

WEEKLY ELECTRICITY MARKET ANALYSIS



AUSTRALIAN ENERGY
REGULATOR

19 February - 25 February 2012

Summary

As has generally been the case since the beginning of the year, the highest prices this week occurred in Queensland. For the seventh consecutive week there were volatile market pricing outcomes in Queensland. The highest spot price for the week was \$503/MWh, and occurred in Queensland at 2 pm on 20 February. The spot price exceeded \$100/MWh on 14 other occasions during the week in Queensland.

Spot market prices

Figure 1 sets out the volume weighted average (VWA) prices for the week 19 February to 25 February 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 19 Feb - 25 Feb 2012	40	29	30	33	38
% change from previous week*	33	11	12	19	2
11/12 financial YTD	30	30	27	33	32
% change from 10/11 financial YTD **	-19	-41	-7	-30	2

*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 or less than -\$100/MWh. Longer term market trends are attached in Appendix B¹.

Financial markets

Figures 2 to 9 show futures contract² prices traded on the Australian Securities Exchange (ASX) as at close of trade on Monday 27 February 2012. 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%	43	0%	38	0%	39	0%
Calendar Year 2013	54*	-1%	59*	0%	53*	0%	57	0%
Calendar Year 2014	57	0%	61	0%	56	-1%	66	-4%
Three year average	50	0%	54	0%	49	0%	54	-1%

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)

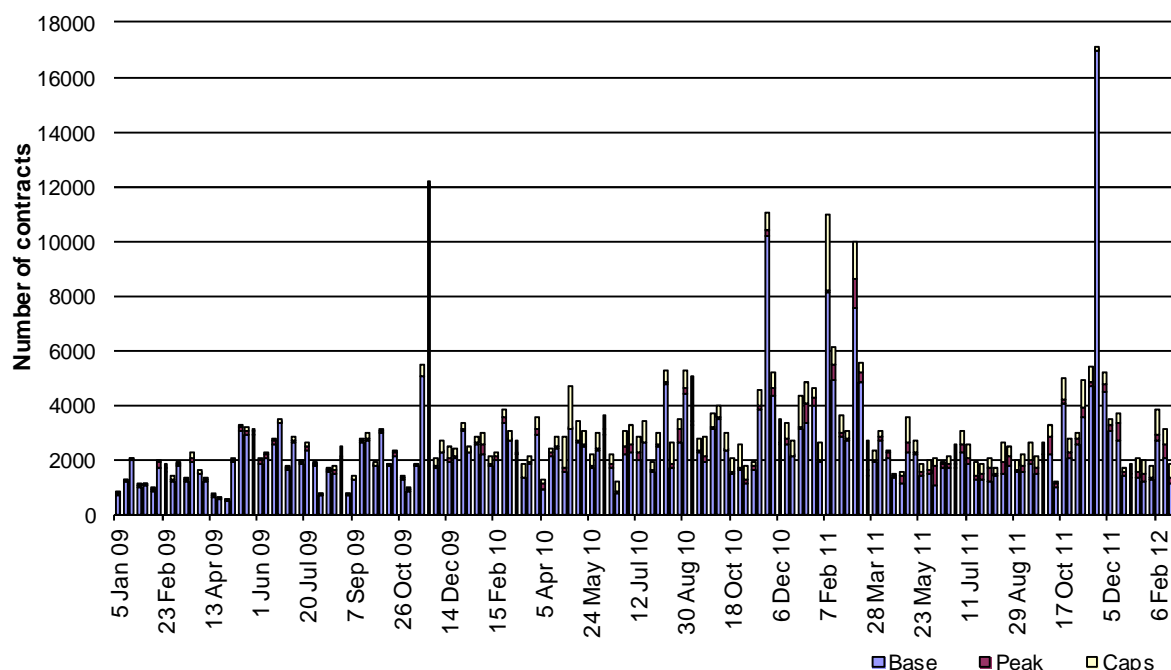
	QLD		NSW		VIC		SA	
Q1 2012 (% change)	4	-30%	2*	-30%	2*	-9%	5	-29%
2012 (% change)	4	-9%	5	-6%	2	-4%	5	-10%

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

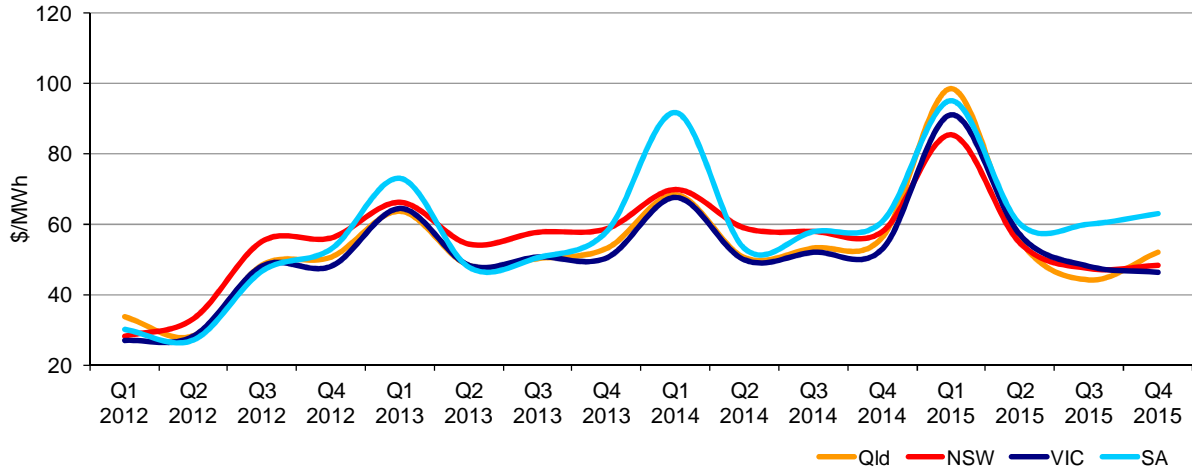


Source: d-cyphaTrade www.d-cyphatrade.com.au

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

⁴ Calculated on prices prior to rounding.

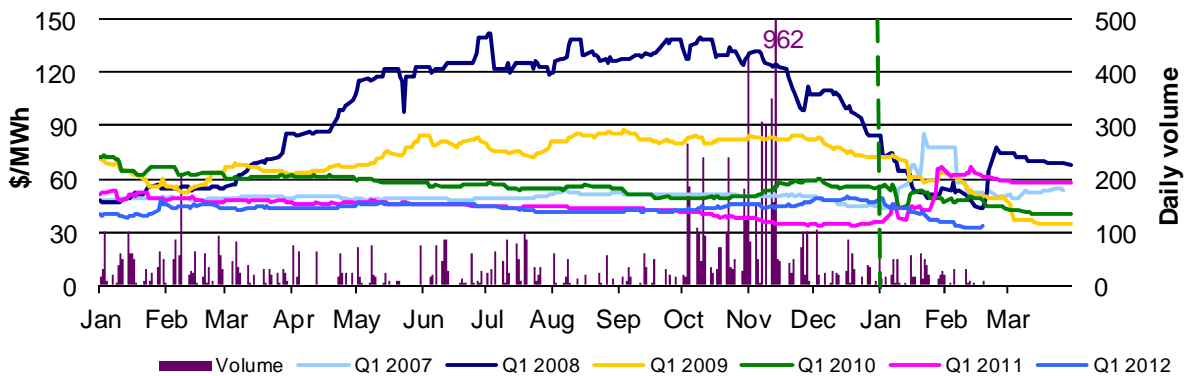
Figure 5: Quarterly base future prices Q1 2012 – Q4 2015



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

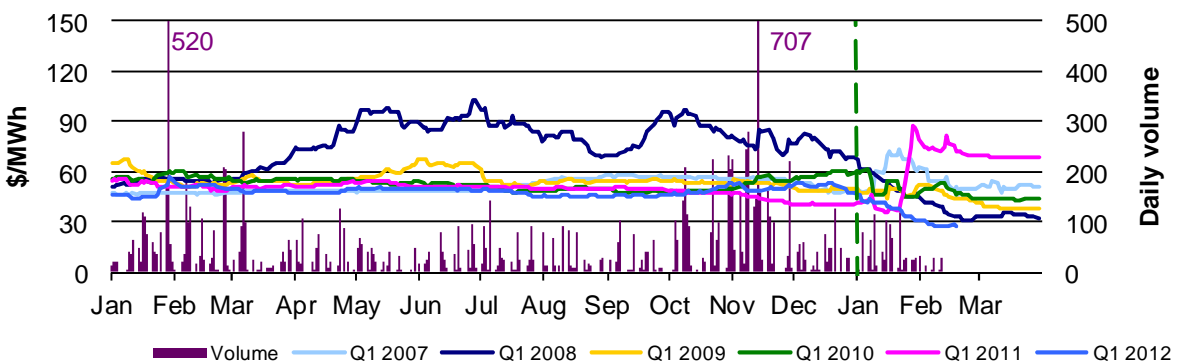
Figures 6-9 compare for each region the closing daily base contract prices for the first quarter of 2007, 2008, 2009, 2010, 2011 and 2012. Also shown is the daily volume of Q1 2012 base contracts traded. The vertical dashed line signifies the start of the Q1 period for which the contracts are being purchased.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



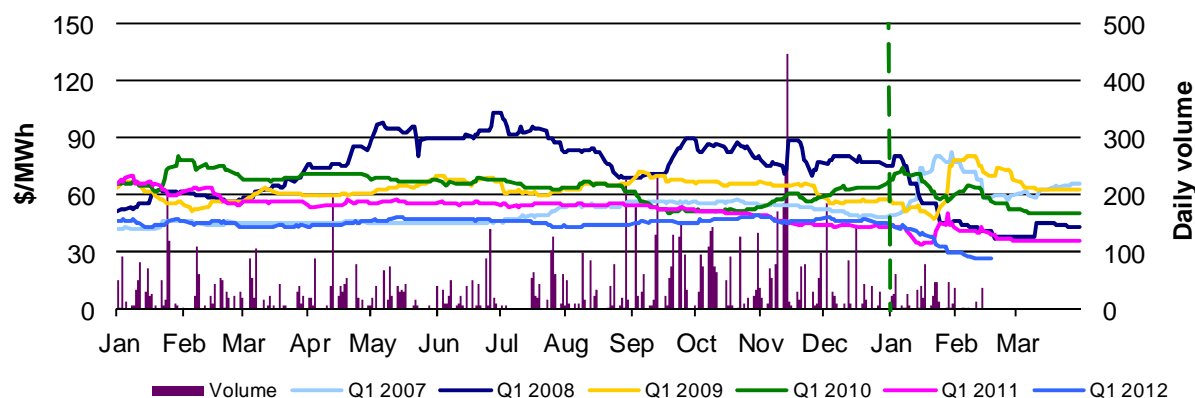
Source: d-cyphaTrade www.d-cyphatrade.com.au

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



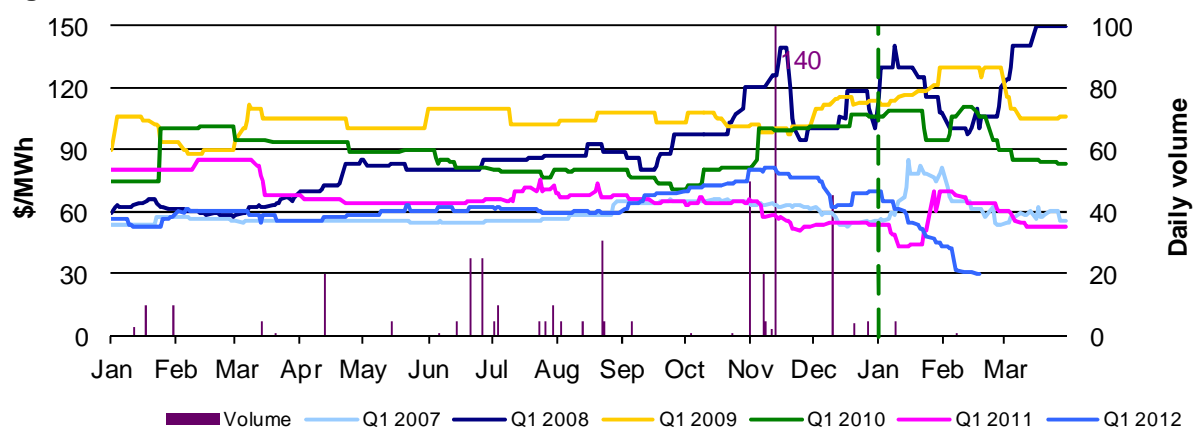
Source: d-cyphaTrade www.d-cyphatrade.com.au

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 113 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	5	41	15	3
% of total below forecast	36	1	0	1

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 57 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	-57	-99	158	46
NSW	-698	442	-574	246
VIC	358	-362	73	-62
SA	17	-62	-68	73
TAS	-239	132	9	46
TOTAL	-619	51	-402	349

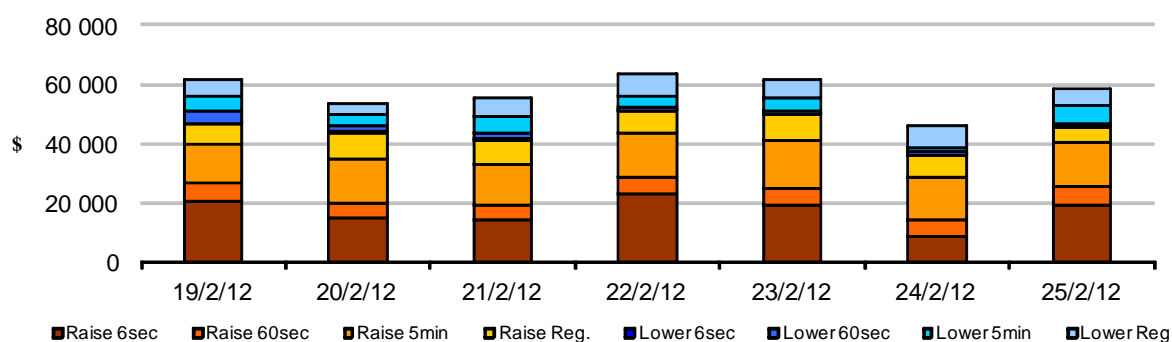
Ancillary services market

The total cost of frequency control ancillary services (FCAS) on the mainland for the week was \$285 000 or less than one per cent of energy turnover on the mainland.

The total cost of FCAS in Tasmania for the week was \$115 000 or around two 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 March 2012

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

Detailed Market Analysis

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Queensland:

There were six occasions where the spot price in Queensland was greater than three times the Queensland weekly average price of \$40/MWh and above \$250/MWh.

Sunday, 19 February

4:00 PM	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	256.60	33.06	32.41
Demand (MW)	6908	6788	6765
Available capacity (MW)	11 485	11 622	11 299

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

From 3.35 pm, a constraint managing the loading on the Calvale to Stanwell 275 kV line for the loss of the Calvale to Wurdong 275 kV line bound. The constraint equation affects the majority of Queensland generators.

At 3.49 pm, effective from 3.55 pm, CS Energy rebid 415 MW of capacity priced below \$50/MWh at its Gladstone Power Station into price bands above \$10 900/MWh. The reason given was “1547A g/stone intraconnector constraint manage 855_871 sl”.

From 4 pm, a constraint used to manage the loading of the Calvale to Wurdong line for the loss of the Calvale to Stanwell line bound. This constraint (which is very similar to the 855-871 constraint quoted by CS Energy) effects the majority of generation in Queensland as well as flow across the Queensland to New South Wales (QNI) interconnector.

The limit and flow on QNI went from 234 MW into New South Wales at 3.55 pm to 126 MW into Queensland at 4 pm. The 5-minute dispatch price reached \$1375/MWh at 4 pm as low priced generation was ramped down causing higher priced generation to be dispatched.

There was no other significant rebidding.

Monday, 20 February

2:00 PM	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	503.10	33.27	45.00
Demand (MW)	7958	7801	8001
Available capacity (MW)	11 581	11 661	11 708

3:30 PM	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	372.17	28.78	32.80
Demand (MW)	7937	7767	8088
Available capacity (MW)	11 457	11 661	11 683

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

At 12.05 pm a constraint used to manage the loading on the Calvale to Stanwell 275 kV line for the loss of the Calvale to Wurdong 275 kV line bound. The constraint equation affects the majority of Queensland generators.

At 1.41 pm, effective from 1.50 pm to 2 pm, CS Energy rebid 250 MW of capacity at Gladstone from prices below \$50/MWh to above \$10 900/MWh. The reason given was “1341A g/stone intraconnector constraint 855_871 sl”. Then at 1.45 pm CS Energy rebid all 700 MW of available capacity at Callide B at close to the price floor. The reason given was “1342A call_b intraconnector constraint 855-871 sl”..

The limit and flow on QNI reduced from 546 MW into New South Wales at 1.45 pm to 232 MW (counter-price) at 1.50 pm. The 5-minute dispatch price reached \$1356/MWh at 1.50 pm and \$1350/MWh at 1.55 pm as low priced generation was ramped down causing higher priced generation to be dispatched.

At 2.05pm a constraint managing negative settlement residues started to bind. The constraint bound for the majority of the time between 2.05 pm and 6.35 pm. Around \$178 000 of negative settlement residues accrued over this period.

Over two rebids at 3.02 pm and 3.05 pm, effective from 3.10 pm and 3.15 pm respectively, CS Energy rebid a total of 450 MW of capacity at Gladstone from prices below \$50/MWh to above \$10 900/MWh. The reasons given were “1455A g/stone intraconnector constraint 855_871 sl” and “1502A G/stone dispatch lower than 30min pre-dispatch”. Then at 3.06 pm CS Energy rebid all 725 MW of capacity at Kogan Creek from zero to prices close to the price floor. The reason given was “1506A interconnector constraint sl”.

The limit and flow on QNI went from 18 MW into New South Wales at 3.10 pm to 109 MW into Queensland at 3.15 pm. The 5-minute dispatch price reached \$1427/MWh at 3.15 pm as low priced generation was ramped down causing higher priced generation to be dispatched.

There was no other significant rebidding.

Tuesday, 21 February

12:30 PM	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	392.32	31.70	36.67
Demand (MW)	7546	7603	7920
Available capacity (MW)	11 478	11 653	11 713
1:30 PM	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	257.49	33.06	45.00
Demand (MW)	7704	7580	8063
Available capacity (MW)	11 573	11 556	11 706

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

At 11.10 pm a constraint managing the loading on the Calvale to Stanwell 275 kV line for the loss of the Calvale to Wurdong 275 kV line bound. The constraint equation affects the majority of Queensland generators.

At 12.16 pm, effective from 12.25 pm, CS Energy rebid 150 MW of capacity at Gladstone from prices below \$50/MWh to above \$10 900/MWh. The reason given was “1216A g/stone intraconnector constraint 855_871 sl”.

The limit and flow on QNI went from 569 MW into New South Wales at 12.20 pm to 277 MW (counter-price) at 12.35 pm. The 5-minute dispatch price reached \$1307/MWh at 12.25 pm as low priced generation was ramped down causing higher priced generation to be dispatched.

At 12.35pm a constraint managing negative settlement residues started binding and bound for the majority of the time until 1.35 pm. Around \$174 000 of negative settlement residues accrued over this period.

From 1.05 pm, a constraint used to manage the loading of the Calvale to Wurdong line for the loss of the Calvale to Stanwell line bound. This constraint (which is very similar to the 855-871 constraint quoted by CS Energy) effects the majority of generation in Queensland as well as flow across the Queensland to New South Wales (QNI) interconnector.

At 1.08 pm, effective from 1.15 pm, CS Energy rebid 250 MW of capacity at Gladstone from prices below \$50/MWh to above \$10 900/MWh. The reason given was “1301A g/stone intraconnector constraint 855_871 sl”.

The limit and flow on QNI changed from 303 MW into New South Wales at 1.05 pm to 542 MW (counter-price at) at 1.10 pm. The 5-minute dispatch price reached \$1354/MWh at 1.15 pm as low priced generation was ramped down causing higher priced generation to be dispatched.

There was no other significant rebidding.

Wednesday, 22 February

3:30 PM	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	438.18	27.54	25.76
Demand (MW)	7404	7399	7334
Available capacity (MW)	11 474	11 660	11 710

Conditions at the time saw demand close to that forecast and available capacity 186 MW lower than that forecast four hours ahead.

At 1.25 pm a constraint managing the loading on the Calvale to Stanwell 275 kV line for the loss of the Calvale to Wurdong 275 kV line bound. The constraint equation affects the majority of Queensland generators.

At 2.54 pm, effective from 3.05 pm, Stanwell Corporation reduced the available capacity of Stanwell unit four by 185 MW (from 365 MW to 180 MW) all of which was priced above \$1800/MWh. The reason given was “1452P Mill limit sl”.

At 3.11 pm, effective from 3.20 pm, CS Energy rebid 650 MW of capacity at Gladstone from prices below \$50/MWh to above \$10 900/MWh. The reason given was “1511A g/stone intraconnector constraint 855_871 sl”.

The limit and flow on QNI went from 807 MW into New South Wales at 3.15 pm to 618 MW at 3.20 pm. The 5-minute dispatch price reached \$1296/MWh at 3.20 pm and \$1278/MWh at 3.25 pm as low priced generation was ramped down causing higher priced generation to be dispatched.

At 3.30 pm a constraint used to manage negative settlement residues started to bind. Around \$250 000 of negative settlement residues accrued between 2.30 pm and 4.30 pm.

There was no other significant rebidding.

Detailed NEM Price and Demand Trends

for Weekly Market Analysis
19 February - 25 February 2012



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

Financial year	QLD	NSW	VIC	SA	TAS
2011-12 (\$/MWh) YTD	30	30	27	33	32
2010-11 (\$/MWh) YTD	37	51	29	48	31
Change*	-19%	-41%	-7%	-30%	2%
2010-11 (\$/MWh)	34	43	29	42	31

Table 2: NEM turnover

Financial year	NEM Turnover** (\$, billion)	Energy (TWh)
2011-12 (YTD)	\$3.886	131
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)
Oct-11	28	29	24	43	33	0.421
Nov-11	35	40	27	32	31	0.512
Dec-11	26	26	23	25	26	0.369
Jan-12	35	26	25	28	39	0.447
Feb-12 (MTD)	32	27	27	29	37	0.367
Q1 2012	33	26	26	28	38	0.895
Q1 2011	88	126	50	116	28	2.980
Change*	-62%	-79%	-48%	-75%	39%	-69.96%

Table 4: ASX energy futures contract prices at end of 27 February 2012

	QLD		NSW		VIC		SA	
	Base	Peak	Base	Peak	Base	Peak	Base	Peak
Q1 2012								
Price on 20 Feb (\$/MWh)	33	43	28	34	27	35	31	44
Price on 27 Feb (\$/MWh)	34	46	28	34	27	34	30	44
Open interest on 27 Feb	1240	306	2413	610	2161	303	293	5
Traded in the last week (MW)	22	15	60	5	36	3	0	0
Traded since 1 Jan 11 (MW)	11535	459	13845	1677	10432	1332	499	5
Settled price for Q1 11(\$/MWh)	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
December 11 with December 10						
MW Priced <\$20/MWh	-767	-1462	-931	-239	-401	-3799
MW Priced \$20 to \$50/MWh	65	971	767	134	164	2100
January 12 with January 11						
MW Priced <\$20/MWh	77	609	76	-291	-211	259
MW Priced \$20 to \$50/MWh	168	131	226	57	-8	574
February 12 with February 11 (MTD)						
MW Priced <\$20/MWh	-125	-455	-39	-217	160	-677
MW Priced \$20 to \$50/MWh	421	508	84	83	-391	704

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

** Estimated value