

# WEEKLY MARKET ANALYSIS



4 – 10 January 2009

## Summary

Average spot prices on the mainland ranged from \$32/MWh in Victoria to \$38/MWh in New South Wales. The average spot price in Tasmania was \$45/MWh.

## Spot market prices

Figure 1 sets out the volume weighted average prices for 4 to 10 January and the financial year to date across the National Electricity Market. 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
Ave price for 4 – 10 January	34	38	32	33	45
Financial year to 10 January	38	45	38	37	44
% change from previous week*	25%	60%	69%	67%	50%
% change from year to date**	-32%	-10%	-29%	-52%	-20%

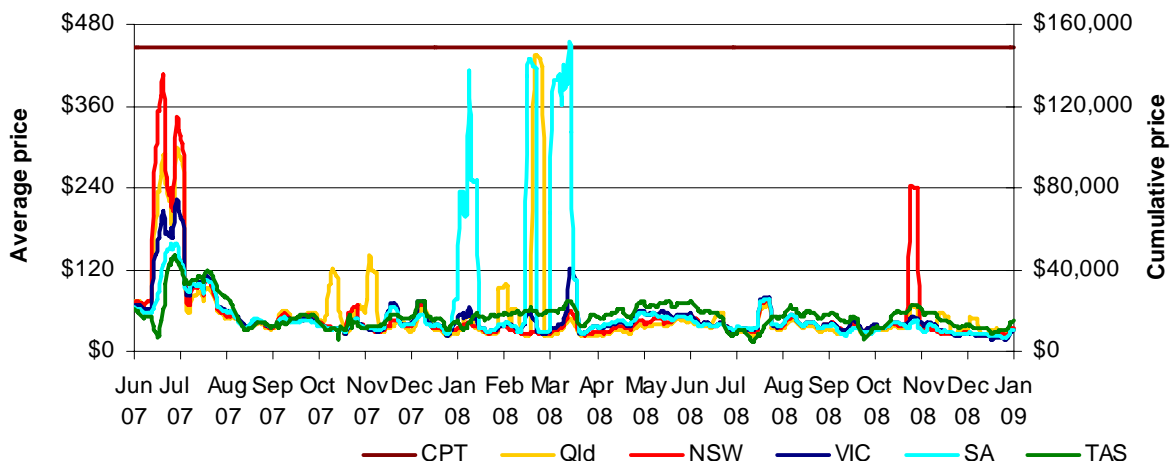
\*The percentage change between last week's average spot price and the average price for the previous week.

\*\*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.

The AER provides further information if the spot price exceeds three times the weekly average. Details of these events are attached in Appendix A. Longer term market trends are attached in Appendix B.

Figure 2 shows the seven day rolling cumulative price for each region together with the Cumulative Price Threshold (CPT) (and the equivalent seven day time-weighted average price).

**Figure 2: Seven day rolling cumulative price and CPT**



## Financial markets

Figures 3 to 10 show futures contract<sup>1</sup> prices traded on the Sydney Futures Exchange (SFE) as at close of trade on Monday 12 January. Figure 3 shows the base futures contract prices for the next three financial years, and the three year average. Also shown are percentage changes compared to a week earlier.

**Figure 3: Base financial year futures contract prices (\$/MWh)**

	QLD		NSW		VIC		SA	
Financial 2009-10	48	0%	48	1%	49	1%	57	0%
Financial 2010-11	61	0%	61	1%	64	1%	62	0%
Financial 2011-12	64	0%	63	0%	67	3%	65	0%
Three year average	58	0%	57	1%	60	2%	61	0%

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

Figure 4 shows the \$300 cap contract price for the first quarter of 2009 and the 2009 calendar year and the change from the previous week.

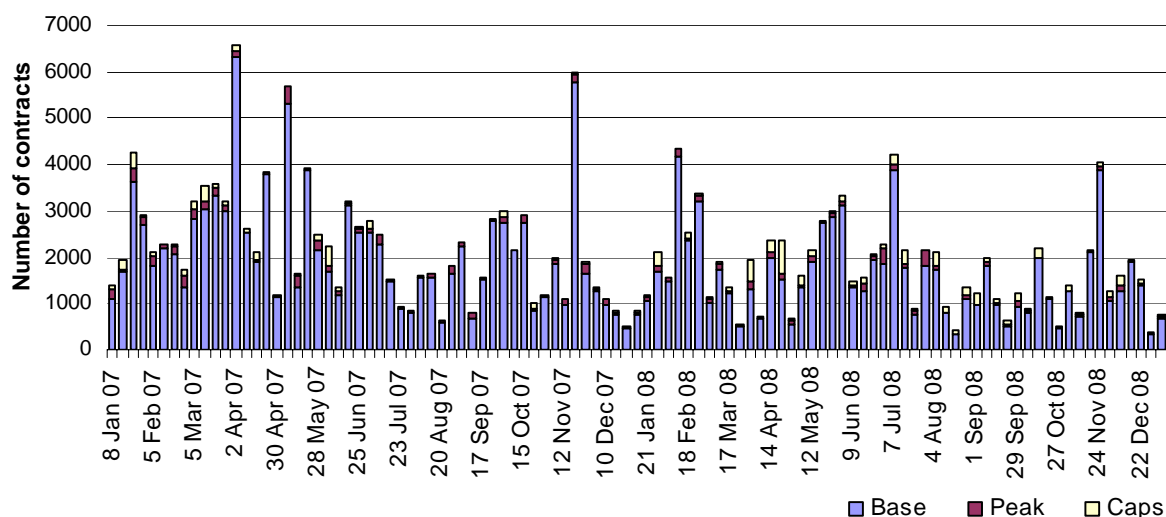
**Figure 4: \$300 cap contract prices (\$/MWh)**

	QLD		NSW		VIC		SA	
Q1 2009 price	36	2%	14	0%	17	-6%	75	0%
Calendar 2009	14	1%	9	0%	9	-3%	23	0%

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

Figure 5 shows the weekly trading volumes for base, peak and cap contracts. The date represents the end of the trading week.

**Figure 5: Number of exchange traded contracts per week**

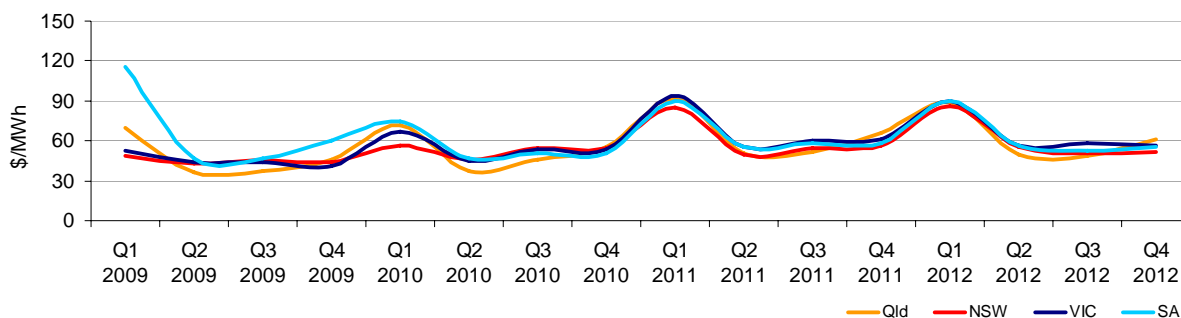


Source: d-cyphaTrade [www.d-cyphatrade.com.au](http://www.d-cyphatrade.com.au)

<sup>1</sup> Futures contracts 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.

Figure 6 shows the prices for base contracts for each quarter for the next four years.

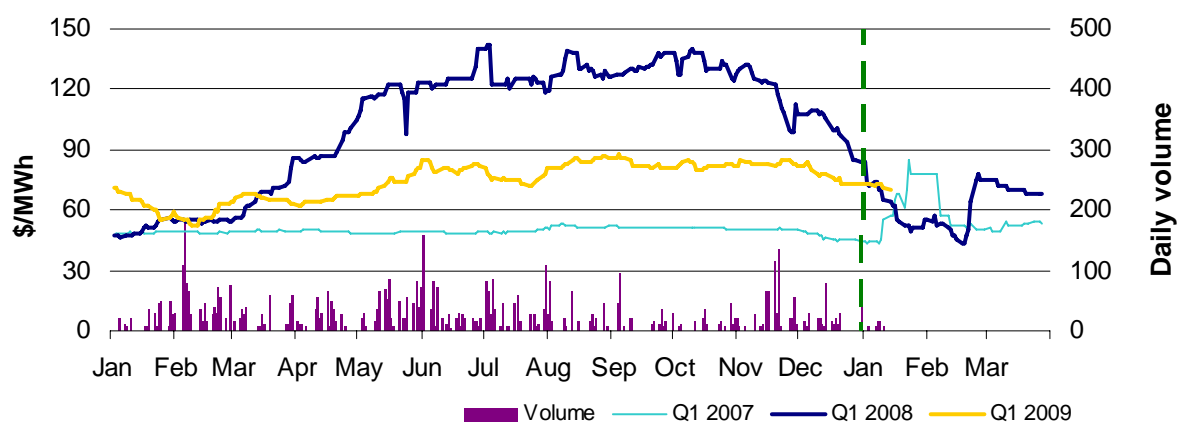
**Figure 6: Quarterly base future prices 2009 - 2012**



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

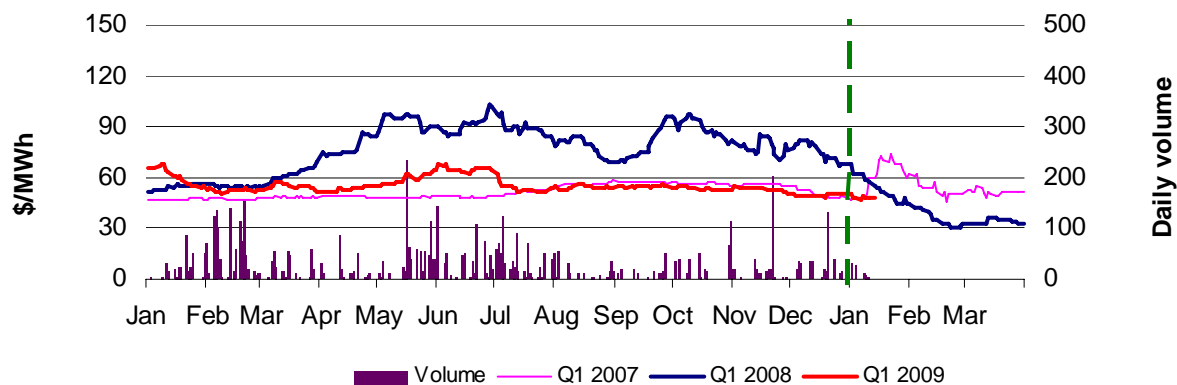
Figures 7-10 compare for each region the closing daily base contract prices for the first quarter of 2007, 2008 and 2009. Also shown is the daily volume of Q1 2009 base contracts traded. The vertical dashed line signifies the start of the Q1 period.

**Figure 7: Queensland Q1 2007, 2008 and 2009**



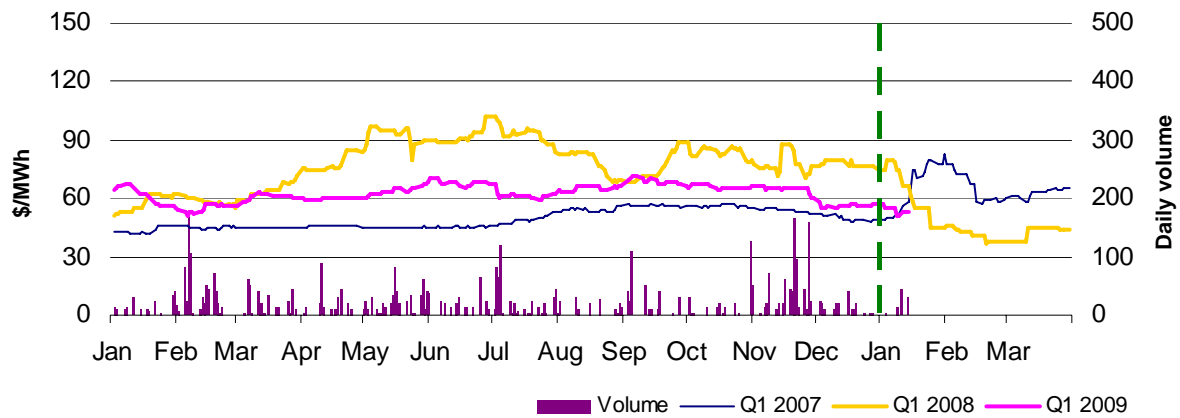
Source: d-cyphaTrade [www.d-cyphatrade.com.au](http://www.d-cyphatrade.com.au)

**Figure 8: New South Wales Q1 2007, 2008 and 2009**



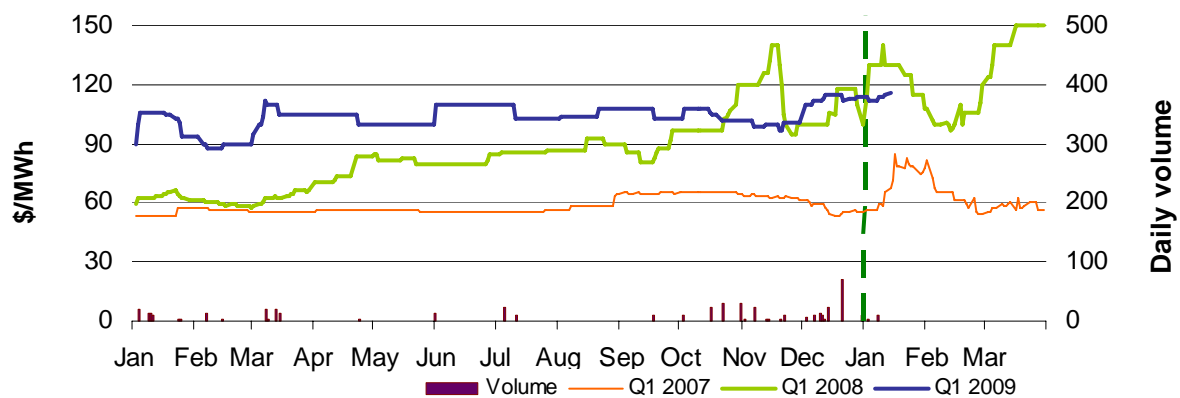
Source: d-cyphaTrade [www.d-cyphatrade.com.au](http://www.d-cyphatrade.com.au)

**Figure 9: Victoria Q1 2007, 2008 and 2009**



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

**Figure 10: South Australia Q1 2007, 2008 and 2009**



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

### 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 NEMMCO and the actual spot price and, if there is a variation, state why the AER considers that 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 137 trading intervals where actual prices significantly varied from forecasts<sup>2</sup> throughout the week. This compares to the weekly average in 2008 of 130 counts. Reasons for these variances are summarised in Figure 11<sup>3</sup>.

**Figure 11: Reasons for variations between forecast and actual prices**

	Availability	Demand	Network	Combination
% of total above forecast	5%	34%	0%	2%
% of total below forecast	49%	10%	0%	0%

<sup>2</sup> A trading interval is counted as having a variation if the actual price differs significantly from the forecast price either four or twelve hours ahead.

<sup>3</sup> The table summarises (as a percentage) the number of times when the actual price differs significantly from the forecast price four or twelve 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 twelve and four 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 12 shows changes to the offer price and available capacity of generation in each region for the peak periods only<sup>4</sup>. For example, in Queensland 42 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 12: Changes in available generation and average demand compared to the previous week during peak times**

\$/MWh	<20	Between 20 and 50	Total availability	Change in average demand
Queensland	-42	129	33	-2
New South Wales	357	179	626	1616
Victoria	-299	537	-230	890
South Australia	187	-73	105	346
Tasmania	91	-176	-40	76
Total	294	596	494	2926

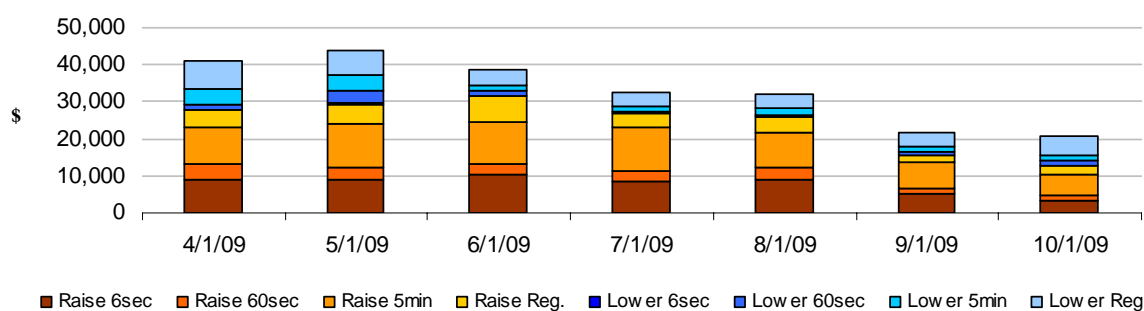
## Ancillary services market

The total cost of frequency control ancillary services on the mainland for the week was \$179 000 or less than one per cent of turnover in the energy market.

The total cost of ancillary services in Tasmania for the week was \$51 000 or less than three per cent of turnover in the energy market in Tasmania

Figure 13 shows the daily breakdown of cost for each frequency control ancillary service for the NEM.

**Figure 13: Daily frequency control ancillary service cost**



## Australian Energy Regulator January 2009

<sup>4</sup> Peak period is defined as between 7 am and 10 pm on weekdays, which aligns with the SFE contract definition.

## Detailed Market Analysis



4 – 10 January 2009

**National:** There were four occasions where the spot price aligned nationally and the New South Wales price was greater than three times the New South Wales weekly average price of \$38/MWh. The New South Wales spot price has been used as a proxy national price under these conditions as New South Wales is located in the centre of the NEM.

### Tuesday, 6 January

<b>2:30 pm</b>	<b>Actual</b>	<b>4 hr forecast</b>	<b>12 hr forecast</b>
Price (\$/MWh)	119.64	99.54	89.99
Demand (MW)	30 310	29 981	29 642
Available capacity (MW)	36 003	36 804	36 988
<b>3:00 pm</b>	<b>Actual</b>	<b>4 hr forecast</b>	<b>12 hr forecast</b>
Price (\$/MWh)	119.64	89.99	96.45
Demand (MW)	30 409	30 179	29 881
Available capacity (MW)	35 890	36 823	37 018
<b>3:30 pm</b>	<b>Actual</b>	<b>4 hr forecast</b>	<b>12 hr forecast</b>
Price (\$/MWh)	151.44	119.64	98.06
Demand (MW)	30 621	30 535	30 017
Available capacity (MW)	35 991	36 225	37 042
<b>4:00 pm</b>	<b>Actual</b>	<b>4 hr forecast</b>	<b>12 hr forecast</b>
Price (\$/MWh)	276.40	119.64	101.00
Demand (MW)	30 696	30 732	30 120
Available capacity (MW)	36 023	36 308	37 077

Conditions at the time saw demand up to 330 MW greater than forecast four hours ahead and available capacity up to 930 MW less than forecast four hours ahead.

At 11.45 am, NEMMCO declared a Low Reserve Condition in New South Wales for the 12 pm and 1.30 pm to 5 pm trading intervals. The maximum reserve deficiency in the New South Wales region was estimated to be 44 MW.

At 8.01 am, Tarong rebid 115 MW of capacity at Tarong units two, three and four and at Wivenhoe unit one from prices below \$35/MWh to above \$9500/MWh. The reason given was “Uneconomic Wivenhoe run::volume portfolio change”.

Over two rebids at 9.38 am and 12.27 am, Stanwell Corporation reduced the available capacity across its portfolio by 140 MW, the majority of which was priced below \$40/MWh. The reasons given were “Technical issues::Change avail/MW” and “Revised unit RTS/OOS::Change availability”.

At 10.41 am, Macquarie Generation’s Liddell unit two tripped reducing available capacity by 515 MW, all of which was priced below \$90/MWh.

At 12.45 pm, Delta Electricity reduced the available capacity at Wallerawang unit seven by 100 MW, the majority of which was priced below \$35/MWh. The reason given was “Dust burden::Capacity limit change”. Over several rebids from 12.26 pm Delta Electricity shifted up to 1080 MW of capacity across its portfolio from prices below \$25/MWh to above \$9500/MWh. The majority of this was first effective at 3.20 pm. The reasons included “Spot price higher than forecast::Band Shift” and “NSW capacity change::Band shift and ROC change”.

Over two rebids at 1.02 pm and 1.19 pm, Millmerran Energy Trader rebid 150 MW of capacity across its Millmerran units one and two from prices below \$10/MWh to above \$9700/MWh. The reasons given were “Change in predispatch::Change MW distribution” and “QNI Constraint ::Change MW distribution”.

There was no other significant rebidding.

**Queensland:** There were 11 occasions where the spot price in Queensland was greater than three times the Queensland weekly average price of \$34/MWh. Four of these occurred when prices were generally aligned across all regions and is detailed in the national market outcomes section. The remaining seven occasions are presented below.

### **Tuesday, 6 January**

<b>5:00 pm</b>	<b>Actual</b>	<b>4 hr forecast</b>	<b>12 hr forecast</b>
Price (\$/MWh)	104.15	54.40	43.49
Demand (MW)	7540	7498	7615
Available capacity (MW)	10 007	10 207	10 501

Conditions at the time saw demand close to forecast and available capacity 200 MW less than that forecast four hours ahead.

At 12.27 pm, Stanwell Corporation reduced the available capacity at Gladstone unit four by 280 MW, all which was priced \$30/MWh. The reason given was “Revised unit RTS/OOS::Change availability”.

At 1.09 pm CS Energy rebid 155 MW of capacity at Callide B and Swanbank unit one from prices below \$55/MWh to prices above \$100/MWh. The reason given was “N Manage interconnector constraint”.

At 3.44 pm, Millmerran Energy Trader rebid 120 MW of capacity across its Millmerran units one and two from prices below \$10/MWh to prices above \$9700/MWh. The reason given was “Change in predispatch::Change MW distribution”.

There was no other significant rebidding.

**Wednesday, 7 January**

<b>12:30 pm</b>	<b>Actual</b>	<b>4 hr forecast</b>	<b>12 hr forecast</b>
Price (\$/MWh)	109.46	67.16	54.46
Demand (MW)	7578	7556	7557
Available capacity (MW)	9570	10 227	10 242
<b>2:00 pm</b>	<b>Actual</b>	<b>4 hr forecast</b>	<b>12 hr forecast</b>
Price (\$/MWh)	102.78	98.62	66.94
Demand (MW)	7571	7724	7683
Available capacity (MW)	9510	9980	10 238
<b>2:30 pm</b>	<b>Actual</b>	<b>4 hr forecast</b>	<b>12 hr forecast</b>
Price (\$/MWh)	121.56	120.58	68.39
Demand (MW)	7563	7745	7708
Available capacity (MW)	9505	9789	10 238
<b>3:00 pm</b>	<b>Actual</b>	<b>4 hr forecast</b>	<b>12 hr forecast</b>
Price (\$/MWh)	124.37	119.84	84.19
Demand (MW)	7555	7730	7694
Available capacity (MW)	9636	9788	10 238
<b>3:30 pm</b>	<b>Actual</b>	<b>4 hr forecast</b>	<b>12 hr forecast</b>
Price (\$/MWh)	123.25	119.82	83.92
Demand (MW)	7606	7720	7670
Available capacity (MW)	9640	9790	10 238
<b>4:00 pm</b>	<b>Actual</b>	<b>4 hr forecast</b>	<b>12 hr forecast</b>
Price (\$/MWh)	110.29	119.00	82.12
Demand (MW)	7621	7685	7639
Available capacity (MW)	9752	9791	10 238

Conditions at the time saw demand up to 180 MW and available capacity up to 660 MW less than that forecast. Prices were close to those forecast four hours ahead. Queensland and NSW prices were aligned during the period.

At 5.14 am Stanwell Corporation reduced the available capacity of Gladstone units three and four by 110 MW, all of which was priced below \$30/MWh. The reasons given were “Unit ramp up/down pre/post outage::change availability” and “Technical issues::change avail”. At 8.26 am, Stanwell unit four’s available capacity was reduced by 185 MW, 95 MW of this capacity was priced below \$25/MWh. The reason given was “Technical issues – FD Fan::Change avail”. At noon, Gladstone unit four’s available capacity was further reduced by 270 MW to zero, all of which was priced below \$30/MWh. The reason given was “Unit trip – Heater level Trip::Change availability”.

At 9.38 am, Millmerran Energy Trader reduced available capacity at Millmerran unit two by 185 MW, all of which was priced below \$10/MWh. The reason given was “Change plant conditions”.

There was no other significant rebidding.



**New South Wales:** There were 10 occasions where the spot price in New South Wales was greater than three times the New South Wales weekly average price of \$38/MWh. Four of these occurred when prices were generally aligned across all regions and is detailed in the national market outcomes section. The remaining six occasions are presented below.

### **Tuesday, 6 January**

<b>4:30 pm</b>	<b>Actual</b>	<b>4 hr forecast</b>	<b>12 hr forecast</b>
Price (\$/MWh)	147.82	119.19	98.88
Demand (MW)	12 427	12 611	12 308
Available capacity (MW)	12 129	12 080	12 625
<b>5:00 pm</b>	<b>Actual</b>	<b>4 hr forecast</b>	<b>12 hr forecast</b>
Price (\$/MWh)	114.53	119.64	89.83
Demand (MW)	12 259	12 446	12 275
Available capacity (MW)	12 139	12 082	12 625

Conditions at the time saw demand, available capacity and price close to that forecast four hours ahead. Available capacity was 540 MW lower than that forecast 12 hours ahead.

At 10.41 am Macquarie Generation's Liddell unit two tripped reducing available capacity by 515 MW all of which was priced below \$90/MWh.

Over two rebids at 12.26 pm and 12.27 pm, Delta Electricity rebid 120 MW of capacity across its Mount Piper units one and two, from prices below \$25/MWh to prices above \$9500/MWh. The reason given was "Spot price higher than forecast::Band Shift". At 3.42 pm Delta Electricity rebid to reduce availability by 80 MW at Munmorah units three and four, all of which was priced above \$140/MWh. The reason given was "GEN TX Bus duct cooler limit::Capacity limit change".

There was no other significant rebidding.

### **Wednesday, 7 January**

<b>2:30 pm</b>	<b>Actual</b>	<b>4 hr forecast</b>	<b>12 hr forecast</b>
Price (\$/MWh)	125.54	119.64	72.83
Demand (MW)	12 454	12 490	12 459
Available capacity (MW)	12 770	12 615	12 634
<b>3:00 pm</b>	<b>Actual</b>	<b>4 hr forecast</b>	<b>12 hr forecast</b>
Price (\$/MWh)	130.65	119.64	89.67
Demand (MW)	12 337	12 588	12 560
Available capacity (MW)	12 730	12 925	12 634
<b>3:30 pm</b>	<b>Actual</b>	<b>4 hr forecast</b>	<b>12 hr forecast</b>
Price (\$/MWh)	130.54	119.64	89.99
Demand (MW)	12 310	12 641	12 594
Available capacity (MW)	12 753	12 907	12 634
<b>4:00 pm</b>	<b>Actual</b>	<b>4 hr forecast</b>	<b>12 hr forecast</b>
Price (\$/MWh)	116.53	119.64	89.83
Demand (MW)	12 317	12 683	12 642
Available capacity (MW)	12 732	12 907	12 674

Conditions at the time saw demand 360 MW and available capacity 195 MW less than that forecast four hours ahead. Queensland and NSW prices were aligned during the period.

Over two rebids at 10:50 am and 11:42 am, Eraring Energy rebid 110 MW of capacity across its Eraring units from prices below \$100/MWh to prices above \$295/MWh. The reasons given were “Material change in PD sensitivities” and “Unit 1 RTS, adjust ER Bids”.

Over several rebid from 1:53 pm, Delta Electricity rebid 600 MW of capacity across its portfolio from prices below \$40/MWh to prices above \$9500/MWh. The reasons given were “NSW/VIC I/C limit and constant changes::Band shift”, “NSW/VIC I/C limit keeps changing::Band shift” and “Maintain steady unit::band shift”..

Over two rebids at 2 pm and 2:09 pm, TRU Energy reduced the available capacity at Tallawarra by 180 MW, all which was bid inflexible. The reasons given were “updated commissioning profile”.

There was no other significant rebidding.

## Detailed NEM Price and Demand Trends



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

Financial year	QLD	NSW	VIC	SA	TAS
2008-09 (\$/MWh) YTD	38	45	38	37	44
2007-08 (\$/MWh) YTD	56	50	53	78	55
Change	-32%	-10%	-29%	-52%	-20%
2007-08 (\$/MWh)	58	44	51	101	57

**Table 2: NEM turnover**

Financial year	NEM Turnover* (\$, billion)	Energy (TWh)
2008-09 YTD	\$4.5	111
2007-08	\$11.1	208
2006-07	\$12.7	206
Change (2006-07 to 2007-08)	-12%	0.8%

\* estimated value

**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)
Sep-08	32	37	38	34	46	0.61
Oct-08	43	94	41	37	47	1.05
Nov-08	40	32	36	34	51	0.60
Dec-08	36	25	23	26	33	0.48
Jan-09 MTD	31	34	28	29	40	0.17
Q4 2008	39	51	34	32	44	2.13
Q4 2007	56	41	44	46	44	2.35
Change	-29%	23%	-23%	-30%	0%	-0.48%

**Table 4: ASX energy futures contract prices at 12 January**

	QLD		NSW		VIC		SA	
	Base	Peak	Base	Peak	Base	Peak	Base	Peak
Q1 2009								
Price on 05 Jan (\$/MW)	72	134	47	75	55	92	112	200
Price on 12 Jan (\$/MW)	70	125	49	75	53	92	116	200
Open interest on 12 Jan	2451	248	2716	211	2376	469	267	20
Traded in the last week (MW)	37	0	11	0	92	0	10	0
Traded since 1 Jan 08	5859	519	6124	260	4824	782	529	40
Settled price for Q1 08(\$/MW)	68	97	32	42	43	65	152	322

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

Comparison:	QLD	NSW	VIC	SA	TAS	NEM
November 08 with November 07						
MW Priced <\$20	-175	391	26	4	-62	183
MW Priced \$20 to \$50	450	25	-41	10	-27	417
December 08 with December 07						
MW Priced <\$20	-157	515	729	-79	89	1097
MW Priced \$20 to \$50	343	458	-149	110	120	882
January 09 with January 08						
MW Priced <\$20	-402	-1722	133	-131	-141	-2263
MW Priced \$20 to \$50	360	1147	141	91	7	1746