

WEEKLY ELECTRICITY MARKET ANALYSIS



AUSTRALIAN ENERGY
REGULATOR

10 – 16 February 2013

Spot market prices

Figure 1 sets out the volume weighted average (VWA) prices for the week 10 to 16 February 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 10 Feb - 16 Feb 2013	65	53	53	57	45
% change from previous week*	24	5	7	8	2
12-13 financial YTD	74	57	63	64	49
% change from 11-12 financial YTD**	147	88	133	92	55

*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 15 February 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	66	-1%	55	0%	53	1%	58	0%
Calendar Year 2014	55 (6)	-1%	56 (15)	-1%	53	-1%	58	0%
Calendar Year 2015	52 (10)	-1%	51 (5)	-2%	48	0%	50	0%
Three year average	58	-1%	54	-1%	51	0%	55	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.

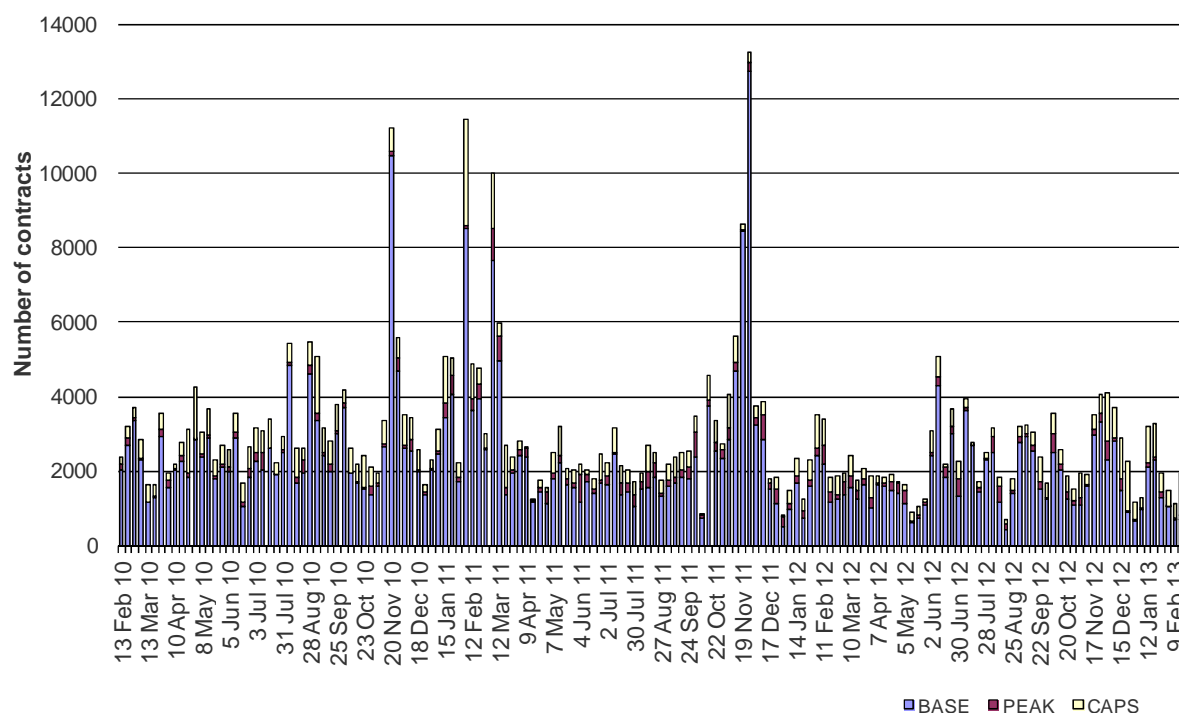
Figure 3: \$300 cap contract prices (\$/MWh)

	QLD		NSW		VIC		SA	
Q1 2013	25	-1%	1	-33%	7 (42)	56%	7	0%
2013	9	-1%	3	-3%	4	20%	5	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.

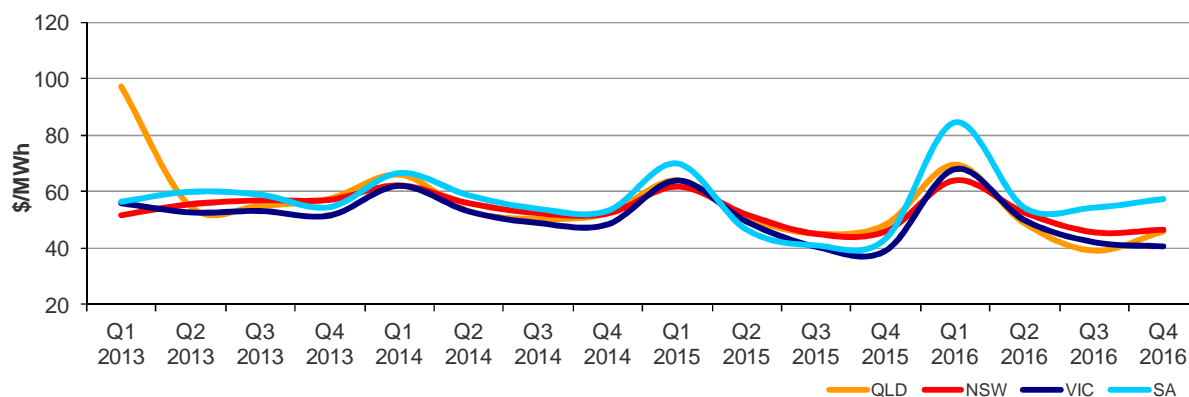
Figure 4: Number of exchange traded contracts per week



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

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

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

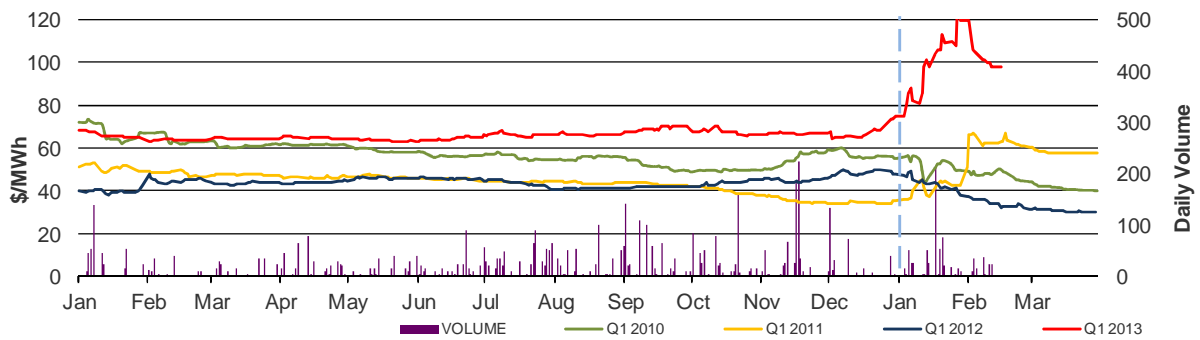


Source: d-cyphaTrade/ASX www.d-cyphatrade.com.au

⁴ Calculated on prices prior to rounding.

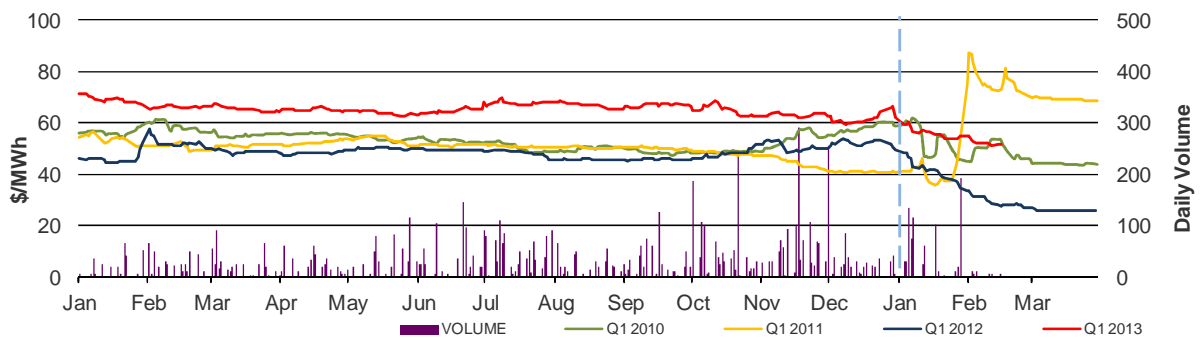
Figures 6-9 compare for each region the closing daily base contract prices for the first quarter of 2010, 2011, 2012 and 2013. Also shown is the daily volume of Q1 2013 base contracts traded. The vertical dashed line signifies the start of the Q1 period for which the contracts are being purchased.

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



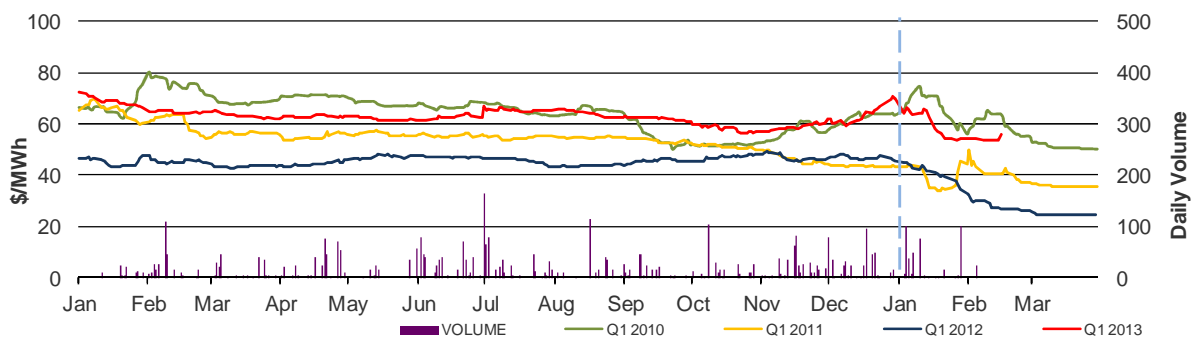
Source: d-cyphaTrade/ASX www.d-cyphatrade.com.au

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



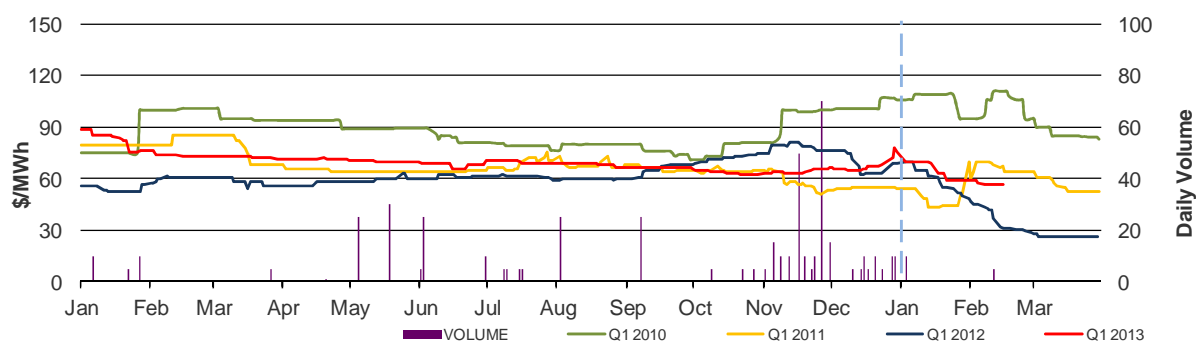
Source: d-cyphaTrade/ASX www.d-cyphatrade.com.au

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 74 trading intervals throughout the week where actual prices varied significantly from forecasts⁵. This compares to the weekly average in 2011 of 78 counts and the average in 2010 of 57. 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	15	21	3	7
% of total below forecast	24	24	0	7

The total may not equal 100% due to rounding

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.

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 871 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	-871	916	-810	84
NSW	-148	-559	-1123	-360
VIC	216	-168	32	-132
SA	69	36	118	109
TAS	-26	11	-10	-3
TOTAL	-760	236	-1793	-302

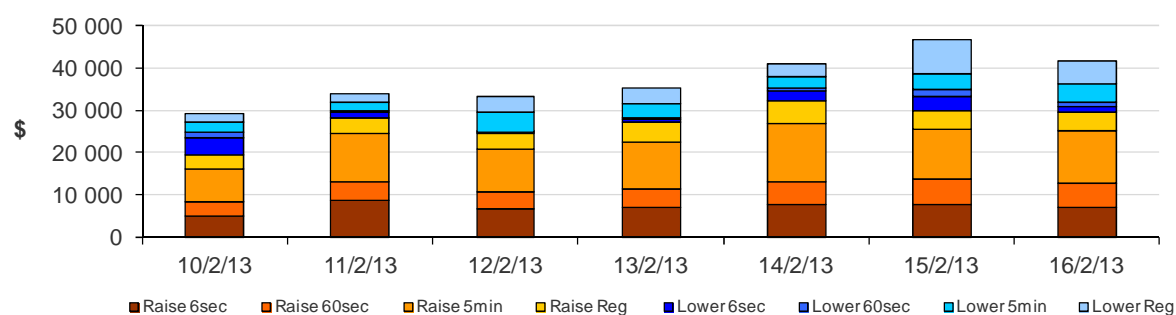
Ancillary services market

The total cost of frequency control ancillary services (FCAS) on the mainland for the week was \$203 000 or less than one per cent of energy turnover on the mainland.

The total cost of FCAS in Tasmania for the week was \$58 500 or less than one 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



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



10 – 16 February 2013

Queensland:

There were two occasions where the spot price in Queensland was greater than three times the Queensland weekly average price of \$65/MWh and above \$250/MWh.

These high price events were caused by congestion around Gladstone and were similar to the circumstances explained in the “*Special report - The impact of congestion on bidding and inter-regional trade in the NEM*” published by the AER in December 2012. The report is available at <http://www.aer.gov.au/node/18855>.

Sunday, 10 February

2 PM	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	297.48	47.19	48.50
Demand (MW)	5830	6077	6155
Available capacity (MW)	9694	9809	9829

Conditions at the time saw demand around 250 MW less than that forecast four hours ahead and available capacity close to forecast.

At 10.48 am, effective from 10.55 am, CS Energy rebid 320 MW of capacity across Gladstone from prices below \$52/MWh to above \$800/MWh. The reason given was “1047A 855_871 Constraint binding-SL”.

At 12.42 pm, effective from 12.50 pm, Stanwell rebid 160 MW of capacity at Stanwell Power Station from \$296/MWh to \$1000/MWh. The reason given was “1242A manage binding network constraints 855_871”.

The dynamic ratings of the Calvale to Stanwell and Calvale to Wurdong lines reduced by around 20 MVA and flows across both lines increased between 1.35 pm and 1.40 pm. This required a large change in dispatch - increasing output from generators north of Calvale (e.g. Gladstone and Stanwell Power Stations), reducing generation south of Calvale, and increasing the flow on the QNI interconnector towards New South Wales.

The five-minute dispatch price spiked to \$3158/MWh at 1.40 pm but reduced to -\$901/MWh by 2 pm, following rebidding by participants of capacity into lower price bands.

There was no other significant rebidding.

Friday, 15 February

10:30 AM	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	385.16	79.79	79.27
Demand (MW)	6623	6731	6754
Available capacity (MW)	9596	9825	9830

Conditions at the time saw demand 100 MW and available capacity 230 MW less than forecast.

At 9.57 am, effective from 10.05 am, CS Energy rebid 210 MW of capacity at Gladstone from prices below \$52/MWh to the price cap. The reason was 0956A 855_871 constraint-binding –SL.

Over two rebids at 9.44 am and 10.04 am, effective from 10.05 am and 10.15 am respectively, Stanwell rebid 340 MW of capacity from prices below \$295/MWh to above \$799/MWh. The reasons given were “0943A manage pd constraint 855/871 – sl” and “1004A manage Q>>nil_855_871_sl”.

The 5-minute price rose from \$86/MWh at 10 am to \$1522/MWh at 10.15 am as flow across the Calvale to Wurdong and Calvale to Stanwell lines increased. This required a large change in dispatch - increasing output from generators north of Calvale (e.g. Gladstone and Stanwell Power Stations), reducing generation south of Calvale, and increasing the flow on the QNI interconnector towards New South Wales.

At 10.20 am, the priced reduced to \$101/MWh when Yabulu unit 1 was synchronised and received start targets.

There was no other significant rebidding.

Detailed NEM Price and Demand Trends

for Weekly Market Analysis
10 February - 16 February 2013



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

Financial year	QLD	NSW	VIC	SA	TAS
2012-13 (\$/MWh) YTD	74	57	63	64	49
2011-12 (\$/MWh) YTD	30	30	27	34	32
Change*	147%	88%	133%	92%	55%
2011-12 (\$/MWh)	30	31	28	32	33

Table 2: NEM turnover

Financial year	NEM Turnover** (\$, billion)	Energy (TWh)
2012-13 YTD	7.732	123
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)
October-12	53	58	52	52	44	0.848
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 MTD	60	52	50	54	44	0.457
Q1 2013 QTD	134	51	56	63	52	1.946
Q1 2012 QTD	32	26	25	28	38	0.732
Change*	313%	99%	122%	128%	37%	1.659

Table 4: ASX energy futures contract prices at end of 15 February 2013

	QLD		NSW		VIC		SA	
	Base	Peak	Base	Peak	Base	Peak	Base	Peak
Q1 2013								
Price on 8 Feb (\$/MWh)	101	125	52	59	54	65	57	74
Price on 15 Feb (\$/MWh)	98	117	52	56	56	70	57	74
Open Interest on 15 Feb (\$/MWh)	1549	369	2466	692	1245	178	275	0
Traded in the last week (MW)	51	75	15	0	0	1	5	0
Traded since 1 Jan 12 (MW)	5920	676	8696	1069	4243	292	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
December 12 with December 11						
MW Priced \$20/MWh	-2990	273	-1725	-115	-219	-4777
MW Priced \$20/MWh to \$50/MWh	2632	-867	605	-235	33	2168
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 MTD						
MW Priced \$20/MWh	-3141	-1831	-840	-100	-416	-6328
MW Priced \$20/MWh to \$50/MWh	1903	304	501	-343	463	2828

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

** Estimated value