

WEEKLY ELECTRICITY MARKET ANALYSIS



AUSTRALIAN ENERGY
REGULATOR

13 November - 19 November 2011

Summary

Weekly average spot prices ranged from \$28/MWh in Victoria to \$36/MWh in New South Wales.

In the contract market, the volume of trades for the week was the highest ever, with around 17 000 contracts traded. The high volume was driven by Calendar 2012 and Q1 2012 options being exercised just prior to their expiry date of 21 November 2011.

Spot market prices

Figure 1 sets out the volume weighted average (VWA) prices for the week 13 November to 19 November 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 13 Nov - 19 Nov 2011	34	36	28	32	31
% change from previous week*	-19	-37	-5	-14	-26
11/12 financial YTD	29	32	28	38	31
% change from 10/11 financial YTD **	41	15	18	39	-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 A¹.

Financial markets

Figures 2 to 9 show futures contract² prices traded on the Australian Securities Exchange (ASX) as at close of trade on Monday 21 November 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 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 2012	43*	-2%	49*	-3%	43*	-3%	55	-1%
Calendar Year 2013	54*	0%	60	0%	55	0%	58	0%
Calendar Year 2014	56	0%	59	0%	58	0%	69	0%
Three year average	51	0%	56	-1%	52	-1%	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)

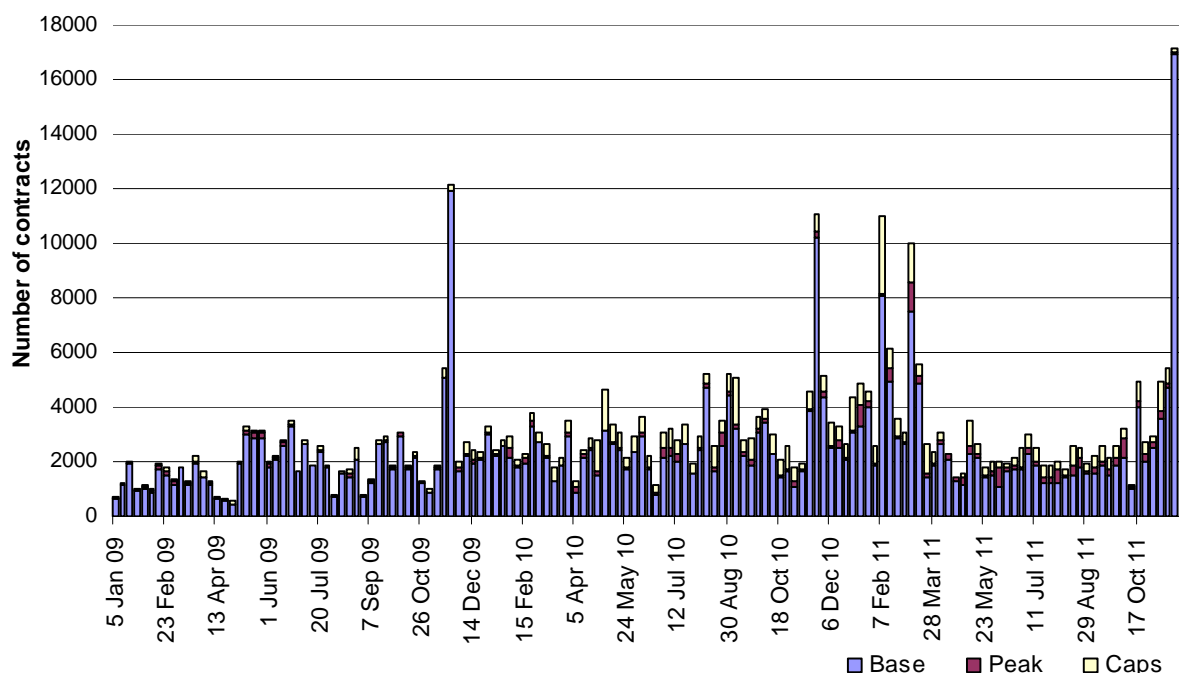
	QLD		NSW		VIC		SA	
Q1 2012 (% change)	14*	-2%	17*	-9%	17*	-11%	38	0%
2012 (% change)	7	2%	10	-5%	6	-8%	13	0%

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

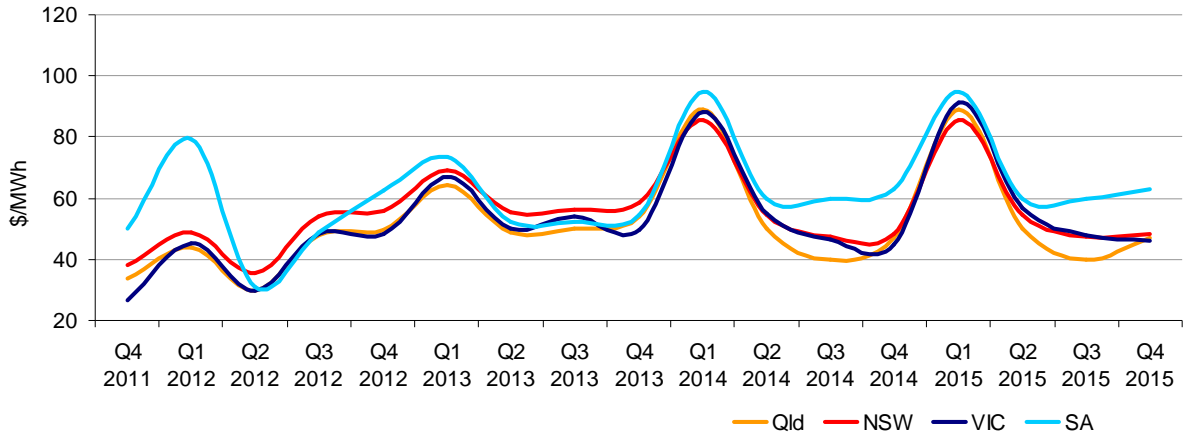


Source: d-cyphaTrade www.d-cyphatrade.com.au

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

⁴ Calculated on prices prior to rounding.

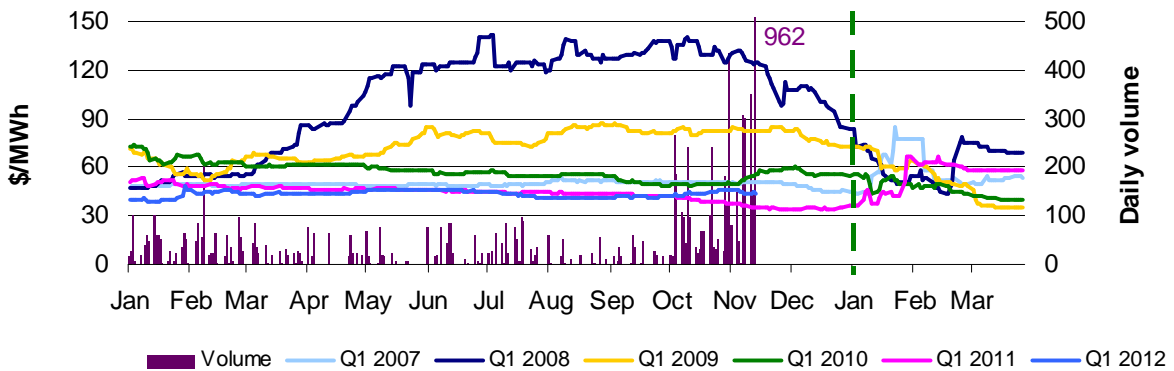
Figure 5: Quarterly base future prices Q4 2011 – Q4 2015



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

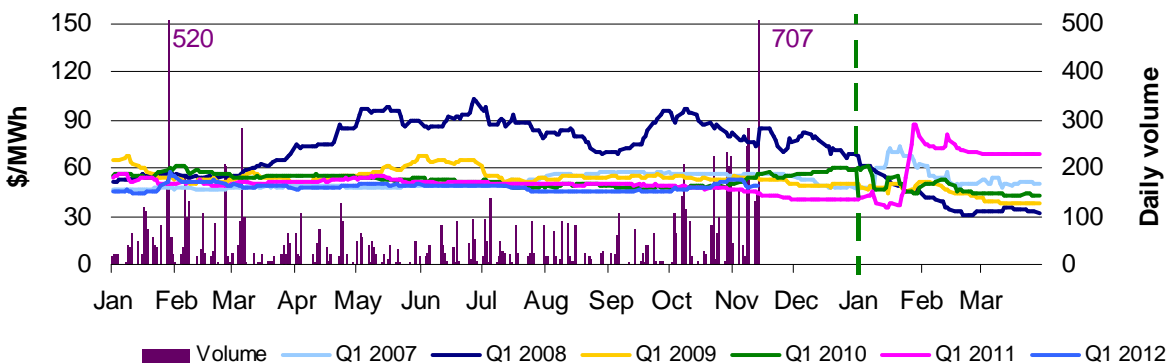
Figures 6-9 compare for each region the closing daily base contract prices for the first quarter of 2007, 2008, 2009, 2010, 2011 and 2012. Also shown is the daily volume of Q1 2012 base contracts traded. The vertical dashed line signifies the start of the Q1 period for which the contracts are being purchased.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



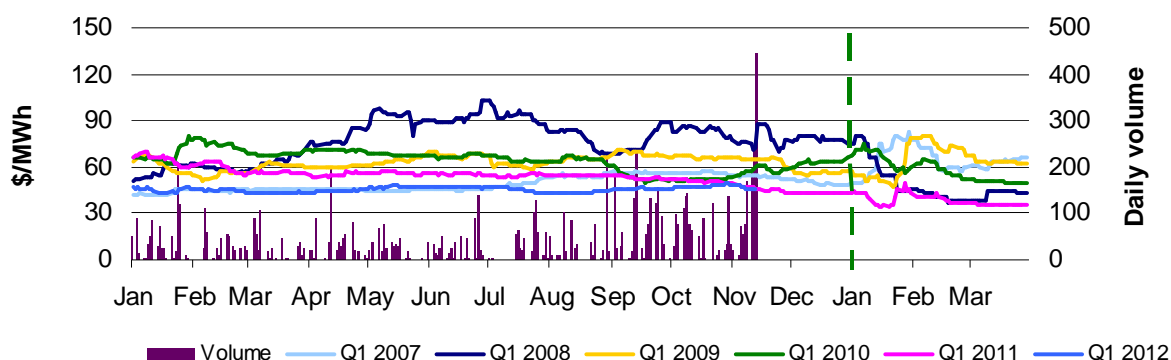
Source: d-cyphaTrade www.d-cyphatrade.com.au

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



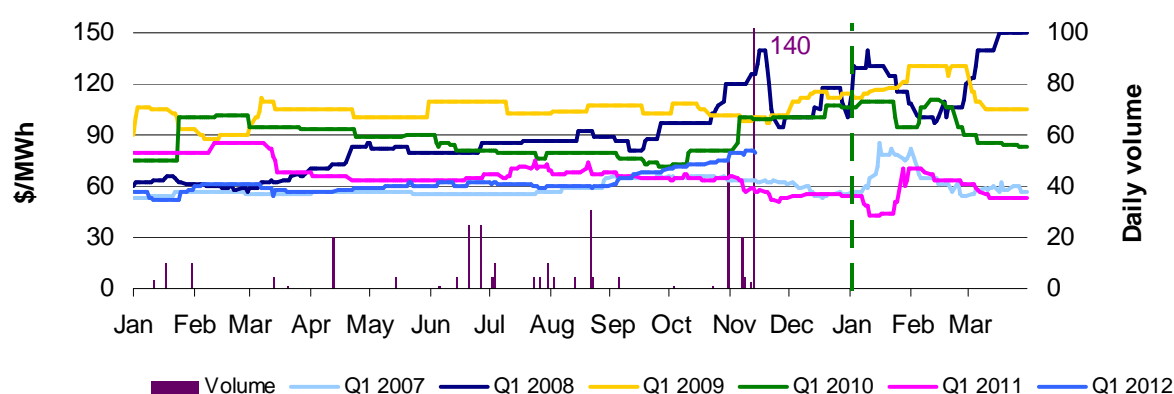
Source: d-cyphaTrade www.d-cyphatrade.com.au

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 122 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	4	11	0	2
% of total below forecast	75	6	0	2

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 80 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	-80	-159	142	273
NSW	-465	-220	-662	-171
VIC	690	-288	818	144
SA	24	30	109	138
TAS	-117	100	-80	1
TOTAL	52	-537	327	385

Ancillary services market

The total cost of frequency control ancillary services (FCAS) on the mainland for the week was around \$4.4 million or three and a half per cent of energy turnover on the mainland. The vast majority of this cost (almost \$4 million) was incurred in Queensland on 13 November.

At around 6.48 pm on 13 November, lightning forced the outage of both Armidale to Dumaresq 330 kV lines (i.e. the QNI interconnector). At the time the interconnector was exporting from Queensland into New South Wales at around 320 MW.

As a result of the loss of QNI, constraint equations were invoked at 7 pm to manage the contingencies of the loss of the largest Queensland generator (requiring increased local raise services) and the largest Queensland load (requiring increased local lower services). The constraints violated from 7 pm to 7.10 pm⁸ inclusive due to insufficient supply of local FCAS in Queensland to meet the increased requirements.

The largest requirements for each service were:

- raise regulation – around 135 MW
- raise 5 minute – 348 MW
- raise 60 second – around 315 MW
- raise 6 second – 246 MW
- lower regulation – around 155 MW
- lower 5 minute – 75 MW
- lower 60 and 6 second – around 208 MW

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

⁸ One line returned to service shortly after 7 pm, which was followed by revoking of constraints that allowed scheduled flows on the interconnector to resume from 7.15 pm.

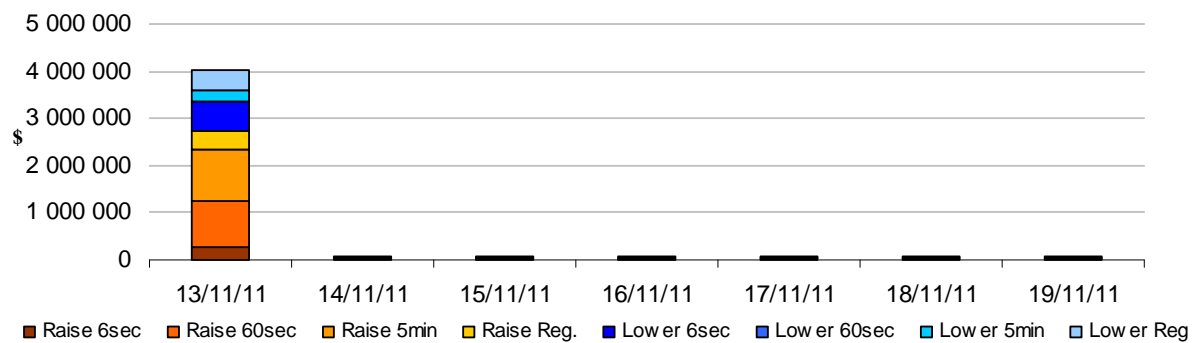
Prices for services other than raise 6 second and lower 60 second services were at or close to the price cap from 7 pm to 7.10 pm, inclusive. The price for raise 6 second services reached the price cap at 7 pm before falling to \$10/MW at 7.05 pm and 7.10 pm. The price for lower 60 second services remained at \$7.50/MW throughout these dispatch intervals.

One of the Armidale to Dumaresq 330 kV lines remained out of service for the rest of the day, leading to an ongoing requirement for local lower FCAS in Queensland. However, the requirement for services was lower and at significantly lower prices.

The total cost of FCAS in Tasmania for the week was \$111 000 or 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



Detailed NEM Price and Demand Trends

for Weekly Market Analysis
13 November - 19 November 2011



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

Financial year	QLD	NSW	VIC	SA	TAS
2011-12 (\$/MWh) YTD	29	32	28	38	31
2010-11 (\$/MWh) YTD	21	28	24	27	36
Change*	41%	15%	18%	39%	-14%
2010-11 (\$/MWh)	34	43	29	42	31

Table 2: NEM turnover

Financial year	NEM Turnover** (\$, billion)	Energy (TWh)
2011-12 (YTD)	\$2.392	78
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)
Jul-11	27	32	31	36	34	0.508
Aug-11	29	31	31	36	29	0.483
Sep-11	29	29	28	40	27	0.427
Oct-11	28	29	24	43	33	0.421
Nov-11 (MTD)	35	42	28	33	33	0.335
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 21 November

	QLD		NSW		VIC		SA	
	Base	Peak	Base	Peak	Base	Peak	Base	Peak
Q1 2012								
Price on 14 Nov (\$/MW)	45	70	51	84	47	78	80	130
Price on 21 Nov (\$/MW)	44	69	49	76	45	76	79	140
Open interest on 21 Nov	1606	175	2448	521	2254	390	301	5
Traded in the last week (MW)	2074	0	1512	0	1126	0	167	0
Traded since 1 Jan 11 (MW)	9817	211	11144	1155	8760	727	439	5
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
September 11 with September 10						
MW Priced <\$20/MWh	-856	-1281	-424	-614	-345	-3520
MW Priced \$20 to \$50/MWh	-376	1085	148	175	161	1191
October 11 with October 10						
MW Priced <\$20/MWh	-782	-1751	-648	-182	-724	-4086
MW Priced \$20 to \$50/MWh	-294	1258	449	126	465	2003
November 11 with November 10 (MTD)						
MW Priced <\$20/MWh	-977	-2424	-1312	-101	-432	-5245
MW Priced \$20 to \$50/MWh	143	1458	1,101	208	327	3238

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

** Estimated value