

WEEKLY ELECTRICITY MARKET ANALYSIS



AUSTRALIAN ENERGY
REGULATOR

17 March – 23 March 2013

Spot market prices

Figure 1 sets out the volume weighted average (VWA) prices for the week 17 March to 23 March 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 17 Mar - 23 Mar 2013	82	51	45	55	49
% change from previous week*	6	-5	-30	-1	-8
12-13 financial YTD	73	56	63	65	49
% change from 11-12 financial YTD**	143	90	133	98	53

*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.¹

Financial markets

Figures 2 to 9 show futures contract² prices traded on the Australian Securities Exchange (ASX) as at close of trade on Friday 22 March 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 changes³ from the previous week.

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

	QLD		NSW		VIC		SA	
Calendar Year 2013	69	3%	56	0%	53	0%	58	0%
Calendar Year 2014	55 (50)	1%	54	0%	51	0%	57	0%
Calendar Year 2015	50	-1%	48	-2%	45	-2%	49	0%
Three year average	58	1%	53	-1%	50	-1%	54	0%

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

* a number in brackets denotes the number of trades in the product.

¹ 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 -> Australian energy industry -> Performance of the energy sector

² Futures contracts traded on the ASX are listed by d-cyphaTrade (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.

³ Calculated on prices prior to rounding.

Figure 3 shows the \$300 cap contract price for Q1 2013 and calendar year 2013 and the percentage change⁴ from the previous week.

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

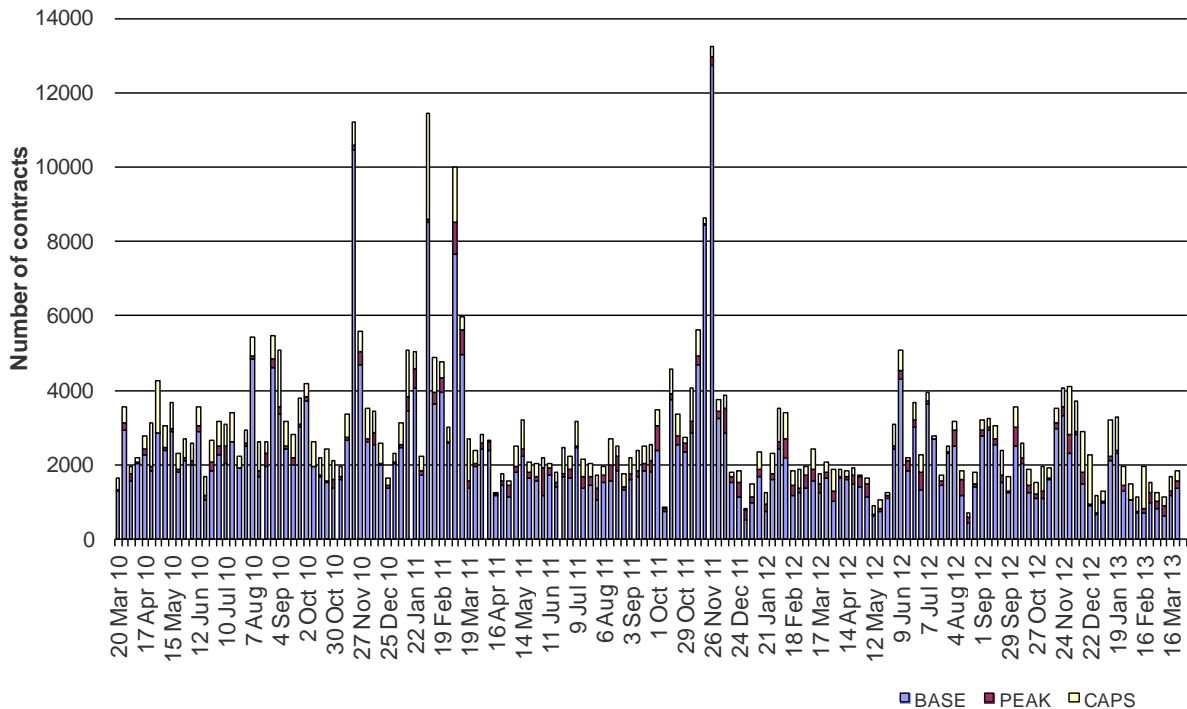
	QLD		NSW		VIC		SA	
Q1 2013	22	7%	0	0%	4	0%	5	-1%
2013	8	7%	2	-10%	3	0%	4	0%

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

* a number in brackets denotes the number of trades in the product.

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

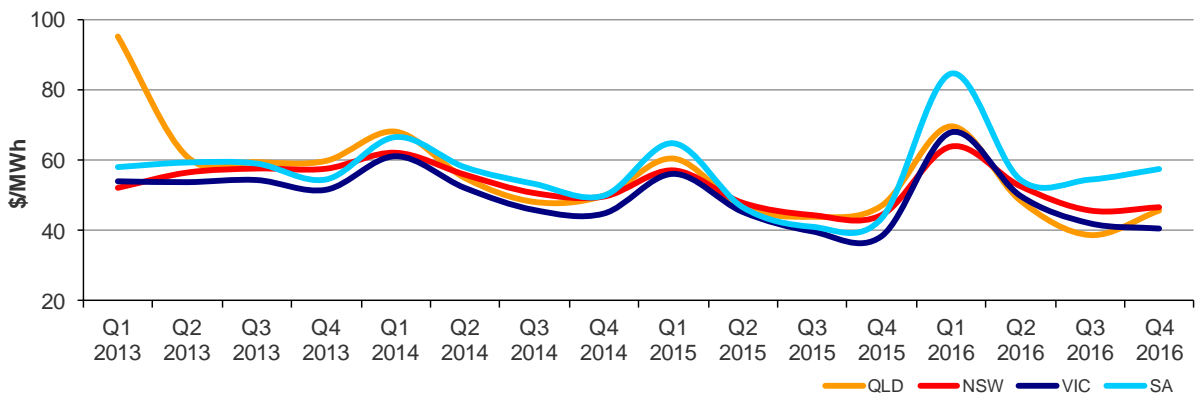
Figure 4: Number of exchange traded contracts per week



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

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

Figure 5: Quarterly base future prices Q1 2013 – Q4 2016

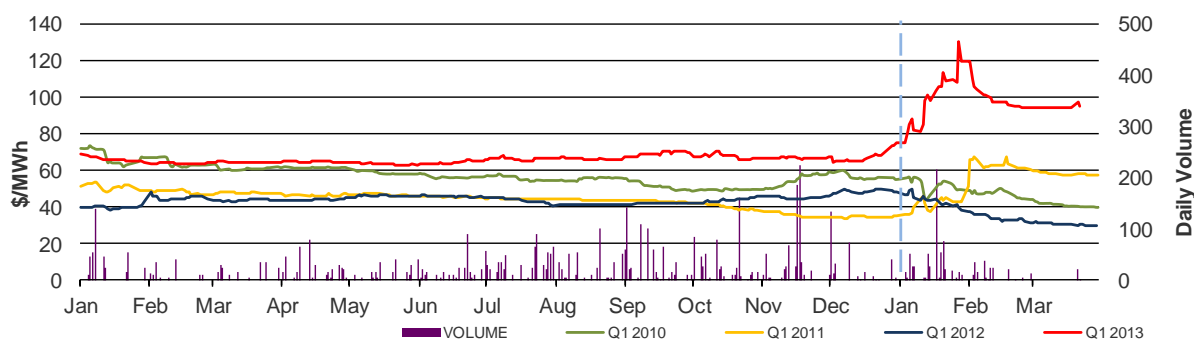


Source: d-cyphaTrade/ASX www.d-cyphatrade.com.au

⁴ Calculated on prices prior to rounding.

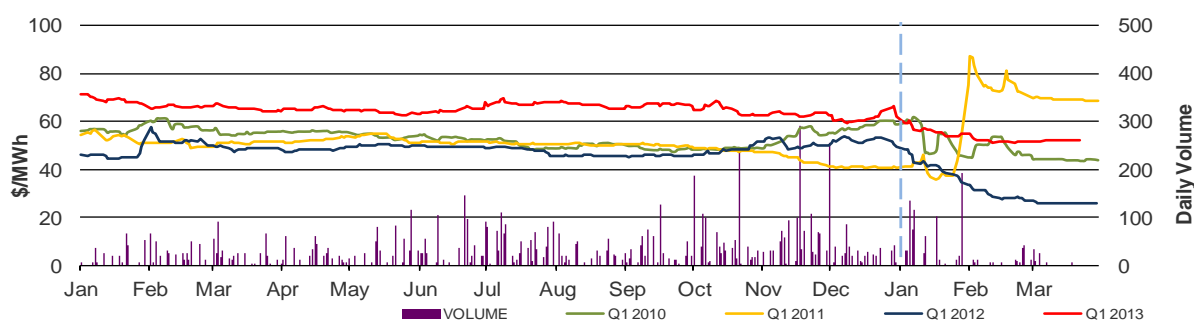
Figures 6-9 compare for each region the closing daily base contract prices for the first quarter of 2010, 2011, 2012 and 2013. Also shown is the daily volume of Q1 2013 base contracts traded. The vertical dashed line signifies the start of the Q1 period for which the contracts are being purchased.

Figure 6: Queensland Q1 2010, 2011, 2012 and 2013



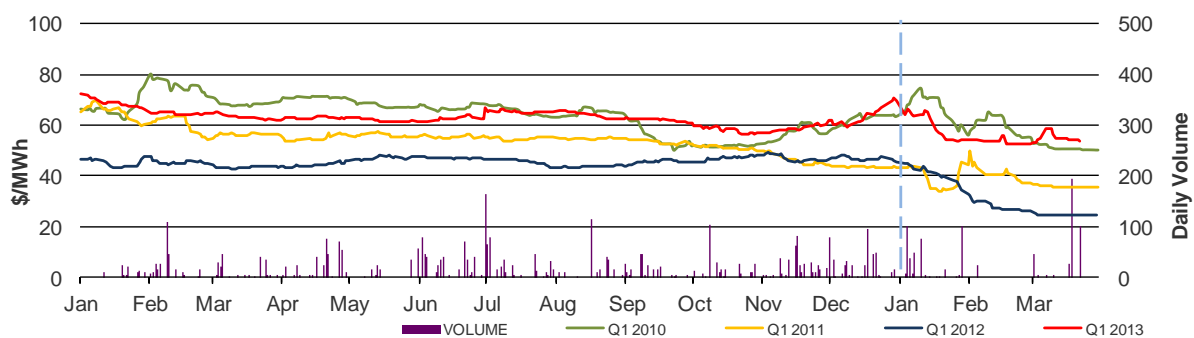
Source: d-cyphaTrade/ASX www.d-cyphatrade.com.au

Figure 7: New South Wales Q1 2010, 2011, 2012 and 2013



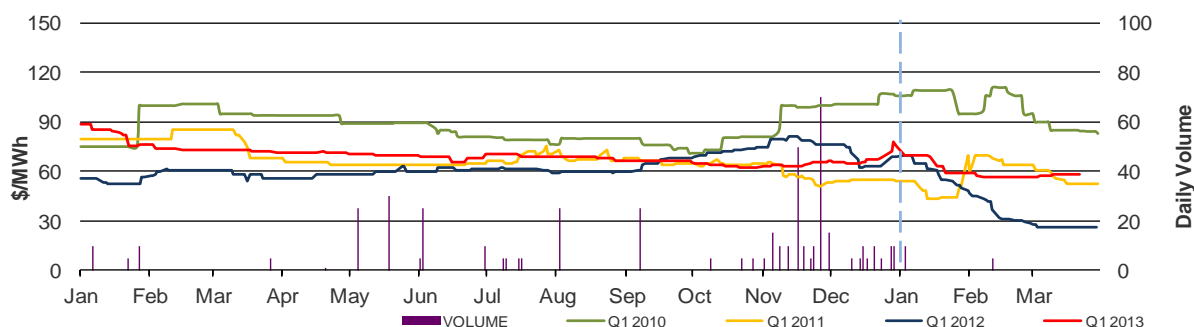
Source: d-cyphaTrade/ASX www.d-cyphatrade.com.au

Figure 8: Victoria Q1 2010, 2011, 2012 and 2013



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

Figure 9: South Australia Q1 2010, 2011, 2012 and 2013



Source: d-cyphaTrade/ASX 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 151 trading intervals throughout the week where actual prices varied significantly from forecasts⁵. 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 10⁶.

Figure 10: Reasons for variations between forecast and actual prices

	Availability	Demand	Network	Combination
% of total above forecast	2	21	2	5
% of total below forecast	52	16	0	3

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 periods⁷. For example, in Queensland 36 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	-36	375	130	97
NSW	-114	-439	-689	-442
VIC	-120	267	69	-852
SA	-283	17	-430	-367
TAS	-51	29	-28	-120
Total	-604	249	-948	-1684

⁵ 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.

⁶ 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.

⁷ A peak period is defined as between 7 am and 10 pm on weekdays.

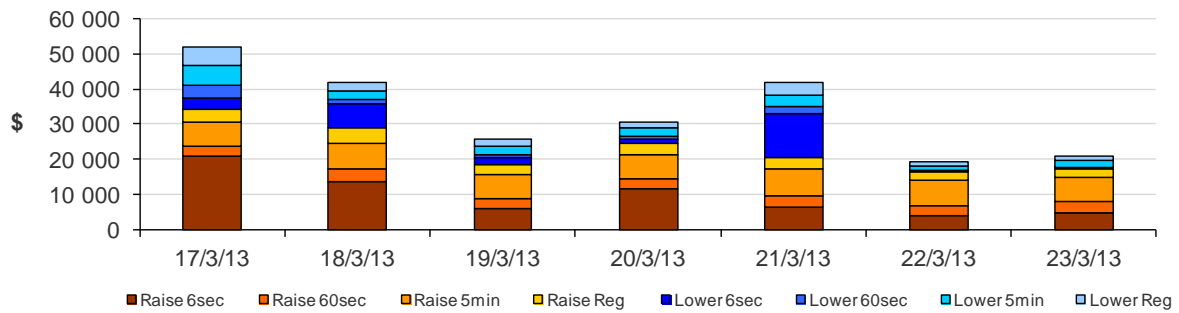
Ancillary services market

The total cost of frequency control ancillary services (FCAS) on the mainland for the week was \$138 000 or less than one per cent of energy turnover on the mainland.

The total cost of FCAS in Tasmania for the week was \$96 000 or less than two per cent of energy turnover in Tasmania.

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

Figure 12: Daily frequency control ancillary service cost



Thursday, 21 March

7:00 AM	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	1473.34	72.05	72.05
Demand (MW)	5721	5798	5736
Available capacity (MW)	10 030	10 060	10 060

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

As demand levels rose over the morning period, a 150 MW step increase in demand over five minutes at 7 am resulted in an increased requirement for local generation. With fast start generation unable to start in time, and other cheaper generation available at Callide C and Tarong power stations ramp rate limited, generation priced at \$8500/MWh was dispatched at Callide B, setting the price for one dispatch interval. Demand decreased by 70 MW for the following dispatch interval and prices returned to normal levels.

There was no significant rebidding.

11:00 PM	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	285.67	90.95	90.95
Demand (MW)	5733	5633	5629
Available capacity (MW)	9883	10 036	10 016

Conditions at the time saw demand higher and available capacity lower than forecast. Some minor rebidding and a small increase in forecast demand saw the forecast price increase to \$125/MWh from 8.30 pm.

With imports across both interconnectors at maximum a 75 MW step change in demand at 10.40 pm resulted in the five minute dispatch price reaching \$454/MWh.

At 10.42 pm, effective from 10.50 pm, Callide Power Trading reduced the availability at its Callide C power station unit 3 by 156 MW, half of which was priced below \$70/MWh. The reason given was "2241P mill trip by clinker fall outlet damper fault".

At 10.42 pm, effective from 10.50 pm, Origin Energy rebid 120 MW of capacity at its Darling Downs power station from below \$120/MWh to above \$300/MWh. The reason given was "2235P management of fuel and linepack sl".

The five minute dispatch price remained above forecast at \$290/MWh for three dispatch intervals from 10.50 pm.

There was no other significant rebidding.

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 \$55/MWh and above \$250/MWh.

Friday, 22 March

7:00 AM	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	2065.10	80.80	80.80
Demand (MW)	1593	1584	1580
Available capacity (MW)	2211	2241	2268

Conditions at the time saw demand and available capacity close to that forecast. Imports were limited to around 190 MW in total, which was as forecast, across the Heywood plus Murraylink interconnectors as a result of planned outages in Victoria. The high 5-minute dispatch prices which occurred towards the end of the trading interval were not forecast.

Output from wind generators was low and decreased further by around 50 MW over the half hour trading interval whilst demand increased by 160 MW.

At 6.47 am, effective from 6.55 am, Energy Australia rebid 42 MW at its Hallett power station (that had just commenced generating at 6.40 am) from around \$580/MWh to \$11 450/MWh. The reason given was "06:46 A band adj due to SA demand higher than forecast".

As a result there was only 85 MW of online capacity (that is excluding the off line gas turbines) offered at prices between \$80/MWh and \$11 450/MWh. This capacity was offered for Northern Power station unit 2, which set the five minute price at \$299/MWh for the 6.55 am dispatch interval. At 7 am, the 5-minute price spiked to \$11 795/MWh, as the Northern unit output was limited by its ramp up rate of change, which saw Hallett set the price for one dispatch interval.

The price returned to normal levels from the following dispatch interval, as demand fell by around 100 MW and Dry Creek power station received a dispatch target to start generating.

There was no other significant rebidding.

Detailed NEM Price and Demand Trends

for Weekly Market Analysis
17 March - 23 March 2013



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

Financial year	QLD	NSW	VIC	SA	TAS
2012-13 (\$/MWh) YTD	73	56	63	65	49
2011-12 (\$/MWh) YTD	30	30	27	33	32
Change*	143%	90%	133%	98%	53%
2011-12 (\$/MWh)	30	31	28	32	33

Table 2: NEM turnover

Financial year	NEM Turnover** (\$, billion)	Energy (TWh)
2012-13 YTD	8.873	142
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)
November-12	55	58	94	72	51	1.045
December-12	62	50	55	57	47	0.881
January-13	170	51	60	68	57	1.489
February-13	60	53	56	63	46	0.855
March-13 MTD	72	53	58	64	53	0.742
Q1 2013 QTD	107	52	58	65	52	3.087
Q1 2012 QTD	32	26	25	28	38	1.287
Change*	233%	99%	128%	136%	37%	1.398

Table 4: ASX energy futures contract prices at end of 22 March 2013

	QLD		NSW		VIC		SA	
	Base	Peak	Base	Peak	Base	Peak	Base	Peak
Q1 2013								
Price on 15 Mar (\$/MWh)	94	108	52	55	55	64	58	72
Price on 22 Mar (\$/MWh)	95	108	52	54	54	63	58	72
Open Interest on 22 Mar (\$/MWh)	1512	341	2456	691	1326	194	275	0
Traded in the last week (MW)	21	0	5	0	320	19	0	0
Traded since 1 Jan 12 (MW)	5982	705	8881	1070	4622	312	486	0
Settled price for Q1 12 (\$/MWh)	30	37	26	28	25	29	26	30

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

Comparison:	QLD	NSW	VIC	SA	TAS	NEM
January 13 with January 12						
MW Priced \$20/MWh	-2772	-2217	-1360	-41	-235	-6625
MW Priced \$20/MWh to \$50/MWh	1812	1269	1255	-346	339	4330
February 13 with February 12						
MW Priced \$20/MWh	-3691	-1475	-1023	-157	-399	-6745
MW Priced \$20/MWh to \$50/MWh	2240	47	635	-421	389	2891
March 13 with March 12 MTD						
MW Priced \$20/MWh	-4690	-1325	-941	150	-348	-7154
MW Priced \$20/MWh to \$50/MWh	2593	-622	1095	-260	349	3155

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

** Estimated value