

WEEKLY ELECTRICITY MARKET ANALYSIS



AUSTRALIAN ENERGY
REGULATOR

11 April – 17 April 2010

Summary

Weekly average spot prices ranged from \$22/MWh in Queensland to \$33/MWh in New South Wales.

Spot market prices

Figure 1 sets out the volume weighted average prices for the week 11 April to 17 April 2010 and the financial year to date 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 11 April – 17 April 2010	22	33	26	31	26
% change from previous week*	5	43	16	31	7
09/10 financial YTD	41	58	39	95	27
% change from 08/09 financial YTD**	10	31	-26	23	-45

*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 to date and the average spot price over the similar period for the previous financial year. Percentage changes are calculated on VWA prices prior to rounding.

The AER provides further information if the spot price exceeds three times the weekly average and is above \$250/MWh. Details of these events are attached in Appendix A. Longer term market trends are attached in Appendix B¹.

Financial markets

Figures 2 to 9 show futures contract² prices traded on the Sydney Futures Exchange (SFE) as at close of trade on Monday 19 April 2010. Figure 2 shows the base futures contract prices for the next three calendar years, and the three year average. Also shown are percentage changes³ compared to 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 on the SFE 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 2011	35*	0%	43*	2%	38*	1%	44	0%
Calendar Year 2012	44	0%	48	0%	47	-1%	69	0%
Calendar Year 2013	58	0%	61	0%	66	0%	69	0%
Three year average	45	0%	51	0%	50	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 the first quarter of 2011 and the 2011 calendar year and the percentage change⁴ from the previous week.

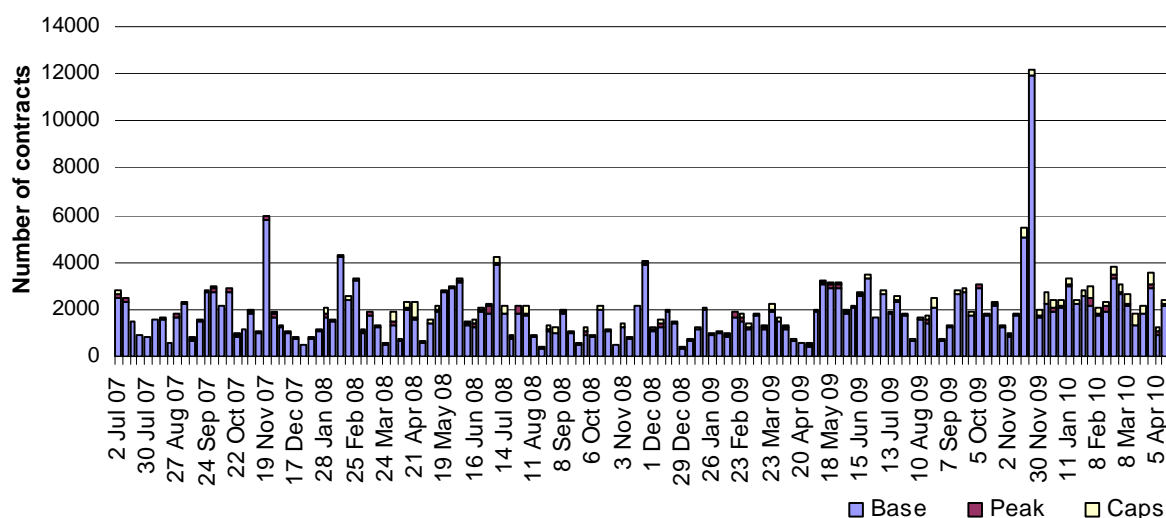
Figure 3: \$300 cap contract prices (\$/MWh)

	QLD		NSW		VIC		SA	
Q1 2011 (% Change)	20	0%	22*	4%	26*	-1%	40	-10%
2011 (% Change)	9	0%	12	2%	11	-2%	14	-10%

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

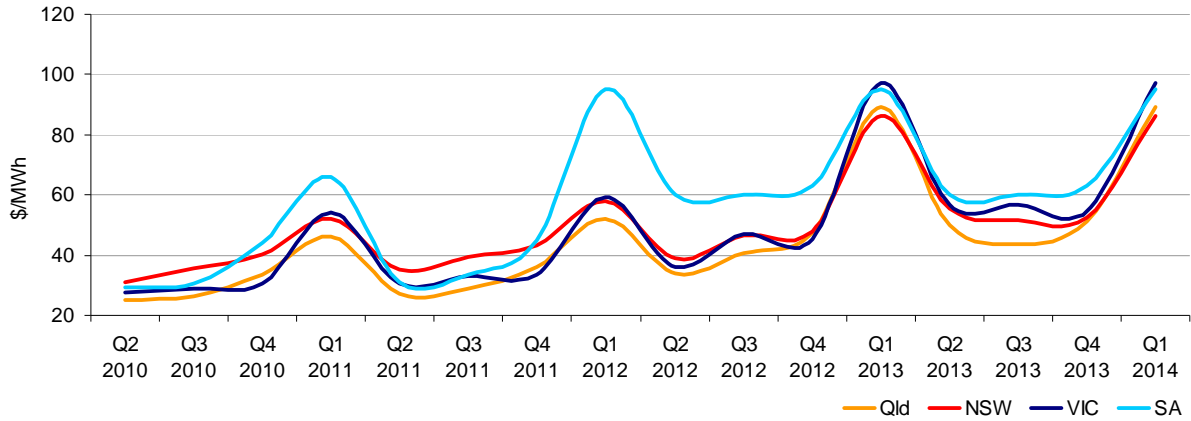


Source: d-cyphaTrade www.d-cyphatrade.com.au

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

⁴ Calculated on prices prior to rounding.

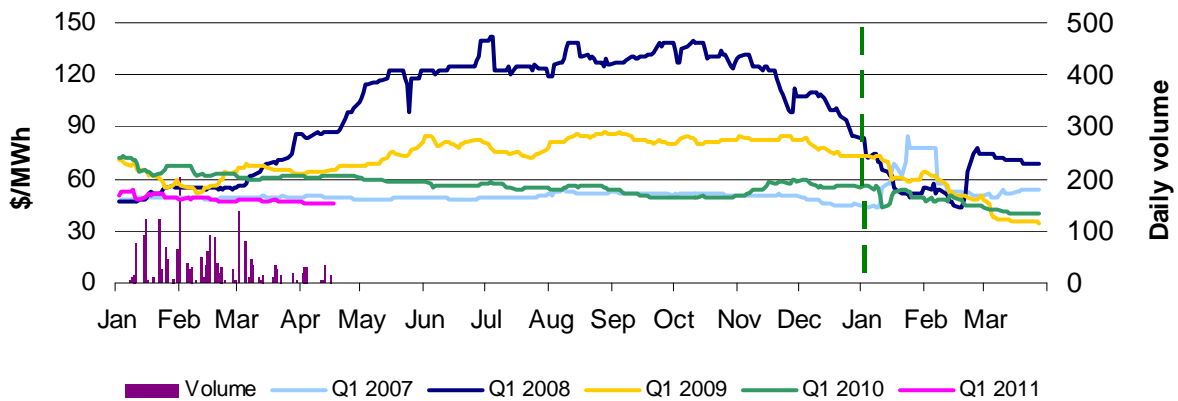
Figure 5: Quarterly base future prices Q2 2010 – Q1 2014



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

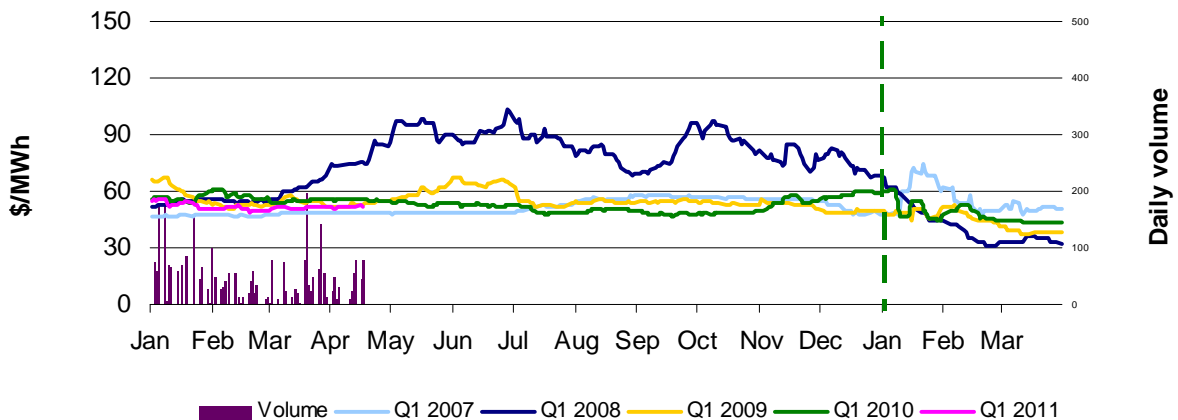
Figures 6-9 compare for each region the closing daily base contract prices for the first quarter of 2007, 2008, 2009, 2010 and 2011. Also shown is the daily volume of Q1 2011 base contracts traded. The vertical dashed line signifies the start of the Q1 period for which the contracts are being purchased. To understand the diagrams, the dark-blue line demonstrates that throughout the middle of 2007, the market had an expectation of very high spot prices in the first quarter of 2008.

Figure 6: Queensland Q1 2007, 2008, 2009, 2010 and 2011



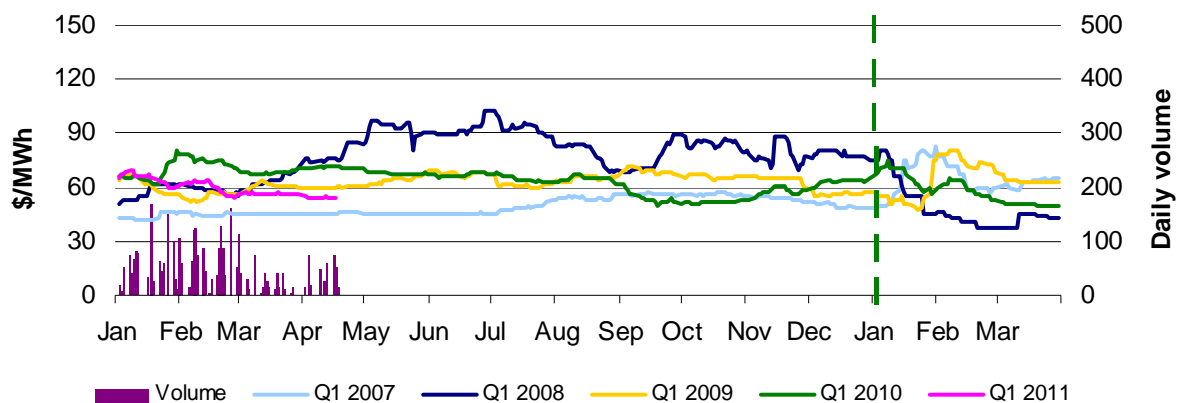
Source: d-cyphaTrade www.d-cyphatrade.com.au

Figure 7: New South Wales Q1 2007, 2008, 2009, 2010 and 2011



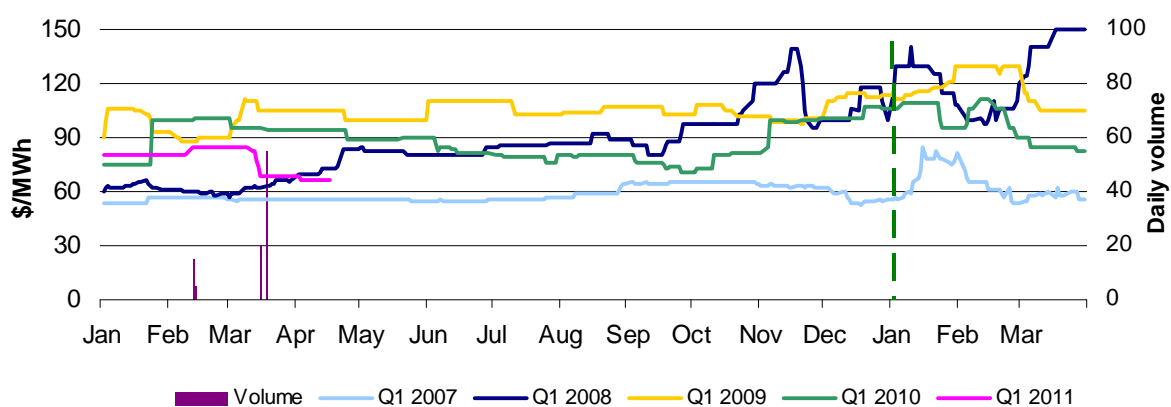
Source: d-cyphaTrade www.d-cyphatrade.com.au

Figure 8: Victoria Q1 2007, 2008, 2009, 2010 and 2011



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

Figure 9: South Australia Q1 2007, 2008, 2009, 2010 and 2011



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.

**This graph was modified on 23/7/2010 to correct an error in the original report.

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 241 trading intervals throughout the week where actual prices varied significantly from forecasts⁵. This compares to the weekly average in 2009 of 103 counts. Reasons for these variances are summarised in Figure 10⁶.

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.

Figure 10: Reasons for variations between forecast and actual prices

	Availability	Demand	Network	Combination
% of total above forecast	1	10	0	2
% of total below forecast	70	10	0	7

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 166 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	166	-45	-84	89
NSW	193	308	321	212
VIC	-14	-131	-169	313
SA	-191	85	-257	68
TAS	384	-123	-117	66
TOTAL	538	94	-306	748

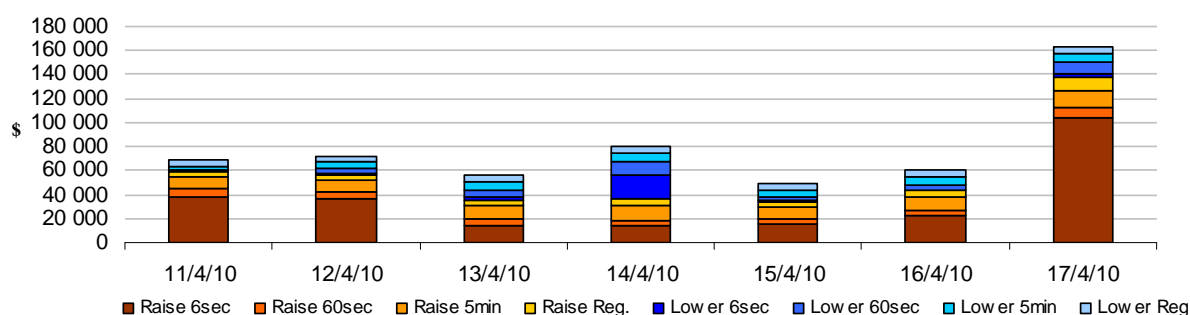
Ancillary services market

The total cost of frequency control ancillary services (FCAS) on the mainland for the week was \$287 000 or less than one per cent of energy turnover on the mainland.

The total cost of FCAS in Tasmania for the week was \$261 000 or about five per cent of energy turnover in Tasmania. At around 2.40 pm on Saturday, Basslink tripped as a result of the failure of a thyristor valve cooling pipe. This meant that Tasmania had to meet its FCAS requirements locally. As a result of the interaction between the Energy and FCAS markets the price of raise 6 second service reached \$5648/MW at 2.45 pm and stayed above \$95/MW until 3.25 pm, driving high FCAS costs on the day.

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 May 2010

⁷ A peak period is defined as between 7 am and 10 pm on weekdays, which aligns with the SFE contract definition.

Detailed Market Analysis



11 April – 17 April 2010

New South Wales: There was one occasion where the spot price in New South Wales was greater than three times the New South Wales weekly average price of \$33/MWh and above \$250/MWh.

Tuesday, 13 April

2 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	3080.54	24.90	22.00
Demand (MW)	9214	9337	9335
Available capacity (MW)	11 975	11 694	11 873

Conditions at the time saw demand around 120 MW lower than forecast and available capacity around 280 MW higher than forecast.

The N>>N-DTKV_D constraint, invoked to manage a planned outage of the Dapto to Kangaroo Valley line, violated at 1.35 pm. The constraint is designed to avoid the overload of one of the Mt Piper to Wallerawang lines on the trip of the other Mt Piper to Wallerawang line. The constraint was violated when Delta Electricity's Wallerawang Power Station unit eight tripped at around 1.30 pm from 400 MW.

This had a similar impact on the market as has been seen on several occasions in New South Wales over the past few months.⁸ Again there were reductions in import capability and constrained-off low-priced generation. This caused the five minute price to reach the price cap at 1.35 pm and 1.40 pm. AEMO stated in its pricing event report⁹ into the incident, that following its request to Transgrid to perform switching operations to facilitate higher network capability, the constraint stopped binding at 1.50 pm.

In response to the high prices, New South Wales generators rebid around 5000 MW of available capacity into prices of zero and below. This led to negative prices from 1.55 pm until 2.05 pm inclusive, until the generators rebid back into higher price bands.

There was no other significant rebidding.

⁸ The impact of the N>>N-NIL__S is explained in detail in Spot Prices above \$5000/MWh reports for 7 and 17 December 2009 and 4 and 22 February 2010. All of these reports are available on the AER website at www.aer.gov.au. The N>>N-NIL__S is also designed to avoid the overload of one of the Mt Piper to Wallerawang lines on the trip of the other Mt Piper to Wallerawang line.

⁹ The pricing event report is available on the AEMO website at www.aemo.com.au

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 \$31/MWh and above \$250/MWh.

Saturday, 17 April

5:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	269.58	33.91	33.77
Demand (MW)	1455	1423	1363
Available capacity (MW)	1942	1971	1898

Demand was higher than forecast, and available capacity was lower than forecast four hours ahead. With only 30 MW of capacity priced between \$33/MWh and \$280/MWh, the higher demand and lower available capacity led to the increase in price compared to that forecast four hours ahead.

There was no significant rebidding.

Detailed NEM Price and Demand Trends

for Weekly Market Analysis
11 April - 17 April 2010



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

Financial year	QLD	NSW	VIC	SA	TAS
2009-10 (\$/MWh) (YTD)	41	58	39	95	27
2008-09 (\$/MWh) (YTD)	37	44	53	77	49
Change*	10%	31%	-26%	23%	-45%
2008-09 (\$/MWh)	36	43	49	69	62

Table 2: NEM turnover

Financial year	NEM Turnover** (\$, billion)	Energy (TWh)
2009-10 (YTD)	\$8.166	164
2008-09	\$9.413	208
2007-08	\$11.125	208

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-09	34	130	25	26	32	1.066
Jan-10	67	63	88	160	30	1.336
Feb-10	45	66	90	213	23	1.235
Mar-10	25	27	24	25	26	0.443
Apr-10 (MTD)	21	27	24	26	25	0.220
Q1 2010	46	52	67	134	27	3.014
Q1 2009	37	43	87	161	55	3.136
Change*	24%	20%	-23%	-17%	-52%	-3.89%

Table 4: ASX energy futures contract prices at end of 19 April

	QLD		NSW		VIC		SA	
Q1 2011	Base	Peak	Base	Peak	Base	Peak	Base	Peak
Price on 12 Apr (\$/MW)	46	80	52	86	55	98	66	100
Price on 19 Apr (\$/MW)	46	78	52	88	54	98	66	100
Open interest on 19 Apr	1875	82	2739	90	3173	20	45	0
Traded in the last week (MW)	60	22	285	5	225	0	0	0
Traded since 1 Jan 10 (MW)	2010	48	3077	65	3315	20	95	0
Settled price for Q1 10(\$/MW)	40	65	44	68	50	89	83	160

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

Comparison:	QLD	NSW	VIC	SA	TAS	NEM
February 10 with February 09						
MW Priced <\$20/MWh	1044	-637	26	311	100	844
MW Priced \$20 to \$50/MWh	-588	696	-285	160	673	655
March 10 with March 09						
MW Priced <\$20/MWh	943	-1063	101	386	-6	361
MW Priced \$20 to \$50/MWh	-482	632	117	-164	596	699
April 10 with April 09 - MTD						
MW Priced <\$20/MWh	892	-246	-106	111	120	770
MW Priced \$20 to \$50/MWh	-631	766	457	-260	658	990

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

** Estimated value