

WEEKLY ELECTRICITY MARKET ANALYSIS



AUSTRALIAN ENERGY
REGULATOR

21 – 27 April 2013

Spot market prices

Figure 1 sets out the volume weighted average (VWA) prices for 21 to 27 April 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 21 Apr - 27 Apr 2013	55	53	48	95	41
% change from previous week*	-7	-8	-10	34	-11
12-13 financial YTD	72	56	61	65	49
% change from 11-12 financial YTD**	140	87	124	102	50

*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 26 April 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 2014	55 (5)	1%	54	0%	50	-1%	56	0%
Calendar Year 2015	48	-2%	47	-2%	43	-3%	48	-1%
Calendar Year 2016	51	0%	52	0%	50	0%	63	0%
Three year average	51	0%	51	-1%	47	-1%	56	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 2014 and calendar year 2014 and the percentage change⁴ from the previous week.

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

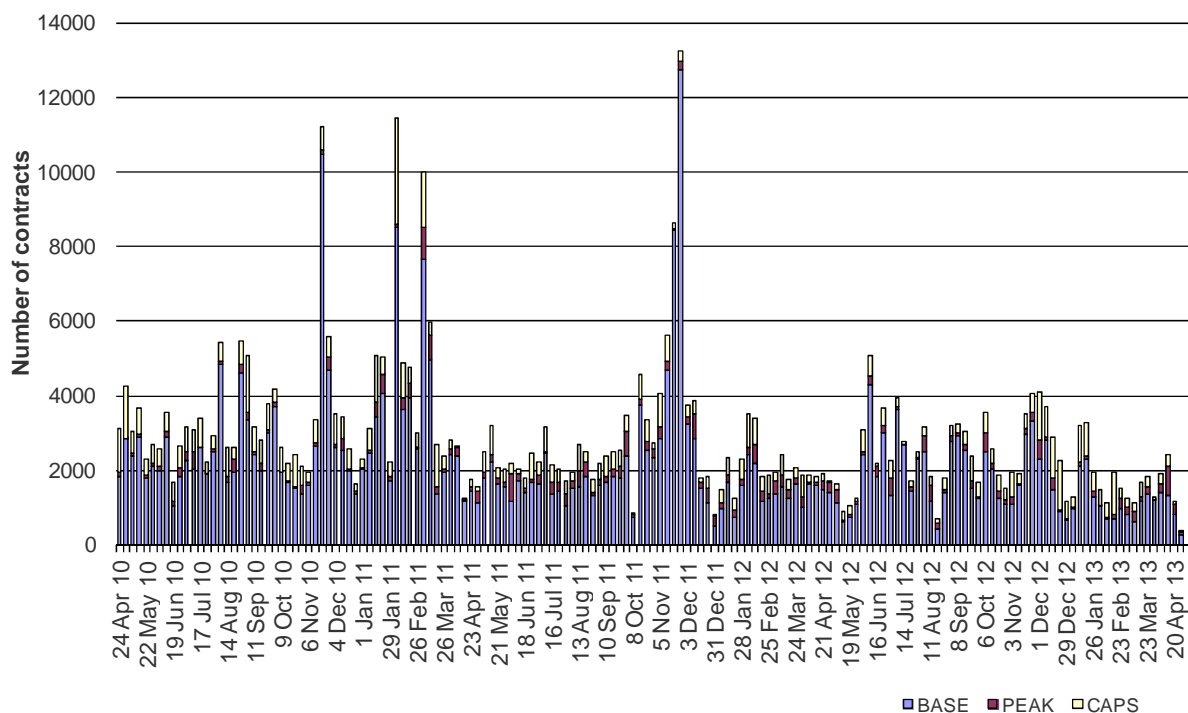
	QLD		NSW		VIC		SA	
Q1 2014	13	0%	8 (5)	-3%	10	0%	16	0%
2014	6	0%	4	-1%	4	-2%	8	0%

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

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

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

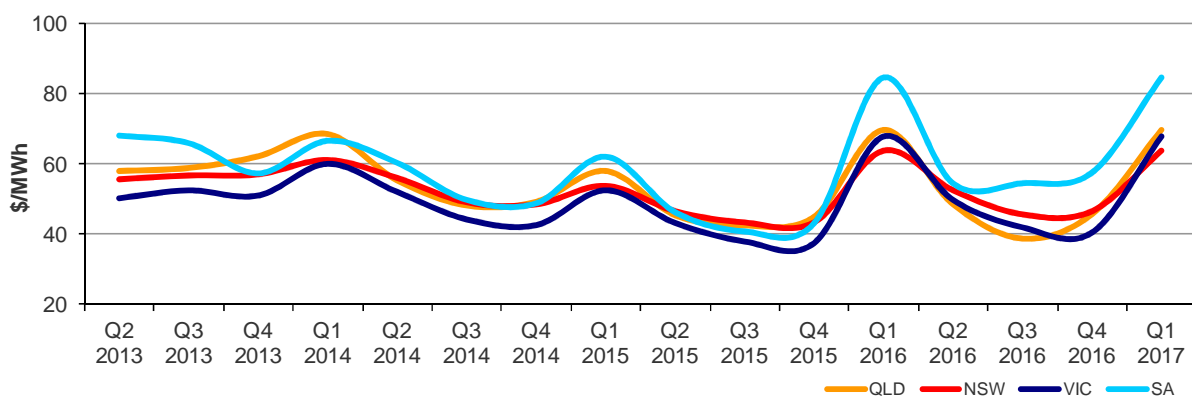
Figure 4: Number of exchange traded contracts per week



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

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

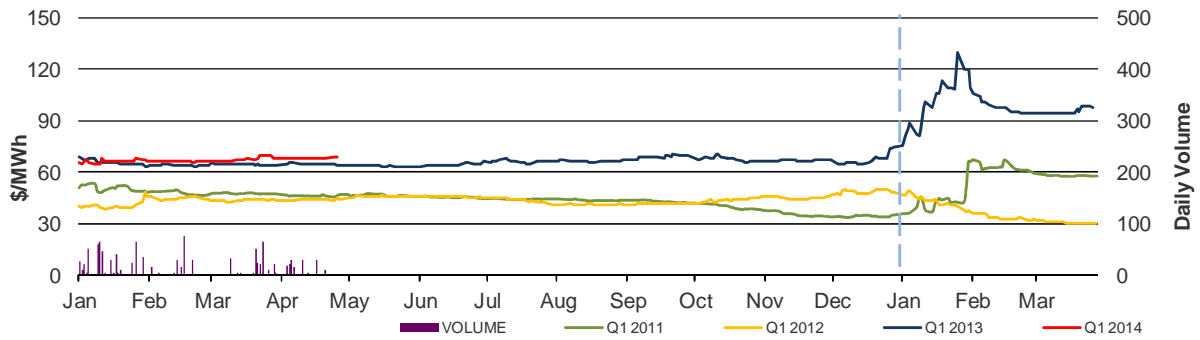


Source: d-cyphaTrade/ASX www.d-cyphatrade.com.au

⁴ Calculated on prices prior to rounding.

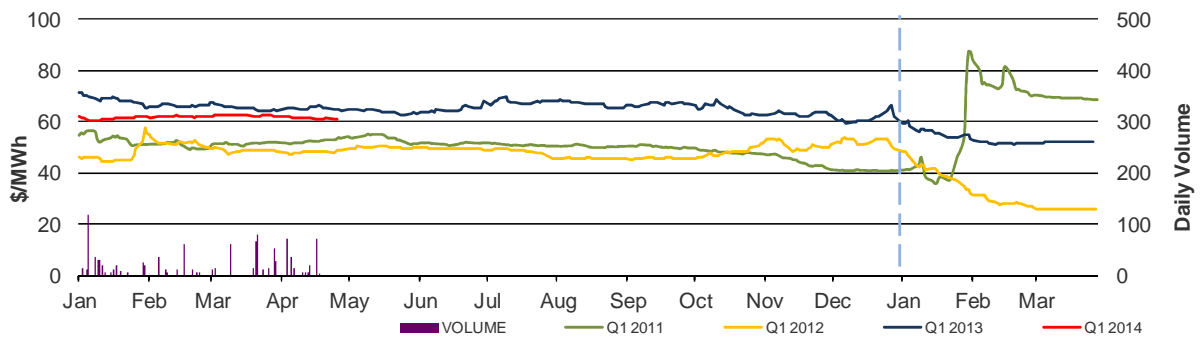
Figures 6-9 compare for each region the closing daily base contract prices for the first quarter of 2011, 2012, 2013 and 2014. Also shown is the daily volume of Q1 2014 base contracts traded. The vertical dashed line signifies the start of the Q1 period for which the contracts are being purchased.

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



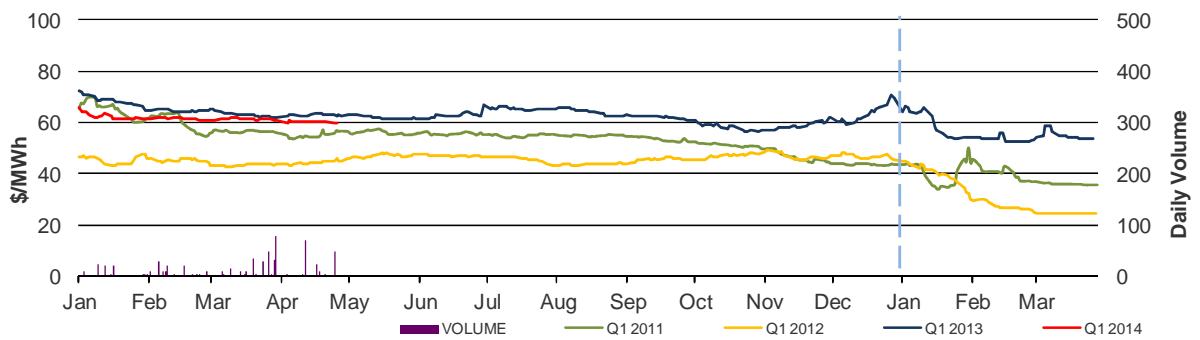
Source: d-cyphaTrade/ASX www.d-cyphatrade.com.au

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



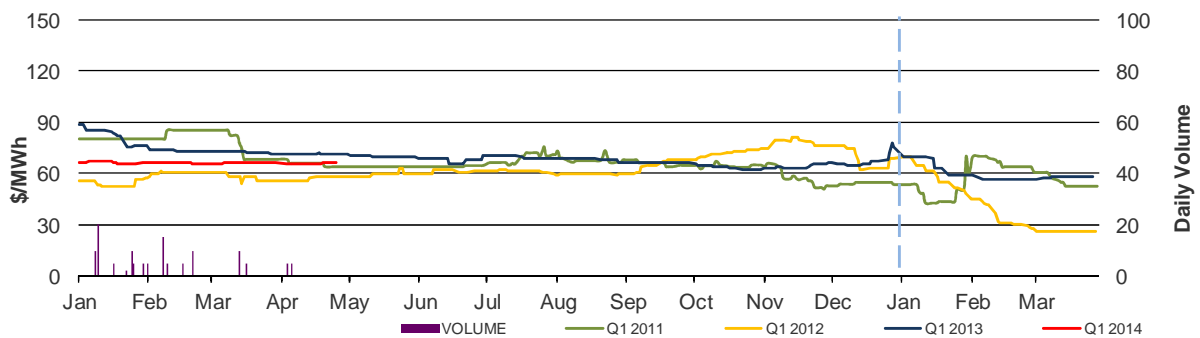
Source: d-cyphaTrade/ASX www.d-cyphatrade.com.au

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



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

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



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 34 trading intervals throughout the week where actual prices varied significantly from forecasts.⁵ 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	9	40	0	2
% of total below forecast	6	41	0	2

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 71 MW more 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	71	-192	113	-138
NSW	560	-271	552	-453
VIC	34	-99	336	-273
SA	-158	-34	-222	-31
TAS	124	-93	115	-89
TOTAL	631	-689	894	-984

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.

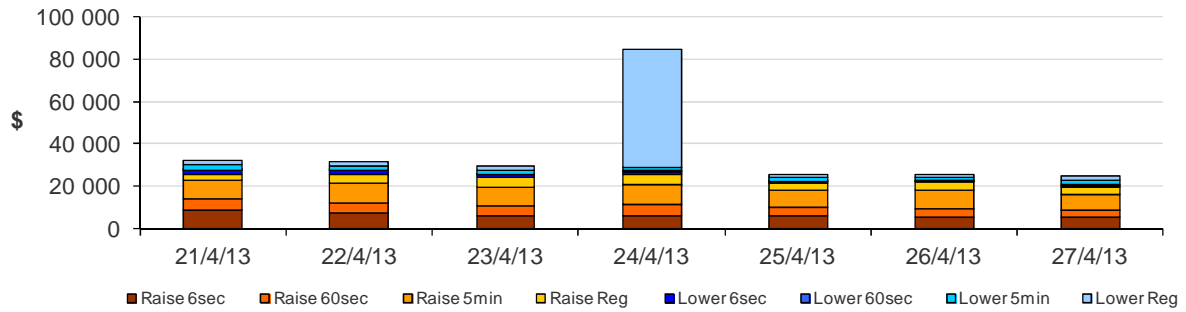
Ancillary services market

The total cost of frequency control ancillary services (FCAS) on the mainland for the week was \$163 500 or less than one per cent of energy turnover on the mainland.

The total cost of FCAS in Tasmania for the week was \$91 000 or just over 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





21 - 27 April 2013

South Australia:

There were three occasions where the spot price in South Australia was greater than three times the South Australia weekly average price of \$95/MWh and above \$250/MWh.

Tuesday, 23 April

Midnight	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	2081.34	200.80	90.80
Demand (MW)	1488	1552	1581
Available capacity (MW)	1410	1563	1562

The scheduled demand in South Australia increased rapidly from 1397 MW at 11.30 pm to 1590 MW at 11.35 pm. This sharp increase in scheduled demand of around 190 MW in 5 minutes (compared to an increase in metered demand over the same period of around 62 MW) was related to off peak hot water load. With limited 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 \$91/MWh at 11.30 pm to \$12 195/MWh at 11.35 pm, before reducing to previous levels. The import limit across the Murraylink interconnector was violated by around 30 MW at the same time.

There was no significant rebidding.

Wednesday, 24 April

8:30 PM	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	2108.88	200.87	300.07
Demand (MW)	1623	1652	1644
Available capacity (MW)	1592	1565	1537

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

Reduced available generation capacity in South Australia in recent weeks saw less low priced capacity offered into the market and a steep supply curve for the region.⁸ A small increase in demand from 1607 MW at 8.25 pm to 1642 MW at 8.30 pm coincided with a 48 MW decrease in the import limit across Heywood (from 460 MW at 8.25 pm to 412 MW at 8.30 pm). With limited ramp up rate capability, high-priced capacity had to be dispatched to meet the changes in demand and import, which saw the 5-minute price increase from \$91/MWh at 8.25 pm to \$12 200/MWh at 8.30 pm. The 5-minute price returned to previous levels at 8.35 pm, when Torrens Island was no longer ramp rate limited.

There was no significant rebidding.

Thursday, 25 April

⁸ Alinta's Northern Power Station (NPS) unit one has been offline since 28 March 2013 and unit 2 since 20 April 2013. GDF SUEZ's Pelican Point reduced its capacity from 465 MW to 235 MW from 20 March 2013.

Midnight	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	2194.52	61.30	70.80
Demand (MW)	1378	1391	1422
Available capacity (MW)	1501	1717	1685

Similar to the event on 23 April, the scheduled demand in South Australia increased rapidly from 1316 MW at 11.30 pm to 1528 MW at 11.35 pm. This sharp increase in scheduled demand of more than 210 MW in five minutes (compared to an increase in metered demand over the same period of around 60 MW) was related to off peak hot water load. With limited 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 \$61/MWh at 11.30 pm to \$12 898/MWh at 11.35 pm, before reducing to previous levels. The import limit across the Heywood interconnector was violated by 3 MW at the same time.

There was no significant rebidding.

Detailed NEM Price and Demand Trends

for Weekly Market Analysis

21 April - 27 April 2013

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

Financial year	QLD	NSW	VIC	SA	TAS
2012-13 (\$/MWh) YTD	72	56	61	65	49
2011-12 (\$/MWh) YTD	30	30	27	32	33
Change*	140%	87%	124%	102%	50%
2011-12 (\$/MWh)	30	31	28	32	33

Table 2: NEM turnover

Financial year	NEM Turnover** (\$, billion)	Energy (TWh)
2012-13 YTD	9.857	160
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)
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	76	53	55	62	50	0.986
April-13 MTD	56	54	50	74	46	0.741
Q2 2013 QTD	56	54	50	74	46	0.741
Q2 2012 QTD	30	34	33	30	36	0.454
Change*	86%	58%	53%	149%	27%	0.634

Table 4: ASX energy futures contract prices at end of 26 April 2013

	QLD		NSW		VIC		SA	
	Base	Peak	Base	Peak	Base	Peak	Base	Peak
Q1 2014								
Price on 19 Apr (\$/MWh)	68	87	61	75	60	78	66	92
Price on 26 Apr (\$/MWh)	68	87	61	74	60	78	67	92
Open Interest on 26 Apr (\$/MWh)	684	95	1196	250	630	195	86	35
Traded in the last week (MW)	10	0	0	25	55	50	0	0
Traded since 1 Jan 13 (MW)	1091	66	1069	380	688	200	122	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
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						
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 MTD						
MW Priced \$20/MWh	-4003	-92	-441	-341	-347	-5224
MW Priced \$20/MWh to \$50/MWh	2277	-1227	990	-504	281	1818

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

** Estimated value