Electricity Report

12–18 January 2014

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. High spot and dispatch prices as a result of the heat wave in the southern states notably increased the overall average price for the week.

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

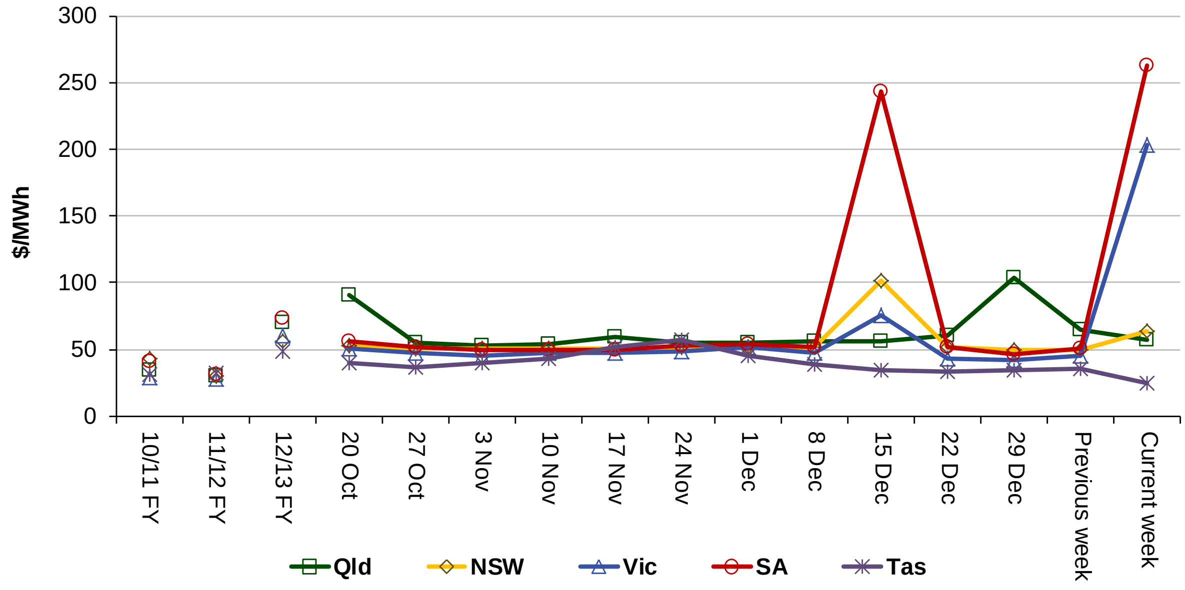


Table 1: Volume weighted average spot prices by region ($/MWh)

Region	Qld	NSW	Vic	SA	Tas
Current week	57	63	204	264	25
12-13 financial YTD	70	56	61	73	49
13-14 financial YTD	62	55	59	79	43

Longer-term statistics tracking average spot market prices are available on the AER website.

AER reference: 39220 – D14/6309

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 188 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	34	0	1
% of total below forecast	20	35	0	7

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.

Heat wave conditions existed in the southern states for most of this week and as expected the high temperatures led to high demand conditions. Generator offers reflected the potential opportunity from increased demand. Spot prices exceeded $5000/MWh in South Australia and Victoria on 15 January at 4.00 pm. The events leading up to this price are discussed in the South Australian and Victorian $5000 report for 15 January 2014.

Figure 2 shows that, particularly on 15, 16, and 17 January there was little or no capacity available between $500/MWh and $5000/MWh in Queensland. Figure 3 shows that a similar situation existed in NSW over the same period with a notable reduction in the available capacity more broadly during daylight hours in the $500/MWh and $5000/MWh and notably less capacity between $50/MWh and $500/MWh. On two days at least this was accompanied by an increase in the capacity offered less than $0/MWh.

Figures 4 and 5 shows that from 13 to 17 January in South Australia and Victoria, the majority of the capacity of the generators was offered in at prices less than $40/MWh and during the day, there was little capacity available at prices less than the market price cap.

Figure 6 shows that the Tasmanian generators had arranged their offers in such a way as to maximise the potential for export across Basslink into Victoria. This resulted in extensive periods during the day where Tasmanian spot prices were less than zero or at the market price floor.

Figure 2: Queensland generation and bidding patterns

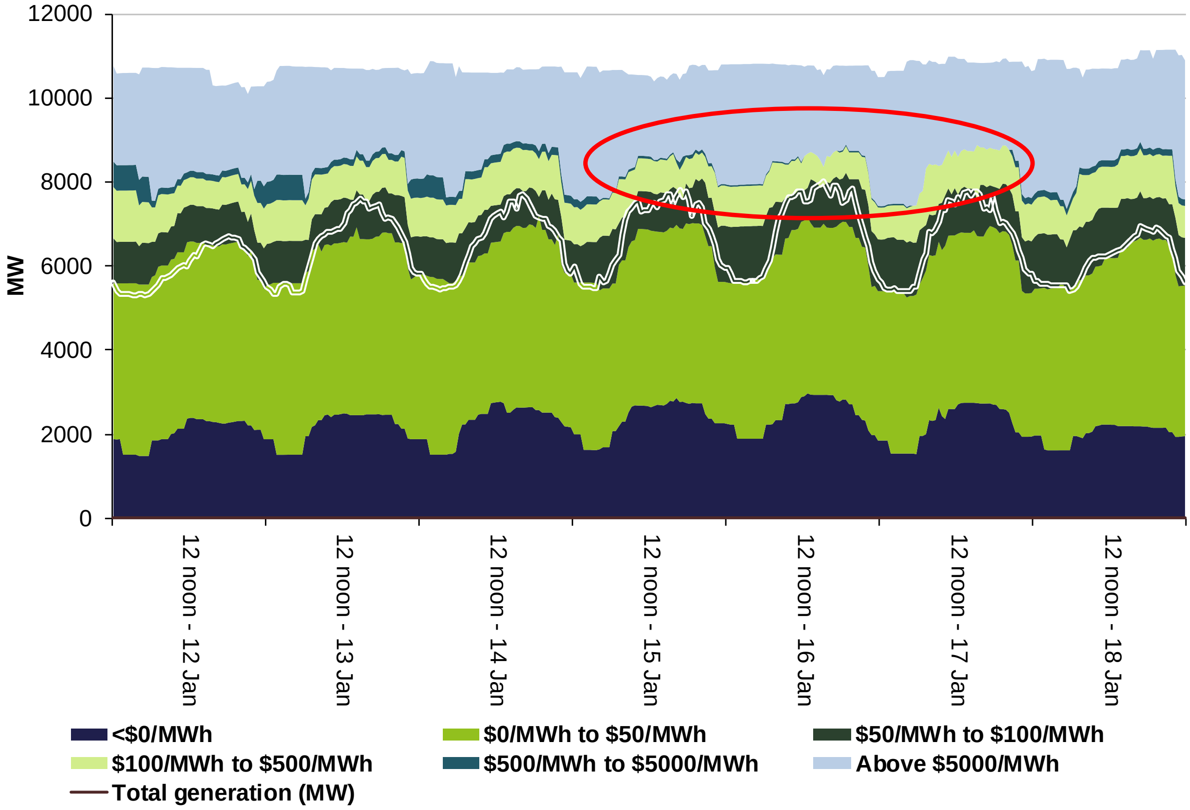


Figure 3: New South Wales generation and bidding patterns

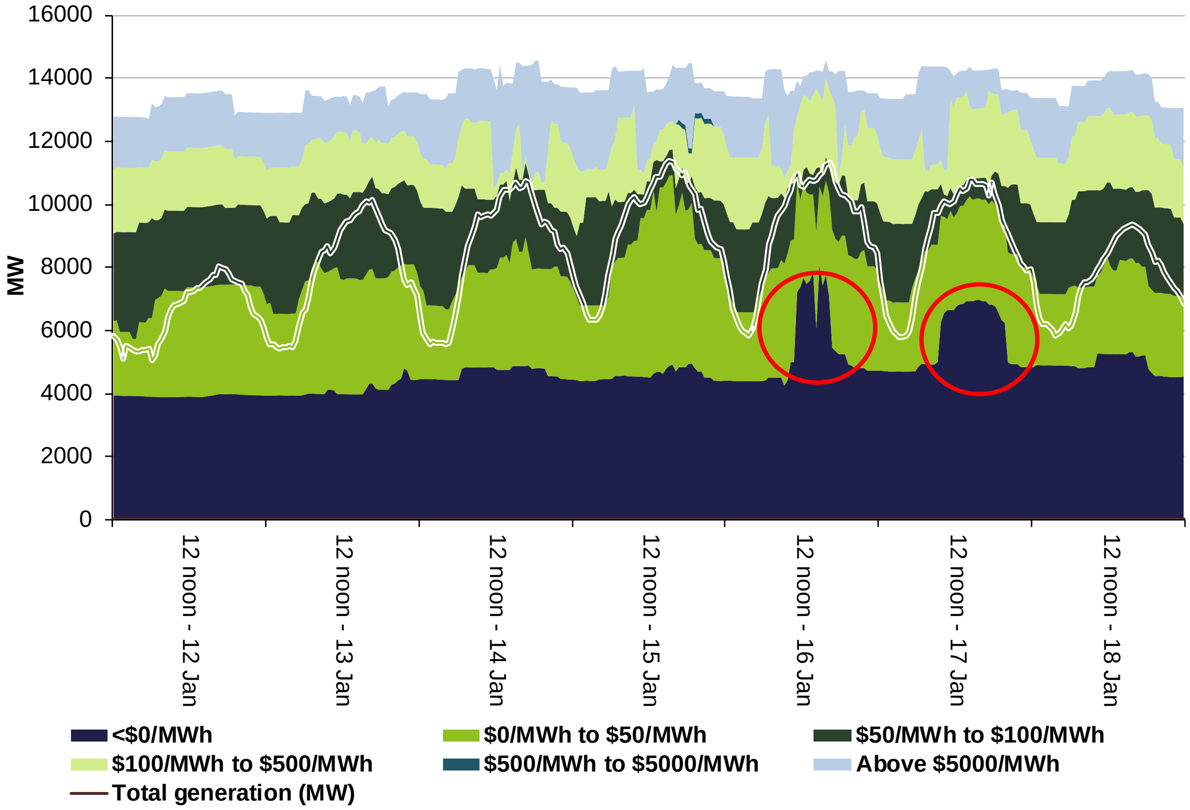


Figure 4: Victoria generation and bidding patterns

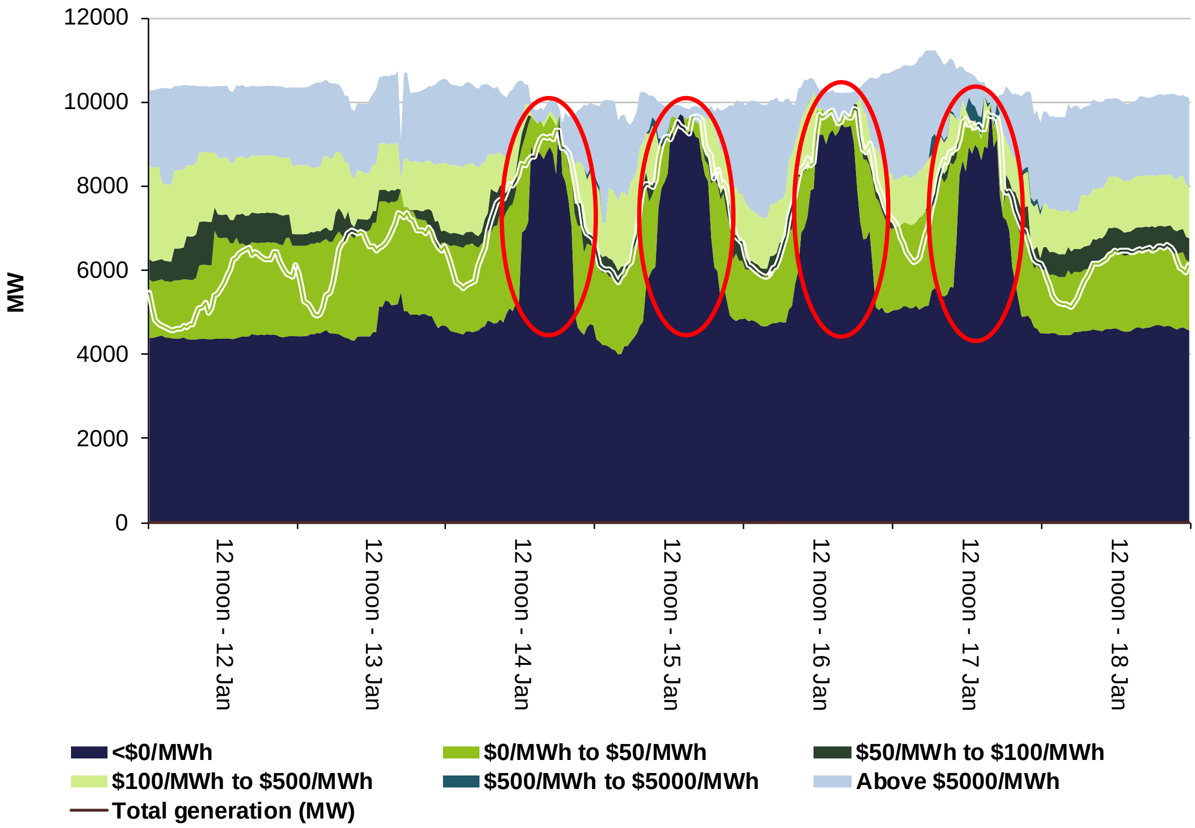


Figure 5: South Australia generation and bidding patterns

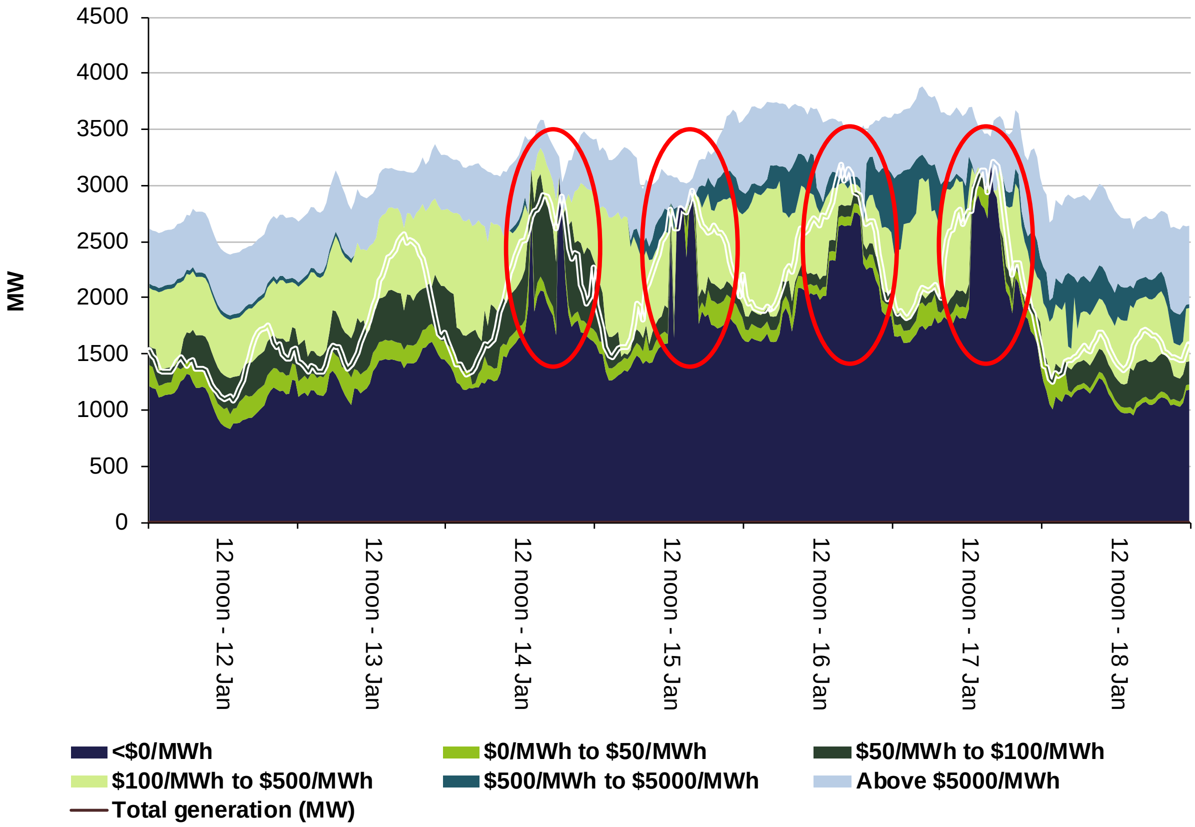
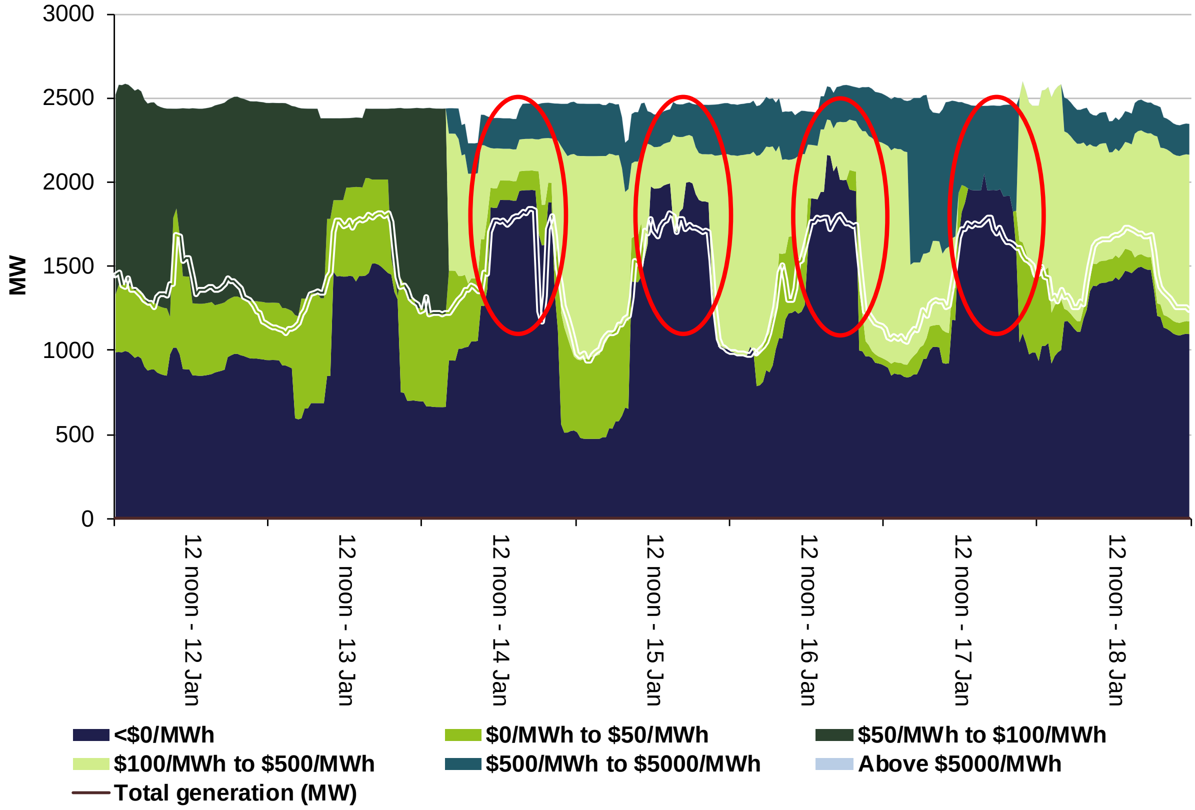


Figure 6: Tasmania generation and bidding patterns



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.

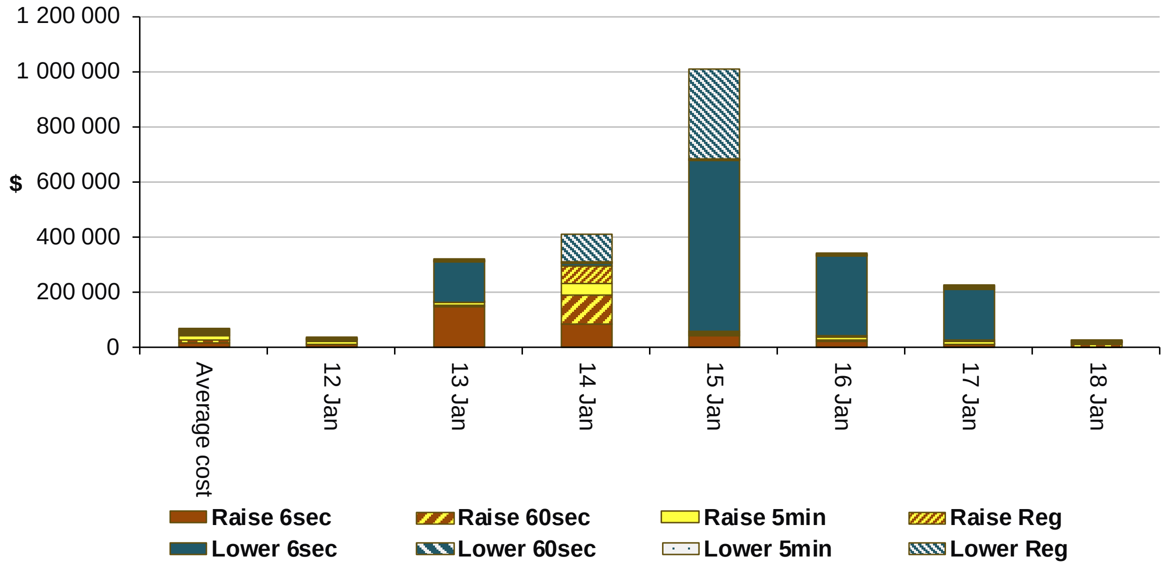
The Electricity Rules stipulate that generators pay for raise contingency services and customers pay for lower contingency services. Regulation services are paid for on a “causer pays” basis determined every four weeks by AEMO.

The total cost of FCAS on the mainland for the week was $179 500 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 $2 170 500 or 1 per cent of energy turnover in Tasmania. The causes of this high total cost are discussed under the Tasmania section in *Detailed Market Analysis*.

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.

New South Wales

There was one occasion where the spot price in New South Wales was greater than three times the New South Wales weekly average price of $63/MWh and above $250/MWh.

Table 3: New South Wales, Thursday, 16 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
3.30 pm	310.76	271.05	197.37	11 772	11 793	11 731	14 191	14 800	14 787

Actual demand was close to forecast four hours before, however available capacity was 609 MW lower than forecast four hours before. Despite the reduction in available capacity, the actual price was close to forecast four hours before.

There was no significant rebidding.

South Australia

There were fourteen occasions where the spot price in South Australia was greater than three times the South Australia weekly average price of $264/MWh and above $250/MWh.

Table 4: South Australia, Tuesday 14 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
1.30 pm	1855.08	300.07	292.18	2751	2819	2626	3397	3328	3384
2.00 PM	1035.38	305.99	292.18	2782	2840	2687	3417	3306	3358

Conditions at 1.30 pm

Demand and available capacity was close to that forecast four hours ahead.

At 12.56 pm, effective from 1.05 pm, AGL rebid 370 MW of capacity across its portfolio at Torrens Island A and B from $306/MWh to $12 499/MWh – reason: “12:50F chg in contract pos:see log”.

This resulted in the dispatch of high priced generation and the 5-minute price increased from $305.99/MWh at 1.00 pm to $10 515/MWh at 1.05 pm.

There were no other significant rebids.

Conditions at 2.00 pm

Demand and available capacity were close to that forecast four hours ahead.

Wind generation dropped 43 MW during the 1.45 pm and 1.50 pm dispatch intervals. At the same time, high prices in Victoria saw the Heywood interconnector reduce imports into South Australia by 73 MW, and demand increased by 22 MW.

A constraint to avoid the overload of the Ballarat to Bendigo 220 kV line for the loss of Shepparton to Bendigo 220 kV line had been violating since 12.05 pm.

Demand was unable to be met by low price generation as it was trapped in FCAS. The constraint set the price for the 1.50 pm dispatch interval at $5343/MWh.

There were no significant rebids.

Table 5: South Australia, Tuesday 14 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
6.30 pm	1889.59	305.99	305.99	2585	3109	2927	3276	3273	3260
7.00 pm	1885.66	305.99	305.99	2509	3033	2873	3091	3284	3264

Conditions at 6:30 pm

Demand was significantly lower than forecast four hours before (524 MW) but available capacity was close to forecast.

High prices in Victoria during the 6.10 pm dispatch interval saw the Heywood interconnector reduce imports into South Australia by 332 MW. Despite a decrease in demand of 49 MW during the same interval, demand could not be met by low priced generation as they were either ramp rate limited, or trapped in FCAS. Consequently, the 5 minute price increase from $109/MWh at 6.05 pm to $13 098/MWh at 6.10 pm, and a trading interval price of $1889.59/MWh.

There was no significant rebidding.

Conditions at 7.00 pm

Demand was significantly lower than forecast four hours before (524 MW) and available capacity was 193 MW lower than forecast four hours before.

At 6.37 pm, effective from 6.45 pm, AGL reduced the available capacity Torrens Island unit B3 from 200 MW to zero (all of which was priced at or under $306/MWh) due to a plant failure. The reason given was “18:35P reduction in avail cap::plant failure 200MW – steam leak”.

At 6.47 pm, effective from 6.55 pm, Origin rebid 142 MW of capacity at its Ladbroke and Quarantine generators from -$995/MWh to $10 545/MWh – reason:“1845A constraint management – basslink trip – VT_ZERO”.

Demand could not be met by low priced generation as they were either trapped in FCAS or ramp rate limited. This saw the 5 minute price increase from $306/MWh at 6.50 pm to $10041/MWh at 6.55 pm.

There were no other significant rebids.

Table 6: South Australia, Wednesday 15 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
12:30 PM	1200	10 516	9890	2665	2799	2793	3094	3105	3156
1:00 PM	369	13 099	10 417	2711	2896	2799	3073	3065	3134
1:30 PM	2146	13 099	10 521	2770	2968	2890	3073	3050	3112
2:00 PM	4004	13 100	13 099	2844	3034	2959	3040	3040	3100
2:30 PM	1200	13 100	13 080	2847	3068	3029	3021	3036	3081
3:00 PM	220	13 100	13 099	2885	3111	3064	3040	3037	3073
3:30 PM	3570	13 100	13 100	2957	3162	3110	3027	3035	3068
4:00 PM	6213	13 100	13 100	2960	3195	3163	3072	3036	3070

Events of 15 January 2014 are discussed in the South Australia-Victoria $5000/MWh report.

Table 7: South Australia, Thursday 16 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
4.00 pm	1860.50	13 089.71	12 951.95	2978	3292	3141	3572	3636	3593
4.30 pm	2167.77	13 093.20	13 084.12	3044	3296	3198	3503	3609	3540

Conditions at 4.00 pm

Demand was 314 MW lower than forecast four hours before and available capacity was close to forecast.

The actual price was significantly lower than both the four and 12 hour ahead forecasts, due to a combination of forecast error and the Heywood interconnector providing more generation into South Australia than forecast.

At 3.47 pm, effective from 3.55 pm, Alinta rebid 50 MW of capacity at NPS 1 and 2 from prices under $283/MWh to $9772/MWh - reason:"1545A SA dispatch $290 V 5PD $600.99@15:47".

Demand could not be met by low priced generation as they were trapped in FCAS and the 5 minute price increased from $290/MWh at 3.50 pm to $10 027/MWh at 3.55 pm.

There were no other significant rebids.

Conditions at 4.30 pm

Demand was 252 MW lower than forecast four hours before and available capacity was close to forecast.

The actual price was significantly lower than both the 4 and 12 hour forecasts largely due to lower demand and the Heywood interconnector providing more generation into South Australia than forecast.

Wind generation dropped 56 MW from the 4.25 pm and 4.30 pm dispatch intervals. At the same time, demand increased by 70 MW, and high prices in Victoria saw the Heywood interconnector reduce imports into South Australia by 53 MW.

Demand could not be met by low priced generation as they were either ramp rate limited, or trapped in FCAS and the 5 minute price increased from $110/MWh at 4.25 pm to $12500/MWh at 4.30 pm.

There was no significant rebidding.

Table 8: South Australia, Thursday 16 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
7.30 pm	2007.63	305.99	498.30	3117	2982	2975	3514	3477	3444

Demand was 135 MW higher than forecast four hours earlier. Available capacity was close to forecast.

At 7.18 pm, AGL rebid a total of 645 MW of capacity across its portfolio at Torrens Island, from prices under $601/MWh (305 MW was offered at $306/MWh) to $13 099/MWh - reason:"19:15A CHG in dispatch::demand incr VS PD SA 3215V3093".

Demand could not be met by low priced generation as they were either ramp rate limited, or trapped in FCAS and the 5 minute price increase from $306/MWh at 7.20 pm to $10 501/MWh at 7.25 pm.

There was no other significant rebidding.

Table 9: South Australia, Friday 17 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
4.00 pm	1975.54	305.99	393.75	2866	2778	2918	3459	3537	3489

Both demand and available capacity was close to forecast.

Demand increased by 92 MW during the 3.45 pm 5 minute interval. This step change in demand could not be met by low priced generation, and the 5 minute price increased from $110/MWh at 3.40 pm to $12 500/MWh at 3.45 pm.

There was no significant rebidding.

Victoria

There were twelve occasions where the spot price in Victoria was greater than three times the Victoria weekly average price of $204/MWh and above $250/MWh.

Table 10: Victoria, Tuesday, 14 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
2.00 pm	828.68	160.12	59.21	9554	9511	8962	10 261	10 730	10 915

The maximum temperature on the day was 42.8 degrees Celsius. The high temperature resulted in demand increasing significantly throughout the day but the temperature also adversely affected the capabilities of several generators.

Demand was close to the four hour ahead forecast, however it was 592 MW higher than the forecast 12 hours before. Available capacity was 469 MW lower than the four hour forecast, and 654 MW lower than the forecast 12 hours before.

Demand increased by 51 MW in the 1.45 pm dispatch interval, and a further 20 MW in the 1.50 pm dispatch interval.

As discussed in the South Australia section for the same trading interval, a constraint to avoid the overload of the Ballarat to Bendigo 220 kV line for the loss of Shepparton to Bendigo 220 kV line had been violating since 12.05 pm.

Demand was unable to be met by low priced generation as they were either ramp rate limited, trapped or stranded in FCAS. The constraint set the price for the 1.50 pm dispatch interval at $4888/MWh.

There were no significant rebids.

Table 11: Victoria, Tuesday, 14 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
6.30 pm	1803.52	59.21	52.70	9496	8958	8609	9899	9938	10 806
7.00 pm	1889.48	59.21	52.70	9278	8795	8336	9589	9799	10 760

Conditions at 6.30 pm

Demand was 528 MW higher than forecast four hours before. Available capacity was close to the forecast four hours before, however it was 907 MW lower than forecast 12 hours before.

At 6.04 pm, Basslink tripped. At 6.10 pm, Basslink rebid their availability from 571 MW to 0 MW – reason:“Scenerio 1 and trip”. From previous correspondence with the participant, we understand “scenario 1” means that Basslink was operating outside its envelope and its output needed to be reduced. Basslink’s exports into Victoria were reduced by 453 MW between the 6.05 pm and 6.10 pm dispatch intervals, from 571 MW to 117 MW.

Demand was unable to be met by low priced generation as they were either ramp rate limited, trapped or stranded in FCAS and the 6.10 pm 5 minute price increased from $71/MWh at 6.05 pm to $12 704/MWh.

There was no significant rebidding.

Conditions at 7.00 pm

Demand was 483 MW higher than forecast four hours before. Available capacity was 210 MW lower than forecast four hours before.

A constraint to avoid the overload of the Ballarat to Moorabool No.1 220 kV line for loss of the Ballarat to Elaine to Moorabool 220 kV line and the Mount Mercer Wind Farm bound at 6.55 pm. This resulted in the import limit into Victoria on the Victoria to New South Wales interconnector reducing from 188 MW to 114 MW, a reduction of 74 MW.

The Murraylink interconnector was also affected by the constraint. The Murraylink import limit into Victoria reduced from 88 MW to 73 MW, a reduction of 15 MW.

At 6.34 pm, AGL's Loy Yang A3 unit tripped reducing its capacity from 234 MW to zero. Its capacity was therefore rebid, effective from 6.40 pm - reason:"18:30P reduction in avail cap::unit trip 235 MW".

At 6.47 pm, effective at 6.55 pm, Origin Energy rebid 259 MW of capacity at its Mortlake generators from between the price floor at $53.MWh to $10 007/MWh - reason:"1845A constraint management – basslink trip – VT_ZERO SL".

Demand could not be met by low priced generation as they were either trapped or stranded in FCAS, or ramp rate limited. This resulted in the 5 minute price increasing from $305/MWh at 6.50 pm to $10 027/MWh at 6.55 pm. The 6.55 pm price was set by Origin's Mortlake generators.

There was no significant rebidding.

Table 12: Victoria, Wednesday, 15 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
12:30 PM	1189	10 271	10 058	9887	9877	9298	9884	10 133	10 204
1:00 PM	338	12 946	10 070	9920	10 077	9464	9914	10 135	10 201
1:30 PM	2053	12 990	12 681	9980	10 165	9545	9931	10 083	10 145
2:00 PM	3884	13 100	12 705	9993	10 417	9624	9914	10 066	10 193
2:30 PM	1127	13 100	12 986	9985	10 383	9710	9872	9899	10 048
3:00 PM	203	13 100	12 738	9968	10 326	9884	9849	9912	10 035
3:30 PM	3331	13 100	12 733	10 001	10 536	9980	9853	9871	10 010
4:00 PM	5972	13 075	12 689	10 042	10 549	10 101	9881	9868	9993

Events of 15 January 2014 are discussed in the South Australian-Victorian $5000/MWh report

Table 13: Victoria, Thursday, 16 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
4.00 pm	1823.23	12 976.81	12 976.81	10 240	10 423	10 347	10 214	10 235	9962
4.30 pm	2048.65	12 976.81	12 976.81	10 180	10 404	10 220	10 222	10 209	9965

Conditions at 4:00 pm

Demand was 183 MW lower than forecast four hours before. Available capacity was close to forecast four hours before.

Both the 12 hour and 4 hour forecast prices were $12 977/MWh. In fact, nearly every forecast taken from 12 hours out from actual trading interval forecast the price to be in excess of $11 000/MWh. The reasons for the high prices varied. Some were due to available generation (forecasting it to be significantly lower than actual) or demand (forecasting it to be significantly higher than actual).

Demand increased by 34 MW in the 3.55 pm dispatch interval. Demand could not be met by low priced generation as they were either trapped or stranded in FCAS. This resulted in the 5 minute price increasing from $285/MWh at 3.50 pm to $9830/MWh 3.55 pm. Demand was lower than forecast in predispatch, which is why the price was not as high as forecast.

There was no significant rebidding.

Conditions at 4:30 pm

Demand was 224 MW lower than forecast four hours before. Available capacity was close to forecast four hours before.

At 3.37 pm, Snowy Hydro rebid 118 MW of capacity at Valley Power from the price floor to the price cap – reason:“15:36 A VIC: 5MPD price $11,930.63 LWR THN 30MPD 16:10@15:32”.

At 4.20 pm, effective from 4.30 pm, Snowy Hydro rebid 100 MW of capacity at Laverton North from the price floor to the price cap – reason:“16:20 A VIC: ACT DEM 164 LWR THN 30MPD 16:20@15:32”.

Demand increased by 42 MW in the 4.30 pm dispatch interval.

Demand could not be met by low priced generation and 5 minute price increased from $103/MWh at 4.25 pm to $11 817/MWh at 4.30 pm set by AGL’s Torrens Island units in South Australia.

There was no other significant rebidding.

Table 14: Victoria, Friday, 17 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
4.00 pm	2033.78	129.27	329.77	10 093	10 251	10 207	10 149	10 515	10 670

Demand was 158 MW lower than forecast four hours before. Available capacity was 366 MW lower than forecast four hours before.

High prices in South Australia increased the Heywood interconnector’s exports out of Victoria by 34 MW for the 3.45 pm dispatch interval. At the same time, imports from South Australia across the Murraylink interconnector decreased by 25 MW, and demand increased by 57 MW in Victoria.

Demand could not be met by low priced generation. This resulted in the 5 minute price increasing from $106/MWh at 3.40 pm to $11 999/MWh at 3.45 pm. The price was set by AGL’s Torrens Island units in South Australia.

There was no significant rebidding.

Tasmania

There was one occasion where the spot price in Tasmania was greater than three times the Tasmania weekly average price of $25/MWh and above $250/MWh.

There were four occasions where the spot price in Tasmania was less than -$100/MWh.

Table 15: Tasmania, Monday, 13 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
8.30 am	-130.34	40.42	45.55	1102	1043	1048	2441	2445	2459

Both demand and available capacity were close to forecast.

Exports from Tasmania into Victoria reduced from 241 MW at the 8.15 pm 5 minute interval to 187 MW at the 8.20 pm 5 minute interval, a reduction of 54 MW. This corresponded with a reduction in the 5 minute price from $46/MWh to $-999.66/MWh over the same period.

There was no significant rebidding.

Table 16: Tasmania, Monday, 13 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 pm	-142.76	37.18	44.03	1139	1045	1042	2442	2443	2461

Demand was 94 MW higher than forecast four hours before. Available capacity was close to forecast.

Wind generation increased 101 MW, from 3 MW at the 9.35 pm 5 minute interval to 104 MW at the 9.45 pm 5 minute interval and the 5 minute price dropped from $41.71/MWh to -$999.64/MWh over the same period.

There was no significant rebidding.

Table 17: Tasmania, Tuesday, 14 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
6.30 pm	1893.26	-79.70	25.32	1124	1099	1103	2465	2472	2482

Both demand and available capacity were close to forecast four hours before.

As discussed previously, Basslink tripped at 6.04 pm. The Frequency Control System Protection Scheme (FCSPS) was activated and automatically tripped John Butters, Reece unit 2, Gordon units 2 and 3, and Cethana.

Low priced generation was unable to meet demand, with units either trapped or stranded in FCAS. The 5 minute price rose from -$79.66/MWh at 6.05 pm to $12 040.09/MWh at 6.10 pm.

There was no significant rebidding.

Table 18: Tasmania, Thursday, 16 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
4.00 pm	-256.74	-299.80	-299.78	1135	1066	1046	2566	2526	2514

Demand was 69 MW higher than forecast four hours before. Available capacity was close to forecast.

At 3.52 pm, effective from 4.00 pm, Hydro Tasmania rebid 724 MW of capacity from across its portfolio from under $-1/MWh to prices under -$900/MWh – reason:"1550A price>forecast:VIC". This corresponded with the 5 minute price reducing from -$91/MWh at 3.55 pm to -$999.70/MWh. Prices in Victoria were forecast to be at almost the market price cap and had peaked at $9830/MWh at 3.55 pm.

There was no other significant rebidding.

Table 19: Tasmania, Friday, 17 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
4.00 pm	-545.16	-999.66	-299.74	1221	1150	1178	2455	2465	2431

Demand was 71 MW higher than forecast four hours before. Available capacity was close to forecast.

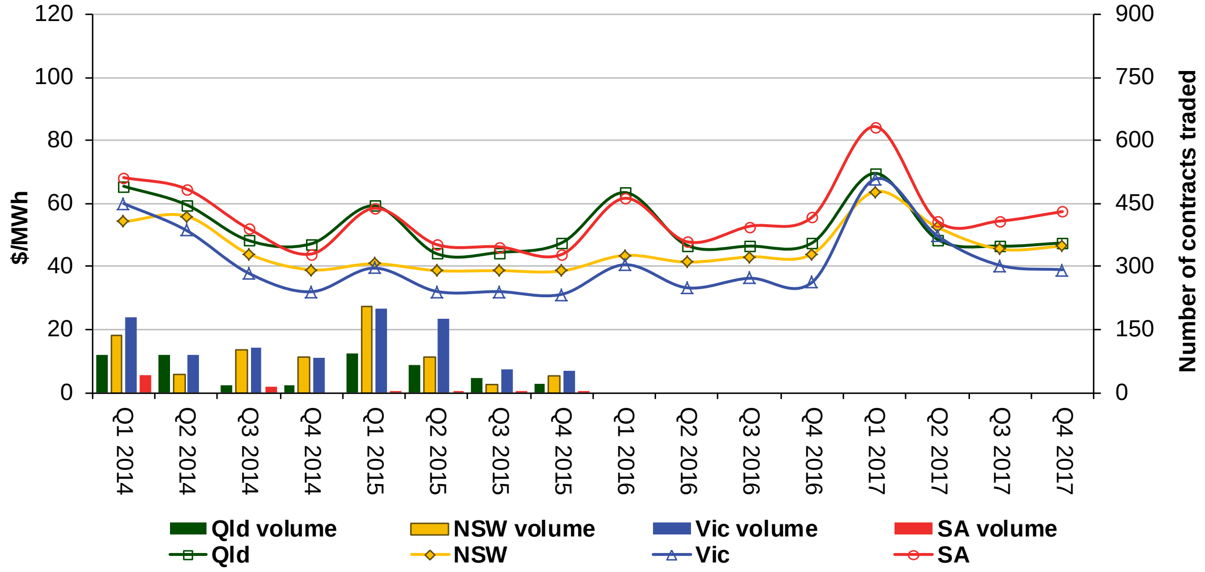
At 3.42 pm, effective from 3.50 pm, Hydro Tasmania rebid 936 MW of capacity from across its portfolio, the majority of which was priced under -$1/MWh to prices under -$900/MWh – reason:"1540P price> forecast: VIC" and the 5 minute price dropped from -$91/MWh at 3.55 pm to -$999.70/MWh. Prices in Victoria were at almost $12 000/MWh at this time.

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.

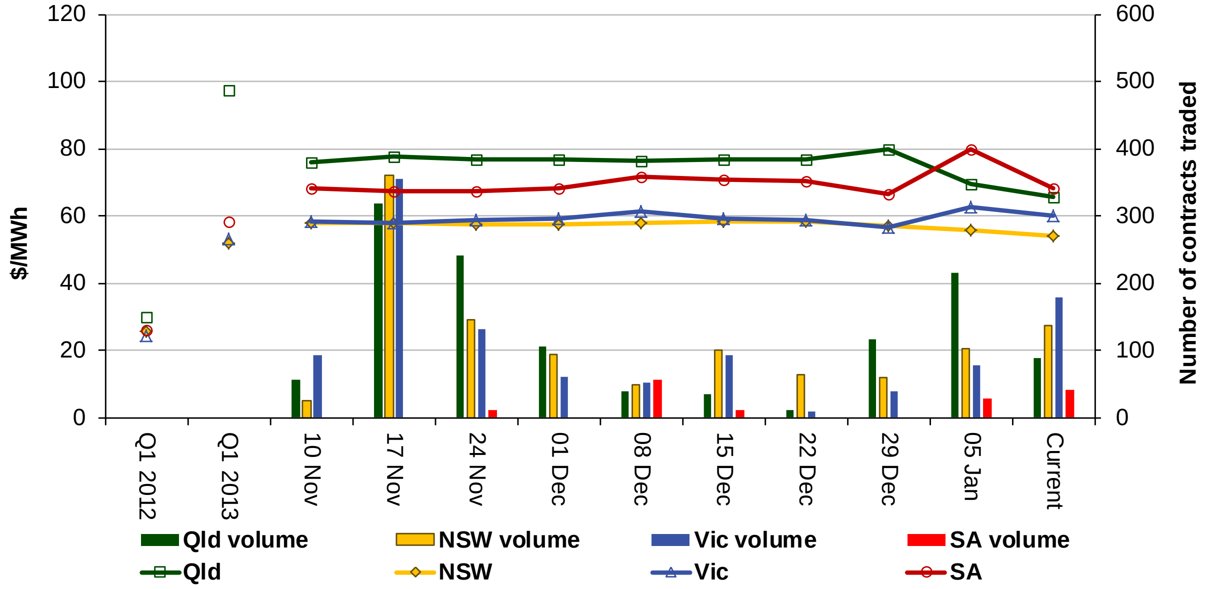
Figure 8: Quarterly base future prices Q4 2013 – Q3 2017



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

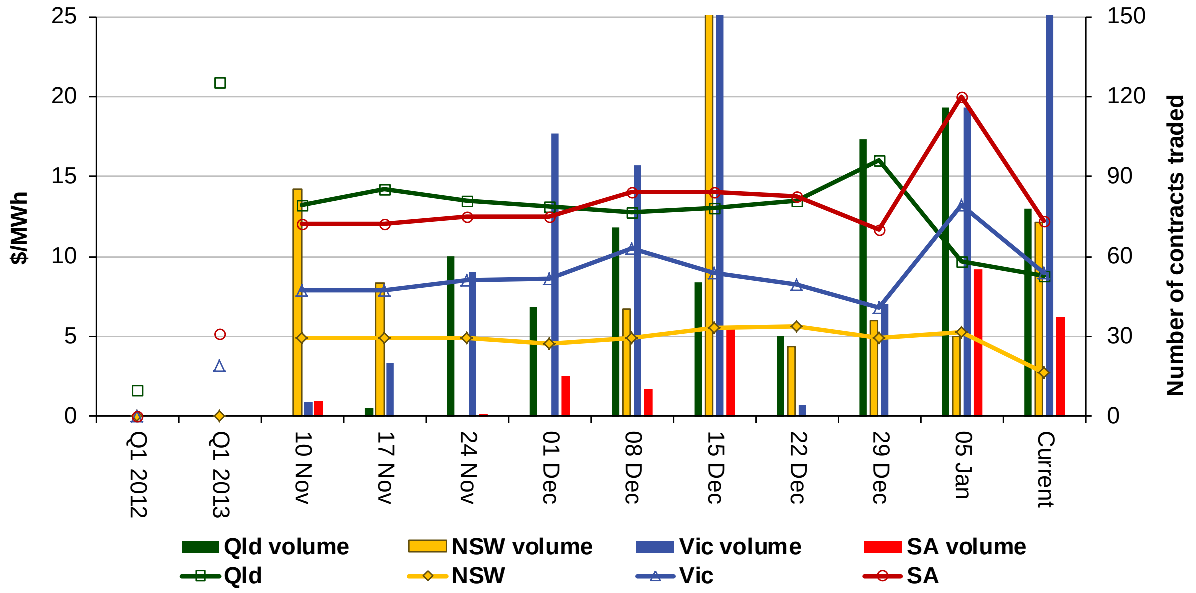
Source: ASXEnergy.com.au

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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