

WEEKLY ELECTRICITY MARKET ANALYSIS



AUSTRALIAN ENERGY
REGULATOR

15 April - 21 April 2012

Summary

Weekly average spot prices increased across all regions in line with an increase in average demand in each region. Tasmania recorded an average spot price of \$49/MWh as a result of a \$4928/MWh spot price on Wednesday caused by the outage of two major transmission lines (one planned the other unplanned).

Spot market prices

Figure 1 sets out the volume weighted average (VWA) prices for the week 8 April to 14 April and the 11/12 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 15 Apr – 21 Apr 2012	34	39	37	37	49
% change from previous week*	26	24	25	21	71
11/12 financial YTD	30	30	27	32	33
% change from 10/11 financial YTD **	-16	-36	-5	-26	7

*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 B¹.

Financial markets

Figures 2 to 9 show futures contract² prices traded on the Australian Securities Exchange (ASX) as at close of trade on Monday 23 April 2012. 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.

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 -> Monitoring, reporting and enforcement -> Electricity market reports -> Long-term analysis.

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

	QLD		NSW		VIC		SA	
Calendar Year 2013	55*	0%	58*	-1%	53	0%	57	0%
Calendar Year 2014	52	1%	55	1%	51	0%	57	1%
Calendar Year 2015	62	0%	59	0%	60	0%	69	0%
Three year average	56	0%	57	0%	55	0%	61	0%

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

* denotes trades in the product.

Figure 3 shows the \$300 cap contract price for Q1 2012 and calendar year 2012 and the percentage change⁴ from the previous week.

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

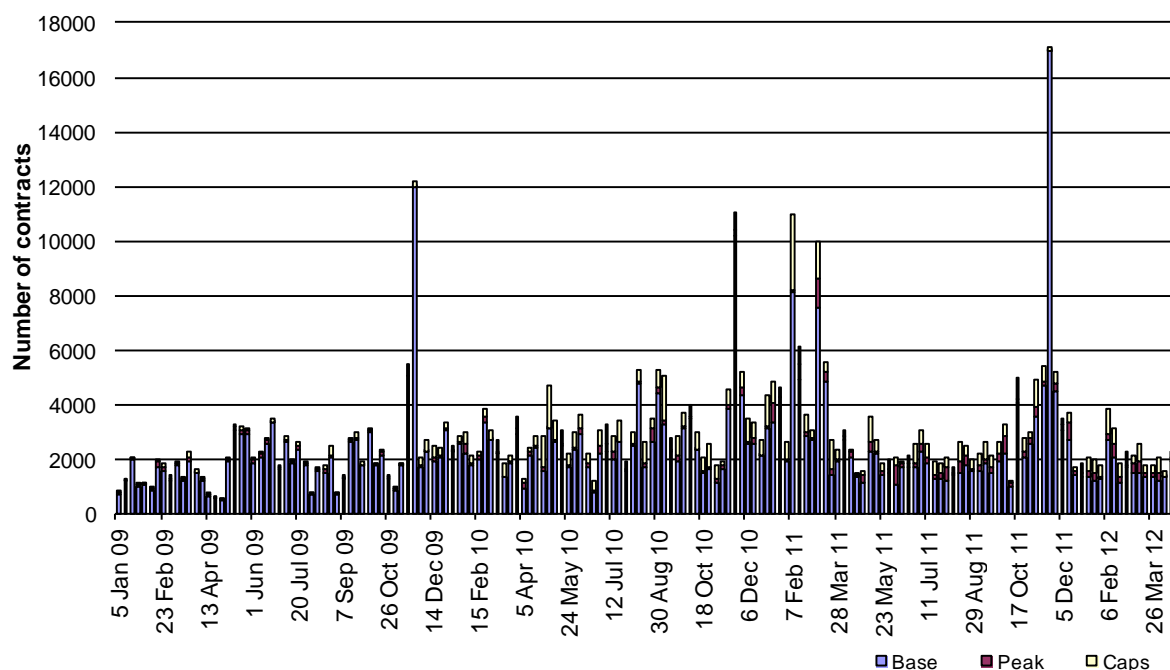
	QLD		NSW		VIC		SA	
Q1 2012 (% change)	15*	2%	15*	3%	16	-1%	24	0%
2012 (% change)	7	1%	9	4%	7	-2%	10	0%

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

* denotes 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

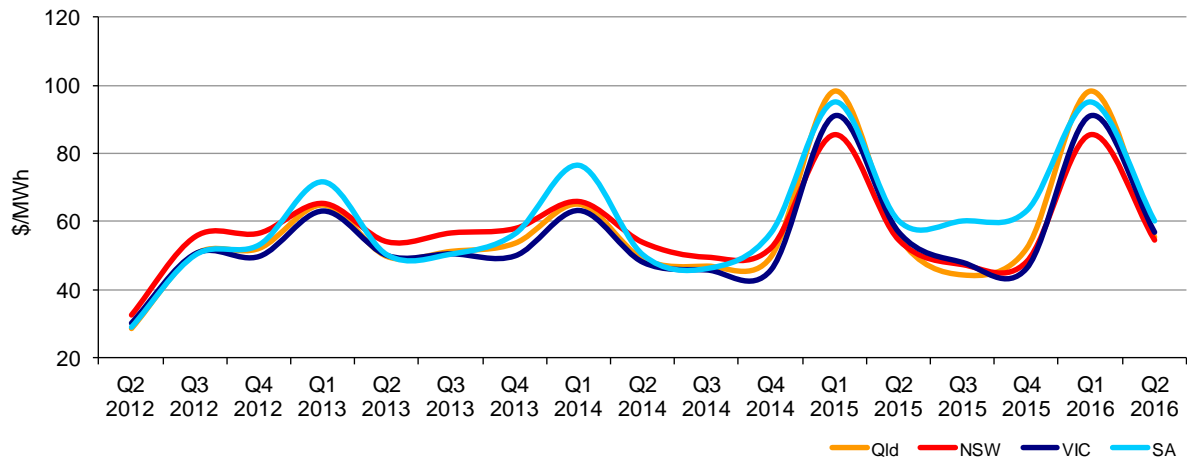


Source: d-cyphaTrade www.d-cyphatrade.com.au

⁴ Calculated on prices prior to rounding.

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

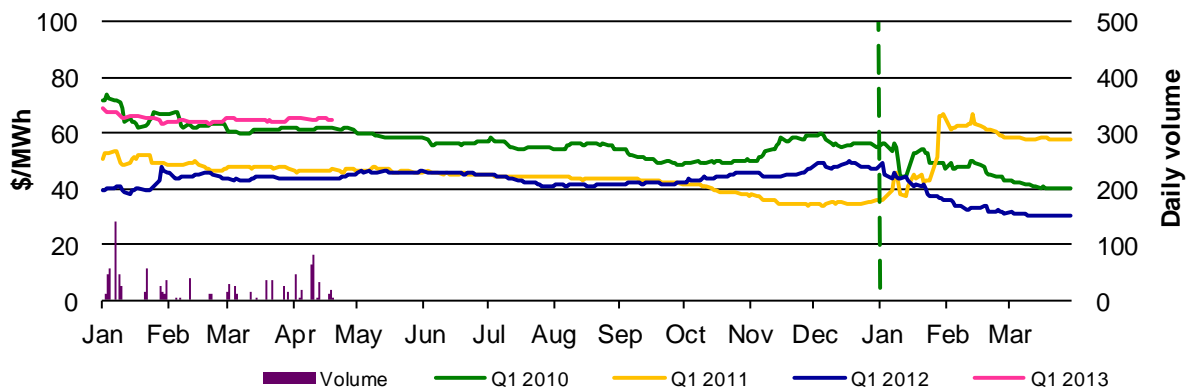
Figure 5: Quarterly base future prices Q2 2012 – Q4 2016



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

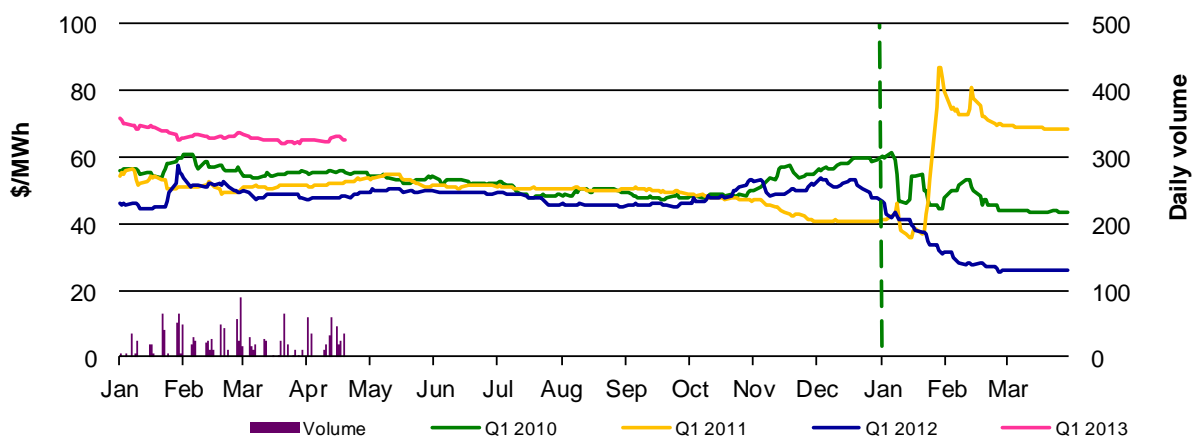
Figures 6-9 compare for each region the closing daily base contract prices for the first quarter of 2010, 2011, 2012 and 2013. Also shown is the daily volume of Q1 2013 base contracts traded. The vertical dashed line signifies the start of the Q1 period for which the contracts are being purchased.

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



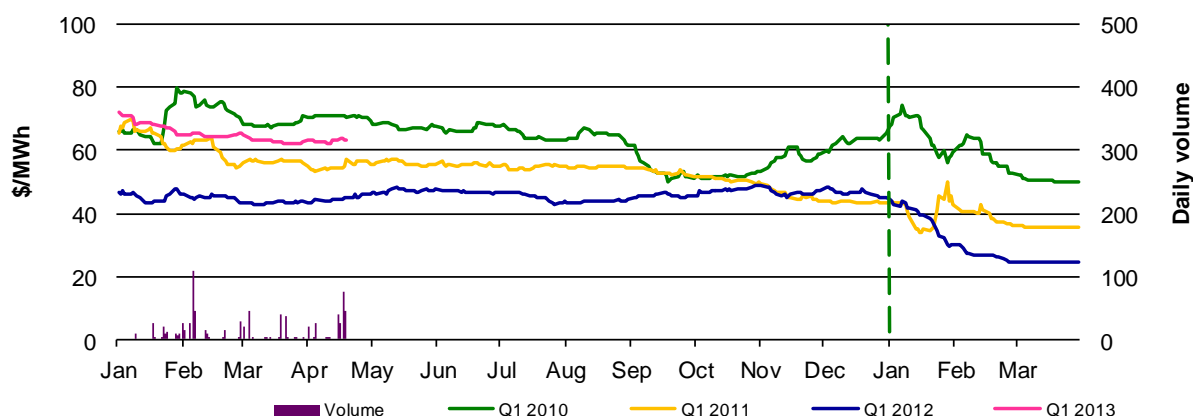
Source: d-cyphaTrade www.d-cyphatrade.com.au

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



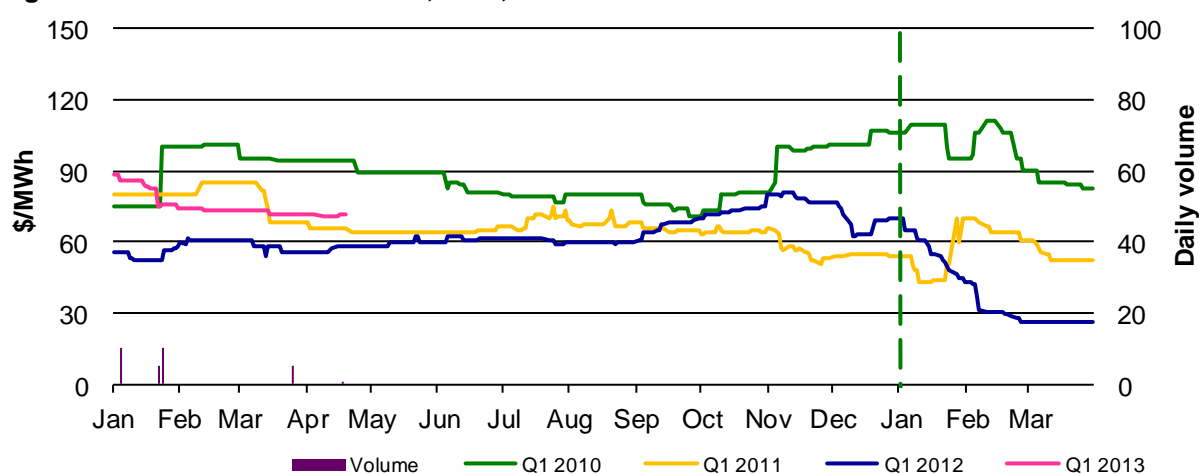
Source: d-cyphaTrade www.d-cyphatrade.com.au

Figure 8: Victoria 2010, 2011, 2012 and 2013



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

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



Source: d-cyphaTrade 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 61 trading intervals throughout the week where actual prices varied significantly from forecasts⁵. This compares to the weekly average in 2010 of 57 counts and the average in 2009 of 103. 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	25	10	2	0
% of total below forecast	39	6	0	18

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 97 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	-97	-116	-404	349
NSW	-381	-394	-1179	586
VIC	-246	198	-64	352
SA	194	66	266	220
TAS	-374	168	-72	38
TOTAL	-904	-78	-1453	1545

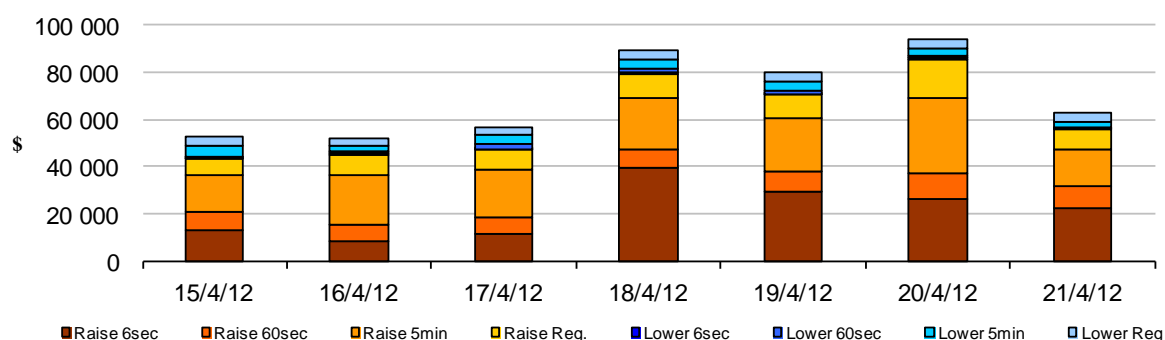
Ancillary services market

The total cost of frequency control ancillary services (FCAS) on the mainland for the week was \$349 000 or less than one per cent of energy turnover on the mainland.

The total cost of FCAS in Tasmania for the week was \$140 500 or around 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



Australian Energy Regulator April 2012

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



15 April– 21 April 2012

Tasmania:

There was one occasion where the spot price in Tasmania was greater than three times the Tasmania weekly average price of \$49/MWh and above \$250/MWh.

Wednesday, 18 April

4:30 PM	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	4928.30	53.01	39.32
Demand (MW)	1026	1075	1117
Available capacity (MW)	2213	2083	2083

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

There was a planned outage of the Sheffield-George Town No. 1 220kV line from around 3 am.

At 3.49 pm an unplanned outage of the Sheffield to Palmerston 220 kV transmission line occurred, resulting in the operation of a Network Control System Protection Scheme (NCSPS) which offloaded the two Reece generating units from 113 MW per unit. Constraint equations were invoked at 4 pm in response to the unplanned outage, which bound immediately, causing a further 170 MW reduction in the dispatch of generators (also located in the west of Tasmania).

One of the constraint equations, invoked to limit West Coast and Mersey Forth generation, violated for the 4.05 pm to 4.15 pm dispatch intervals.

Flows across BassLink reduced from around 350 MW into Victoria at 3.55 pm to 26 MW at 4.05 pm. The five-minute energy price increased from \$52/MWh at 3.55 pm to the price cap at 4.05 pm before falling to \$5735/MWh at 4.10 pm and increasing again to \$11 243/MWh at 4.15 pm.

The Sheffield to Palmerston line was returned to service at around 4.10 pm, the constraints used to manage the outage were revoked by 4.20 pm which saw the prices return to previous levels.

There was no significant rebidding.

Detailed NEM Price and Demand Trends

for Weekly Market Analysis
15 April - 21 April 2012



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

Financial year	QLD	NSW	VIC	SA	TAS
2011-12 (\$/MWh) YTD	30	30	27	32	33
2010-11 (\$/MWh) YTD	36	47	29	44	30
Change*	-16%	-36%	-5%	-26%	7%
2010-11 (\$/MWh)	34	43	29	42	31

Table 2: NEM turnover

Financial year	NEM Turnover** (\$, billion)	Energy (TWh)
2011-12 (YTD)	\$4.737	161
2010-11	\$7.445	204
2009-10	\$9.643	206

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)
Dec-11	26	26	23	25	26	0.369
Jan-12	35	26	25	28	39	0.447
Feb-12	32	27	27	29	37	0.427
Mar-12	28	26	24	26	36	0.396
Apr-12 (MTD)	30	34	33	30	36	0.318
Q2 2012 (QTD)	30	34	33	30	36	0.349
Q2 2011 (QTD)	26	27	27	29	27	0.300
Change*	13%	25%	22%	3%	36%	16.31%

Table 4: ASX energy futures contract prices at end of 23 April 2012

	QLD		NSW		VIC		SA	
	Base	Peak	Base	Peak	Base	Peak	Base	Peak
Q1 2013								
Price on 16 Apr (\$/MWh)	65	90	66	89	63	88	71	114
Price on 23 Apr (\$/MWh)	65	90	65	90	63	88	72	114
Open interest on 23 Apr	511	62	773	195	576	63	25	0
Traded in the last week (MW)	32	25	124	0	187	0	1	0
Traded since 1 Jan 12 (MW)	1032	112	1468	140	848	78	31	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
February 12 with February 11						
MW Priced <\$20/MWh	-194	-460	-25	-213	154	-738
MW Priced \$20 to \$50/MWh	416	621	98	94	-404	825
March 12 with March 11						
MW Priced <\$20/MWh	-151	-49	-33	-263	95	-402
MW Priced \$20 to \$50/MWh	479	395	43	91	-540	468
April 12 with April 11 (MTD)						
MW Priced <\$20/MWh	-27	-1932	-39	-41	166	-1873
MW Priced \$20 to \$50/MWh	488	651	-287	202	-312	742

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

** Estimated value