

WEEKLY ELECTRICITY MARKET ANALYSIS



AUSTRALIAN ENERGY
REGULATOR

8 May - 14 May 2011

Summary

Weekly average spot prices on the mainland ranged from \$26/MWh in Queensland to \$33/MWh in Victoria. The weekly average price in Tasmania of \$45/MWh was driven by a spot price on 11 May of \$2129/MWh, which is analysed in Appendix A¹.

At 4.30 pm on Tuesday 10 May the spot price in South Australia fell to -\$320/MWh as a result of a planned network outage affecting the Heywood interconnector, high wind generation and rebidding by AGL. Detailed analysis is provided in Appendix A.

Spot market prices

Figure 1 sets out the volume weighted average (VWA) prices for the week 8 May to 14 May and the 10/11 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 8 May - 14 May 2011	26	28	33	28	45
% change from previous week*	-7	-3	4	-14	45
10/11 financial YTD	35	45	29	43	31
% change from 09/10 financial YTD **	-12	-18	-34	-52	14

*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.

Longer term market trends are attached in Appendix B².

Financial markets

Figures 2 to 9 show futures contract³ prices traded on the Sydney Futures Exchange (SFE) as at close of trade on Monday 16 May 2011. 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 changes⁴ from the previous week.

¹ Further information is provided when the spot price exceeds three times the weekly average and is above \$250/MWh, or is below \$-100/MWh.

² 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.

³ Futures contracts traded 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.

⁴ Calculated on prices prior to rounding.

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

	QLD		NSW		VIC		SA	
Calendar Year 2012	37*	1%	43*	1%	38*	3%	42	1%
Calendar Year 2013	45	0%	49	0%	45	0%	67	0%
Calendar Year 2014	56	0%	59	0%	60	0%	69	0%
Three year average	46	0%	50	0%	48	1%	60	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 change⁵ from the previous week.

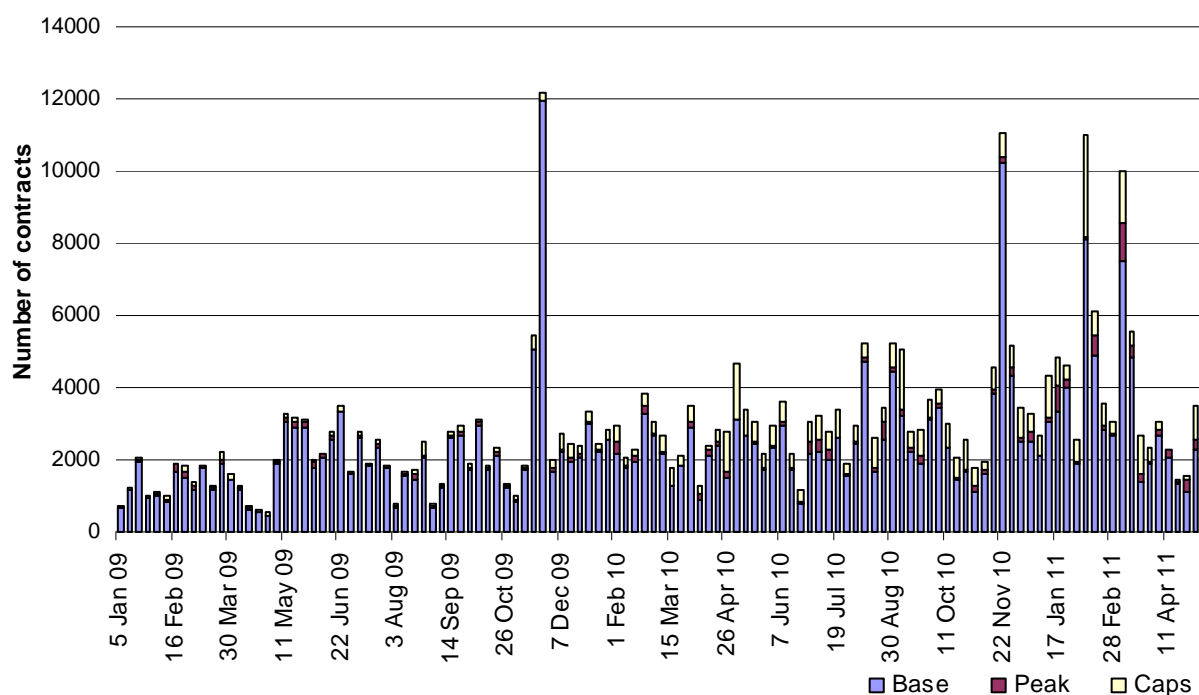
Figure 3: \$300 cap contract prices (\$/MWh)

	QLD		NSW		VIC		SA	
Q1 2012 (% change)	17	0%	20	0%	18	0%	32	0%
2012 (% change)	8	0%	12	0%	7	0%	12	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

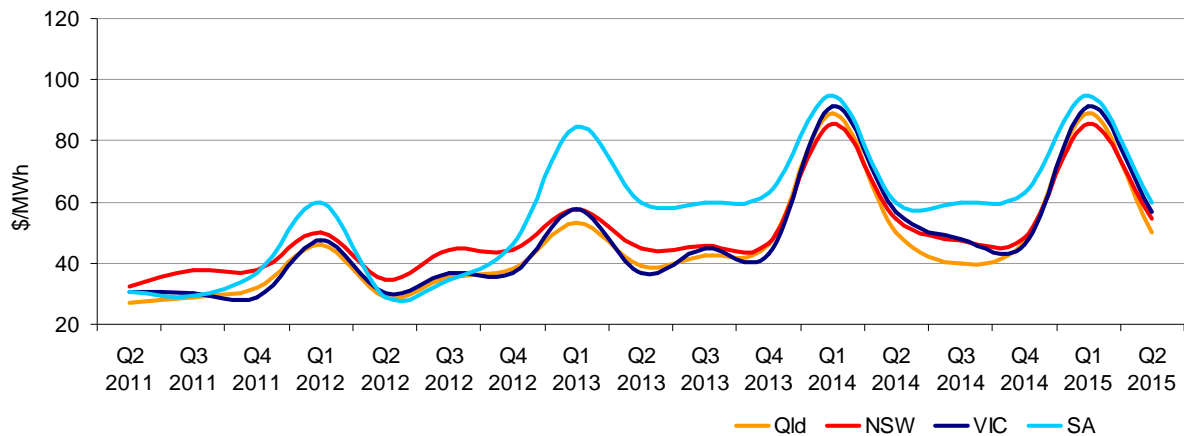


Source: d-cyphaTrade www.d-cyphatrade.com.au

⁵ Calculated on prices prior to rounding.

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

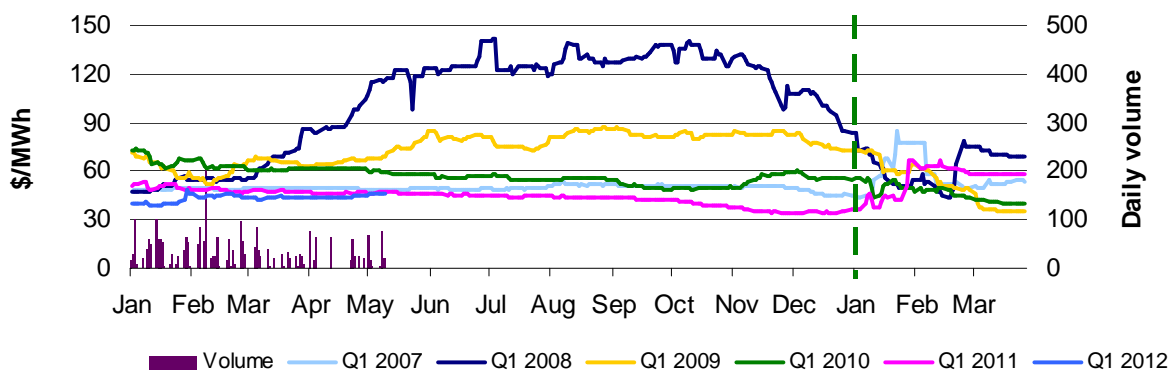
Figure 5: Quarterly base future prices Q2 2011 – Q2 2015



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

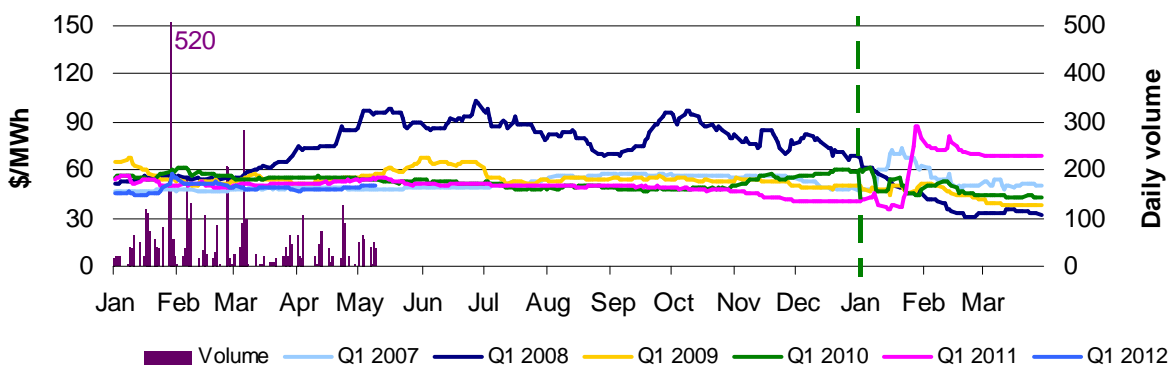
Figures 6-9 compare for each region the closing daily base contract prices for the first quarter of 2007, 2008, 2009, 2010, 2011 and 2012. Also shown is the daily volume of Q1 2012 base contracts traded. The vertical dashed line signifies the start of the Q1 period for which the contracts are being purchased. To understand the diagrams, the dark-blue line in figure 6 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, 2011 and 2012



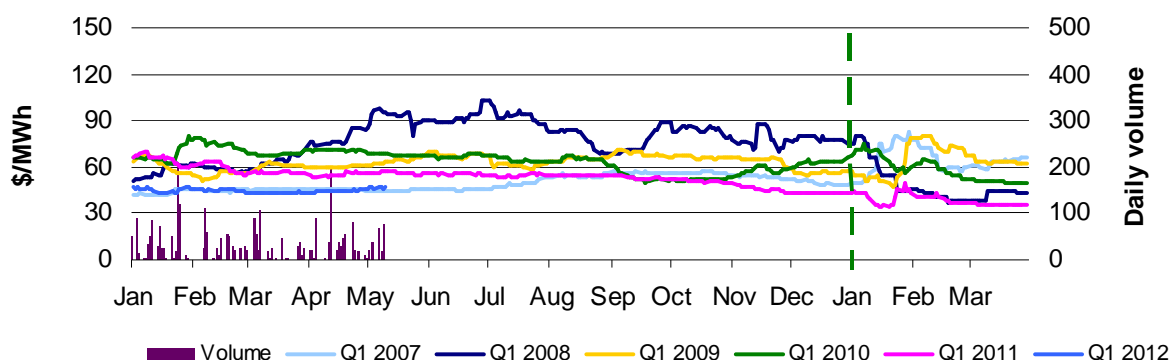
Source: d-cyphaTrade www.d-cyphatrade.com.au

Figure 7: New South Wales Q1 2007, 2008, 2009, 2010, 2011 and 2012



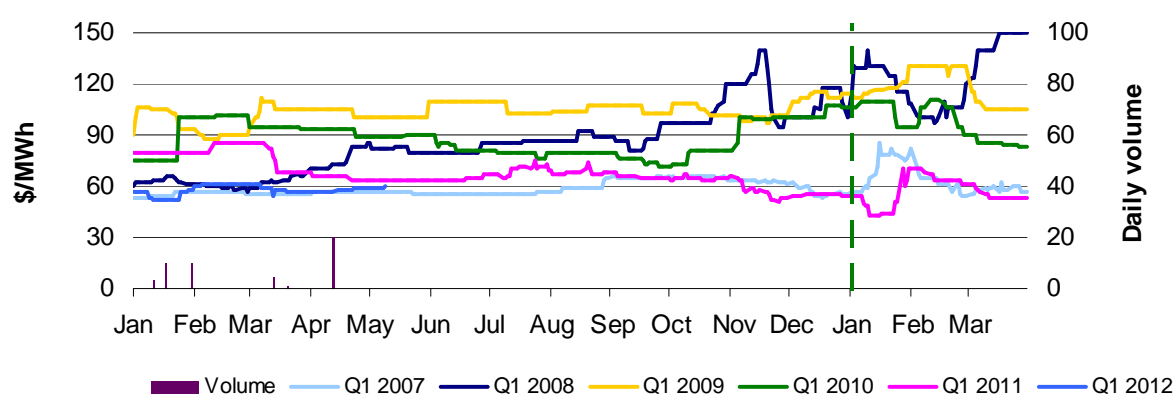
Source: d-cyphaTrade www.d-cyphatrade.com.au

Figure 8: Victoria Q1 2007, 2008, 2009, 2010, 2011 and 2012



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

Figure 9: South Australia Q1 2007, 2008, 2009, 2010, 2011 and 2012



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 67 trading intervals throughout the week where actual prices varied significantly from forecasts⁶. 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 10⁷.

Figure 10: Reasons for variations between forecast and actual prices

	Availability	Demand	Network	Combination
% of total above forecast	0	45	0	0
% of total below forecast	49	5	1	0

⁶ 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.

⁷ 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 periods⁸. For example, in Queensland 213 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	213	78	-20	167
NSW	534	457	734	634
VIC	556	-18	599	463
SA	-87	-27	-57	-71
TAS	-223	-165	-20	73
TOTAL	993	325	1236	1266

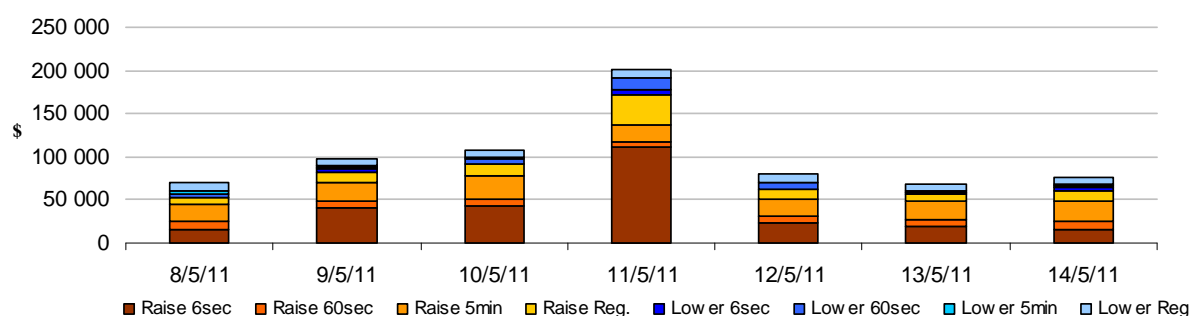
Ancillary services market

The total cost of frequency control ancillary services (FCAS) on the mainland for the week was \$387 000 or less than one per cent of energy turnover on the mainland.

The total cost of FCAS in Tasmania for the week was \$315 000 or three per cent of energy turnover in Tasmania. On 11 May, the raise 6 second and raise regulation price in Tasmania increased from \$78/MW and \$31/MW respectively at 7.50 am to close to the price cap at 7.55 am. At the same time the energy price spiked to the cap, (which is explained in Appendix A). The total FCAS cost on the day in Tasmania was around \$148 000 (almost half of the total weekly cost for Tasmania).

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

Figure 12: Daily frequency control ancillary service cost



⁸ A peak period is defined as between 7 am and 10 pm on weekdays.

Detailed Market Analysis

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South Australia:

There was one occasion where the spot price in South Australia was less than -\$100/MWh.

Tuesday, 10 May

4.30 PM	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	-320.29	27.06	37.16
Demand (MW)	1557	1597	1559
Available capacity (MW)	3306	3357	3352

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

A planned outage of the Heywood to Moorabool line in Victoria led to reduced interconnector capability. Wind generation increased from zero overnight to 500 MW at midday and more than 900 MW by evening. The high wind generation resulted in exports up to this reduced limit from South Australia. At 4.15 pm two constraints caused a step reduction in exports to Victoria for two dispatch intervals, causing the five-minute dispatch price to decrease from \$19/MWh to the price floor. In response, AGL immediately rebid 285 MW of capacity to close to the price floor, which led to a further price at close to the price floor at 4.20 pm. The reason given was “16:10a chg in dispatch::price decrease vs PD SA -\$1000”.

Tasmania:

There was one occasion where the spot price in Tasmania was greater than three times the Tasmania weekly average price of \$45/MWh and above \$250/MWh.

Wednesday, 11 May

8 AM	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	2129.14	37.18	37.16
Demand (MW)	1489	1532	1489
Available capacity (MW)	2149	2149	2149

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

There was an increase in five-minute demand, from 7.40 am to 7.55 am, of almost 90 MW. Due to ramp rate limitations and low-priced generation trapped in frequency control ancillary services, high priced generation was dispatched to meet the increase in demand. As a result the 5-minute price increased from \$40/MWh at 7.40 am to close to the price cap at 7.55 am, and then reduced to previous levels when demand fell by 30 MW at 8 am.

Detailed NEM Price and Demand Trends

for Weekly Market Analysis
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Table 1: Financial year to date spot market volume weighted average price

Financial year	QLD	NSW	VIC	SA	TAS
2010-11 (\$/MWh) YTD	35	45	29	43	31
2009-10 (\$/MWh) YTD	40	55	44	90	27
Change*	-12%	-18%	-34%	-52%	14%
2009-10 (\$/MWh)	37	52	42	82	30

Table 2: NEM turnover

Financial year	NEM Turnover** (\$, billion)	Energy (TWh)
2010-11 (YTD)	\$6.635	177
2009-10	\$9.643	206
2008-09	\$9.413	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)
Jan-11	48	58	50	183	26	0.959
Feb-11	123	190	48	33	29	1.794
Mar-11	28	27	26	23	26	0.414
Apr-11	25	27	26	28	27	0.374
May-11 (MTD)	27	29	32	30	38	0.210
Q1 2011	65	90	41	83	27	3.484
Q1 2010	46	52	67	134	27	3.014
Change*	41%	74%	-38%	-38%	2%	15.57%

Table 4: ASX energy futures contract prices at end of 16 May

	QLD		NSW		VIC		SA	
	Base	Peak	Base	Peak	Base	Peak	Base	Peak
Q1 2012								
Price on 09 May (\$/MW)	47	74	51	82	47	76	59	100
Price on 16 May (\$/MW)	46	75	50	82	47	77	60	100
Open interest on 16 May	1110	83	1310	185	1362	76	87	0
Traded in the last week (MW)	104	10	189	0	198	0	0	0
Traded since 1 Jan 11 (MW)	3041	71	4779	265	2623	1	73	0
Settled price for Q1 11(\$/MW)	57	96	68	118	35	51	53	93

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

Comparison:	QLD	NSW	VIC	SA	TAS	NEM
March 11 with March 10						
MW Priced <\$20/MWh	-287	-85	-360	227	201	-909
MW Priced \$20 to \$50/MWh	2	76	42	278	273	219
April 11 with April 10						
MW Priced <\$20/MWh	-1035	-451	-384	272	-6	-1604
MW Priced \$20 to \$50/MWh	339	521	323	183	91	1457
May 11 with May 10 (MTD)						
MW Priced <\$20/MWh	-1161	170	-545	364	-300	-1472
MW Priced \$20 to \$50/MWh	433	910	629	153	-6	2119

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

** Estimated value