

# WEEKLY ELECTRICITY MARKET ANALYSIS



AUSTRALIAN ENERGY  
REGULATOR

19 – 25 May 2013

## Spot market prices

Figure 1 sets out the volume weighted average (VWA) prices for 19 to 25 May 2013 and the 12/13 financial year to date (YTD) across the NEM. It compares these prices with price outcomes from the previous week and year to date respectively.

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

	QLD	NSW	VIC	SA	TAS
Average price for 19 May - 25 May 2013	59	57	57	120	43
% change from previous week*	5	3	5	-20	3
12-13 financial YTD	71	56	61	69	49
% change from 11-12 financial YTD**	139	87	121	115	48

\*The percentage change between last week's average spot price and the average price for the previous week. Calculated on VWA prices prior to rounding.

\*\*The percentage change between the average spot price for the current financial year and the average spot price for the previous financial year. Percentage changes are calculated on VWA prices prior to rounding.

Further information is provided in Appendix A when the spot price exceeds three times the weekly average and is above \$250/MWh or less than -\$100/MWh. Longer term market trends are attached in Appendix B.<sup>1</sup>

## Financial markets

Figures 2 to 9 show futures contract<sup>2</sup> prices traded on the Australian Securities Exchange (ASX) as at close of trade on Friday 24 May 2013. Figure 2 shows the base futures contract prices for the next three calendar years, and the average over these three years. Also shown are percentage changes<sup>3</sup> from the previous week.

**Figure 2: Base calendar year futures contract prices (\$/MWh)**

	QLD		NSW		VIC		SA	
Calendar Year 2014	54 (1)	-2%	51	-2%	48 (25)	-2%	55 (25)	-1%
Calendar Year 2015	46 (27)	-1%	45	-1%	40 (10)	-4%	47	-2%
Calendar Year 2016	51	0%	52	0%	48	-5%	63	0%
Three year average	50	-1%	49	-1%	45	-3%	55	-1%

Source: d-cyphaTrade/ASX www.d-cyphatrade.com.au

A number in brackets denotes the number of trades in the product.

<sup>1</sup> Monitoring the performance of the wholesale market is a key part of the AER's role and an overview of the market's performance in the long term is provided on the AER website. Long-term statistics can be found there on, amongst other things, demand, spot prices, contract prices and frequency control ancillary services prices. To access this information go to [www.aer.gov.au](http://www.aer.gov.au) -> Australian energy industry -> Performance of the energy sector

<sup>2</sup> Futures contracts traded on the ASX are listed by d-cyphaTrade ([www.d-cyphatrade.com.au](http://www.d-cyphatrade.com.au)). A futures contract is typically for one MW of electrical energy per hour based on a fixed load profile. A base load profile is defined as the base load period from midnight to midnight Monday to Sunday over the duration of the contract quarter. A peak load profile is defined as the peak-period from 7 am to 10 pm Monday to Friday (excluding Public holidays) over the duration of the contract quarter.

<sup>3</sup> Calculated on prices prior to rounding.

Figure 3 shows the \$300 cap contract price for Q1 2014 and calendar year 2014 and the percentage change<sup>4</sup> from the previous week.

**Figure 3: \$300 cap contract prices (\$/MWh)**

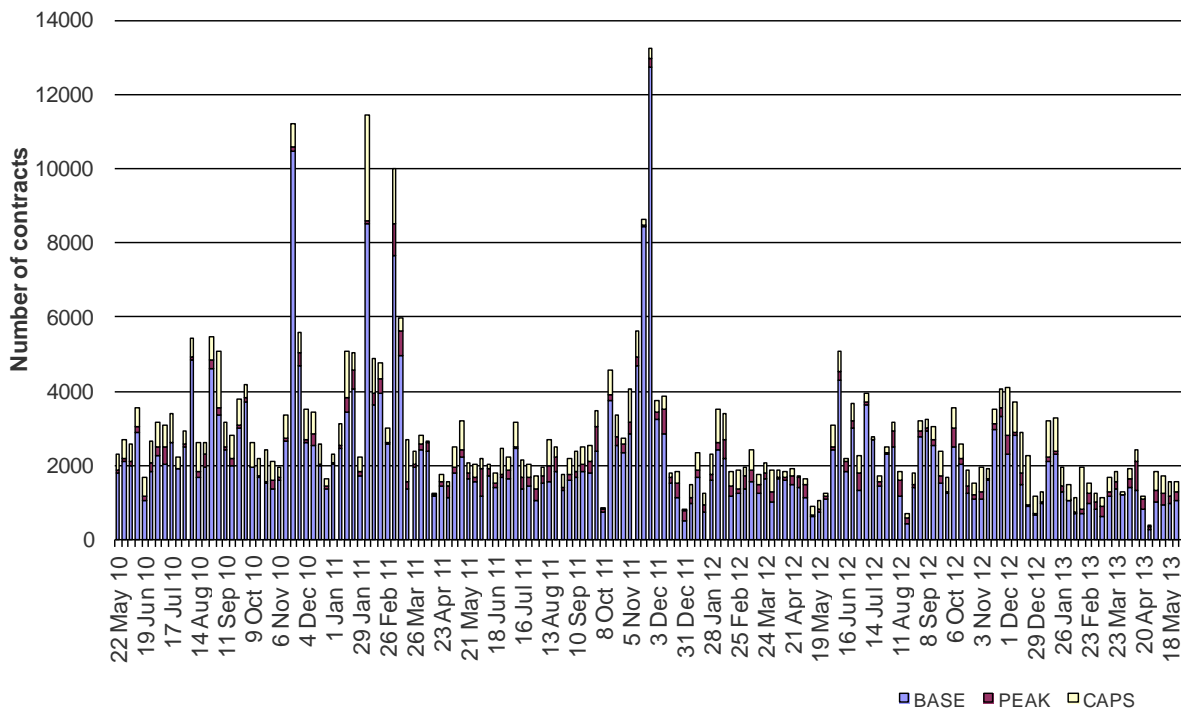
	QLD		NSW		VIC		SA	
Q1 2014	12	1%	8 (100)	0%	10 (10)	3%	16	0%
2014	6	0%	4	-2%	4	2%	8	0%

Source: d-cyphaTrade/ASX [www.d-cyphatrade.com.au](http://www.d-cyphatrade.com.au)

A number in brackets denotes the number of trades in the product.

Figure 4 shows for the last three years the weekly trading volumes for base, peak and cap contracts. The date represents the end of the trading week.

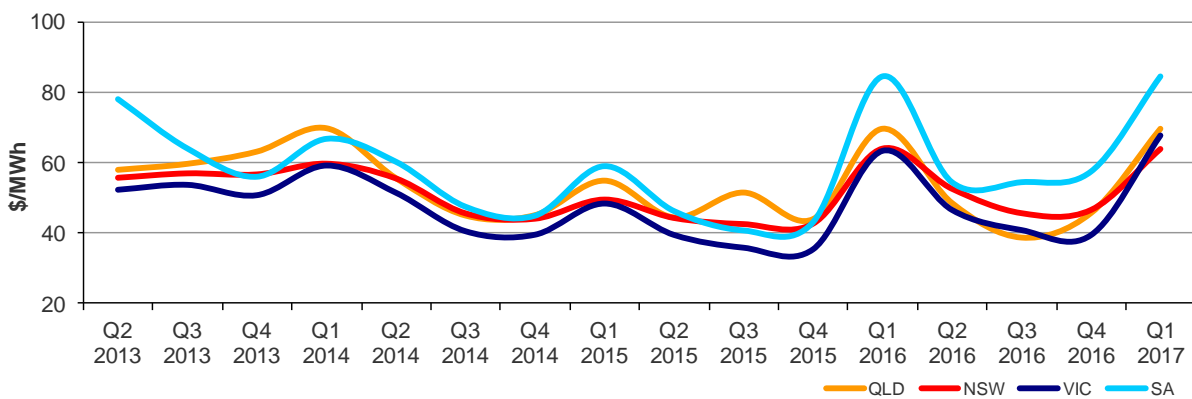
**Figure 4: Number of exchange traded contracts per week**



Source: d-cyphaTrade/ASX [www.d-cyphatrade.com.au](http://www.d-cyphatrade.com.au)

Figure 5 shows the prices for base contracts for each quarter for the next four financial years.

**Figure 5: Quarterly base future prices Q2 2013 – Q1 2017**

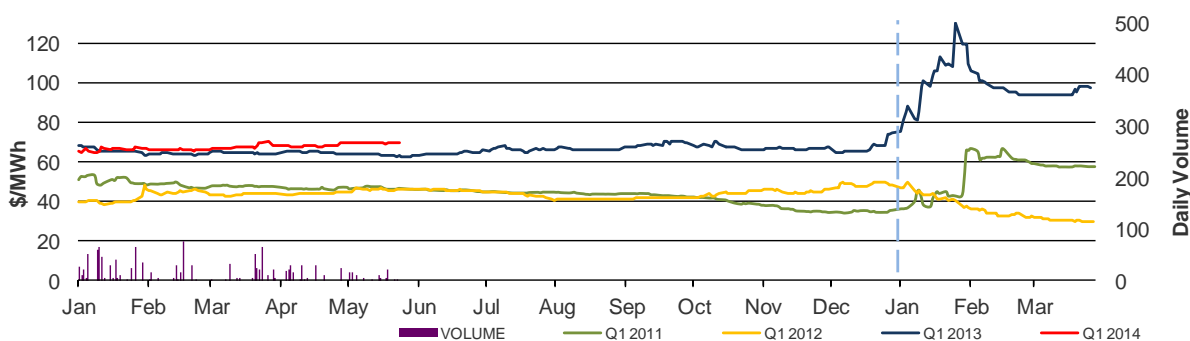


Source: d-cyphaTrade/ASX [www.d-cyphatrade.com.au](http://www.d-cyphatrade.com.au)

<sup>4</sup> Calculated on prices prior to rounding.

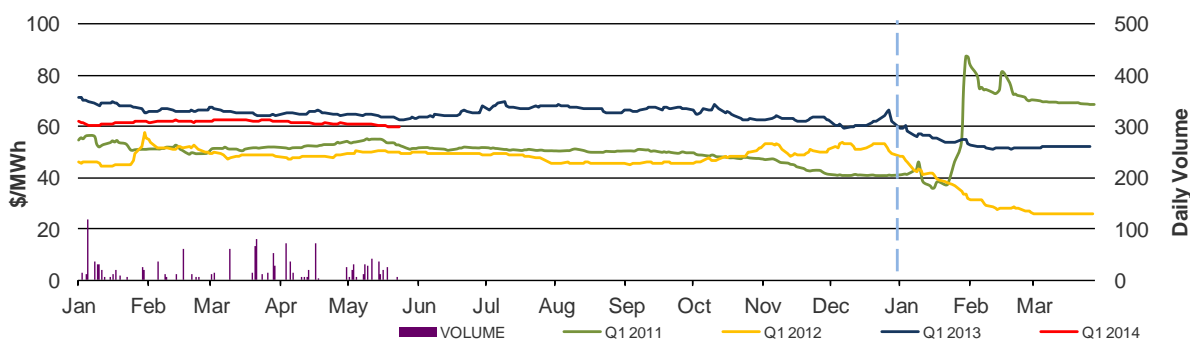
Figures 6-9 compare for each region the closing daily base contract prices for the first quarter of 2011, 2012, 2013 and 2014. Also shown is the daily volume of Q1 2014 base contracts traded. The vertical dashed line signifies the start of the Q1 period for which the contracts are being purchased.

**Figure 6: Queensland Q1 2011, 2012, 2013 and 2014**



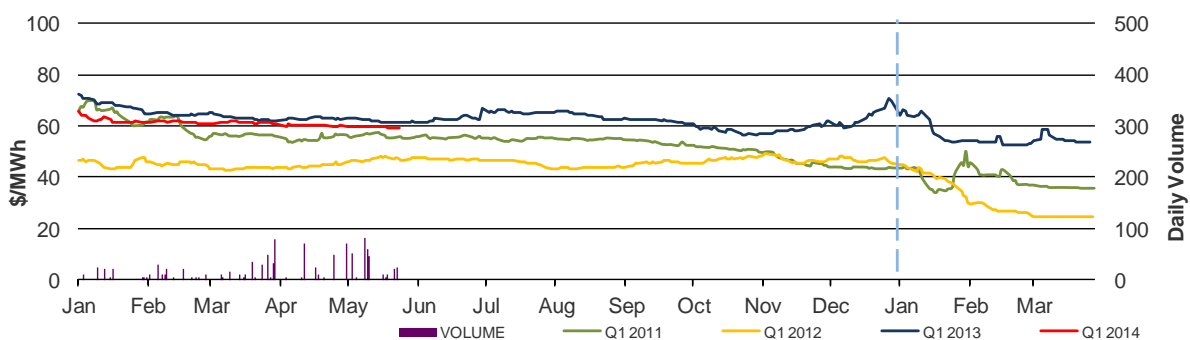
Source: d-cyphaTrade/ASX [www.d-cyphatrade.com.au](http://www.d-cyphatrade.com.au)

**Figure 7: New South Wales Q1 2011, 2012, 2013 and 2014**



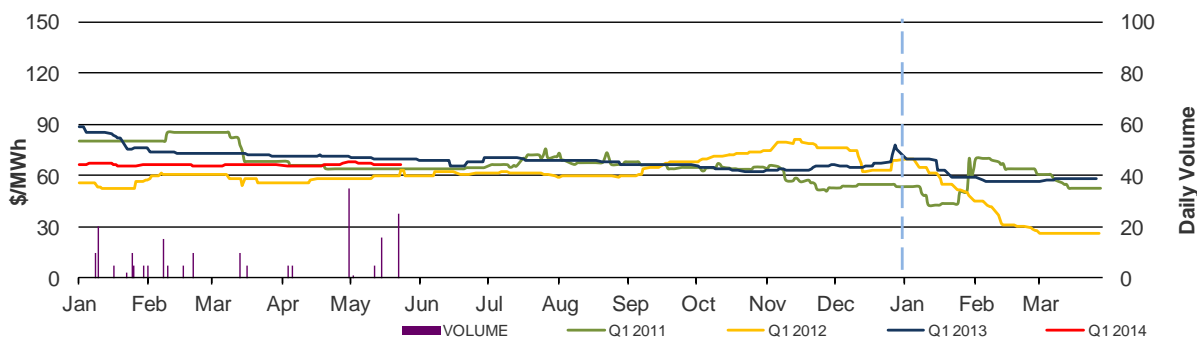
Source: d-cyphaTrade/ASX [www.d-cyphatrade.com.au](http://www.d-cyphatrade.com.au)

**Figure 8: Victoria Q1 2011, 2012, 2013 and 2014**



Source: d-cyphaTrade/ASX [www.d-cyphatrade.com.au](http://www.d-cyphatrade.com.au)

**Figure 9: South Australia Q1 2011, 2012, 2013 and 2014**



Source: d-cyphaTrade/ASX [www.d-cyphatrade.com.au](http://www.d-cyphatrade.com.au)

The daily volume scale for South Australia is smaller than for other regions to reflect the lower liquidity in the market in South Australia.

## Spot market forecasting 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 as participants react to changing market conditions. There were 160 trading intervals throughout the week where actual prices varied significantly from forecasts.<sup>5</sup> This compares to the weekly average in 2012 of 60 counts and the average in 2011 of 78. Reasons for these variances are summarised in Figure 10<sup>6</sup>.

**Figure 10: Reasons for variations between forecast and actual prices**

	Availability	Demand	Network	Combination
% of total above forecast	9	21	0	1
% of total below forecast	12	48	0	10

The total may not equal 100% due to rounding.

## Demand and bidding patterns

The AER reviews demand, network limitations and generator bidding as part of its market monitoring to better understand the drivers behind price variations. Figure 11 shows the weekly change in total available capacity at various price levels during peak periods<sup>7</sup>. For example, in Queensland 49 MW less capacity was offered at prices under \$20/MWh this week compared to the previous week. Also included is the change in average demand during peak periods, for comparison.

**Figure 11: Changes in available generation and average demand compared to the previous week during peak periods**

MW	<\$20/MWh	Between \$20 and \$50/MWh	Total availability	Change in average demand
QLD	-49	105	-758	72
NSW	437	412	728	500
VIC	266	157	317	267
SA	24	-1	134	69
TAS	23	-146	58	65
<b>TOTAL</b>	701	527	479	973

<sup>5</sup> A trading interval is counted as having a variation if the actual price differs significantly from the forecast price either four or 12 hours ahead.

<sup>6</sup> 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.

<sup>7</sup> A peak period is defined as between 7 am and 10 pm on weekdays.

### Ancillary services market

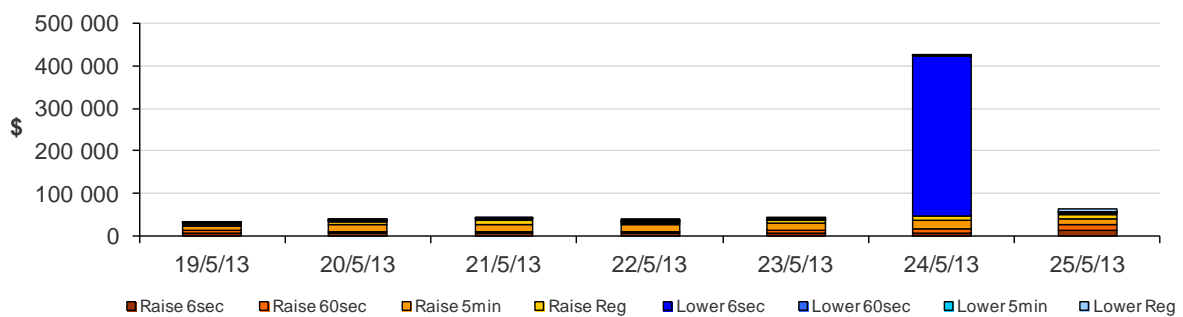
The total cost of frequency control ancillary services (FCAS) on the mainland for the week was \$262 500 or less than one per cent of energy turnover on the mainland.

The total cost of FCAS in Tasmania for the week was \$428 500 or around 5 per cent of energy turnover in Tasmania.

The large cost of lower 6 second services on Friday 24 May was the result of the price for the local Tasmania service reaching the Market Price Cap for two five-minute dispatch intervals from 4.20 pm. This saw costs accrue to around \$375 000 for that service in ten minutes. The high prices were caused by the unplanned loss of the Basslink interconnector, which led to an increased requirement for all local services except raise 60 second service. The price for all other services were less than \$30/MW.

Figure 12 shows the daily breakdown of cost for each FCAS for the NEM.

**Figure 12: Daily frequency control ancillary service cost**



**19 - 25 May 2013**

**South Australia:**

There was one occasion where the spot price in South Australia was greater than three times the South Australia weekly average price of \$121/MWh and above \$250/MWh.

**Friday, 24 May**

<b>Midnight</b>	<b>Actual</b>	<b>4 hr forecast</b>	<b>12 hr forecast</b>
Price (\$/MWh)	2216.57	66.94	90.80
Demand (MW)	1691	1682	1716
Available capacity (MW)	2085	2070	2074

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

The scheduled demand in South Australia increased rapidly from 1578 MW at 11.30 pm to 1825 MW at 11.45 pm. This increase in scheduled demand of around 247 MW was related to off peak hot water load. The target flow on the Heywood interconnector towards South Australia increased from 167 MW to 449 MW over the same period. With limited generator ramp up rate capability, high-priced capacity had to be dispatched to meet the increase in demand. As a result, the 5-minute price increased from \$70/MWh at 11.30 pm to \$200/MWh at 11.40 pm once the interconnector reached its import limit and \$12 880/MWh at 11.45 pm.

There was no significant rebidding.

# Detailed NEM Price and Demand Trends

for Weekly Market Analysis

19 May - 25 May 2013

**Table 1: Financial year to date spot market volume weighted average price**

Financial year	QLD	NSW	VIC	SA	TAS
2012-13 (\$/MWh) YTD	71	56	61	69	49
2011-12 (\$/MWh) YTD	30	30	27	32	33
Change*	139%	87%	121%	115%	48%
2011-12 (\$/MWh)	30	31	28	32	33

**Table 2: NEM turnover**

Financial year	NEM Turnover** (\$, billion)	Energy (TWh)
2012-13 YTD	10.727	174
2011-12	5.987	199
2010-11	7.445	204

**Table 3: Recent monthly and quarterly spot market volume weighted average price and turnover**

Volume weighted average (\$/MWh)	QLD	NSW	VIC	SA	TAS	Turnover (\$, billion)
January-13	170	51	60	68	57	1.489
February-13	60	53	56	63	46	0.855
March-13	76	53	55	62	50	0.986
April-13	56	55	51	80	45	0.836
May-13 MTD	58	56	54	111	45	0.775
Q2 2013 QTD	57	55	52	94	45	1.611
Q2 2012 QTD	28	32	30	30	35	0.883
Change*	103%	75%	75%	215%	29%	0.825

**Table 4: ASX energy futures contract prices at end of 24 May 2013**

	QLD		NSW		VIC		SA	
	Base	Peak	Base	Peak	Base	Peak	Base	Peak
Q1 2014								
Price on 17 May (\$/MWh)	69	88	60	72	60	77	67	92
Price on 24 May (\$/MWh)	70	89	60	72	59	77	67	92
Open Interest on 24 May (\$/MWh)	781	95	1314	265	767	255	128	35
Traded in the last week (MW)	29	0	31	5	60	10	25	0
Traded since 1 Jan 13 (MW)	1209	66	1359	480	1070	315	204	35
Settled price for Q1 13 (\$/MWh)	97	110	52	54	53	62	58	69

**Table 5: Changes to availability of low priced generation capacity offered to the market**

Comparison:	QLD	NSW	VIC	SA	TAS	NEM
March 13 with March 12						
MW Priced \$20/MWh	-4598	-1294	-810	99	-386	-6989
MW Priced \$20/MWh to \$50/MWh	2509	-548	1060	-290	353	3084
April 13 with April 12						
MW Priced \$20/MWh	-4017	-164	-415	-348	-316	-5259
MW Priced \$20/MWh to \$50/MWh	2269	-1179	951	-513	284	1811
May 13 with May 12 MTD						
MW Priced \$20/MWh	-4008	-636	-891	-474	-235	-6243
MW Priced \$20/MWh to \$50/MWh	2317	-1439	230	-597	384	895

\*Note: These percentage changes are calculated on VWA prices prior to rounding

\*\* Estimated value