

WEEKLY ELECTRICITY MARKET ANALYSIS



AUSTRALIAN ENERGY
REGULATOR

21 August - 27 August 2011

Summary

Weekly average spot prices ranged from \$22/MWh in Tasmania to \$34/MWh in South Australia.

Spot market prices

Figure 1 sets out the volume weighted average (VWA) prices for the week 21 August to 27 August and the 11/12 financial year to date (YTD) 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 21 - 27 August 2011 | 28 | 28 | 26 | 34 | 22 |
| % change from previous week* | -7 | -9 | -15 | -5 | -24 |
| 11/12 financial YTD | 28 | 31 | 31 | 36 | 32 |
| % change from 10/11 financial YTD ** | 32 | -5 | 11 | 21 | -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.

Longer term market trends are attached in Appendix A¹.

Financial markets

Figures 2 to 9 show futures contract² prices traded on the Australian Securities Exchange (ASX) as at close of trade on Monday 29 August 2011. Figure 2 shows the base futures contract prices for the next three calendar years, and the average over these three years. Also shown are percentage changes³ from the previous week.

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.

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 ASX 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 2012 | 40* | -1% | 46* | 0% | 41 | 0% | 47 | -1% |
| Calendar Year 2013 | 51 | 0% | 56 | 0% | 50 | -1% | 58 | 0% |
| Calendar Year 2014 | 56 | 0% | 59 | 0% | 60 | 0% | 69 | 0% |
| Three year average | 49 | 0% | 54 | 0% | 51 | 0% | 58 | 0% |

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

* denotes trades in the product.

Figure 3 shows the \$300 cap contract price for Q1 2012 and calendar year 2012 and the percentage change⁴ from the previous week.

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

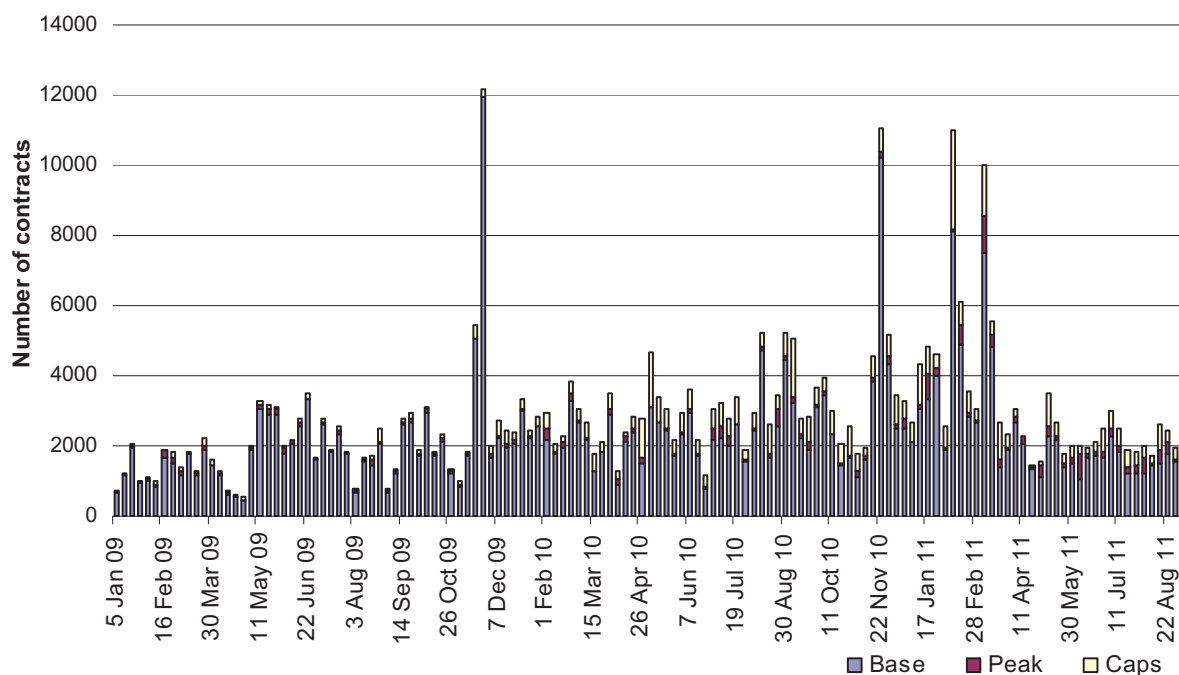
| | QLD | | NSW | | VIC | | SA | |
|--------------------|-----|-----|-----|----|-----|----|----|----|
| Q1 2012 (% change) | 13 | 0% | 15* | 0% | 15* | 1% | 29 | 0% |
| 2012 (% change) | 6 | -1% | 9 | 0% | 6 | 0% | 11 | 0% |

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

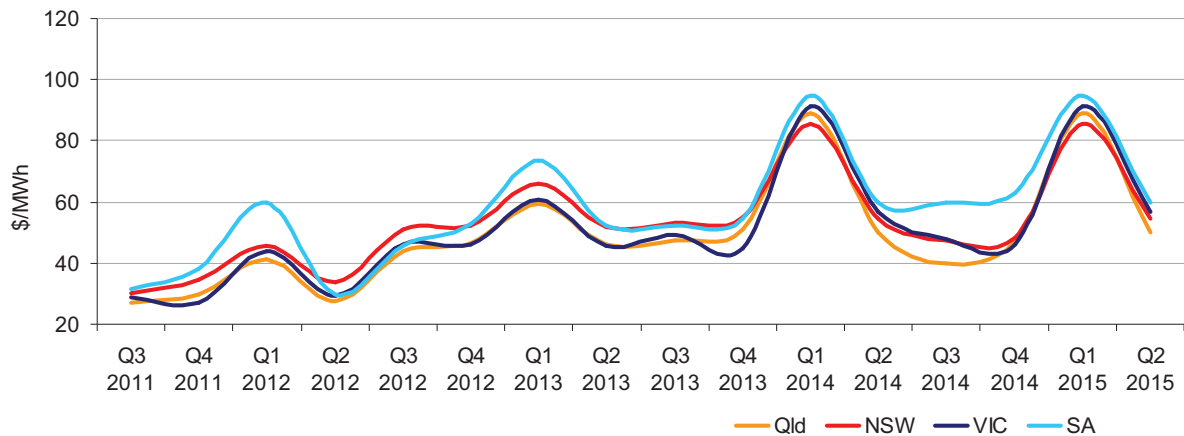


Source: d-cyphaTrade www.d-cyphatrade.com.au

⁴ Calculated on prices prior to rounding.

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

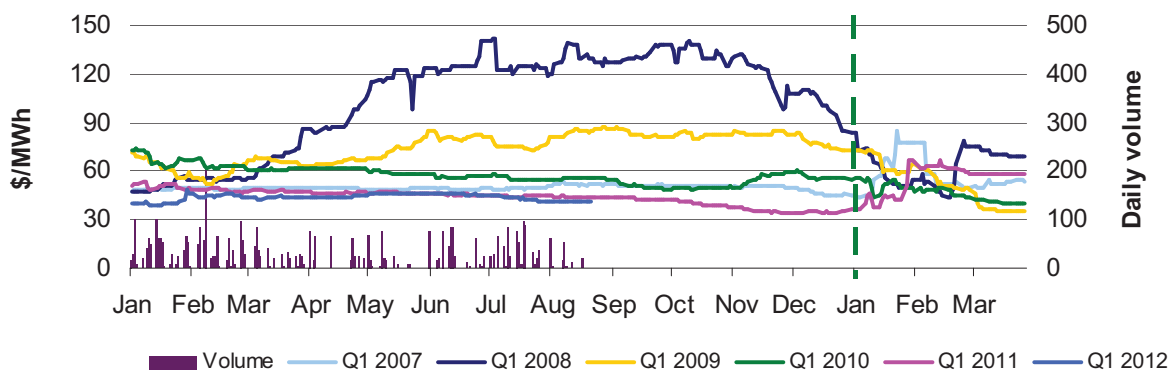
Figure 5: Quarterly base future prices Q3 2011 – Q2 2015



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

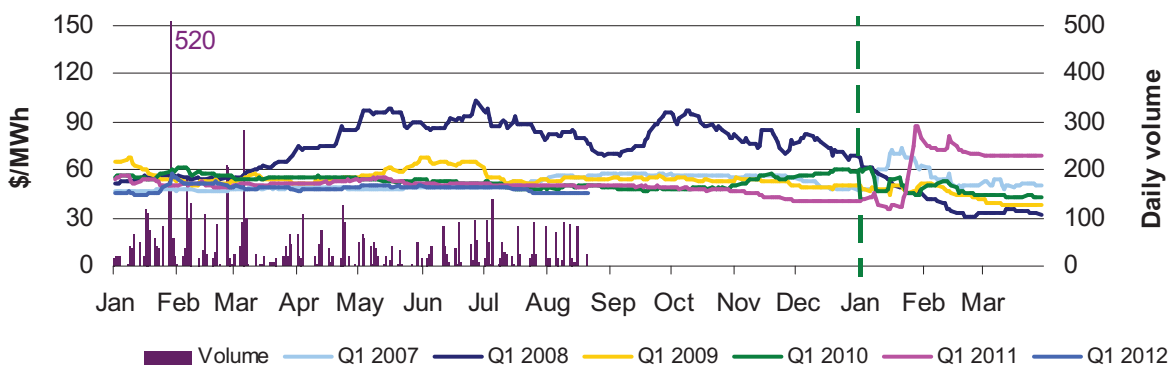
Figures 6-9 compare for each region the closing daily base contract prices for the first quarter of 2007, 2008, 2009, 2010, 2011 and 2012. Also shown is the daily volume of Q1 2012 base contracts traded. The vertical dashed line signifies the start of the Q1 period for which the contracts are being purchased. 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, 2011 and 2012



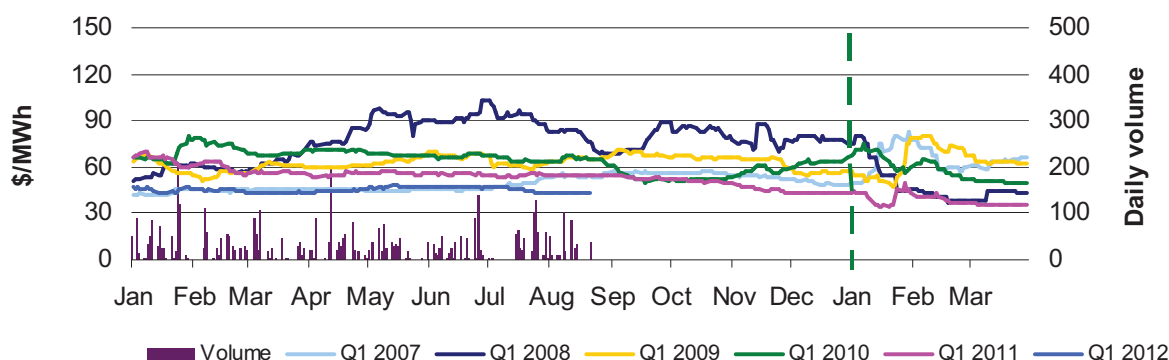
Source: d-cyphaTrade www.d-cyphatrade.com.au

Figure 7: New South Wales Q1 2007, 2008, 2009, 2010, 2011 and 2012



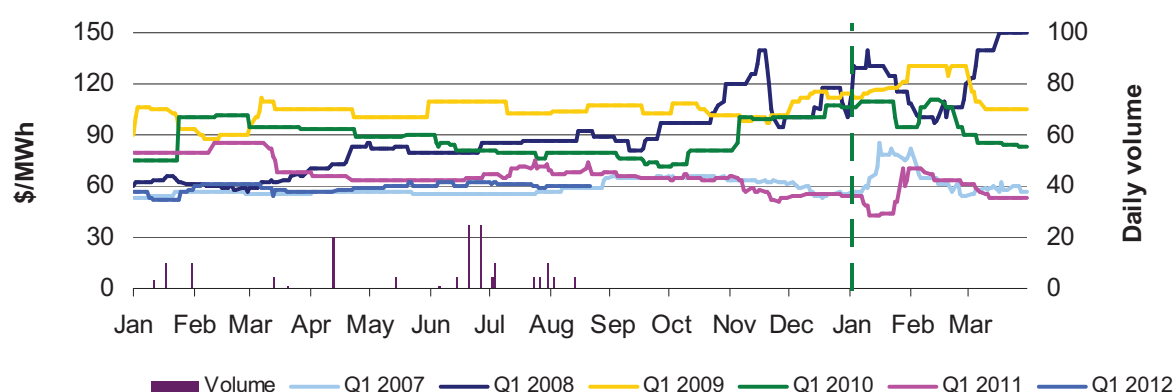
Source: d-cyphaTrade www.d-cyphatrade.com.au

Figure 8: Victoria Q1 2007, 2008, 2009, 2010, 2011 and 2012



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

Figure 9: South Australia Q1 2007, 2008, 2009, 2010, 2011 and 2012



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 97 trading intervals throughout the week where actual prices varied significantly from forecasts⁵. This compares to the weekly average in 2010 of 57 counts and the average in 2009 of 103. 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 | 0 | 2 | 0 | 0 |
| % of total below forecast | 96 | 2 | 0 | 0 |

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 99 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 | -99 | -196 | 155 | 68 |
| NSW | 104 | -283 | -202 | -518 |
| VIC | 215 | 27 | 113 | -209 |
| SA | 35 | 9 | 7 | -119 |
| TAS | -4 | -56 | -20 | -35 |
| TOTAL | 251 | -499 | 53 | -813 |

Ancillary services market

The total cost of frequency control ancillary services (FCAS) on the mainland for the week was \$240 000 or less than one per cent of energy turnover on the mainland.

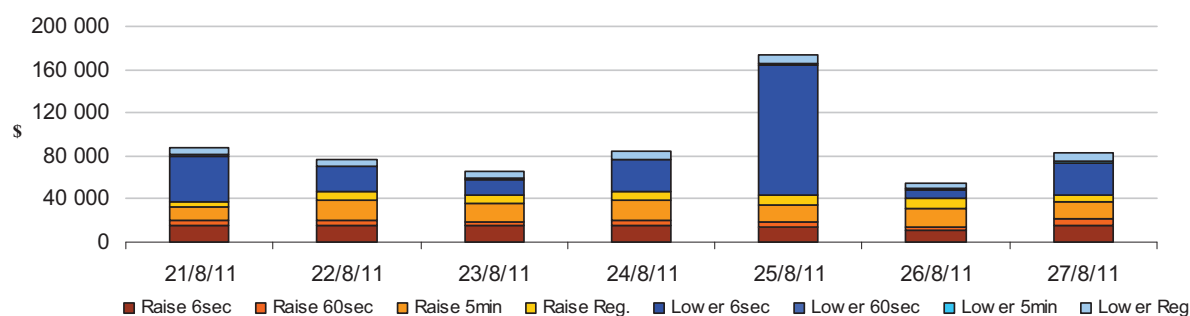
The total cost of FCAS in Tasmania for the week was \$384 500 or around nine per cent of energy turnover in Tasmania.

On 25 August, following the complete loss of SCADA values in Tasmania a series of frequency constraints bound forcing flow across Basslink into Tasmania and the frequency in Tasmania to fall. As a result, the requirement for local lower 6 second services increased from zero at 2.15 pm to 163 MW at 2.20 pm as these services could no longer be provided over the interconnector.

The “trade-off” between the energy and FCAS markets to meet the increase in requirement saw the price of local lower 6 second services exceed \$1000/MW for a total of six dispatch intervals between 2.20 pm and 3.20 pm, at a cost of around \$101 000.

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 September 2011

⁷ A peak period is defined as between 7 am and 10 pm on weekdays.

Detailed NEM Price and Demand Trends

for Weekly Market Analysis
21 August - 27 August 2011



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

| Financial year | QLD | NSW | VIC | SA | TAS |
|----------------------|-----|-----|-----|-----|------|
| 2011-12 (\$/MWh) YTD | 28 | 31 | 31 | 36 | 32 |
| 2010-11 (\$/MWh) YTD | 21 | 33 | 28 | 30 | 52 |
| Change* | 32% | -5% | 11% | 21% | -39% |
| 2010-11 (\$/MWh) | 34 | 43 | 29 | 42 | 31 |

Table 2: NEM turnover

| Financial year | NEM Turnover** (\$, billion) | Energy (TWh) |
|----------------|------------------------------|--------------|
| 2011-12 (YTD) | \$1.023 | 33 |
| 2010-11 | \$7.445 | 204 |
| 2009-10 | \$9.643 | 206 |

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) |
|----------------------------------|-----|-----|------|------|-----|------------------------|
| Apr-11 | 25 | 27 | 26 | 28 | 27 | 0.374 |
| May-11 | 28 | 30 | 35 | 35 | 39 | 0.499 |
| Jun-11 | 26 | 28 | 29 | 33 | 30 | 0.447 |
| Jul-11 | 27 | 32 | 31 | 36 | 34 | 0.508 |
| Aug-11 (MTD) | 29 | 31 | 31 | 36 | 29 | 0.422 |
| Q1 2011 | 65 | 90 | 41 | 83 | 27 | 3.484 |
| Q1 2010 | 46 | 52 | 67 | 134 | 27 | 3.014 |
| Change* | 41% | 74% | -38% | -38% | 2% | 15.57% |

Table 4: ASX energy futures contract prices at end of 29 August

| | QLD | | NSW | | VIC | | SA | |
|--------------------------------|------|------|------|------|------|------|------|------|
| | Base | Peak | Base | Peak | Base | Peak | Base | Peak |
| Q1 2012 | | | | | | | | |
| Price on 22 Aug (\$/MW) | 41 | 66 | 46 | 72 | 44 | 71 | 60 | 106 |
| Price on 29 Aug (\$/MW) | 41 | 66 | 46 | 72 | 44 | 71 | 60 | 106 |
| Open interest on 29 Aug | 1413 | 98 | 1824 | 415 | 1811 | 236 | 160 | 5 |
| Traded in the last week (MW) | 20 | 0 | 117 | 0 | 76 | 0 | 0 | 0 |
| Traded since 1 Jan 11 (MW) | 4528 | 126 | 6823 | 703 | 4468 | 257 | 179 | 5 |
| Settled price for Q1 11(\$/MW) | 57 | 96 | 68 | 118 | 35 | 51 | 53 | 93 |

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

| Comparison: | QLD | NSW | VIC | SA | TAS | NEM |
|----------------------------|-------|------|------|------|------|-------|
| June 11 with June 10 | | | | | | |
| MW Priced <\$20/MWh | -1001 | -98 | -842 | 261 | 107 | -1574 |
| MW Priced \$20 to \$50/MWh | 579 | 647 | 612 | 1 | -84 | 1755 |
| July 11 with July 10 | | | | | | |
| MW Priced <\$20/MWh | -826 | -665 | -448 | 99 | 121 | -1718 |
| MW Priced \$20 to \$50/MWh | 202 | 753 | -162 | 29 | -282 | 539 |
| Aug 11 with Aug 10 (MTD) | | | | | | |
| MW Priced <\$20/MWh | -1286 | -846 | 89 | -163 | -193 | -2399 |
| MW Priced \$20 to \$50/MWh | 129 | 687 | -271 | 27 | -65 | 508 |

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

** Estimated value