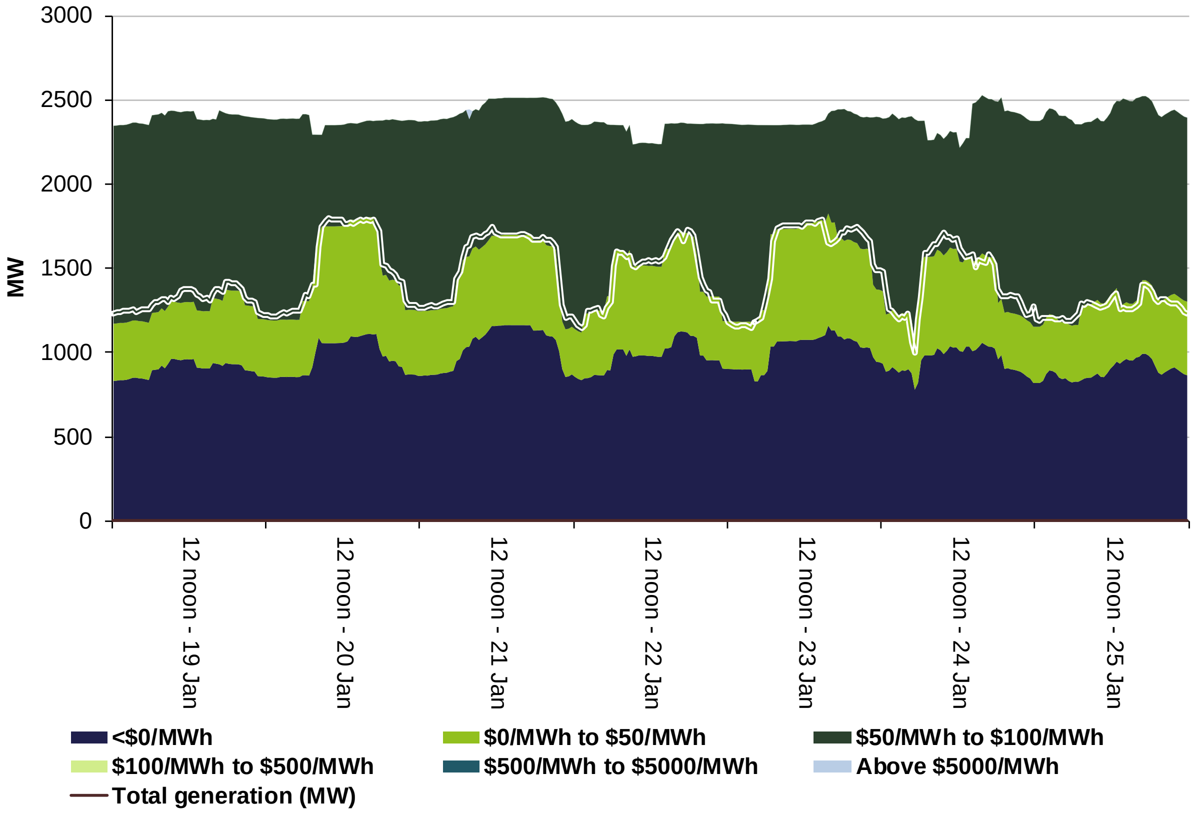


Figure 6: Tasmania generation and bidding patterns



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.

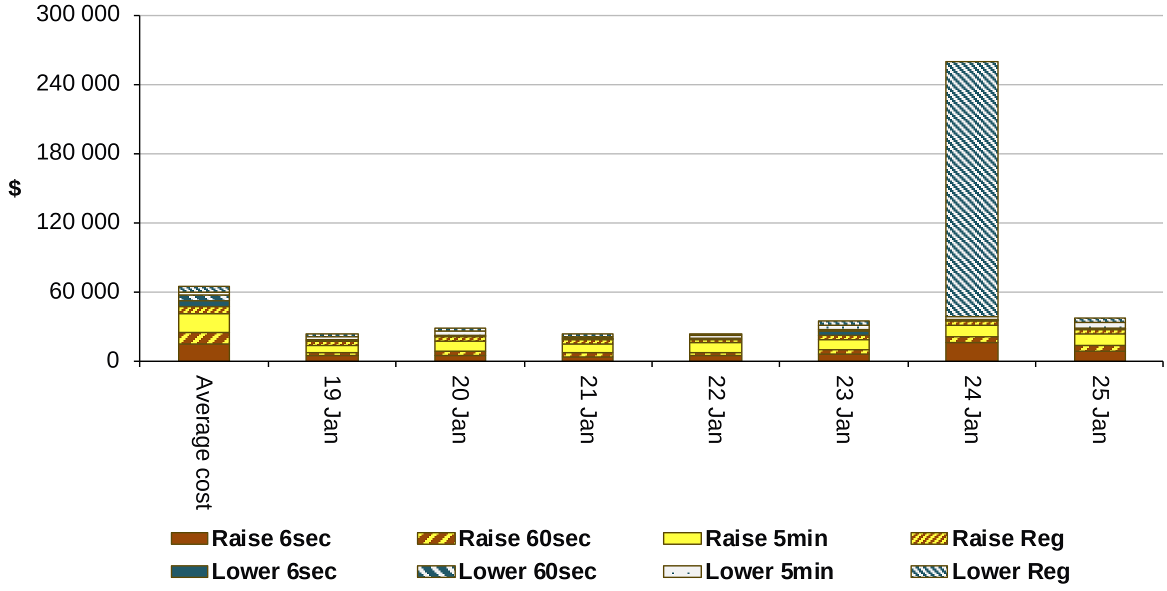
The Electricity Rules stipulate that generators pay for raise contingency services and customers pay for lower contingency services. Regulation services are paid for on a “causer pays” basis determined every four weeks by AEMO.

The total cost of FCAS on the mainland for the week was $184 400 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 $246 000 or around 3 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



On 24 January, due to lightning near George Town, the George Town-Hadspen lines in Tasmania were reclassified as a credible contingency from 4.30 am to 6.15 am.

The constraints invoked to manage the reclassification resulted in the reduction in the output of several generators in Tasmania by a total of around 200 MW (from 1251 MW at 4.30 am to 1054 MW at 4.35 am). This resulted in Basslink reducing exports into Victoria by around the same magnitude (from 247 MW at 4.30 pm to 36 MW at 4.35 pm). At 4.35 am, one of the reclassification constraints was violated.

At 4.35 am, as Basslink flow was less than 50 MW (within the no-go zone) and was not able to transfer frequency control ancillary services, which meant that all Tasmania frequency requirements were sourced locally. Basslink was within the no-go zone from 4.35 am to 4.55 am and for the majority of this time the local lower regulation price was at the price cap of $13100/MWh.

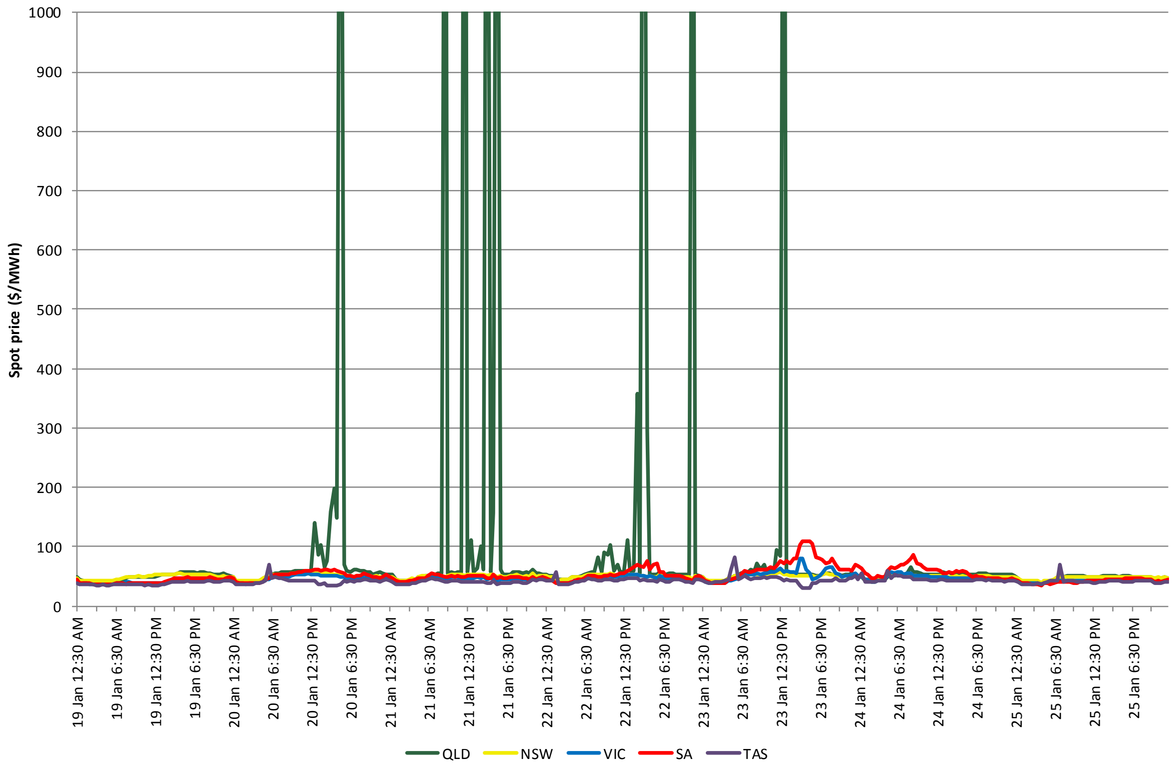
At 4.47 am, effective from 4.55 am, Hydro Tasmania rebid 337 MW of capacity across its portfolio from the price cap to $2.2/MWh for lower regulations services. This rebid combined with a significant reduction in requirement for lower regulation lower regulation resulted in the price in Tasmania to drop to below $2.2/MW at 5.05 am

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.

Figure 8 shows the spot prices for all regions for the period 19 – 25 February.

Figure 8: Regional spot price



Queensland

There were nine occasions where the spot price in Queensland was greater than three times the Queensland weekly average price of $111/MWh and above $250/MWh.

At the time the high prices the import capability into Queensland was reduced by the planned outage of the Terranora interconnector and voltage constraints on QNI. Furthermore, the majority of these events occurred on days with temperatures above 30 degrees in Brisbane.

Table 3: Queensland, Monday 20 January

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
5.00 PM	1902.80	236.57	248.50	7909	7838	7834	10 883	11 125	11 171

Conditions at 5.00 pm

Demand was close to forecast and available capacity around 240 MW less than the four hours ahead forecast.

At 4.07 pm, effective at 4.15 pm, Callide Power Trading reduced the availability at Callide C unit 4 by 136 MW, 68 MW priced less than $60/MWh – reason:“1605P High fabric filter inlet temperature”.

At 4.47 pm, effective for the 4.55 pm and 5.00 pm dispatch intervals, CS Energy rebid 270 MW of Gladstone capacity from below $60/MWh to the price cap –reason:“1644A interconnector constraint – QNI binding –SL”.

Following CS Energy’s rebid the dispatch price increased from $100/MWh at 4.50 pm to $11 000/MWh at 4.55 pm.

No other rebids occurred in this trading interval and the high dispatch price in the last dispatch interval resulted in the $1902.8/MWh spot price.

Subsequently a number of participants rebid capacity into lower price bands, including 250 MW by CS Energy (at Wivenhoe) which became effective at 5 pm and the dispatch price dropped below $50/MWh at that time.

There was no other significant rebidding.

Table 4: Queensland, Tuesday 21 January

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
9.00 am	1876.87	58.95	59.00	6975	6984	7012	11 216	11 166	11 196
12 noon	2086.77	56.91	59.00	7536	7500	7575	10 958	11 178	11 178
3.30 pm	1885.03	67.03	451.05	8126	8106	8157	10 803	10 988	11 169
5.00 pm	1879.21	68.00	451.05	8192	8190	8215	10 826	10 904	11 145

Conditions at 9 am

Demand and available capacity were close to forecast.

At 8.47 am, effective for the 8.55 am and 9 am dispatch intervals, CS Energy rebid 360 MW of Gladstone capacity from below $60/MWh to the price cap – reason: “0846A interconnector constraint – QNI binding – SL”.

Following this rebid the dispatch price increased from $57/MWh at 8.50 am to $11 000/MWh at 8.55 am.

The high dispatch price in the last dispatch interval resulted in the $1876.87/MWh spot price.

A number of participants responded to the high price, including CS Energy, and capacity was rebid into lower price bands. The dispatch price dropped below $40/MWh at 9 am (CS rebid 520 MW of capacity at Wivenhoe from prices above $10 000 to zero. Origin rebid 70 MW from proceed above $10 000 to below zero).

Conditions at 12 noon
Demand and available capacity were close to forecast.

At 11.48 am, effective for the 11.55 am and 12 pm dispatch intervals, CS Energy rebid 325 MW of Gladstone capacity from below $60/MWh to the price cap - reason:“1147A interconnector constraint – QNI binding”.

The dispatch price increased from $300.98/MWh at 11.55 am to $12 000/MWh at 12 noon.

Following the high dispatch price, a number of participants rebid capacity into lower price bands and the dispatch price dropped below $50/MWh at 12.05 am. (The most significant rebid was made by CS Energy which shifted 500 MW of Wivenhoe capacity from prices above $10 000/MWh to zero. The rebid reason was related to the price being higher than forecast).

The high dispatch price in the last dispatch interval resulted in the $2086.77/MWh spot price.

Conditions at 3.30 pm
Demand and available capacity were close to forecast.

At 3.13 pm, effective for the 3.20 pm to 3.30 pm dispatch intervals, CS Energy rebid 300 MW of Gladstone capacity from below $60/MWh to the price cap – reason:“1512A interconnector constraint – QNI binding -SL”.

Following this rebid the dispatch price increased from $100/MWh at 3.15 pm to $11 000/MWh at 3.20 pm.

A number of participants rebid capacity into lower price bands and the dispatch price dropped below $42/MWh at 3.25 pm (CS rebid 500 MW of capacity at Wivenhoe from prices above $10 000/MWh to zero. Origin and Callide power trading 170 MW and 226 MW to the price floor. The rebid reasons were all related to the price being higher than forecast).

This short spike in price lifted the trading interval price to $1885.03/MWh

Conditions at 5.00 pm
Demand and available capacity were close to forecast.

At 4.47 pm, effective for the 4.55 pm and 5 pm dispatch intervals, at the end of the trading period, CS Energy rebid 300 MW of Gladstone capacity from below $60/MWh to the price cap – reason:“1645A interconnector constraint – QNI binding -SL”.

Following this rebid the dispatch price increased from $57/MWh at 4.50 pm to $11 000/MWh at 4.55 pm.

This short spike in price lifted the trading interval price to $1879.21/MWh

A number of participants rebid capacity into lower price bands and the dispatch price dropped below $35/MWh at 5.00 pm (CS rebid 500 MW of capacity at Wivenhoe from prices above $10 000/MWh to zero. The rebid reason was related to the price being higher than forecast).

Table 8: Queensland, Wednesday 22 January

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
2.30 pm	358.70	58.52	435.00	8231	8036	8253	10 905	11 224	11 244
3.30 pm	1930.48	119.50	435.00	8365	8237	8331	10 943	11 258	11 263
11.00 pm	1869.49	56.89	54.96	6308	6357	6430	10 329	10 309	11 171

Conditions at 2.30 pm

Demand was around 200 MW greater than the four hours ahead forecast and available capacity was around 300 MW less than the four hours ahead forecast.

At 2.21 pm, effective for the 2.30 pm dispatch interval, CS Energy rebids 240 MW of Gladstone capacity from below $60/MWh to the price cap and increased the ramp down rate at Gladstone from 5MW/min to 8MW/min - reason:“1419A interconnector constraint – QNI binding north-SL”.

Following this rebid the dispatch price increased from $58/MWh at 2.25 pm to $1501/MWh at 2.30 pm. This short spike in price lifted the trading interval price to $358.70/MWh

The 3 pm trading interval dispatch price returned to $54.99/MWh.

Conditions at 3.30 pm

Demand was close to forecast and available capacity around 300 MW less than the four hours ahead forecast.

Adduced	Effective	Participant/ Plant	Quantity	From $/MWh	To $/MWh	Reason
3.18 pm	3.25 pm & 3.30 pm	CS Energy/ Gladstone	150MW	60	price cap	1518A 5min pd higher than 30min forecast – SL
3.24 pm	3.30 pm					1522A dispatch price higher than 30min forecast-SL

Following these rebids the dispatch price increased from $58/MWh at 3.20 pm to $11 298/MWh at 3.25 pm.

A number of participants rebid capacity into lower price bands and the dispatch price dropped to below $59/MWh at 3.30 pm.

Conditions at 11.00 pm

Demand and available capacity was close to forecast.

At 10.37 pm, effective from 10.45 pm, CS Energy rebid 240 MW of Gladstone capacity from below $60/MWh to the price cap – reason:“2237A interconnector constraint – QNI binding in PD-SL”.

Following this rebid the dispatch price increased from $55/MWh at 10.40 pm to $10 990/MWh at 10.45 pm.

A number of participants rebid capacity into lower price bands and the dispatch price reducing to below $43/MWh at 10.50 pm. (CS Energy rebid 250 MW of Wivenhoe capacity from above $10 900/MWh to zero – reason: “2240A dispatch price higher than 5 min forecast –SL”).

Table 11: Queensland, Thursday 23 January

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
1.00 pm	1899.70	60.00	60.00	7340	7375	7375	10 725	10 923	10 923

Conditions at 1.00 pm
Demand and availability were close to forecast.

At 12.47 pm, effective for the 12.55 pm and 1 pm dispatch intervals only, CS Energy rebid 305 MW of capacity at Gladstone from prices below $60/MWh to the price cap. The reason given was “1247A dispatch price lower than 30min forecast-SL”.

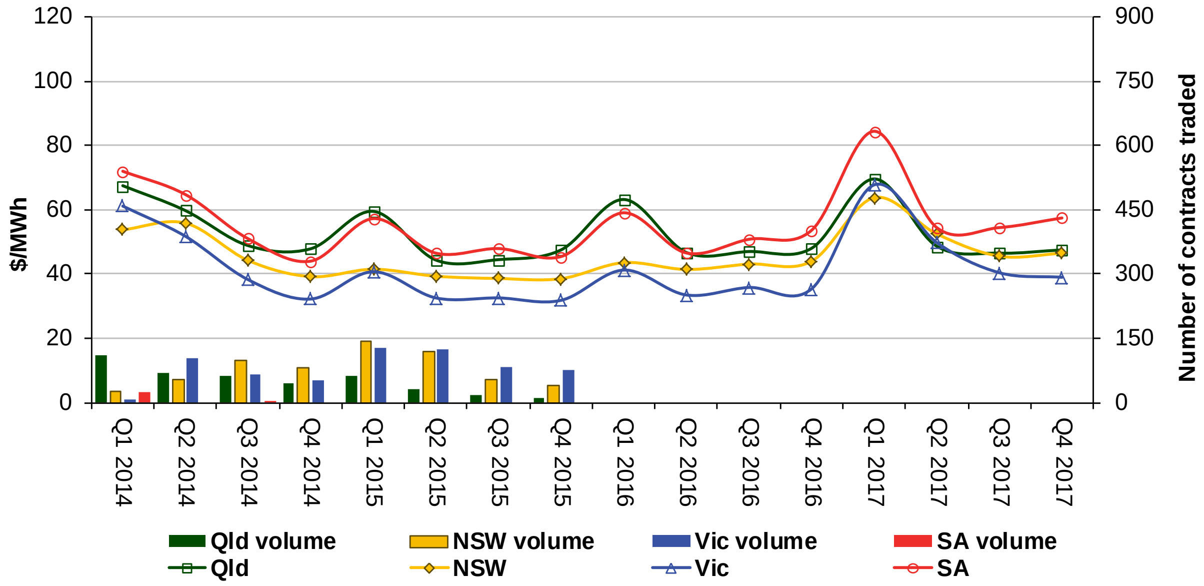
Following this rebid the dispatch price increased from $68/MWh at 12.50 pm to $11 100/MWh at 12.55 pm.

A number of participants (including Stanwell, AGL and Callide) rebid capacity from high prices to lower prices and the dispatch price dropped to below $55/MWh at 1 pm.

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.

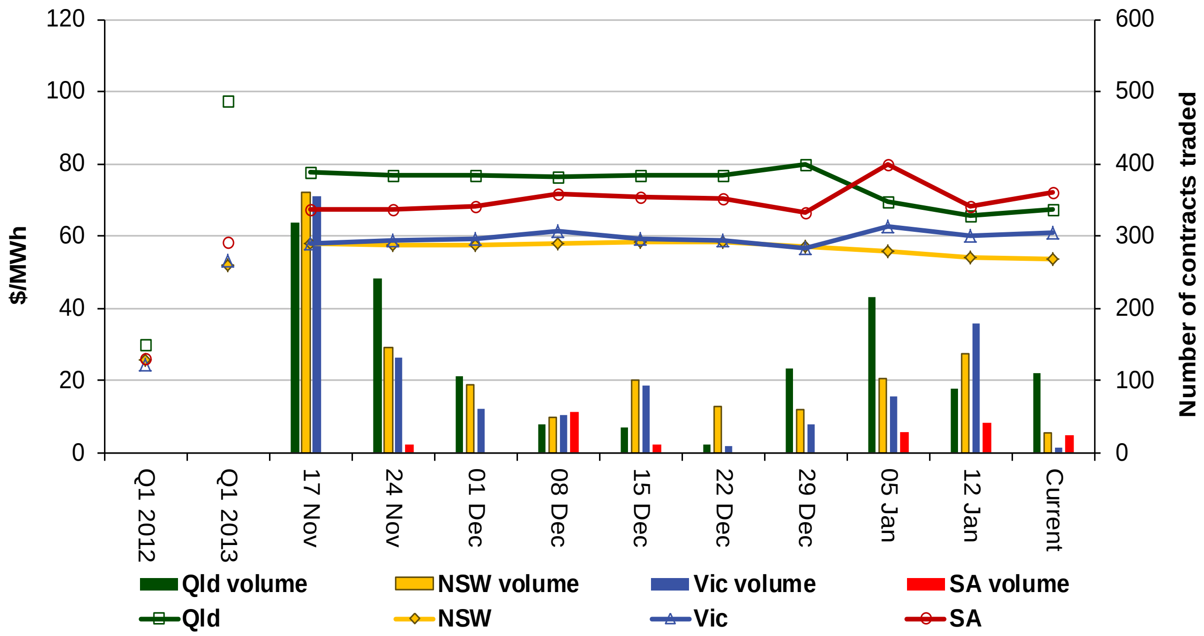
Figure 8: Quarterly base future prices Q4 2013 – Q3 2017



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)



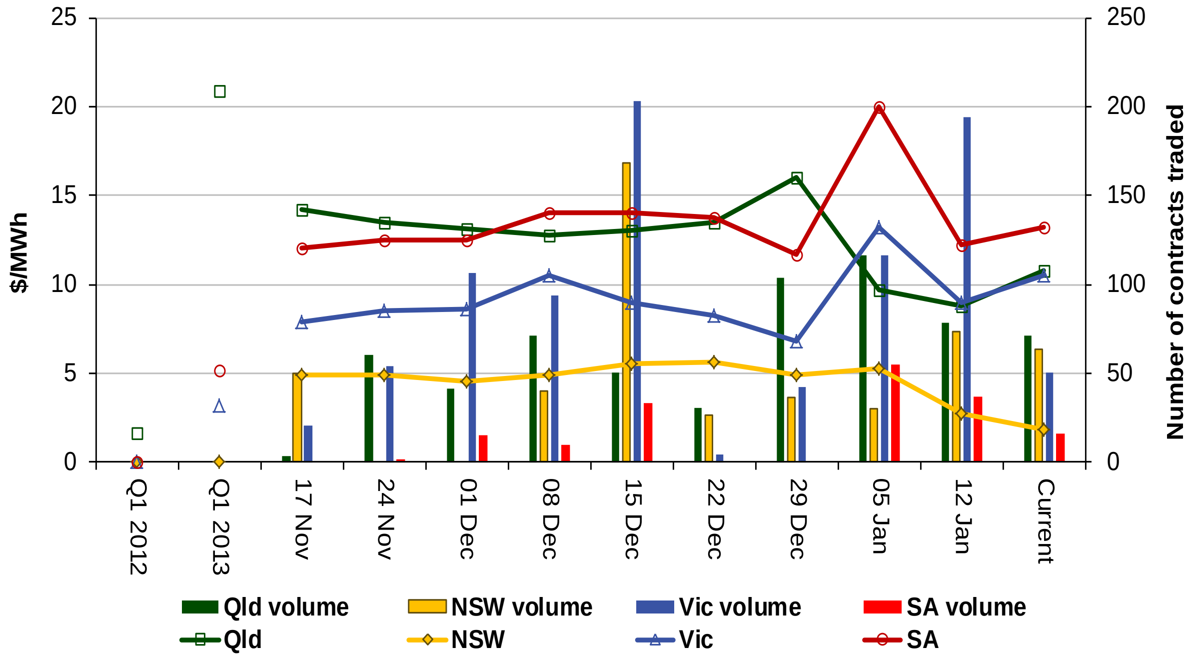
Note: Base contract prices are shown for each of the current week and the previous 9 weeks, with average prices shown for yearly periods 1 and 2 years prior to the current year

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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