

# WEEKLY ELECTRICITY MARKET ANALYSIS



AUSTRALIAN ENERGY  
REGULATOR

14 November – 20 November 2010

## Summary

On 19 November the spot price in Tasmania reached \$12 400/MWh at 7 am, resulting in a weekly average spot price in that region of \$65/MWh. In accordance with clause 3.13.7 of the National Electricity Rules, the AER is required to publish a separate report into the circumstances that led to the spot price exceeding \$5000/MWh.

The weekly average spot prices in the mainland regions ranged from \$18/MWh in Victoria and Queensland to \$23/MWh in New South Wales.

The spot price fell to \$-156/MWh in Queensland early Thursday morning and Friday morning as a result of a single five-minute dispatch price at the price floor on each occasion. These prices were not forecast.

In the contract market, the volume of trades for the week was the second highest ever, with around 11 000 contracts traded, driven by expiring options<sup>1</sup>. Prices for quarter one and calendar year 2011 contracts have fallen steadily in all regions throughout November.

## Spot market prices

Figure 1 sets out the volume weighted average prices for the week 14 November to 20 November 2010 and the 10-11 financial year 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 14 Nov - 20 Nov 2010	18	23	18	22	65
% change from previous week*	-14	-3	-8	-11	228
10/11 financial YTD	21	28	24	27	36
% change from 09/10 financial YTD **	-43	-39	-12	-72	39

\*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.

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 B<sup>2</sup>.

<sup>1</sup> Calendar 2011 and Q1 2011 options expired on 19 November 2010. These expiring options are counted as trades. The highest ever weekly trade occurred twelve months ago. On that occasion a large quantity of expiring options were converted into futures contracts, driven by sustained high demand and prices across the southern states.

<sup>2</sup> 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](http://www.aer.gov.au) -> Monitoring, reporting and enforcement -> Electricity market reports -> Long-term analysis.

## Financial markets

Figures 2 to 9 show futures contract<sup>3</sup> prices traded on the Sydney Futures Exchange (SFE) as at close of trade on Monday 22 November 2010. Figure 2 shows the base futures contract prices for the next three calendar years, and the three year average. Also shown are percentage changes<sup>4</sup> compared to the previous week.

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

	QLD		NSW		VIC		SA	
Calendar Year 2011	29*	-2%	38*	-3%	33*	-1%	39	0%
Calendar Year 2012	32*	-2%	41*	-3%	35*	-3%	40	-3%
Calendar Year 2013	43	-2%	54	0%	52	0%	69	0%
Three year average	35	-2%	44	-2%	40	-1%	49	-1%

Source: d-cyphaTrade [www.d-cyphatrade.com.au](http://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 change<sup>5</sup> from the previous week.

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

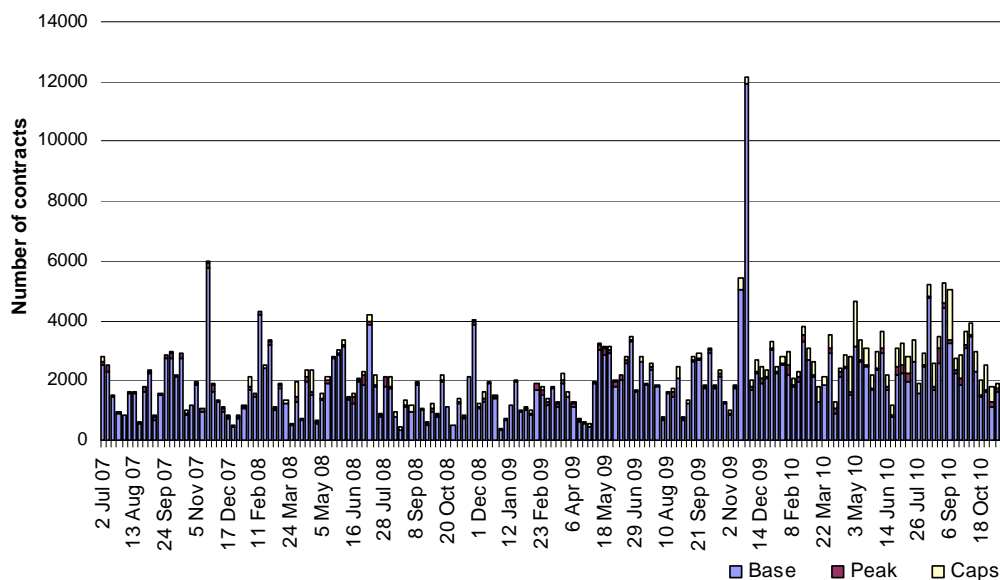
	QLD		NSW		VIC		SA	
Q1 2011 (% Change)	10*	-8%	16*	-5%	19*	0%	26	0%
2011 (% Change)	5	-5%	11	-7%	7	-6%	10	0%

Source: d-cyphaTrade [www.d-cyphatrade.com.au](http://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](http://www.d-cyphatrade.com.au)

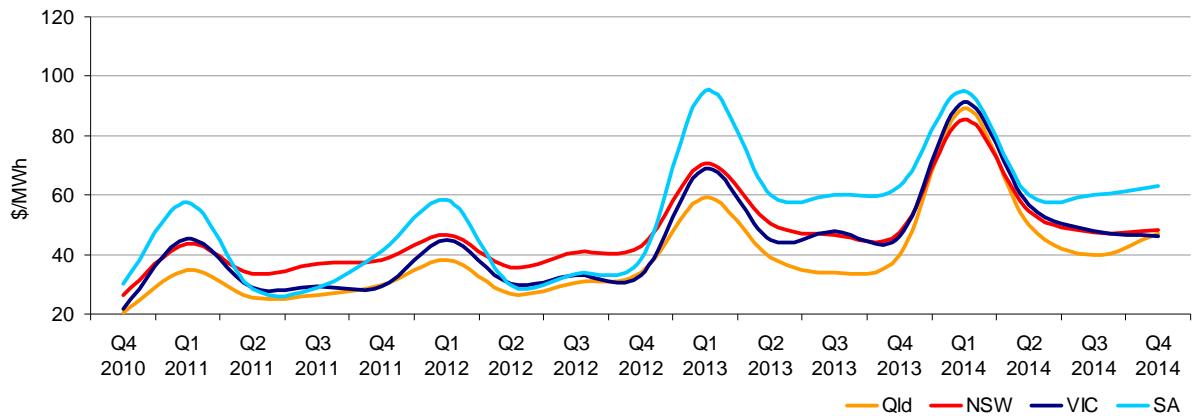
<sup>3</sup> Futures contracts traded on the SFE are listed by d-cyphaTrade ([www.d-cyphatrade.com.au](http://www.d-cyphatrade.com.au)). A futures contract is typically for one MW of electrical energy per hour based on a fixed load profile. A base load profile is defined as the base load period from 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.

<sup>4</sup> Calculated on prices prior to rounding.

<sup>5</sup> Calculated on prices prior to rounding.

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

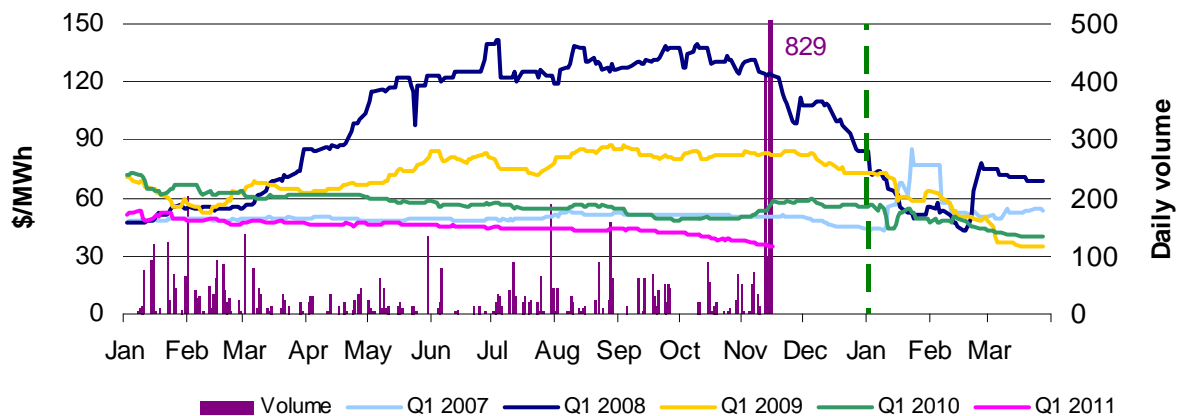
**Figure 5: Quarterly base future prices Q4 2010 – Q4 2014**



Source: d-cyphaTrade [www.d-cyphatrade.com.au](http://www.d-cyphatrade.com.au)

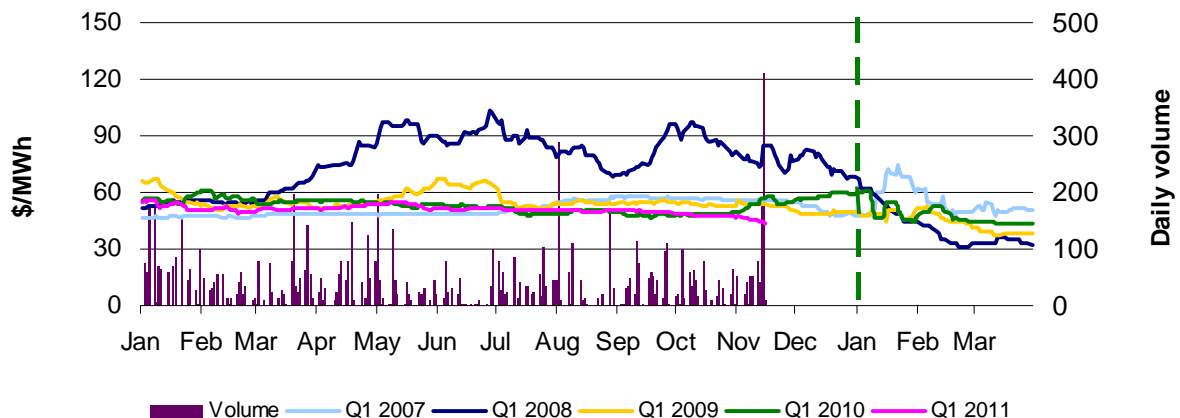
Figures 6-9 compare for each region the closing daily base contract prices for the first quarter of 2007, 2008, 2009, 2010 and 2011. Also shown is the daily volume of Q1 2011 base contracts traded. The vertical dashed line signifies the start of the Q1 period for which the contracts are being purchased.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



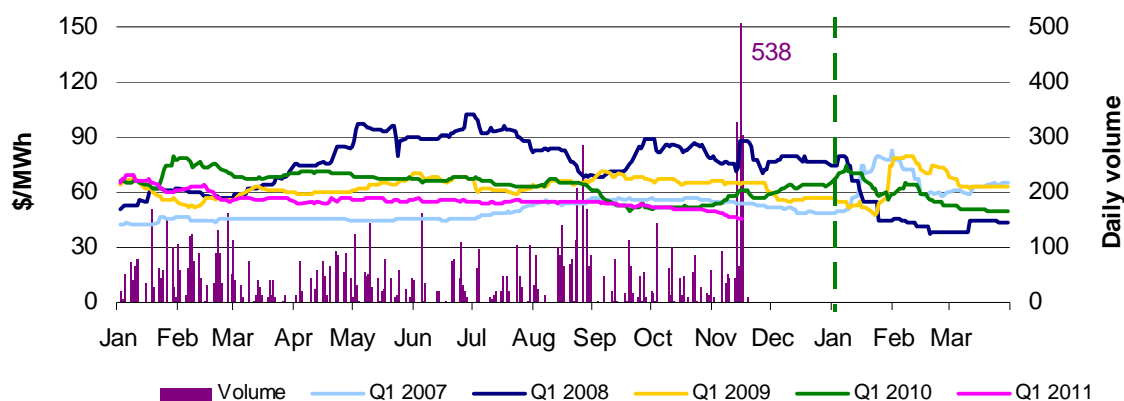
Source: d-cyphaTrade [www.d-cyphatrade.com.au](http://www.d-cyphatrade.com.au)

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



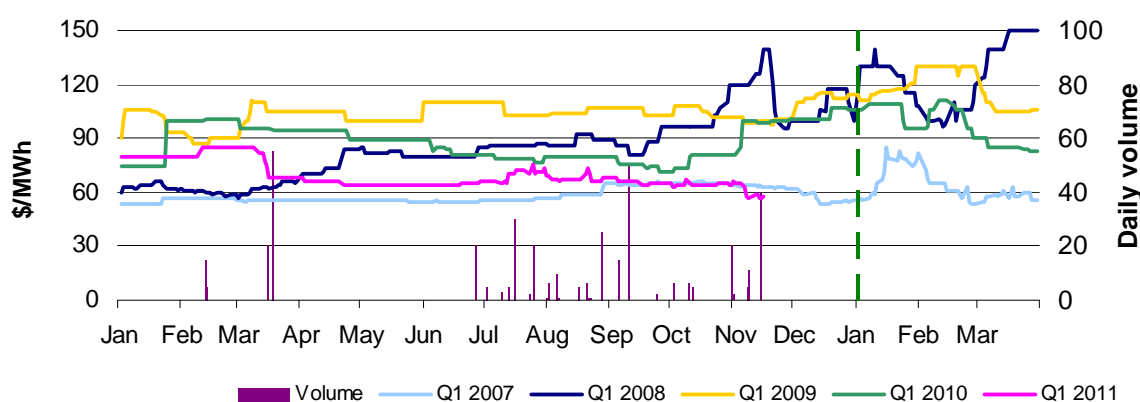
Source: d-cyphaTrade [www.d-cyphatrade.com.au](http://www.d-cyphatrade.com.au)

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



Source: d-cyphaTrade [www.d-cyphatrade.com.au](http://www.d-cyphatrade.com.au)

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



Source: d-cyphaTrade [www.d-cyphatrade.com.au](http://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 36 trading intervals throughout the week where actual prices varied significantly from forecasts<sup>6</sup>. This compares to the weekly average in 2009 of 103 counts. Reasons for these variances are summarised in Figure 10<sup>7</sup>.

**Figure 10: Reasons for variations between forecast and actual prices**

	Availability	Demand	Network	Combination
% of total above forecast	2	11	0	3
% of total below forecast	67	14	0	3

<sup>6</sup> 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.

<sup>7</sup> 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 periods<sup>8</sup>. For example, in Queensland 471 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	471	-82	426	125
NSW	-140	251	517	-314
VIC	-45	-71	140	-362
SA	-70	26	-117	-122
TAS	-38	174	29	21
<b>TOTAL</b>	178	298	995	-652

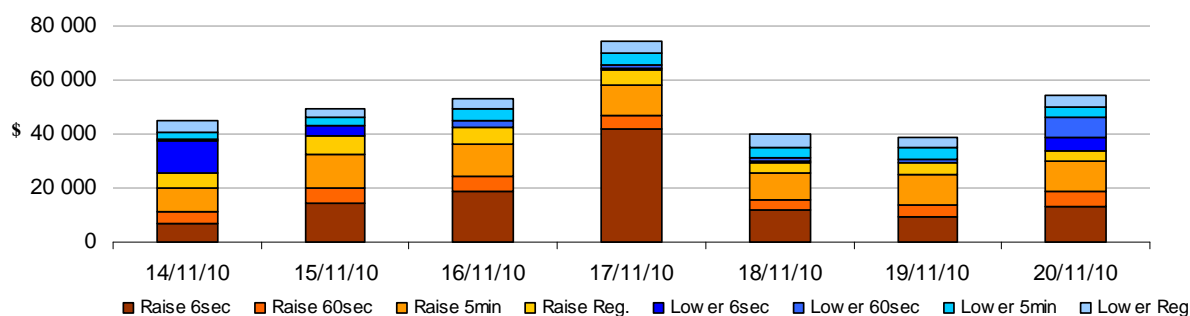
## Ancillary services market

The total cost of frequency control ancillary services (FCAS) on the mainland for the week was \$231 000 or less than one per cent of energy turnover on the mainland.

The total cost of FCAS in Tasmania for the week was \$124 000 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**



<sup>8</sup> A peak period is defined as between 7 am and 10 pm on weekdays, which aligns with the SFE contract definition.

## Detailed Market Analysis



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### Tasmania:

There was one occasion where the spot price in Tasmania was greater than three times the Tasmania weekly average price of \$64/MWh and above \$250/MWh.

### Friday, 19 November

7:00 am	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	12 400	12 400	32.01
Demand (MW)	1353	1277	1251
Available capacity (MW)	2267	2267	2267

In accordance with clause 3.13.7 of the Electricity Rules, the AER is required to publish a separate report into the circumstances that led to the spot price exceeding \$5000/MWh.

# Detailed NEM Price and Demand Trends

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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	21	28	24	27	36
2009-10 (\$/MWh) YTD	36	45	27	95	26
Change*	-43%	-39%	-12%	-72%	39%
2009-10 (\$/MWh)	37	52	42	82	30

**Table 2: NEM turnover**

Financial year	NEM Turnover** (\$, billion)	Energy (TWh)
2010-11 (YTD)	\$2.046	80
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)
Jul-10	22	28	27	31	31	0.495
Aug-10	22	37	28	28	70	0.579
Sep-10	22	24	23	27	21	0.386
Oct-10	20	23	21	25	18	0.358
Nov-10 (MTD)	18	23	19	23	35	0.230
Q3 2010	22	30	26	29	41	1.697
Q3 2009	26	28	25	27	24	1.918
Change*	-16%	5%	4%	6%	72%	-11.51%

**Table 4: ASX energy futures contract prices at end of 22 November**

	QLD		NSW		VIC		SA	
	Base	Peak	Base	Peak	Base	Peak	Base	Peak
Q1 2011								
Price on 15 Nov (\$/MW)	36	59	46	75	47	82	57	111
Price on 22 Nov (\$/MW)	35	56	43	70	45	78	58	105
Open interest on 22 Nov	1538	162	2561	304	2348	215	165	1
Traded in the last week (MW)	1911	1	725	67	1245	0	40	0
Traded since 1 Jan 10 (MW)	6924	209	8676	521	10339	402	398	1
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
September 10 with September 09						
MW Priced <\$20/MWh	495	762	85	655	73	2069
MW Priced \$20 to \$50/MWh	344	-417	125	-167	299	186
October 10 with October 09						
MW Priced <\$20/MWh	499	679	527	481	686	2873
MW Priced \$20 to \$50/MWh	350	-128	-24	-98	-594	-494
November 10 with November 09 (MTD)						
MW Priced <\$20/MWh	-106	17	741	174	916	1741
MW Priced \$20 to \$50/MWh	383	135	-619	-142	-643	-885

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

\*\* Estimated value