# WEEKLY MARKET ANALYSIS

AUSTRALIAN ENERGY REGULATOR

**24 May-30 May 2009**

## Summary

Average spot prices for the mainland regions ranged from $25/MWh in Queensland to $39/MWh in South Australia.

The average spot price in Tasmania was $23/MWh, almost 70 per cent lower than the previous week. Spot prices from late Sunday night through to the early hours of Monday morning were around -$500/MWh (with the minimum of -$732/MWh occurring at 1 am Monday). High prices for frequency control ancillary services were forcing flows into Tasmania across Basslink during this period.

## Spot market prices

Figure 1 sets out the volume weighted average prices for 24 May to 30 May and the financial year to date across the National Electricity Market (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)**

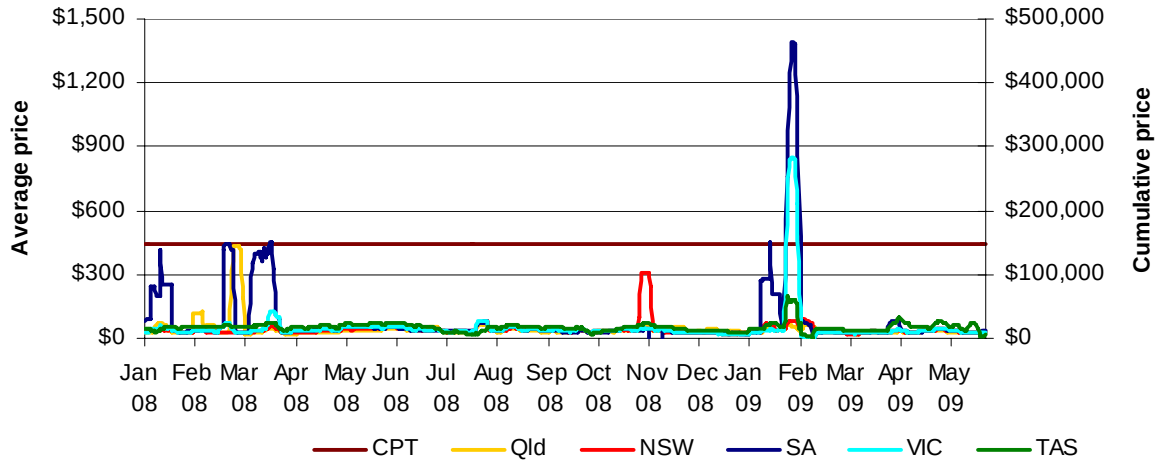
| | Qld | NSW | VIC | SA | Tas |
|---|---|---|---|---|---|
| Average price for 24 May – 30 May | 25 | 30 | 29 | 39 | 23 |
| Financial year to date | 37 | 43 | 51 | 72 | 49 |
| % change from previous week* | -11 | 1 | -4 | 23 | -68 |
| % change from year to date** | -38 | -3 | -1 | -33 | -13 |

*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. This is detailed 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[1] prices traded on the Sydney Futures Exchange (SFE) as at close of trade on Monday 1 June. Figure 3 shows the base futures contract prices for the next three calendar years, and the three year average. Also shown are percentage changes compared to the previous week.

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

| | QLD | | NSW | | VIC | | SA | |
|---|---|---|---|---|---|---|---|---|
| Calendar Year 2010 | 43 | 1% | 46 | 2%* | 48 | 0%* | 59 | 0% |
| Calendar Year 2011 | 46 | -1%* | 49 | 0%* | 51 | -1%* | 69 | 0% |
| Calendar Year 2012 | 62 | 0% | 61 | 0% | 69 | 0% | 69 | 0% |
| Three year average | 50 | 0% | 52 | 0% | 56 | 0% | 66 | 0% |

Source: d-cyphaTrade www.d-cyphatrade.com.au
* there were trades in these products.

Figure 4 shows the $300 cap contract price for the first quarter of 2010 and the 2009-10 financial year and the percentage change from the previous week.

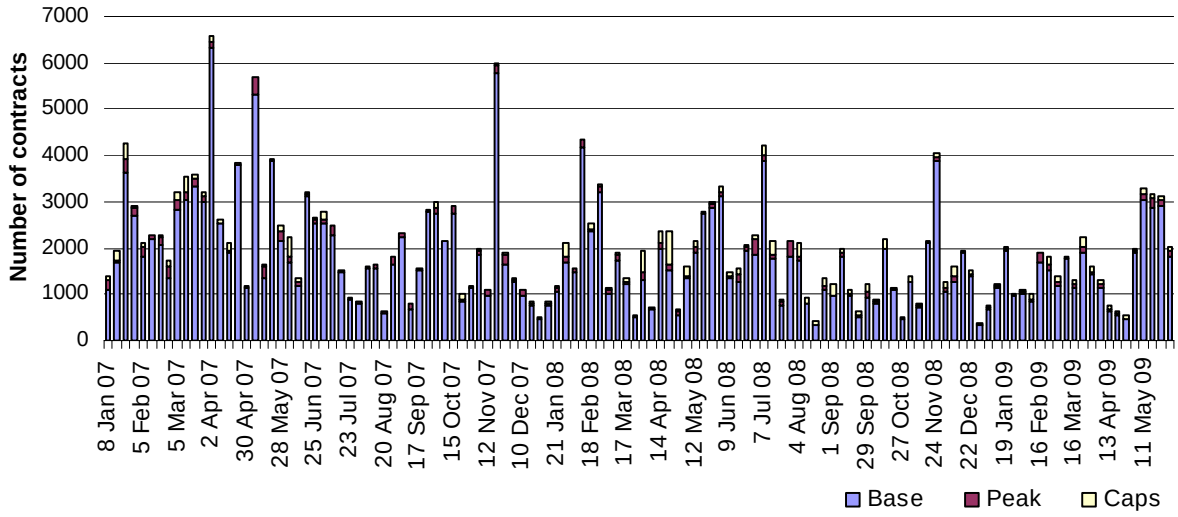
**Figure 4: $300 cap contract prices ($/MWh)**

| | QLD | | NSW | | VIC | | SA | |
|---|---|---|---|---|---|---|---|---|
| Q1 2010 | 27 | 0% | 21 | 0% | 35 | 0% | 45 | 0% |
| Financial 2009-10 | 11 | 0% | 10 | 0% | 11 | 0% | 16 | 0% |

Source: d-cyphaTrade www.d-cyphatrade.com.au
Note: there were no trades in these products.

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**

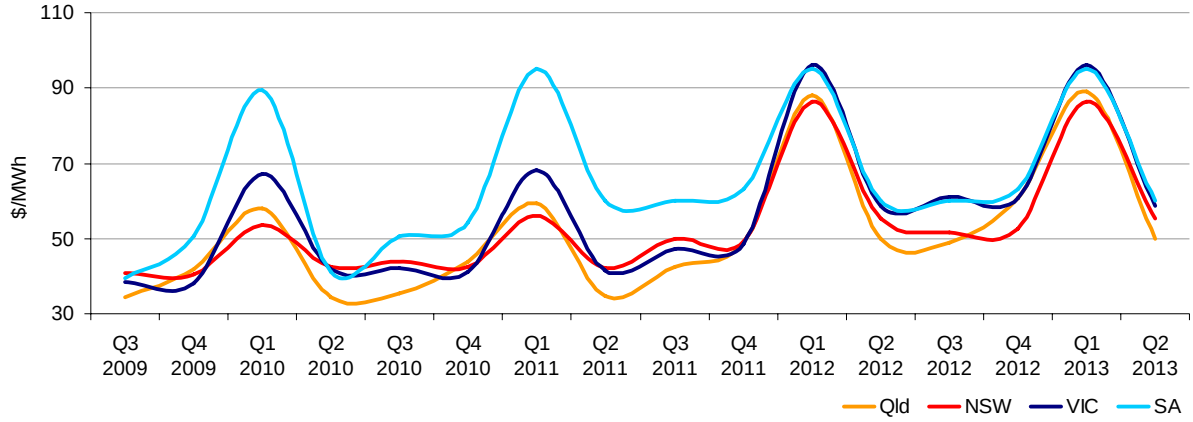



Source: d-cyphaTrade www.d-cyphatrade.com.au

[1] 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.

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

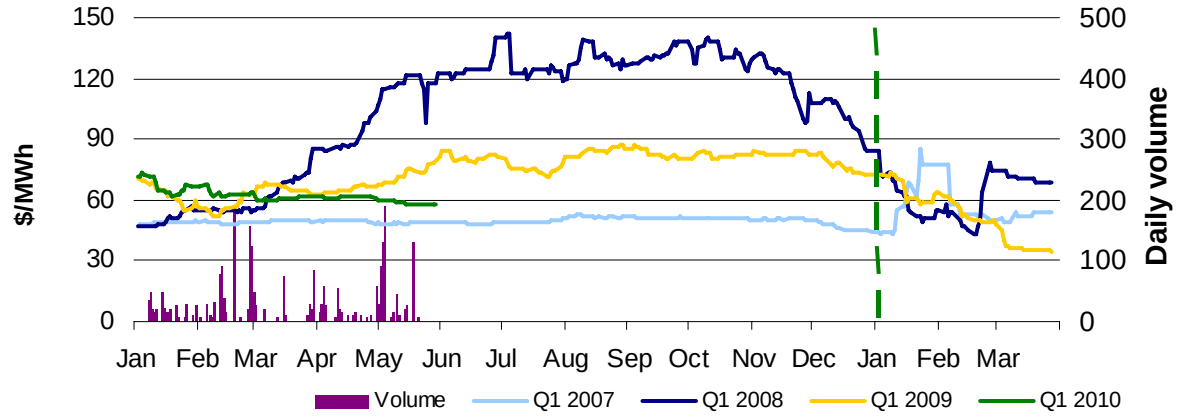
**Figure 6: Quarterly base future prices Q3 2009 – Q2 2013**




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

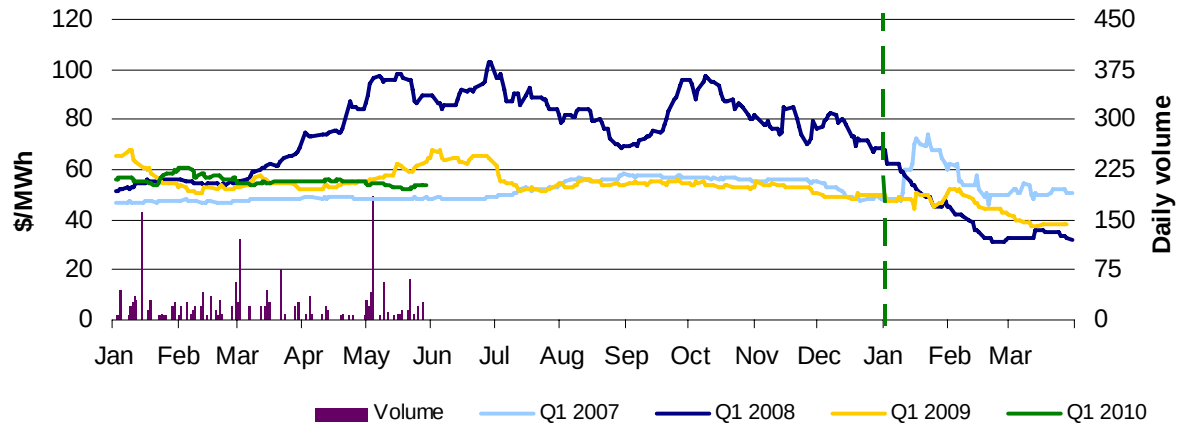
Figures 7-10 compare for each region the closing daily base contract prices for the first quarter of 2007, 2008, 2009 and 2010. Also shown is the daily volume of Q1 2010 base contracts traded. The vertical dashed line signifies the start of the Q1 period for which the contracts are being purchased.

**Figure 7: Queensland Q1 2007, 2008, 2009 and 2010**



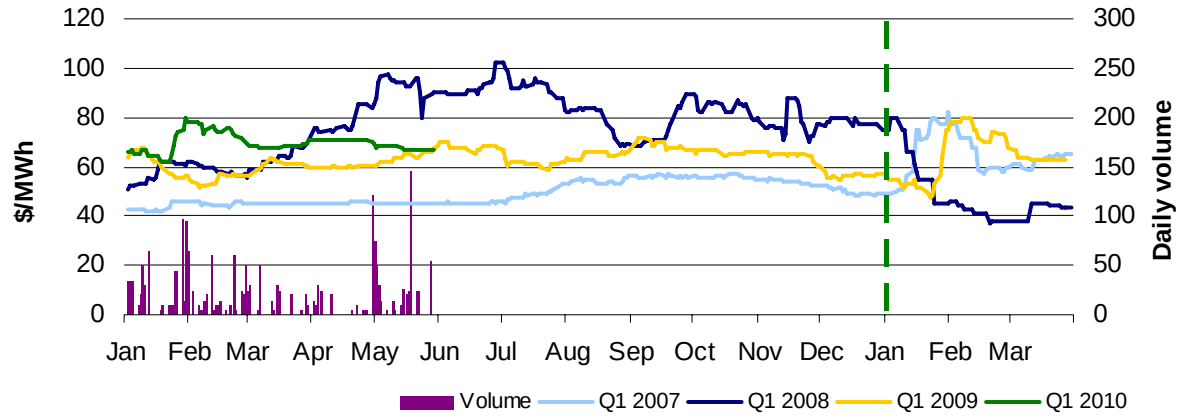

Source: d-cyphaTrade www.d-cyphatrade.com.au

**Figure 8: New South Wales Q1 2007, 2008, 2009 and 2010**



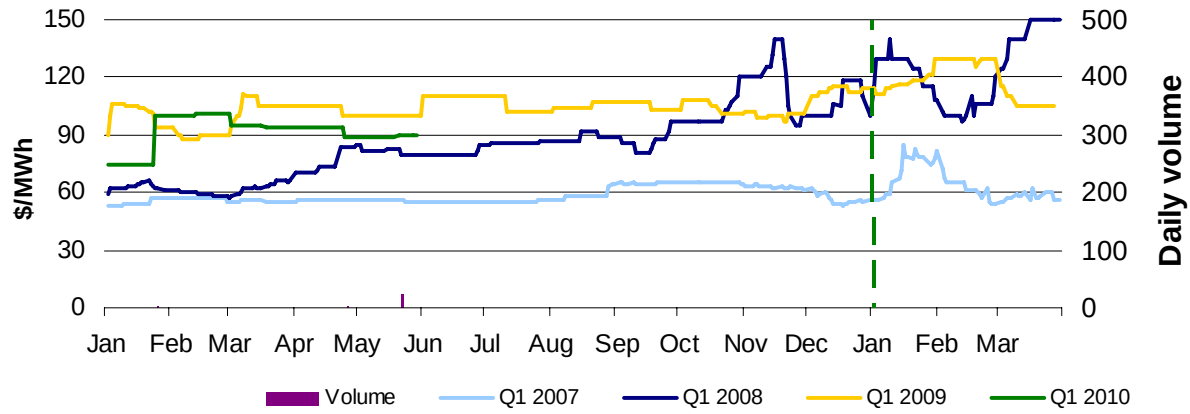

Source: d-cyphaTrade www.d-cyphatrade.com.au

**Figure 9: Victoria Q1 2007, 2008, 2009 and 2010**




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

**Figure 10: South Australia Q1 2007, 2008, 2009 and 2010**




Source: d-cyphaTrade 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 the National Electricity Market Management Company 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 120 trading intervals throughout the week where actual prices varied significantly from forecasts[2]. This compares to the weekly average in 2008 of 130 counts. Reasons for these variances are summarised in figure 11[3].

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

| | Availability | Demand | Network | Combination |
|---|---|---|---|---|
| % of total above forecast | 4 | 35 | 0 | 1 |
| % of total below forecast | 57 | 1 | 0 | 2 |

2 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.

3 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 12 shows the change in total available capacity in each region from the previous week and at the price levels shown, for peak periods[4]. For example, in Queensland 189 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 12: 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 |
|---|---|---|---|---|
| QLDld | 189 | 83 | 159 | -58 |
| NSW | -60 | -149 | -157 | -34 |
| VIC | 404 | -109 | 332 | 36 |
| SA | -280 | -62 | -334 | 56 |
| TAS | 237 | -115 | 95 | -26 |
| **TOTAL** | 490 | -352 | 95 | -26 |

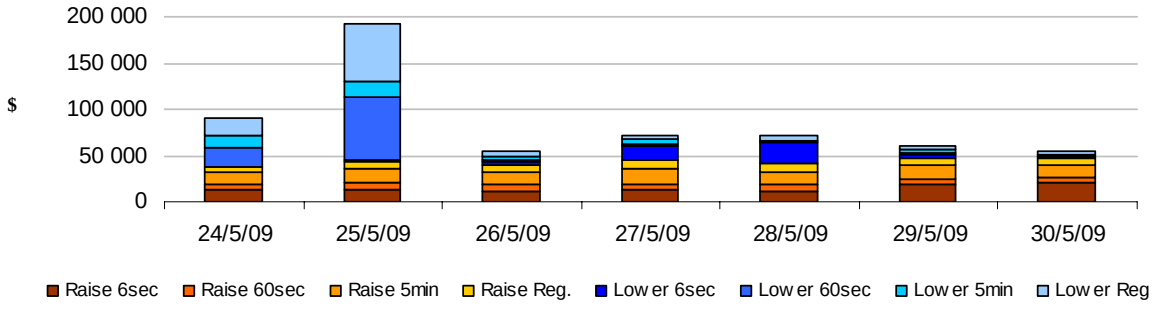
## Ancillary services market

The total cost of frequency control ancillary services (FCAS) on the mainland for the week was $295 000 or less than one per cent of turnover in the energy market.

The total cost of FCAS in Tasmania for the week was $303 000 or approximately seven per cent of turnover in the energy market. Half of this cost accrued early Monday morning when all lower ancillary services were offered by Hydro Tasmania at $265/MW or greater. For the majority of the week, almost all capacity was offered at less than $1/MW for these services.

Figure 13 shows the daily breakdown of cost for each FCAS for the NEM.

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




**Australian Energy Regulator**

**June 2009**

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

**24 May - 30 May 2009**

**Queensland:** There were two occasions where the spot price in Queensland was greater than three times the Queensland weekly average price of $25/MWh.

**Sunday, 24 May**

| 6:00 pm | Actual | 4 hr forecast | 12 hr forecast |
|---|---|---|---|
| Price ($/MWh) | 75.07 | 30.00 | 29.65 |
| Demand (MW) | 6567 | 6342 | 6170 |
| Available capacity (MW) | 9335 | 9193 | 9235 |

Conditions at the time saw demand 225 MW and available capacity approximately 140 MW higher than forecast four hours ahead.

There was no significant rebidding.

**Friday, 29 May**

| 6:00 pm | Actual | 4 hr forecast | 12 hr forecast |
|---|---|---|---|
| Price ($/MWh) | 75.60 | 32.60 | 25.50 |
| Demand (MW) | 6908 | 6751 | 6814 |
| Available capacity (MW) | 9882 | 10 046 | 10 175 |

Conditions at the time saw demand 157 MW higher than that forecast four hours ahead. Available capacity was 160 MW lower than that forecast four hours ahead.

At 2.51 pm Millmerran Energy Trader rebid 110 MW of capacity at Millmerran from prices below $10/MWh to $76/MWh. The reason given was “QNI_PD constraint::change MW distribution”.

At 3.19 pm CS Energy reduced the availability of Collinsville units three, four and five by 128 MW (55 MW of which was priced below zero). The reason given was “Colnsv uneconomical dispatch”. At 4.24 pm CS Energy reduced the availability of Swanbank B four by 40 MW (all of which was priced below $55/MWh). The reason given was “Swanbank B4 turbine warming”.

There were no other significant rebids.

**Victoria:** There were two occasions where the spot price in Victoria was greater than three times the Victoria weekly average price of $29/MWh.

**Friday, 29 May**

| **6:00 pm** | **Actual** | **4 hr forecast** | **12 hr forecast** |
|---|---|---|---|
| Price ($/MWh) | 88.92 | 89.42 | 271.16 |
| Demand (MW) | 7057 | 6800 | 7238 |
| Available capacity (MW) | 8899 | 8883 | 8865 |
| **6:30 pm** | **Actual** | **4 hr forecast** | **12 hr forecast** |
| Price ($/MWh) | 89.75 | 91.01 | 268.43 |
| Demand (MW) | 7093 | 6960 | 7254 |
| Available capacity (MW) | 8848 | 8833 | 8830 |

Conditions at the time saw demand up to approximately 255 MW higher than that forecast four hours ahead but approximately 180 MW lower than that forecast 12 hours ahead. Available capacity was close to forecast. Prices were close to those forecast four hours ahead but lower than those forecast 12 hours ahead.

At 11.56 am, AGL Hydo rebid 150 MW of capacity at AGL Somerton from the price cap to zero. The reason given was “Forecast price change::increase in prices Vic”

At 1.25 pm Ecogen rebid 90 MW of available capacity at Jeeralang from prices above $7000/MWh to below $5/MWh. The reason given was “Adj to unit commitment due to PD conditions”.

There were no other significant rebids.

**South Australia:** There was one occasion where the spot price in South Australia was greater than three times the South Australia weekly average price of $39/MWh.

**Friday, 29 May**

| **4:00 pm** | **Actual** | **4 hr forecast** | **12 hr forecast** |
|---|---|---|---|
| Price ($/MWh) | 185.36 | 35.77 | 44.90 |
| Demand (MW) | 1749 | 1671 | 1621 |
| Available capacity (MW) | 2165 | 2174 | 2019 |

Conditions at the time saw demand 78 MW higher than forecast four hours ahead and available capacity close to that forecast four hours ahead.

There was only 100 MW of capacity priced between $39/MWh and $302/MWh. A reduction of 86 MW in imports across Murraylink combined with the effect of the interaction of the energy and ancillary service markets resulted in the 5-minute price reaching $342/MWh at 3.50 pm.

There was no significant rebidding.

**Tasmania:** There were 13 occasions where the spot price in Tasmania was greater than three times the Tasmania weekly average price of $23/MWh.

**Sunday, 24 May**

| **6:00 pm** | **Actual** | **4 hr forecast** | **12 hr forecast** |
|---|---|---|---|
| Price ($/MWh) | 77.55 | 42.16 | 47.99 |
| Demand (MW) | 1261 | 1266 | 1274 |
| Available capacity (MW) | 2015 | 2014 | 2014 |

Conditions at the time saw demand and available capacity close to that forecast.

Four hours ahead flows across Basslink were forecast to be around 50 MW into Tasmania. However, due to higher than forecast spot prices in Victoria, the actual flow was 170 MW into Victoria. This resulted in the dispatch of more expensive generation in Tasmania.

There was no significant rebidding.

**Friday, 29 May**

| **7:00 am** | **Actual** | **4 hr forecast** | **12 hr forecast** |
|---|---|---|---|
| Price ($/MWh) | 71.81 | 66.18 | 298.24 |
| Demand (MW) | 1161 | 1264 | 1334 |
| Available capacity (MW) | 1967 | 2107 | 2121 |
| **7:30 am** | **Actual** | **4 hr forecast** | **12 hr forecast** |
| Price ($/MWh) | 69.37 | 42.16 | 298.22 |
| Demand (MW) | 1254 | 1405 | 1459 |
| Available capacity (MW) | 1990 | 2107 | 2121 |
| **8:00 am** | **Actual** | **4 hr forecast** | **12 hr forecast** |
| Price ($/MWh) | 113.99 | 86.43 | 298.21 |
| Demand (MW) | 1317 | 1485 | 1539 |
| Available capacity (MW) | 2107 | 2107 | 2121 |
| **8:30 am** | **Actual** | **4 hr forecast** | **12 hr forecast** |
| Price ($/MWh) | 82.67 | 116.03 | 9998.14 |
| Demand (MW) | 1367 | 1489 | 1543 |
| Available capacity (MW) | 2062 | 2053 | 2067 |

Conditions at the time saw demand lower than forecast. Available capacity was lower than forecast for the 7 am and 7.30 am trading intervals but close to that forecast for the 8 am and 8.30 am trading intervals.

Flows across Basslink four and 12 hours ahead were forecast to be between 350 MW and 400 MW into Tasmania. At 7 am flows were heading into Tasmania at 350 MW but, due to FCAS requirements, by 8.30 am flows were (counter price) into Victoria at 109 MW.

At 7.39 am Hydro Tasmania rebid 663 MW of available capacity across its portfolio from prices above $280/MWh to below $100/MWh. The reason given was “Constraint management”.

There was no other significant rebidding.

**Friday, 29 May**

| **4:00 pm** | **Actual** | **4 hr forecast** | **12 hr forecast** |
|---|---|---|---|
| Price ($/MWh) | 1787.97 | 28.08 | 41.87 |
| Demand (MW) | 1264 | 1178 | 1222 |
| Available capacity (MW) | 2121 | 2121 | 2067 |
| **4:30 pm** | **Actual** | **4 hr forecast** | **12 hr forecast** |
| Price ($/MWh) | 113.42 | 41.30 | 41.87 |
| Demand (MW) | 1273 | 1205 | 1246 |
| Available capacity (MW) | 2121 | 2121 | 2121 |

Conditions at the time saw demand up to 86 MW greater than forecast four hours ahead and available capacity close to forecast.

At 3.38 pm, effective from 3.45 pm, Hydro Tasmania rebid 664 MW across its portfolio from prices below $100/MWh to above $4700/MWh. The reason given was “Change in forecast demand”. This resulted in two five minute prices of $4998/MWh at 3.45 pm and 3.50 pm. At 4.04 pm, effective from 4.15 pm, Hydro Tasmania rebid 610 MW of available capacity across its portfolio from prices above $4700/MWh to below $100/MWh. The reason given was “Constraint management”.

There was no other significant rebidding.

**Friday, 29 May**

| **6:00 pm** | **Actual** | **4 hr forecast** | **12 hr forecast** |
|---|---|---|---|
| Price ($/MWh) | 94.60 | 87.23 | 298.16 |
| Demand (MW) | 1410 | 1409 | 1399 |
| Available capacity (MW) | 2146 | 2146 | 2146 |
| **6:30 pm** | **Actual** | **4 hr forecast** | **12 hr forecast** |
| Price ($/MWh) | 93.90 | 88.54 | 298.18 |
| Demand (MW) | 1400 | 1395 | 1406 |
| Available capacity (MW) | 2146 | 2146 | 2146 |
| **7:00 pm** | **Actual** | **4 hr forecast** | **12 hr forecast** |
| Price ($/MWh) | 74.89 | 42.84 | 4998.18 |
| Demand (MW) | 1385 | 1387 | 1396 |
| Available capacity (MW) | 2146 | 2146 | 2146 |

Conditions at the time saw demand and available capacity close to forecast.

At 9.14 am Hydro Tasmania rebid around 600 MW of available capacity across its portfolio from prices above $9000/MWh to below $70/MWh. The reason given was “Change in demand forecast”.

There was no other significant rebidding.

**Friday, 29 May**

| **10:30 pm** | **Actual** | **4 hr forecast** | **12 hr forecast** |
|---|---|---|---|
| Price ($/MWh) | 80.66 | 100.20 | 9998.04 |
| Demand (MW) | 1211 | 1243 | 1175 |
| Available capacity (MW) | 2111 | 2146 | 2146 |
| **11:30 pm** | **Actual** | **4 hr forecast** | **12 hr forecast** |
| Price ($/MWh) | 72.85 | 100.18 | 298.18 |
| Demand (MW) | 1116 | 1139 | 1058 |
| Available capacity (MW) | 2146 | 2146 | 2146 |

Conditions at the time saw demand slightly lower than that forecast four hours ahead and available capacity close to forecast. Prices were below forecast.

The forecast flow and import limit across Basslink for the 10.30 pm trading interval, were at around 200 MW into Tasmania, 12 hours ahead. The actual flow and import limit were around 400 MW into Tasmania.

There was no significant rebidding.

**Saturday, 30 May**

| **6:00 pm** | **Actual** | **4 hr forecast** | **12 hr forecast** |
|---|---|---|---|
| Price ($/MWh) | 73.52 | 39.99 | 35.48 |
| Demand (MW) | 1333 | 1359 | 1322 |
| Available capacity (MW) | 2148 | 2090 | 2148 |

Conditions at the time saw demand and available capacity close to that forecast.

The import limit across Basslink was forcing flows into Victoria, counter-price (resulting in the dispatch of slightly higher priced generation). This was caused by constraints managing ancillary services in Tasmania.

There was no significant rebidding.

# Detailed NEM Price and Demand Trends

for Weekly Market Analysis
24 May - 30 May 2009

AUSTRALIAN ENERGY REGULATOR

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

| Financial year | QLD | NSW | VIC | SA | TAS |
|---|---|---|---|---|---|
| 2008-09 ($/MWh) YTD | 37 | 43 | 51 | 72 | 49 |
| 2007-08 ($/MWh) YTD | 59 | 45 | 51 | 107 | 56 |
| Change* | -38% | -3% | -1% | -33% | -13% |
| 2007-08 ($/MWh) | 58 | 44 | 51 | 101 | 57 |

**Table 2: NEM turnover**

| Financial year | NEM Turnover** ($, billion) | Energy (TWh) |
|---|---|---|
| 2008-09 YTD | $8.667 | 190 |
| 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) |
|---|---|---|---|---|---|---|
| Jan-09 | 44 | 57 | 190 | 374 | 85 | 1.962 |
| Feb-09 | 42 | 47 | 38 | 47 | 40 | 0.709 |
| Mar-09 | 27 | 26 | 26 | 35 | 37 | 0.466 |
| Apr-09 | 34 | 38 | 40 | 38 | 69 | 0.622 |
| May-09 MTD | 28 | 31 | 33 | 35 | 49 | 0.550 |
| | | | | | | |
| Q1 2009 | 37 | 43 | 87 | 161 | 55 | 3.136 |
| Q1 2008 | 80 | 34 | 50 | 243 | 54 | 3.358 |
| Change* | -53% | 28% | 73% | -34% | 1% | 1.09% |

**Table 4: ASX energy futures contract prices at 1 June**

| | QLD | | NSW | | VIC | | SA | |
|---|---|---|---|---|---|---|---|---|
| Q1 2010 | Base | Peak | Base | Peak | Base | Peak | Base | Peak |
| Price on 25 May ($/MW) | 58 | 99 | 53 | 86 | 67 | 122 | 90 | 102 |
| Price on 01 Jun ($/MW) | 58 | 99 | 54 | 87 | 67 | 120 | 90 | 102 |
| Open interest on 01 Jun | 1836 | 135 | 1373 | 25 | 1580 | 35 | 23 | 0 |
| Traded in the last week (MW) | 0 | 0 | 55 | 15 | 55 | 0 | 0 | 0 |
| Traded since 1 Jan 09 (MW) | 2530 | 155 | 1847 | 37 | 2059 | 50 | 33 | 0 |
| 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 |
|---|---|---|---|---|---|---|
| March 09 with March 08 | | | | | | |
| MW Priced <$20/MWh | -557 | -386 | 119 | -246 | -50 | -1121 |
| MW Priced $20 to $50/MWh | 562 | 347 | 129 | -1 | -2 | 1035 |
| | | | | | | |
| April 09 with April 08 | | | | | | |
| MW Priced <$20/MWh | -755 | -678 | 323 | 366 | -41 | -785 |
| MW Priced $20 to $50/MWh | 698 | -218 | -214 | -33 | 57 | 290 |
| | | | | | | |
| May 09 with May 08 | | | | | | |
| MW Priced <$20/MWh | -276 | -484 | 523 | 122 | 22 | -92 |
| MW Priced $20 to $50/MWh | 547 | 198 | -80 | 21 | 236 | 921 |

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