

WEEKLY ELECTRICITY MARKET ANALYSIS



AUSTRALIAN ENERGY
REGULATOR

31 January – 6 February 2010

Summary

Spot prices in Victoria and South Australia averaged around \$86/MWh as a result of high demand and network constraints in the Latrobe Valley driving prices above \$2000/MWh on Tuesday 2 February and Wednesday 3 February.

The average weekly spot price in Tasmania was \$0.70/MWh - the lowest weekly average spot price since the National Electricity Market commenced. This low average price was driven by over 11 hours of negative prices on Tuesday 2 February and Wednesday 3 February, reaching the price floor of -\$1000/MWh at 3 pm and 3.30 pm on Tuesday and close to the price floor at 3.30 pm and 4 pm on Wednesday. These low prices occurred at the same time as the high prices in Victoria and were driven by Hydro Tasmania rebidding that saw almost all its capacity priced at close to the price floor. The rebidding was in response to the constraints in the Latrobe Valley.

On Thursday 4 February the spot price in New South Wales reached \$5540/MWh. In accordance with clause 3.13.7 of the Electricity Rules, the AER will issue a separate report into the circumstances that led to the spot price exceeding \$5000/MWh. The high prices in New South Wales on Thursday drove an average price of \$75/MWh for the week.

Milder conditions in Queensland led to an average spot price for the week of \$28/MWh.

Spot market prices

Figure 1 sets out the volume weighted average prices for the week 31 January to 6 February 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 31 January – 6 February 2010	28	75	87	86	1
% change from previous week*	-21	153	221	208	-100
09/10 financial YTD	44	64	38	93	27
% change from 08/09 financial YTD**	12	35	-37	4	-47

*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.

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.

Financial markets

Figures 2 to 9 show futures contract² prices traded on the Sydney Futures Exchange (SFE) as at close of trade on Monday 8 February 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.

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

	QLD		NSW		VIC		SA	
Calendar Year 2010	36	-1%	40	4%	40*	4%	53	1%
Calendar Year 2011	37*	-1%	42	0%	42*	1%	53	0%
Calendar Year 2012	46	0%	50	0%	53	1%	69	0%
Three year average	40	-1%	44	1%	45	2%	59	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 2010 and the 2010 calendar year and the percentage change⁴ from the previous week.

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

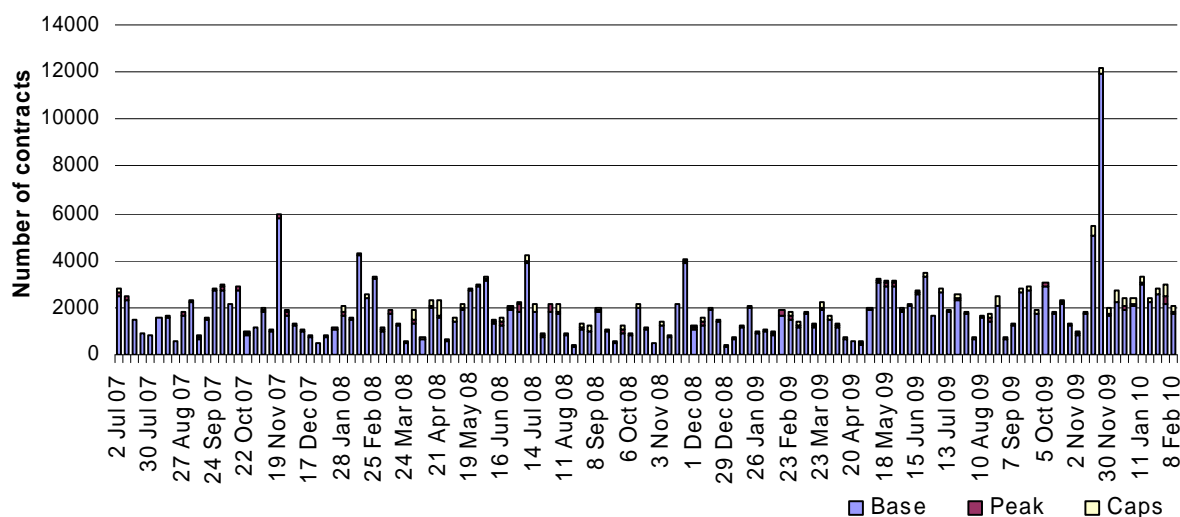
	QLD		NSW		VIC		SA	
Q1 2010 (% Change)	21	0%	19*	23%	31*	13%	61	0%
2010 (% Change)	9	-3%	10	10%	11	7%	19	0%

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



To access this information go to

www.aer.gov.au -> Monitoring, reporting and enforcement -> Electricity market reports -> Long-term analysis.

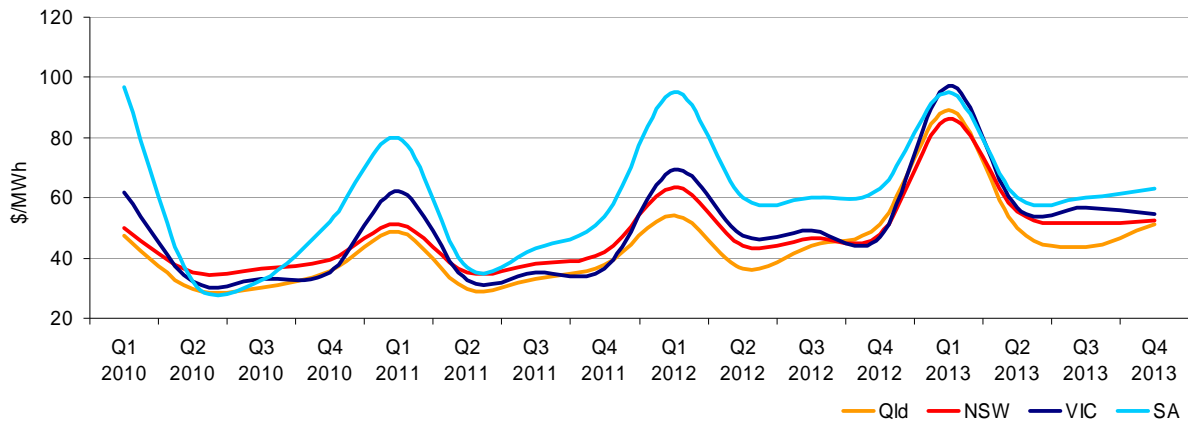
² Futures contracts on the SFE are listed by d-cyphaTrade (www.d-cyphatrade.com.au). A futures contract is typically for one MW of electrical energy per hour based on a fixed load profile. A base load profile is defined as the base load period from midnight to midnight Monday to Sunday over the duration 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.

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 Q4 2009 – Q3 2013



Figures 6-9 compare for each region the closing daily base contract prices for the first quarter of 2007, 2008, 2009 and 2010. Also shown is the daily volume of Q1 2010 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 and 2010

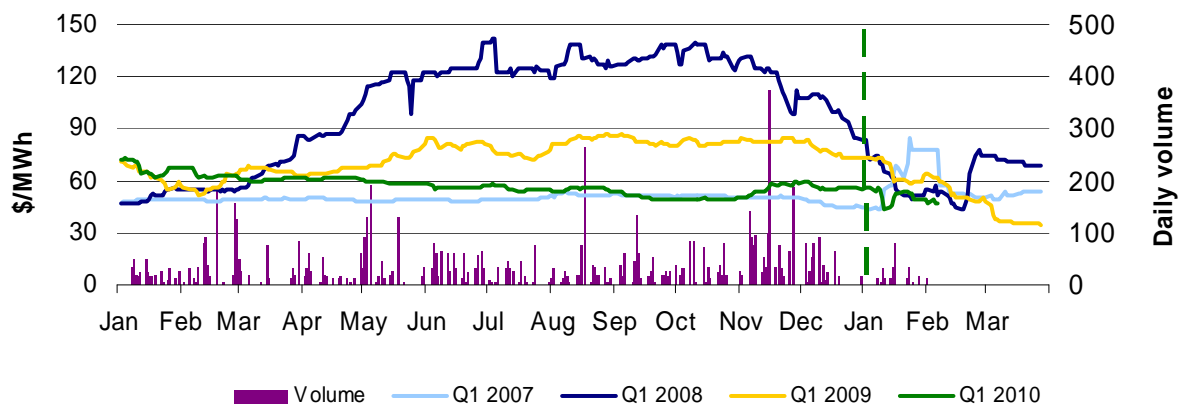
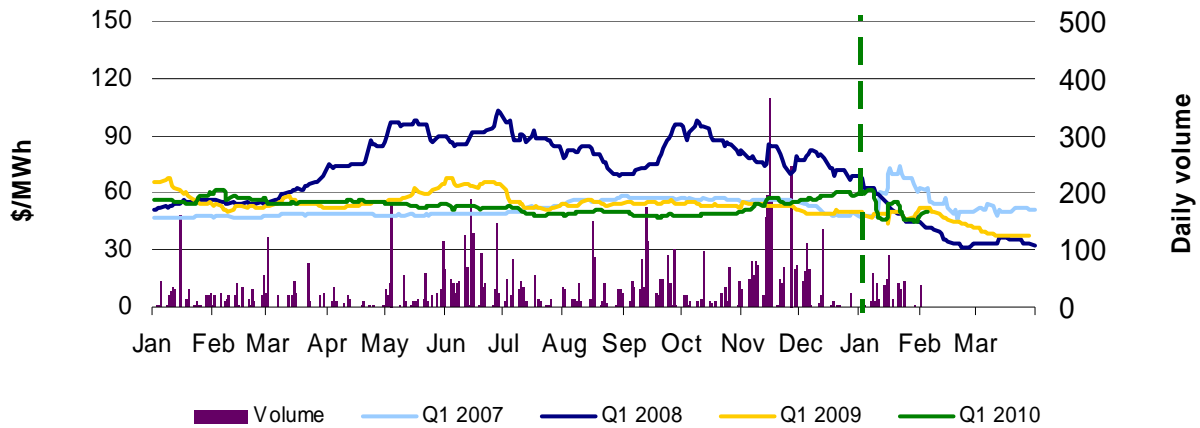
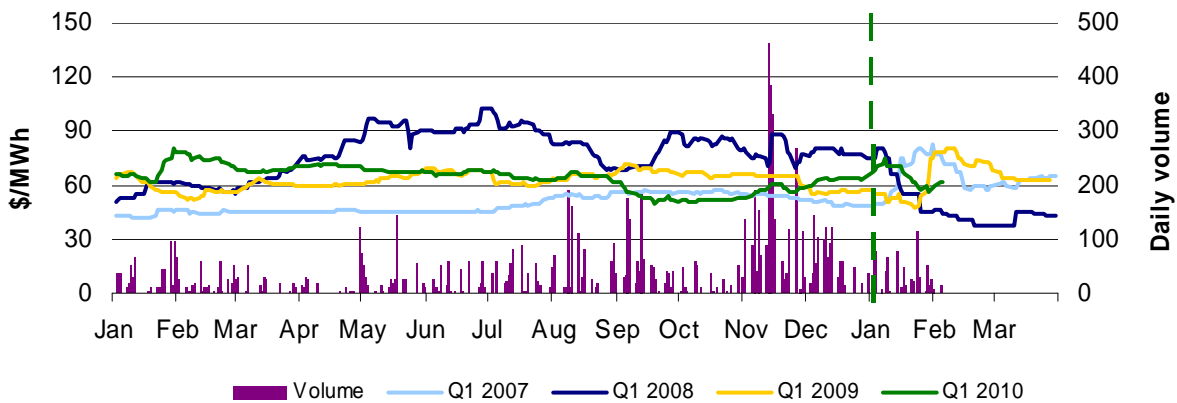


Figure 7: New South Wales Q1 2007, 2008, 2009 and 2010



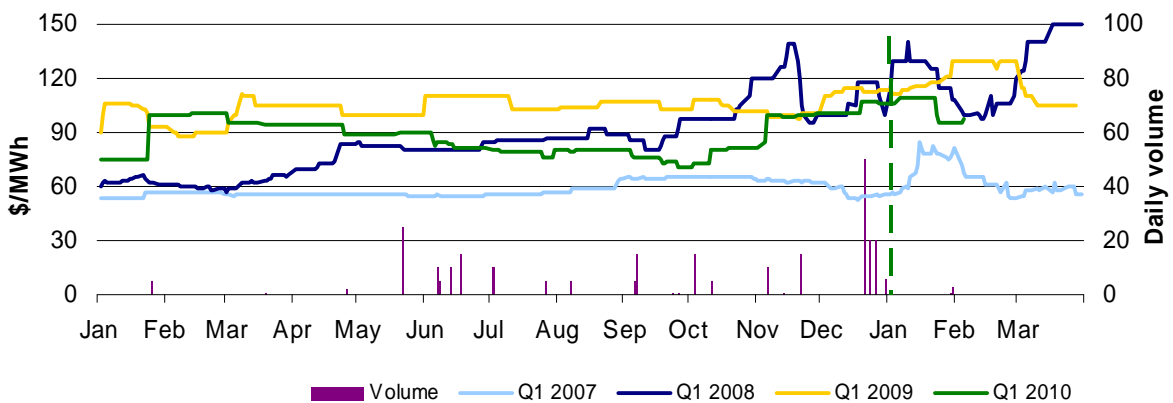
Source: d-cyphaTrade www.d-cyphatrade.com.au

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



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

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



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 119 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.

Figure 10: Reasons for variations between forecast and actual prices

	Availability	Demand	Network	Combination
% of total above forecast	3%	15%	0%	3%
% of total below forecast	32%	37%	0%	10%

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 170 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	-170	104	77	-387
NSW	51	-205	-621	-53
VIC	91	98	43	1012
SA	102	-29	35	144
TAS	136	-161	-5	-19
TOTAL	210	-193	-471	697

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.

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

Ancillary services market

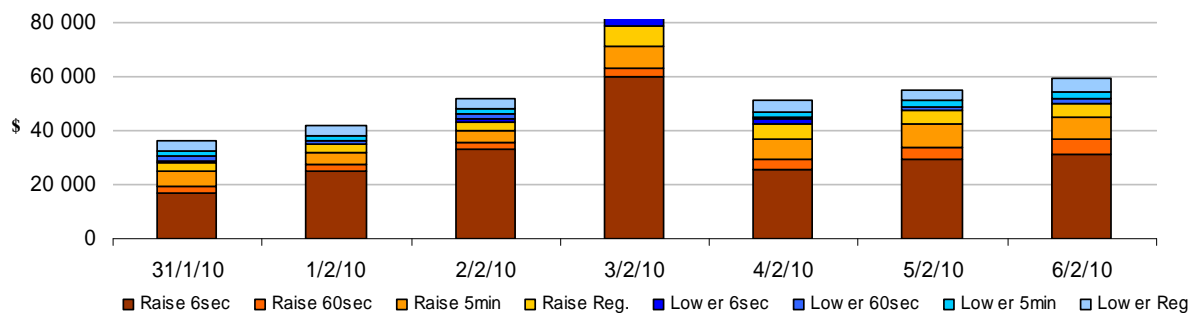
The total cost of frequency control ancillary services (FCAS) on the mainland for the week was \$142 000 or less than one per cent of energy turnover on the mainland.

The total cost of FCAS in Tasmania for the week was \$293 000, which was significantly higher than turnover in the energy market.

On 3 February at 1.05 am the 5-minute price for local raise 6 second ancillary services in Tasmania reached \$10 000/MW caused by the interaction of energy and ancillary services markets. The price returned to \$16/MW immediately after.

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
March 2010

Detailed Market Analysis



AUSTRALIAN ENERGY
REGULATOR

31 January – 6 February 2010

New South Wales: There were five occasions where the spot price in New South Wales was greater than three times the New South Wales weekly average price of \$75/MWh and above \$250/MWh.

Thursday, 4 February

10:30 am	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	1688.31	35.99	36.81
Demand (MW)	10 952	10 737	10 731
Available capacity (MW)	13 034	13 166	13 168
11:00 am	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	4096.95	36.05	33.28
Demand (MW)	10 972	10 799	10 796
Available capacity (MW)	13 398	13 248	13 250
11:30 am	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	1605.87	36.82	32.58
Demand (MW)	10 793	10 862	10 857
Available capacity (MW)	13 416	13 248	13 250
12:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	5540.90	48.56	37.21
Demand (MW)	11 030	10 932	10 919
Available capacity (MW)	13 492	13 248	13 250
12:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	282.41	95.28	60.86
Demand (MW)	11 061	10 968	10 963
Available capacity (MW)	13 509	13 248	13 250

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

Victoria: There were ten occasions where the spot price in Victoria was greater than three times the Victoria weekly average price of \$87/MWh and above \$250/MWh.

Tuesday, 2 February

3:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	502.01	502.01	440.41
Demand (MW)	8938	8676	7952
Available capacity (MW)	9924	9965	10 012
4:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	1412.96	502.01	451.96
Demand (MW)	9005	8721	7961
Available capacity (MW)	9931	9995	10 012
4:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	3555.10	502.01	451.94
Demand (MW)	8807	8738	7942
Available capacity (MW)	10 022	10 025	10 012

Conditions at the time saw demand up to 280 MW higher than forecast 4 hours ahead and around 1000 MW higher than forecast 12 hours ahead. Available capacity was close to that forecast 4 and 12 hours ahead. Prices in South Australia were aligned with those in Victoria.

A constraint used to manage the planned outage of the Hazelwood to Loy Yang No.1 line (which had been out since 31 January 2010) bound from 10.45 am, restricted the dispatch of low-priced generation in the La Trobe Valley by around 800 MW.

An unplanned outage of the No2 330 kV capacitor at Wodonga resulted in the Australian Energy Market Operator (AEMO) invoking constraints at 4 pm which limited Victorian generation and reduced the import limit across the New South Wales to Victoria interconnector (from 218 MW at 3.55 pm to 810 MW at 4 pm and then to 52 MW at 4.05 pm). The 5-minute price increased from \$307/MWh at 3.55 pm to \$9185/MWh at 4.05 pm. The 5-minute price returned to \$315/MWh at 4.15 pm before exceeding \$9000/MWh again at 4.20 pm. At 4.25 pm the 5-minute price fell to \$23/MWh.

At 9.28 am AGL shifted a total of 325 MW of available capacity at McKay and West Kiewa from prices below \$300/MWh to above \$8000/MWh (effective for the period of high prices). The reason given was “0901A chg in AEMO forecasts::Vic incr demand 500MW”.

At 12.11 pm, AGL shifted 45 MW of available capacity at Torrens Island B Unit Two from prices below zero to the price cap. The reason given was “09:58P chg in testing requ :: testing aborted”. Over two rebids at 3.44 pm and 3.47 pm, another 80 MW of available capacity at Torrens Island B Units three and four was shifted from prices below zero to the price cap (effective for 4 pm to 5.30 pm). The reason given was “15:01E SA decr demand 150MW”.

There was no other significant rebidding.

Wednesday, 3 February

2:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	587.42	2295.71	2543.34
Demand (MW)	8780	8614	8530
Available capacity (MW)	9852	10 130	10 073
2:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	1033.83	254.91	6230.58
Demand (MW)	8768	8687	8596
Available capacity (MW)	9816	10 140	10 123
3:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	305.91	2296.77	8791.53
Demand (MW)	8847	8787	8735
Available capacity (MW)	9818	9903	10 218
3:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	2170.44	2302.14	9335.71
Demand (MW)	8967	8895	8835
Available capacity (MW)	9820	9868	10 218
4:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	2176.88	2304.32	9887.15
Demand (MW)	8994	8982	8846
Available capacity (MW)	9815	9895	10 218
4:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	1552.27	2304.61	9981.08
Demand (MW)	8874	9032	8788
Available capacity (MW)	9885	9875	10 198
5:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	319.40	2397.00	8699.04
Demand (MW)	8835	8913	8658
Available capacity (MW)	10 018	9885	10 188

Conditions at the time saw demand higher than forecast (by up to 170 MW 4 hours ahead) for the 2 pm to 4 pm trading intervals inclusive, but lower than forecast for the 4.30 pm and 5 pm trading intervals. Prices in South Australia were aligned with those in Victoria and were generally lower than forecast.

A system normal constraint bound at 1.35 pm, limiting imports into Victoria across the Victoria to New South Wales interconnector, eventually forcing flows into New South Wales (counter price) by 3.55 pm.

As per the previous day, a constraint used to manage the planned outage of the Hazelwood to Loy Yang No.1 line (which had been out since 31 January 2010) bound from 10.25 am, again restricting the dispatch of low-priced generation in the La Trobe Valley.

At 6.51 am Snowy Hydro rebid 300 MW of available generation at Valley Power from prices above \$9000/MWh to below \$5/MWh. The reason given was “6:50 A Vic demand 470 hgher thn 30MPD 06:50 @6:02”.

At 9.56 am AGL rebid 210 MW of available capacity at Torrens Island from prices at the price cap to below \$35/MWh. The reason given was “21:01A chg in AEMO forecasts::Vic incr demand 600 MW”.

Over several rebids from 11.03 am Origin Energy shifted around 160 MW across its South Australian portfolio from prices above \$9000/MWh to below zero. The reasons given were related to changes in predispatch.

At 12.41 pm LYMMCo rebid 542 MW of available capacity at Loy Yang A from prices above \$9000/MWh to below zero. The reason given was “1241F constraint management – V>>V-HWLY_1”. This rebid was extended on several occasions shifting up to 582 MW into negative price bands (the same reason was given with only a different time). Even though the constraint was backing the Loy Yang A units off these rebids resulted in more low-priced capacity dispatched than was forecast.

Over several rebids from 12.49 pm Ecogen shifted up to 160 MW of available capacity at Newport and Jeeralang unit two from prices above \$9600/MWh to below \$25/MWh. The reasons given were “12.47A Band adj due to demand highr thn forecast 8751 vs 8645” and “13.58P MW redistribution due to portfolio plant conditions”.

There was no other significant rebidding.

South Australia: There were ten occasions where the spot price in South Australia was greater than three times the South Australia weekly average price of \$86/MWh and above \$250/MWh.

Tuesday, 2 February

3:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	484.77	515.56	573.48
Demand (MW)	2373	2511	2494
Available capacity (MW)	2700	2667	2585
4:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	1338.89	517.84	590.00
Demand (MW)	2400	2524	2508
Available capacity (MW)	2733	2667	2584
4:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	3322.12	522.61	619.61
Demand (MW)	2405	2546	2528
Available capacity (MW)	2747	2664	2580

Conditions at the time saw demand lower than forecast and available capacity higher than forecast 4 hours ahead. Prices in South Australia were aligned with those in Victoria (see the Victorian section for details).

Wednesday, 3 February

2:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	563.53	3424.38	4038.22
Demand (MW)	2383	2328	2273
Available capacity (MW)	2746	2702	2761
2:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	1003.79	261.21	6616.57
Demand (MW)	2402	2340	2277
Available capacity (MW)	2692	2702	2749
3:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	283.47	2362.88	9000.40
Demand (MW)	2366	2349	2289
Available capacity (MW)	2734	2701	2740
3:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	2040.63	2355.97	9292.31
Demand (MW)	2382	2353	2306
Available capacity (MW)	2758	2704	2759
4:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	2037.13	2357.02	9800.00
Demand (MW)	2407	2362	2348
Available capacity (MW)	2770	2697	2752
4:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	1476.63	2282.37	9901.03
Demand (MW)	2411	2386	2377
Available capacity (MW)	2753	2703	2768
5:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	304.04	2353.77	9000.40
Demand (MW)	2379	2392	2371
Available capacity (MW)	2765	2701	2766

Conditions at the time saw demand and available capacity close to that forecast 4 and 12 hours ahead. Prices in South Australia were aligned with those in Victoria (see the Victorian section for details).

Detailed NEM Price and Demand Trends

for Weekly Market Analysis
31 January - 6 February 2010



AUSTRALIAN ENERGY
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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)	44	64	38	93	27
2008-09 (\$/MWh) (YTD)	39	47	60	89	50
Change*	12%	35%	-37%	4%	-47%
2008-09 (\$/MWh)	36	43	49	69	62

Table 2: NEM turnover

Financial year	NEM Turnover** (\$, billion)	Energy (TWh)
2009-10 (YTD)	\$6.511	125
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)
Oct-09	27	28	26	30	26	0.459
Nov-09	99	138	36	325	34	1.924
Dec-09	34	130	25	26	32	1.066
Jan-10	67	63	88	160	30	1.336
Feb-10 (MTD)	28	82	96	94	-5	0.244
Q4 2009	53	100	29	134	31	3.555
Q4 2008	39	51	34	32	44	2.133
Change*	35%	97%	-13%	312%	-30%	66.66%

Table 4: ASX energy futures contract prices at 8 February

	QLD		NSW		VIC		SA	
Q1 2010	Base	Peak	Base	Peak	Base	Peak	Base	Peak
Price on 01 Feb (\$/MW)	49	81	45	70	56	103	95	185
Price on 8 Feb (\$/MW)	47	81	50	70	62	110	97	185
Open interest on 08 Feb	2903	200	3563	177	4218	305	150	30
Traded in the last week (MW)	11	0	37	0	62	1	3	0
Traded since 1 Jan 09 (MW)	7638	350	8308	228	10012	612	261	20
Settled price for Q1 09(\$/MW)	35	48	38	48	62	114	102	200

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

Comparison:	QLD	NSW	VIC	SA	TAS	NEM
December 09 with December 08						
MW Priced <\$20/MWh	872	-206	-165	503	-14	991
MW Priced \$20 to \$50/MWh	-423	-115	540	-68	441	375
January 10 with January 09						
MW Priced <\$20/MWh	808	-25	168	179	-168	961
MW Priced \$20 to \$50/MWh	-603	47	-138	45	799	150
February 10 with February 09						
MW Priced <\$20/MWh	341	-738	10	73	107	-206
MW Priced \$20 to \$50/MWh	-561	420	-222	245	589	471

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

** Estimated value