WEEKLY ELECTRICITY MARKET ANALYSIS

AUSTRALIAN ENERGY REGULATOR

24 July - 30 July 2011

Summary

Weekly average spot prices on the mainland ranged from $29/MWh in Queensland to $33/MWh in New South Wales and South Australia.

The weekly average spot price in Tasmania was $58/MWh, driven by Hydro Tasmania's bidding strategy that saw high quantities of capacity priced around $300/MWh or higher on Monday, Tuesday and Wednesday. This led to forecast high prices and resulted in 21 spot prices above $250/MWh for the week, with the highest reaching $2084/MWh on Monday at 11 am.

Spot market prices

Figure 1 sets out the volume weighted average (VWA) prices for the week 24 to 30 July 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 24 July - 30 July 2011	29	33	31	33	58
% change from previous week*	13	10	8	-6	67
11/12 financial YTD	27	32	31	36	38
% change from 10/11 financial YTD **	25	13	13	18	24

*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.

Further information is provided in Appendix A when the spot price exceeds three times the weekly average and is above $250/MWh. Longer term market trends are attached in Appendix B[1].

Financial markets

Figures 2 to 9 show futures contract[2] prices traded on the Australian Securities Exchange (ASX) as at close of trade on Monday 1 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 changes[3] 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*	-1%	42*	-1%	48	-1%
Calendar Year 2013	52	0%	57	0%	51	0%	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 change[4] from the previous week.

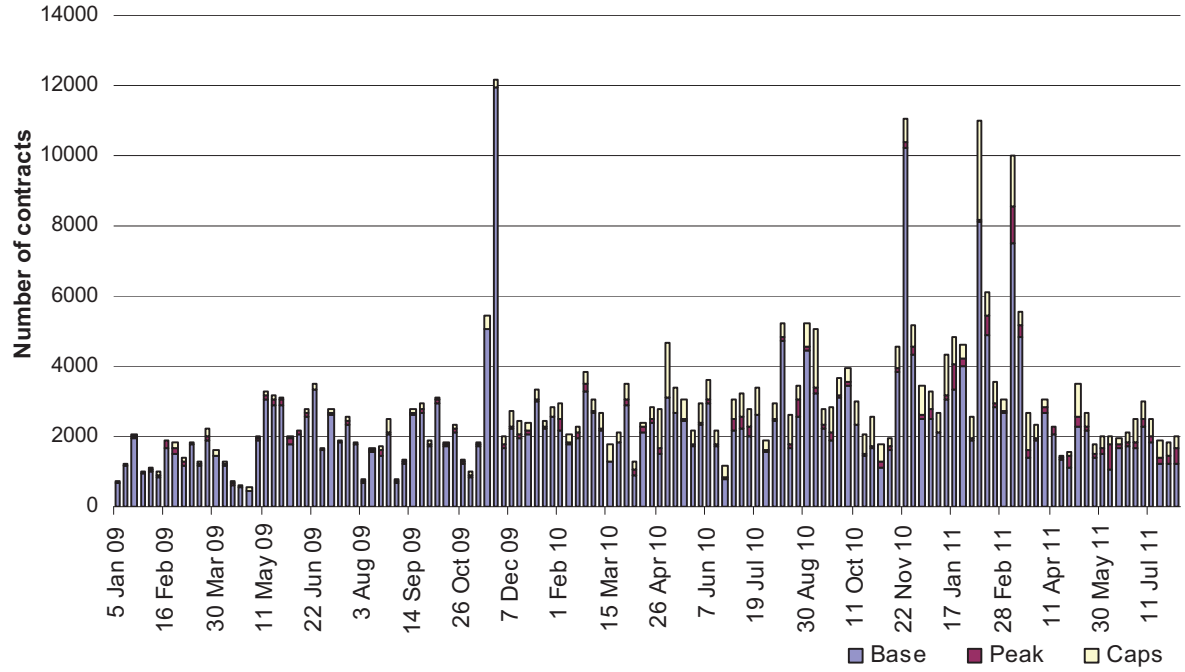
Figure 3: $300 cap contract prices ($/MWh)

	QLD		NSW		VIC		SA	
Q1 2012 (% change)	14*	-2%	16	-5%	16*	-9%	31	-1%
2012 (% change)	7	-5%	10	-6%	6	-6%	12	-1%

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

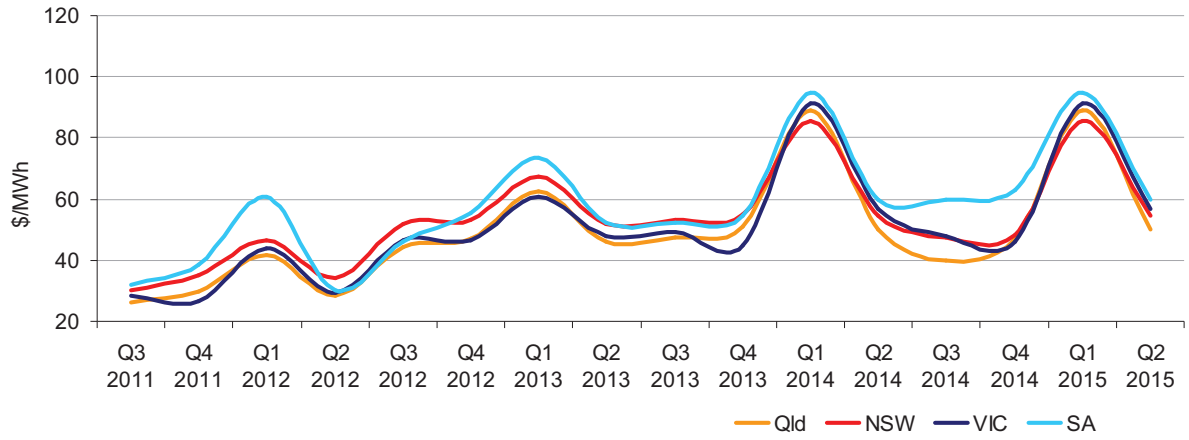


Source: d-cyphaTrade www.d-cyphatrade.com.au

[4] Calculated on prices prior to rounding.

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

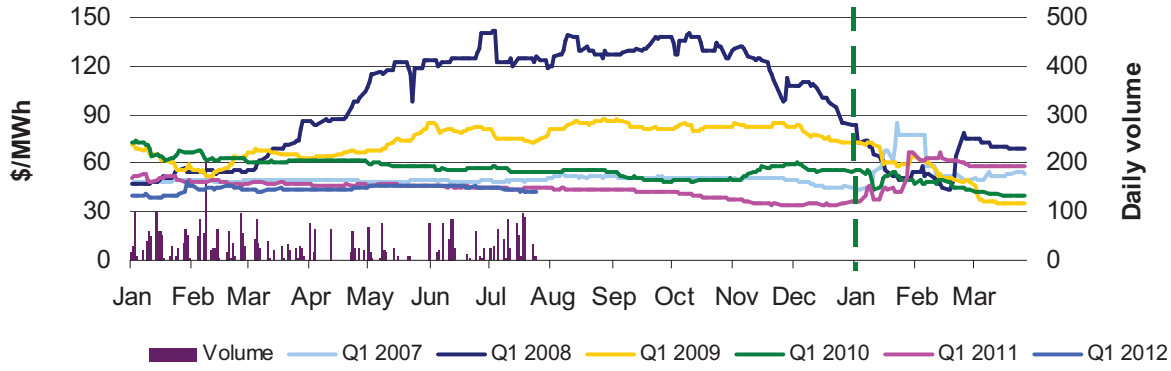
Figure 5: Quarterly base future prices Q3 2011 – Q2 2015



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

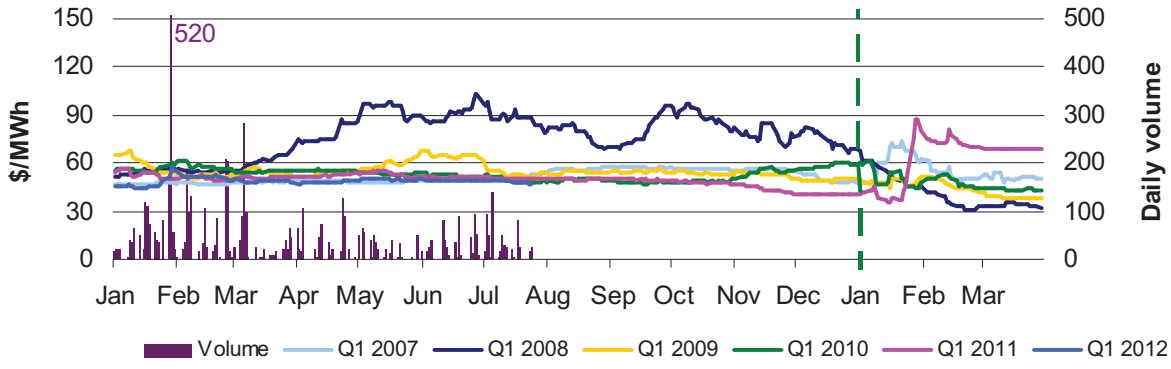
Figures 6-9 compare for each region the closing daily base contract prices for the first quarter of 2007, 2008, 2009, 2010, 2011 and 2012. Also shown is the daily volume of Q1 2012 base contracts traded. The vertical dashed line signifies the start of the Q1 period for which the contracts are being purchased.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



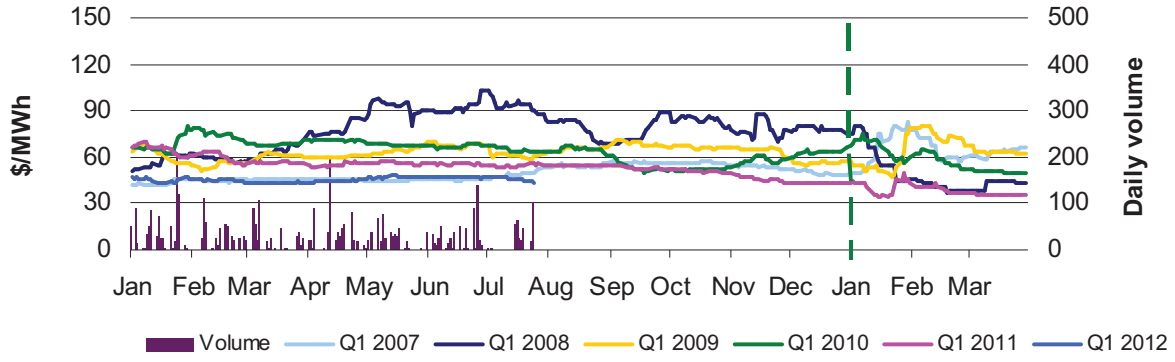
Source: d-cyphaTrade www.d-cyphatrade.com.au

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



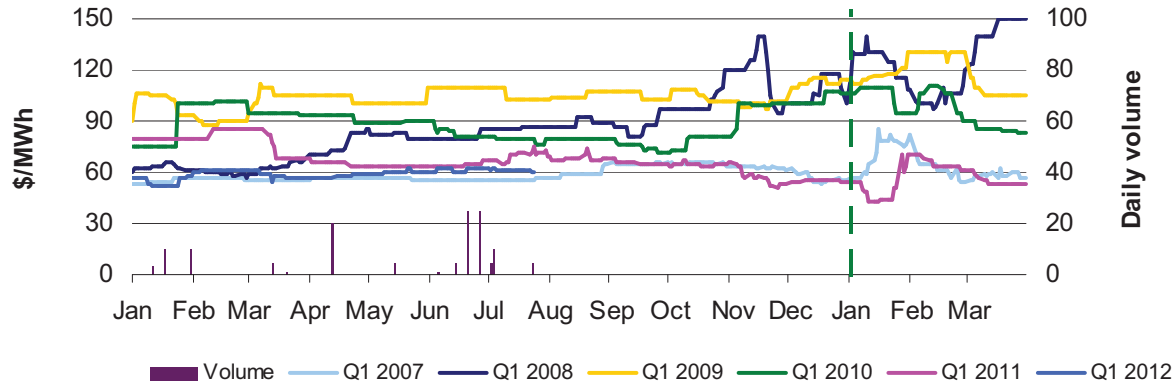
Source: d-cyphaTrade www.d-cyphatrade.com.au

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 103 trading intervals throughout the week where actual prices varied significantly from forecasts[5]. 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 10[6].

Figure 10: Reasons for variations between forecast and actual prices

	Availability	Demand	Network	Combination
% of total above forecast	1	24	0	0
% of total below forecast	56	14	0	5

[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 periods[7]. For example, in Queensland 424 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	-424	103	-553	-26
NSW	-805	140	-1234	-421
VIC	-252	-229	38	-2
SA	-7	-84	-10	-195
TAS	-252	178	13	-29
TOTAL	-1740	108	-1746	-673

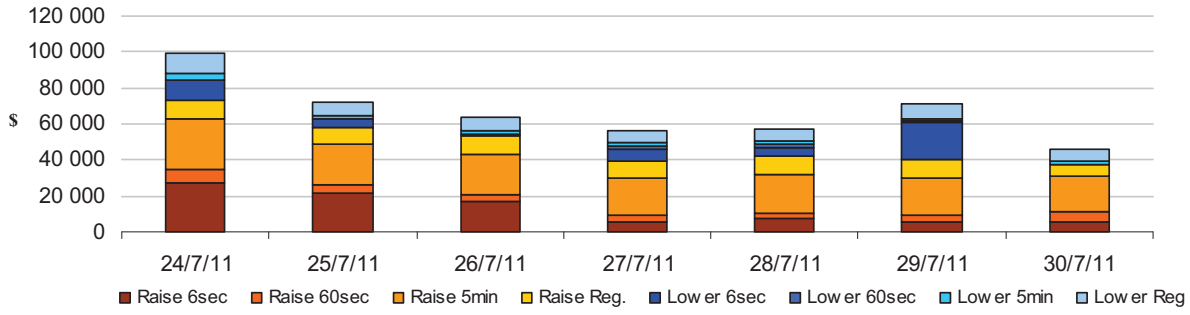
Ancillary services market

The total cost of frequency control ancillary services (FCAS) on the mainland for the week was $299 000 or less than one per cent of energy turnover on the mainland.

The total cost of FCAS in Tasmania for the week was $168 000 or 1.3 per cent of energy turnover in Tasmania.

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
August 2011

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

Detailed Market Analysis

AUSTRALIAN ENERGY REGULATOR

24 July – 30 July 2011

Tasmania

There were twenty-one occasions where the spot price in Tasmania was greater than three times the Tasmania weekly average price of $58/MWh and above $250/MWh.

Monday, 25 July

11:00 AM	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	2083.64	12 390.22	12 390.22
Demand (MW)	1378	1525	1526
Available capacity (MW)	2064	2056	2056
12:00 PM	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	295.16	295.04	295.22
Demand (MW)	1439	1466	1471
Available capacity (MW)	2056	2056	2056
12:30 PM	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	251.99	295.04	295.04
Demand (MW)	1425	1437	1445
Available capacity (MW)	2056	2056	2056
2:30 PM	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	251.88	295.04	295.04
Demand (MW)	1408	1438	1419
Available capacity (MW)	2056	2056	2056
3:30 PM	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	295.04	295.22	295.04
Demand (MW)	1417	1416	1399
Available capacity (MW)	2154	2154	2154

4:00 PM	Actual	4 hr forecast	12 hr forecast
Price ($/MWh)	295.16	295.22	295.04
Demand (MW)	1451	1443	1429
Available capacity (MW)	2154	2154	2154
4:30 PM	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	499.04	499.04	499.04
Demand (MW)	1411	1460	1450
Available capacity (MW)	2159	2154	2154

Conditions at the time saw prices and demand close to that forecast, with the exception of the 11 am trading interval. Available capacity was close to forecast.

At 11 am, the spot price reached $2084/MWh, This was driven by Hydro Tasmania's bidding strategy that saw 1050 MW offered (day ahead) at prices above $11 700/MWh and 602 MW priced below zero for the 11 am trading interval. For the previous trading interval, 1359 MW of capacity was priced at less than $50/MWh. The step change in offer prices meant that the high priced capacity from Hydro Tasmania was dispatched, setting the price for the 10.35 am dispatch interval to $12 390/MWh.

In response to the high price, there was an apparent 150 MW demand side reduction. At 10.34 am, effective from 10.40 am, Hydro Tasmania rebid 370 MW of capacity priced above $12 400/MWh at its Gordon Power Station into negative prices. The reason given was "1035A Tas demand 20MW lower than forecast". As a result the price fell to $28/MWh at 10.40 am. For the next few hours Hydro Tasmania offered only around 600 MW at negative prices, with the remainder offered at around $300/MWh. As a result prices were set at around $300/MWh for these periods.

There was no other significant rebidding.

Tuesday, 26 July

11:30 AM	Actual	4 hr forecast	12 hr forecast
Price ($/MWh)	295.18	295.28	295.28
Demand (MW)	1426	1498	1494
Available capacity (MW)	2154	2154	2154
12:00 PM	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	295.15	295.28	295.28
Demand (MW)	1394	1472	1468
Available capacity (MW)	2154	2154	2154

Conditions at the time saw demand around 70 MW lower than that forecast, while price and available capacity were as forecast.

Wednesday, 27 July

7:00 AM	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	256.30	295.16	295.16
Demand (MW)	1343	1456	1438
Available capacity (MW)	2162	2162	2162
7:30 AM	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	251.97	295.24	295.24
Demand (MW)	1453	1582	1563
Available capacity (MW)	2162	2162	2162
8:00 AM	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	295.24	295.28	295.28
Demand (MW)	1559	1662	1655
Available capacity (MW)	2162	2162	2162
8:30 AM	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	295.24	295.28	295.28
Demand (MW)	1597	1681	1682
Available capacity (MW)	2162	2162	2162
9:00 AM	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	295.24	295.28	295.28
Demand (MW)	1610	1663	1655
Available capacity (MW)	2162	2162	2162
9:30 AM	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	295.25	295.28	295.28
Demand (MW)	1566	1628	1617
Available capacity (MW)	2074	2074	2074
10:00 AM	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	295.22	295.28	295.28
Demand (MW)	1546	1575	1563
Available capacity (MW)	2050	2050	2050

10:30 AM	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	295.17	295.22	295.22
Demand (MW)	1497	1521	1518
Available capacity (MW)	2050	2050	2050
11:00 AM	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	295.16	295.16	295.16
Demand (MW)	1454	1472	1468
Available capacity (MW)	2050	2050	2050
9:00 PM	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	295.90	295.26	295.26
Demand (MW)	1440	1544	1522
Available capacity (MW)	2122	2122	2162
9:30 PM	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	295.19	295.26	295.22
Demand (MW)	1399	1486	1466
Available capacity (MW)	2122	2122	2162
10:00 PM	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	295.16	295.26	295.16
Demand (MW)	1347	1444	1423
Available capacity (MW)	2122	2122	2162

Conditions at the time saw demand up to 129 MW lower than forecast, while price and available capacity were close to that forecast.

Detailed NEM Price and Demand Trends

for Weekly Market Analysis
24 July - 30 July 2011

AUSTRALIAN ENERGY REGULATOR

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

Financial year	QLD	NSW	VIC	SA	TAS
2011-12 ($/MWh) YTD	27	32	31	36	38
2010-11 ($/MWh) YTD	22	28	28	31	31
Change*	25%	13%	13%	18%	24%
2010-11 ($/MWh)	34	43	29	42	31

Table 2: NEM turnover

Financial year	NEM Turnover** ($, billion)	Energy (TWh)
2011-12 (YTD)	$0.550	18
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)
Mar-11	28	27	26	23	26	0.414
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 (MTD)	27	32	31	36	38	0.500
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 1 August

	QLD		NSW		VIC		SA	
Q1 2012	Base	Peak	Base	Peak	Base	Peak	Base	Peak
Price on 25 Jul ($/MW)	43	69	48	78	46	76	61	106
Price on 01 Aug ($/MW)	42	68	47	74	44	72	61	106
Open interest on 01 Aug	1301	93	1605	415	1588	235	150	5
Traded in the last week (MW)	226	0	145	110	183	90	5	0
Traded since 1 Jan 11 (MW)	4302	96	6181	611	3825	251	154	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
May 11 with May 10						
MW Priced <$20/MWh	-1468	-82	-475	288	-126	-1862
MW Priced $20 to $50/MWh	493	952	626	88	52	2210
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 (MTD)						
MW Priced <$20/MWh	-826	-665	-448	99	121	-1718
MW Priced $20 to $50/MWh	202	753	-162	29	-282	539

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