

WEEKLY ELECTRICITY MARKET ANALYSIS



AUSTRALIAN ENERGY
REGULATOR

3 October – 9 October 2010

Summary

Weekly average spot prices ranged from \$6/MWh in South Australia to \$23/MWh in New South Wales. The \$6/MWh price in South Australia (the lowest on record for that region) was driven by a combination of low demand (there was a public holiday on Monday 4 October), high volumes of (low cost) wind generation and significant other capacity offered at low prices. As a result, there were 20 negative spot prices in total on 3, 4 and 6 October, seven of which were below \$-500/MWh. The reasons for the negative spot prices are explained in detail in Appendix A.

Spot market prices

Figure 1 sets out the volume weighted average prices for the week 3 October to 9 October 2010 and the 2010-11 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 3 Oct - 9 Oct 2010	21	23	20	6	18
% change from previous week*	-5	-8	-5	-73	-1
10/11 financial YTD	22	29	26	27	40
% change from 09/10 financial YTD **	-18	3	1	-1	66

*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 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 11 October 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. An overview of the market's performance in the long-term is provided on the AER website. Long-term statistics on demand, spot prices, contract prices and frequency control ancillary services prices are available amongst other things.

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 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	31*	-1%	41*	-1%	35*	-2%	42*	-2%
Calendar Year 2012	34*	-1%	44*	0%	38*	-2%	45	-2%
Calendar Year 2013	50	-1%	56	0%	55	0%	69	0%
Three year average	38	-1%	47	0%	43	-1%	52	-1%

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, the 2011 calendar year and the percentage change⁴ from the previous week.

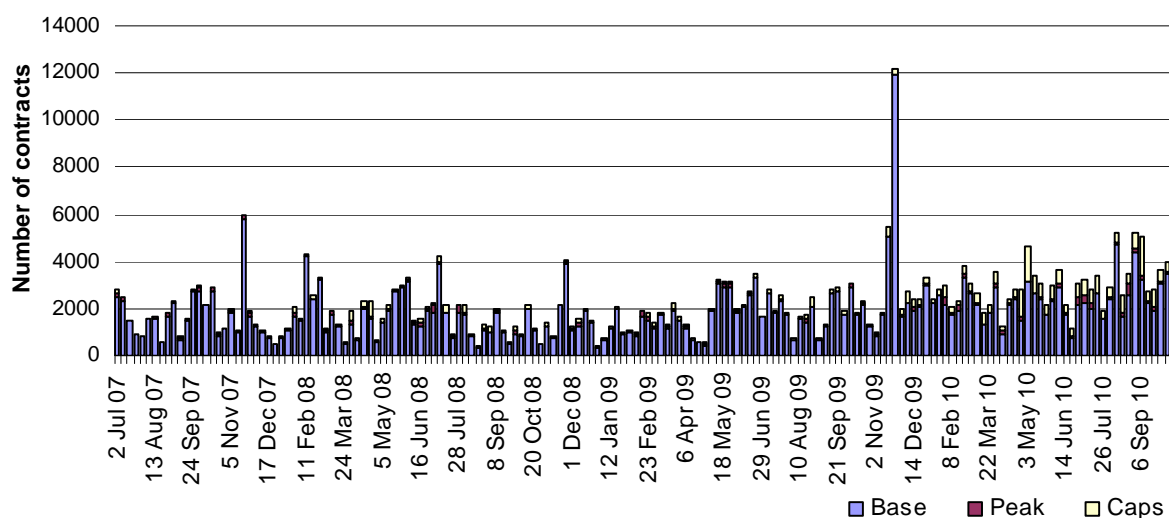
Figure 3: \$300 cap contract prices (\$/MWh)

	QLD		NSW		VIC		SA	
Q1 2011 (% change)	15*	-6%	20*	-1%	24*	0%	31	-25%
2011 (% change)	7	-4%	13	1%	9	-1%	11	-1%

Source: d-cyphaTrade www.d-cyphatrade.com.au
 * denotes trades in the product.

Figure 4 shows weekly trading volumes for base, peak and cap contracts since July 2007. The date represents the end of the trading week.

Figure 4: Number of exchange traded contracts per week

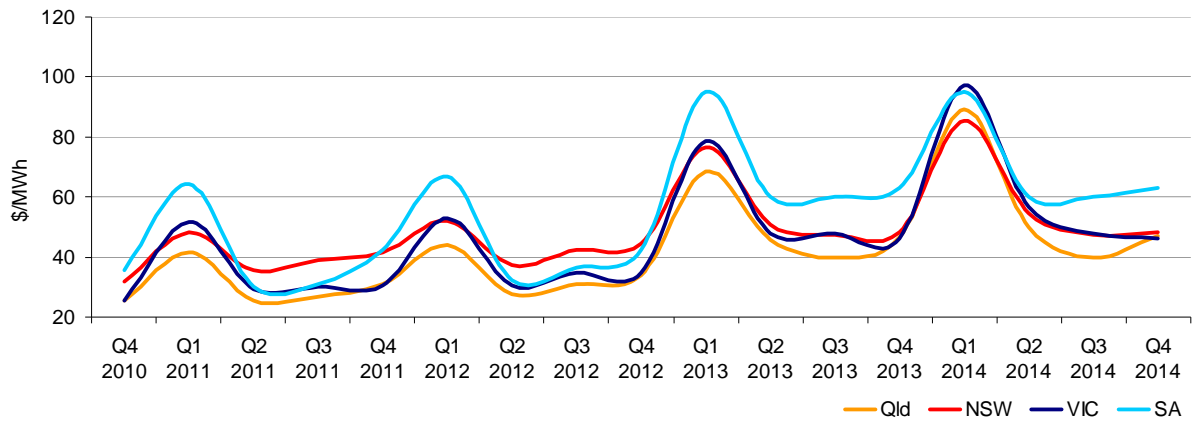


Source: d-cyphaTrade www.d-cyphatrade.com.au

⁴ Calculated on prices prior to rounding.

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

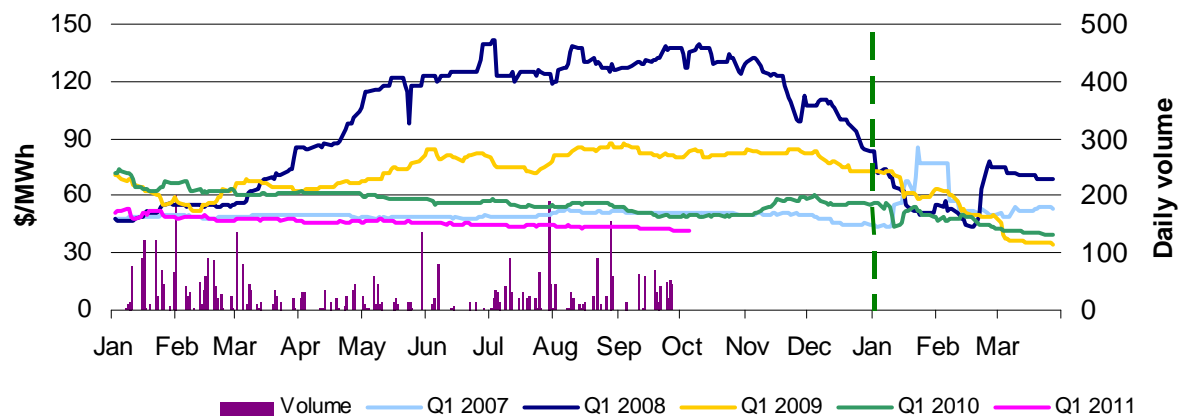
Figure 5: Quarterly base future prices Q4 2010 – Q4 2014



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

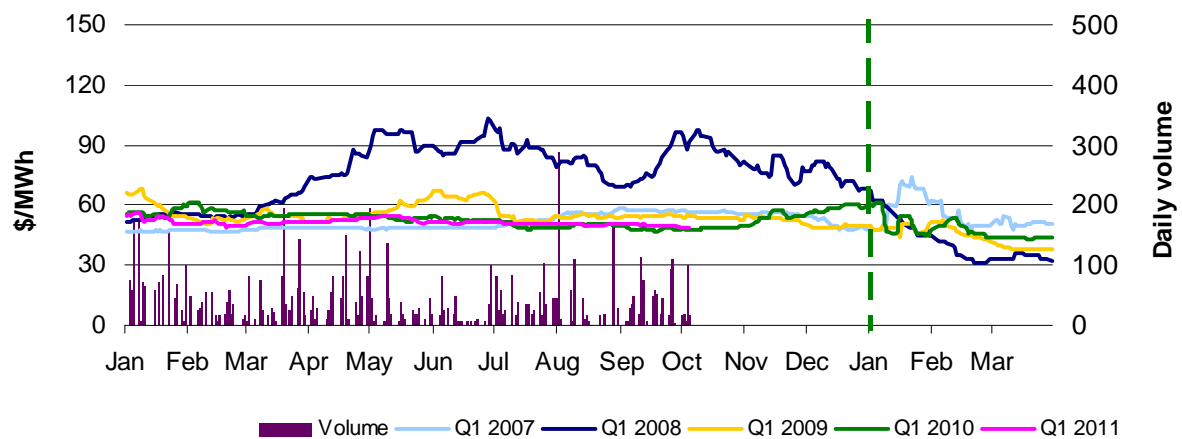
Figures 6-9 compare for each region the closing daily base contract prices for the first quarter of 2007, 2008, 2009, 2010 and 2011. Also shown is the daily volume of Q1 2011 base contracts traded. The vertical dashed line signifies the start of the Q1 period for which the contracts are being purchased.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



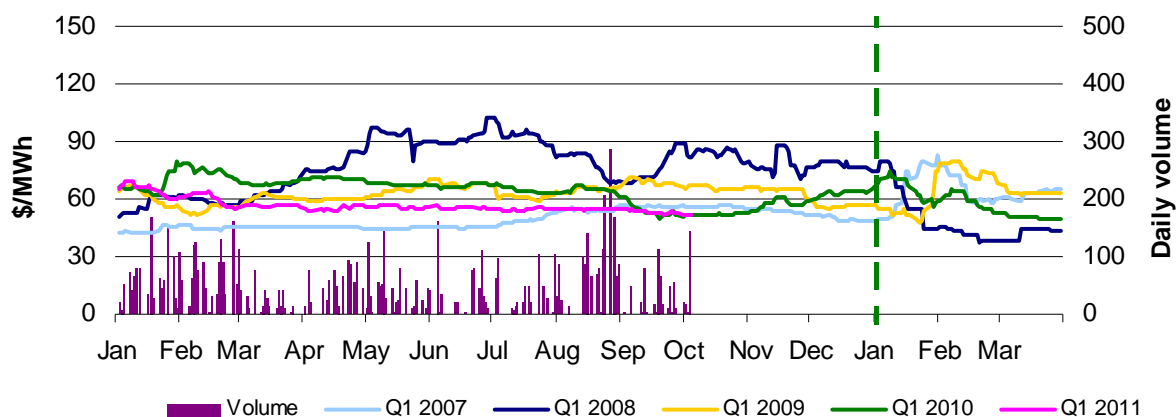
Source: d-cyphaTrade www.d-cyphatrade.com.au

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



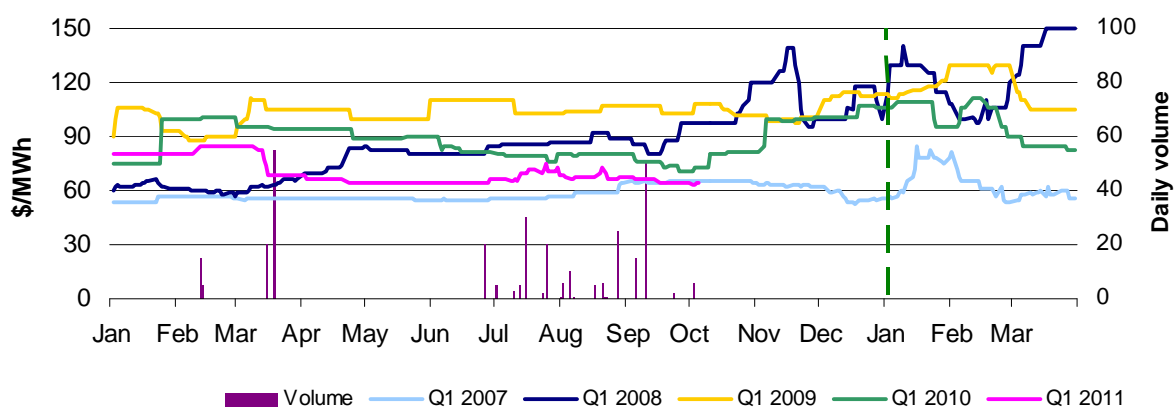
Source: d-cyphaTrade www.d-cyphatrade.com.au

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.

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 49 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 spot prices

	Availability	Demand	Network	Combination
% of total above forecast	0	10	0	1
% of total below forecast	41	34	0	14

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 194 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	194	-152	192	127
NSW	380	259	682	-283
VIC	-124	-178	-517	-380
SA	-337	75	-207	-165
TAS	-132	18	-232	-123
TOTAL	-19	22	-82	-824

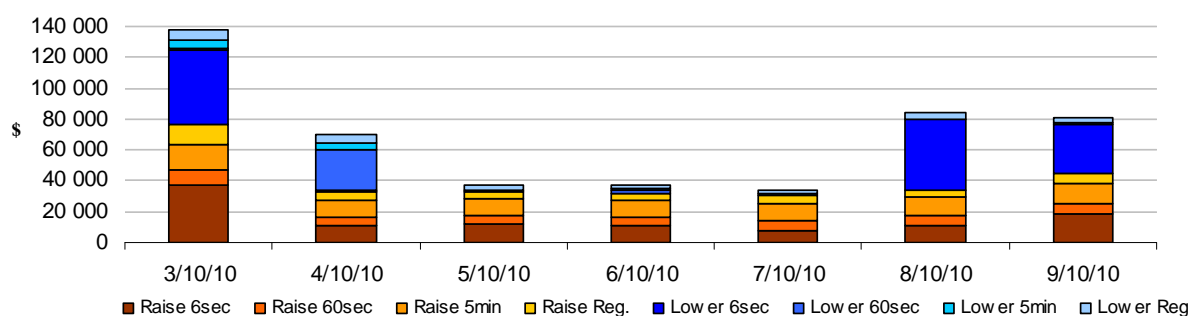
Ancillary services market

The total cost of frequency control ancillary services (FCAS) on the mainland for the week was \$298 000 or less than one per cent of energy turnover on the mainland.

The total cost of FCAS in Tasmania for the week was \$184 000 or less than six per cent of energy turnover in Tasmania. As a result of the interaction between the energy and FCAS markets, the price for lower 6-second services in Tasmania reached \$2499/MW at 5.45 am on 3 October, \$3858/MW at 3.05 am on 8 October and \$2870/MW at 3.10 am on 9 October, driving high FCAS costs in Tasmania on those days.

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 October 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



3 October – 9 October 2010

South Australia:

There were 20 occasions throughout the week when the spot price in South Australia was less than zero. Details of the price outcomes and market conditions at the time are presented below.

Sunday, 3 October

On Sunday 3 October, the spot price in South Australia was less than zero on 13 occasions. The following table compares the spot price and demand with forecasts prepared four hours ahead.

Time	Spot Price \$/MWh		Demand (MW)	
	Actual	4 hr forecast	Actual	4 hr forecast
2.30 am	-27.21	15.00	1052	1037
3 am	-33.01	10.74	990	994
4 am	-0.30	9.92	968	954
4.30 am	-851.75	-996.70	947	946
5 am	-996.70	-996.70	943	950
6.30 am	-187.06	10.11	961	997
7 am	-996.70	11.22	976	1012
7.30 am	-828.92	11.36	1010	1037
9.30 am	-1.23	16.34	1093	1098
1 pm	-4.69	11.36	1109	1224
1.30 pm	-6.64	11.36	1113	1244
2 pm	-340.98	11.22	1139	1253
2.30 pm	-658.68	14.55	1153	1270

Conditions at the time saw very low demand as a result of the public holiday weekend and up to 790 MW of low priced wind generation being dispatched. Prices for the 4.30 am and 5 am trading intervals were close to forecast with AGL presenting 370 MW of its capacity at Torrens Island at prices close to the price floor. This offer was established day ahead.

At 6.21 am, AGL rebid 240 MW of capacity at Torrens Island into low prices for the 6.30 am to 7.30 am trading intervals. A further rebid at 1.39 pm saw 280 MW of capacity at Torrens

Island shifted to prices near the price floor for the 2 pm to 3 pm trading intervals. The reason given for all of these rebids was “chg in dispatch::price decrease vs pd SA”

The extremely low prices saw some wind farms reduce generation during these periods.

Monday, 4 October

On Monday 4 October, the price in South Australia fell to below zero for five trading intervals.

Spot Price \$/MWh			Demand (MW)	
Time	Actual	4 hr forecast	Actual	4 hr forecast
3 am	-4.69	10.15	1020	1068
3.30 am	-8.89	9.05	999	1055
4 am	-512.76	9.80	994	1058
4.30 am	-159.71	11.26	980	1072
7.30 am	-503.13	24.00	1109	1576

Conditions at the time saw low levels of demand reflecting the public holiday in South Australia. Actual demands early in the morning were almost 500 MW lower than forecast four hours ahead as it failed to account for the public holiday conditions. Wind generation was at only moderate levels.

At 5.32 pm the Sunday before, effective from the 4.30 am to 7 am trading intervals, International Power rebid 280 MW of capacity at Pelican Point at close to the price floor. The reason given was “Fuel management due to line pack conditions”.

Over two rebids AGL shifted around 200 MW of capacity close to the price floor at Torrens Island affecting the 4 am, 4.30 am and the 7.30 am trading intervals. The reasons given were related to changes in forecast prices and demand in South Australia.

Wednesday, 6 October

On Wednesday 6 October, the price in South Australia fell to below zero for two trading intervals during the day.

Spot Price \$/MWh			Demand (MW)	
Time	Actual	4 hr forecast	Actual	4 hr forecast
2 pm	-175.50	20.25	1422	1447
5 pm	-83.27	17.65	1378	1394

Conditions at the time saw record levels of wind generation, of around 900 MW, dispatched. At 1.16 pm AGL rebid 120 MW of capacity at Torrens Island to prices close to the price floor for the 2 pm and 2.30 pm trading intervals. A further rebid at 4.38 pm shifted 250 MW of capacity at Torrens Island to prices close to the price floor, for the 5 pm to 6 pm trading intervals. The reasons given were related to changes in forecast prices in South Australia.

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	22	29	26	27	40
2009-10 (\$/MWh) YTD	26	29	25	27	24
Change*	-18%	3%	1%	-1%	66%
2009-10 (\$/MWh)	37	52	42	82	30

Table 2: NEM turnover

Financial year	NEM Turnover** (\$, billion)	Energy (TWh)
2010-11 (YTD)	\$1.558	58
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)
Jun-10	23	35	33	38	32	0.563
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 (MTD)	21	23	20	9	18	0.099
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 11 October

	QLD		NSW		VIC		SA	
	Base	Peak	Base	Peak	Base	Peak	Base	Peak
Q1 2011								
Price on 04 Oct (\$/MW)	42	72	50	81	52	93	65	108
Price on 11 Oct (\$/MW)	41	71	48	80	52	92	65	108
Open interest on 11 Oct	1618	147	2500	284	2238	110	137	0
Traded in the last week (MW)	70	0	157	7	169	0	6	0
Traded since 1 Jan 10 (MW)	4443	150	7211	379	8257	150	309	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
August 10 with August 09						
MW Priced <\$20/MWh	566	-841	-562	184	-86	-739
MW Priced \$20 to \$50/MWh	85	715	537	46	313	1696
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 (MTD)						
MW Priced <\$20/MWh	981	397	234	632	345	2589
MW Priced \$20 to \$50/MWh	241	-496	76	-172	-30	-382

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

** Estimated value