

6 January – 12 January 2008

Summary

Spot prices for the week averaged between \$41/MWh and \$57/MWh in all regions except South Australia.

Extreme temperatures in South Australia and Victoria on Thursday led to new record demand in both regions. The spot price in South Australia was above \$5000/MWh for three and a half hours resulting in a weekly average price of \$416/MWh. In accordance with 3.13.7 of the Rules, the AER will be issuing a report into the events of the day.

Turnover in the energy market in the week ended 12 January was \$297 million. The total cost of ancillary services for the week was \$1.2 million or 0.4 per cent of energy market turnover.

Significant variations between actual prices and those forecast 4 and 12 hours ahead occurred in 252, or three quarters of all trading intervals. Demand forecasts produced 4 and 12 hours ahead varied from actual by more than 5 per cent in 28 per cent of all trading intervals across the market. In South Australia these variations occurred in two thirds of all trading intervals.

Energy prices

Figure 1 sets out the national demand and spot prices in each region for each trading interval. Figure 2 compares the volume weighted average price with the averages for the previous week, the same quarter last year and for the previous financial year.

Figure 1: national demand and spot prices

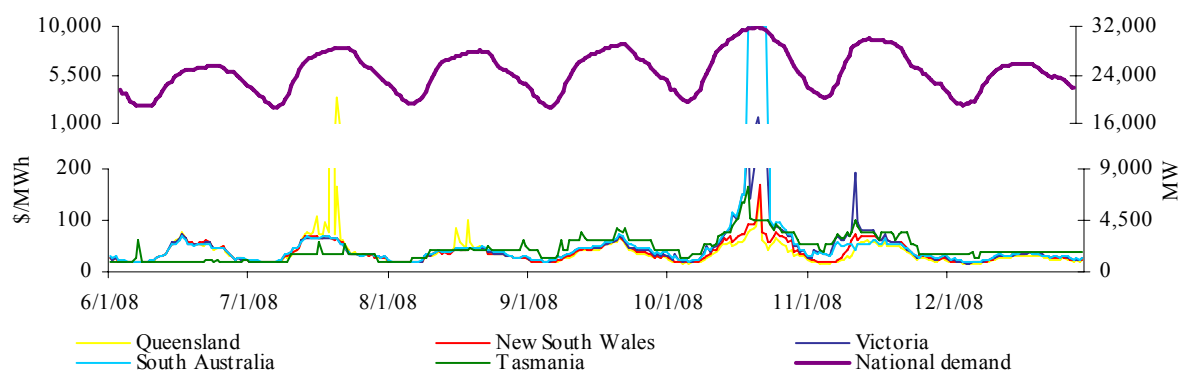


Figure 2: volume weighted average spot price for energy market (\$/MWh)

	QLD	NSW	VIC	SA	TAS
Last week	51	41	57	416	46
Previous week	32	36	61	318	35
Same quarter last year	60	57	75	69	50
Financial year to date	55	50	53	77	55
% change from previous week*	▲ 58%	▲ 13%	▼ 6%	▲ 31%	▲ 30%
% change from same quarter last year**	▼ 14%	▼ 29%	▼ 24%	▲ 505%	▼ 9%
% change from year to date***	▲ 101%	▲ 38%	▲ 50%	▲ 85%	▲ 36%

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

**The percentage change between last week's average spot price and the average price for the same quarter last year.

***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.

Figures 3 to 7 show the weekly correlation between spot price and demand.

Figure 3: Queensland

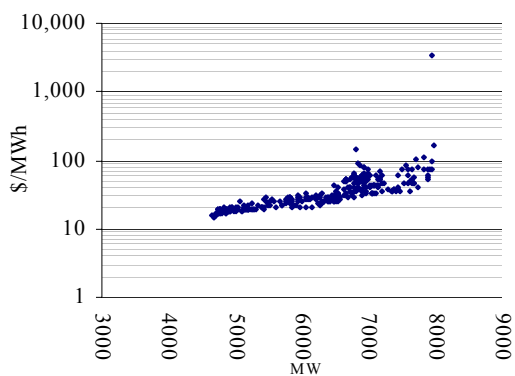


Figure 4: New South Wales

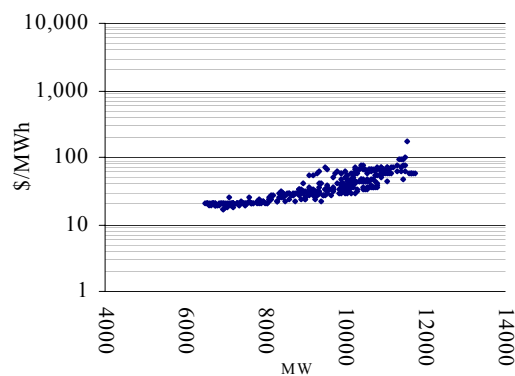


Figure 5: Victoria

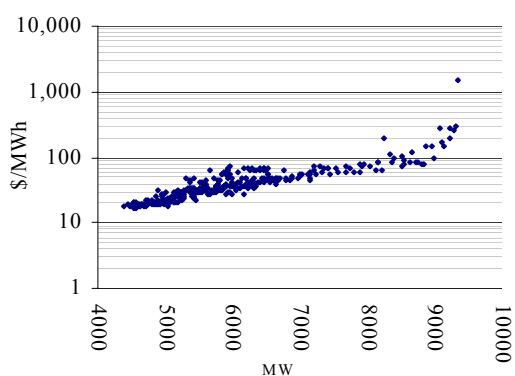


Figure 6: South Australia

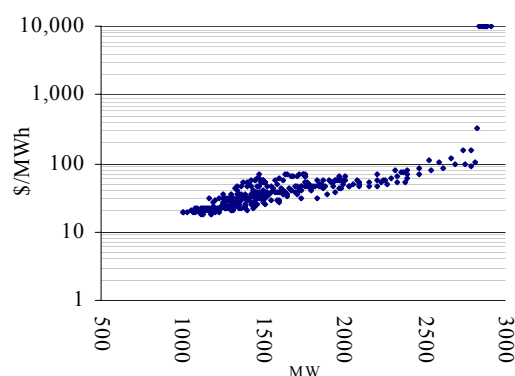
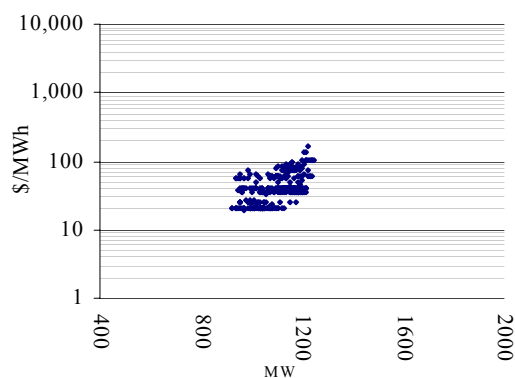


Figure 7: Tasmania



Maximum spot prices for the week ranged from \$166/MWh in Tasmania to \$10 000/MWh in South Australia. Figure 8 compares the weekly price volatility index with the averages for the previous week and the same quarter last year.

Figure 8: volatility index during peak periods

	QLD	NSW	VIC	SA	TAS
Last week	0.81	0.84	1.05	0.93	0.84
Previous week	1.07	1.12	1.49	2.72	0.41
Same quarter last year	0.79	0.78	0.78	0.75	0.70

The definition of the price volatility index is available on the AER website.
<http://www.aer.gov.au/content/index.phtml/tag/MarketSnapshotLongTermAnalysis>

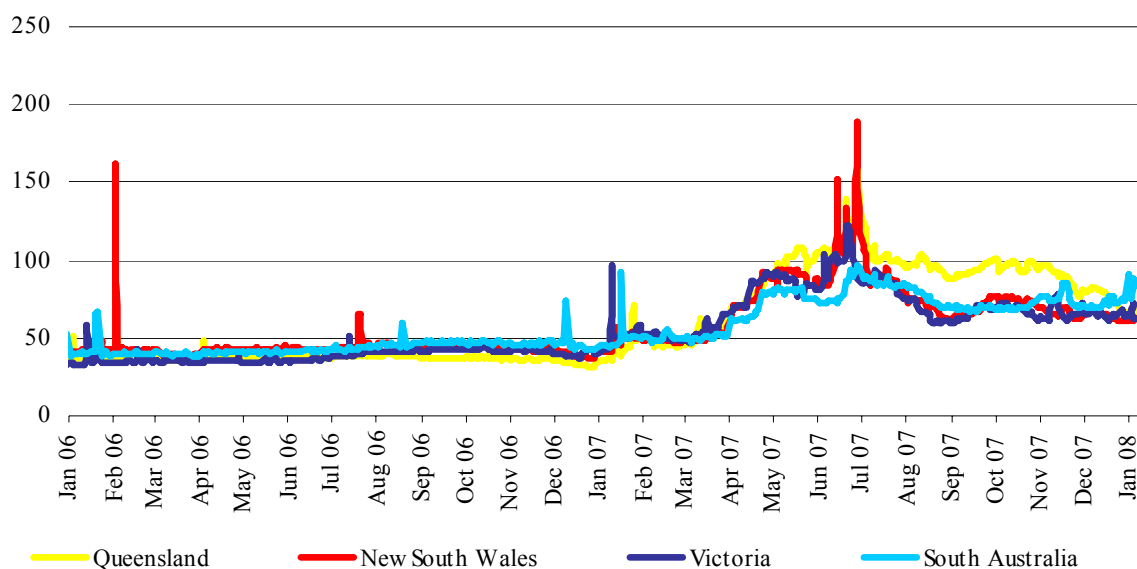
Figure 9 sets out the d-cyphaTrade wholesale electricity price index (WEPI)* for each region throughout the week excluding Tasmania. Figure 10 sets out the WEPI since 1 January 2006.

Figure 9: d-cyphaTrade WEPI for the week

	Monday	Tuesday	Wednesday	Thursday	Friday
Queensland	69.64	66.11	64.22	63.92	61.42
New South Wales	62.28	61.60	61.17	61.61	60.19
Victoria	64.54	64.92	65.13	73.12	62.11
South Australia	84.99	86.63	88.78	233.39	84.58

* The definition of the wholesale electricity price index is available on the d-cyphaTrade website
http://www.d-cyphatrade.com.au/products/wholesale_electricity_price_i
 The WEPI applies for working days only.

Figure 10: d-cyphaTrade WEPI



Reserves

Low reserve conditions were forecast for Wednesday and Thursday in South Australia but these conditions were resolved following a market response.

Imports at time of maximum demand

Figures 11 to 15 show spot price, net imports and limits at the time of weekly maximum demand.

Figure 11: Queensland

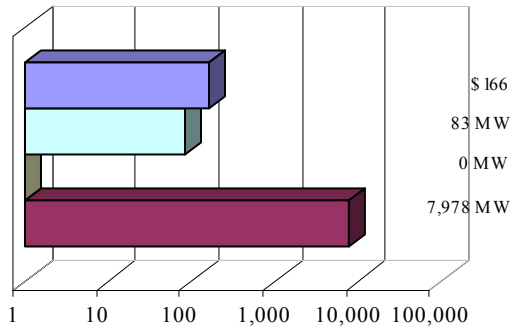


Figure 12: New South Wales

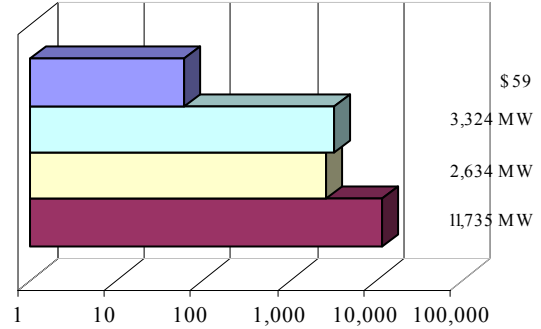


Figure 13: Victoria

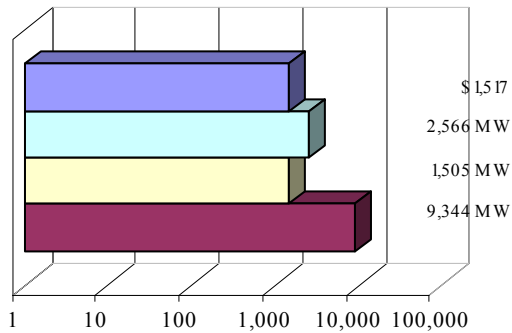


Figure 14: South Australia

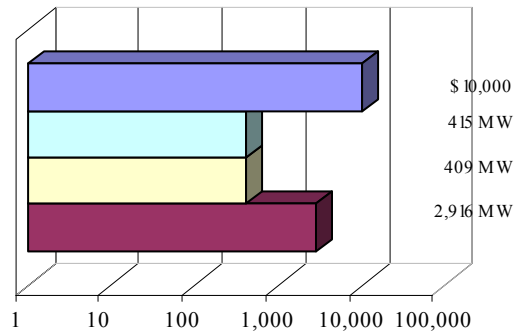
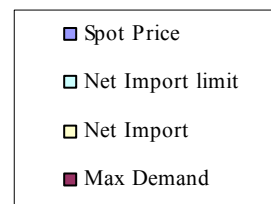
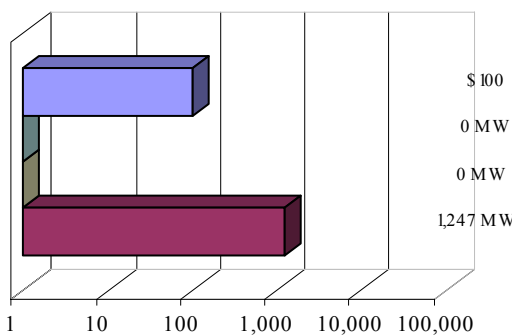


Figure 15: Tasmania



Price variations

There were 252 trading intervals where actual prices significantly varied from forecasts made 4 and 12 hours ahead of dispatch. Figures 16 to 20 show the difference in actual and forecast price against the difference in actual and forecast demand. The figures highlight the relationship between price variation and demand forecast error. The information is presented in terms of the percentage difference from actual. Price differences beyond 100 per cent have been capped.

Figure 16: Queensland

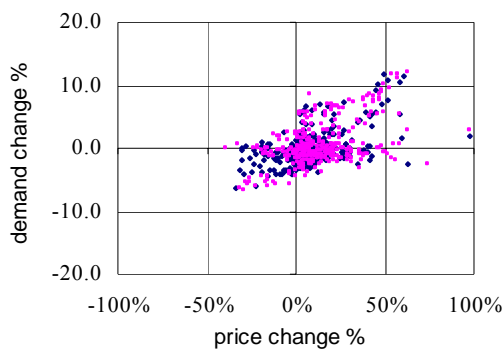


Figure 17: New South Wales

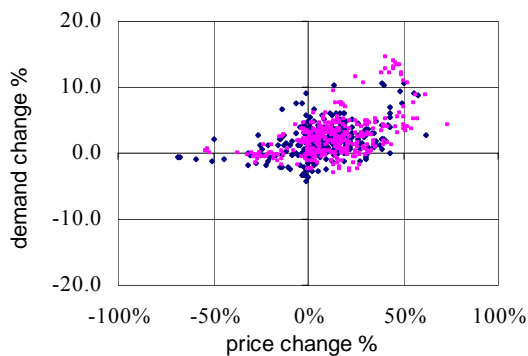


Figure 18: Victoria

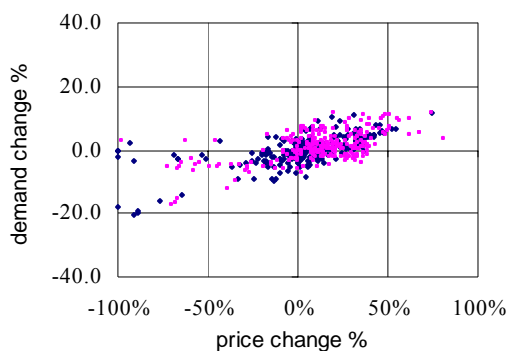


Figure 19: South Australia

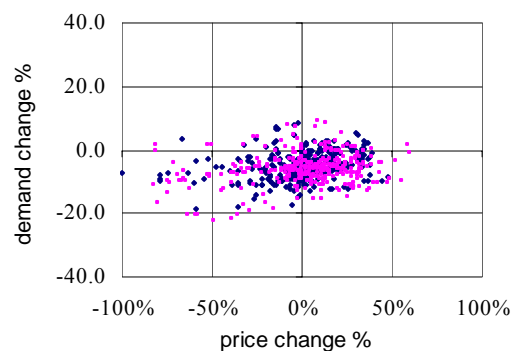


Figure 20: Tasmania

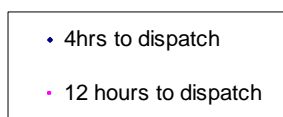
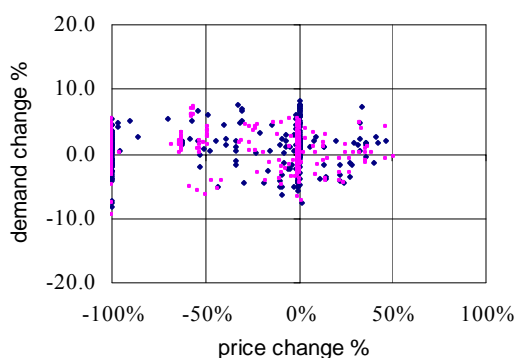
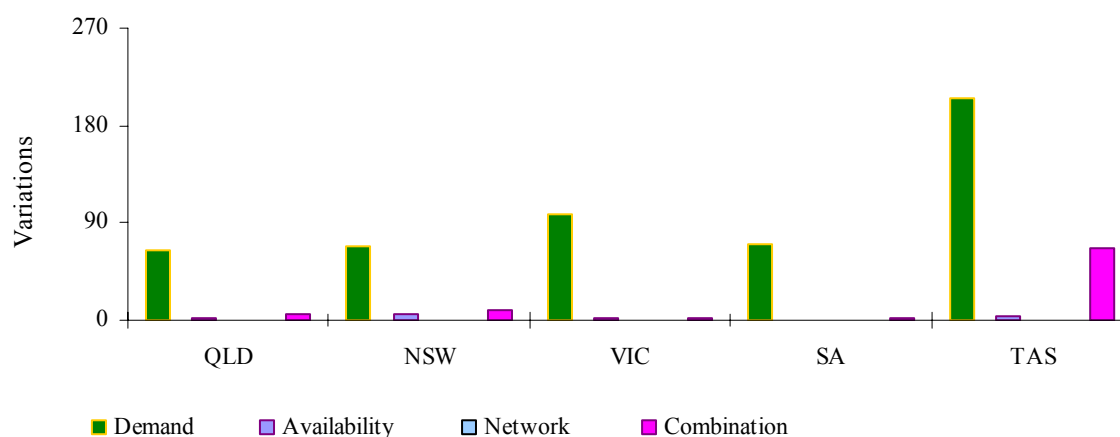


Figure 21 summarises the number and most probable reason for variations between forecast and actual prices.

Figure 21: reasons for variations between forecast and actual prices



Price and demand

Figures 22 – 56 set out details of spot prices and demand on a national and regional basis. They include the actual spot price, actual demand and variation from forecasts made 4 and 12 hours ahead of dispatch.

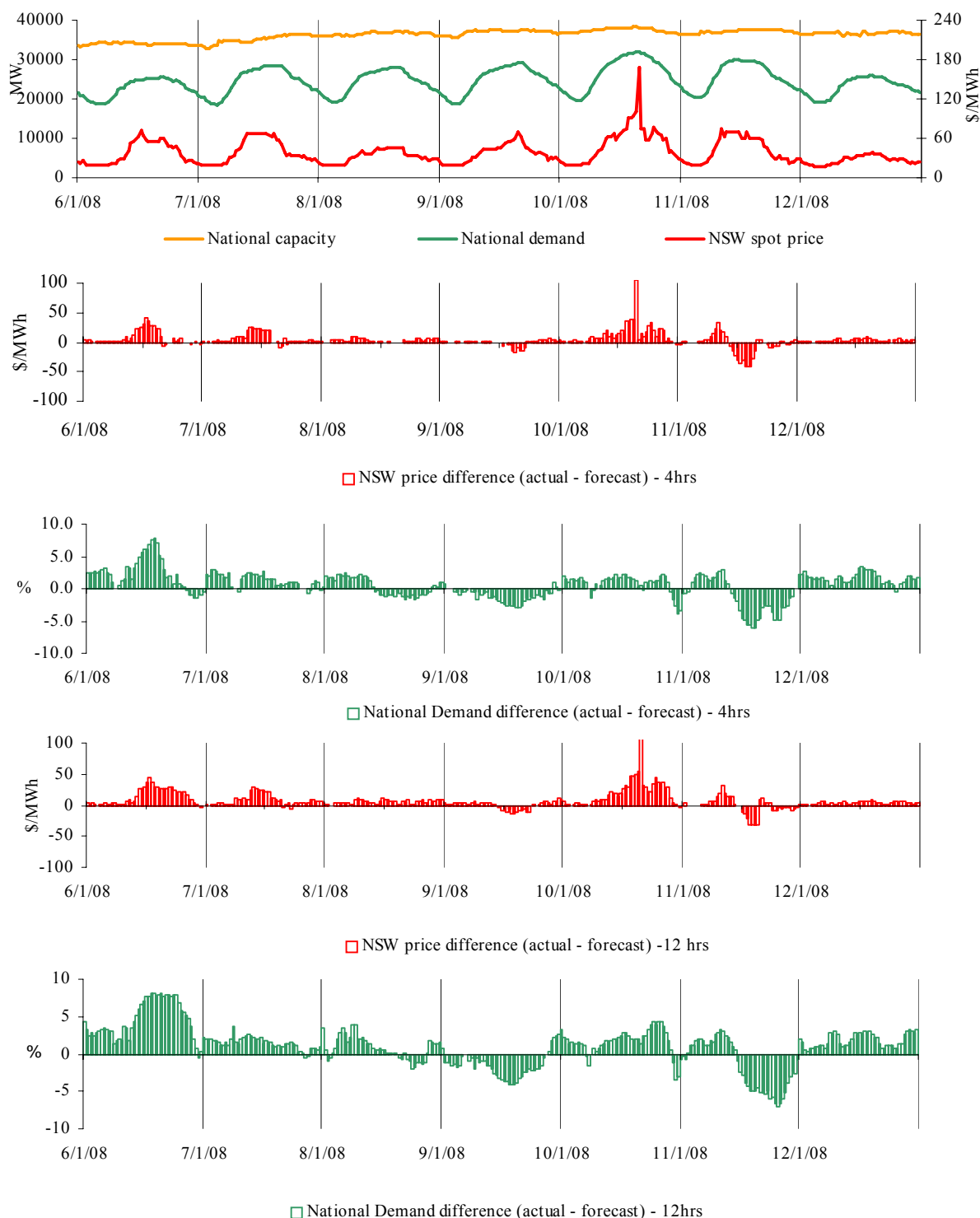
On a regional basis the differences between the maximum temperature and the temperature forecast at around 6.00 pm the day before are also included.

In each section, all prices for the week greater than three times the average have been presented. This threshold is used to filter the material price outcomes for the week. The actual price, demand and generator availability is compared with the forecasts made 4 and 12 hours ahead, with significant changes to these forecasts explained.

National Market

Spot prices within the national market are regularly aligned with conditions in one region reflected across all others. Figures 22-26 shows pricing events that occurred when spot prices were generally aligned across all regions of the national electricity market – 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.

Figures 22-26: National market outcomes

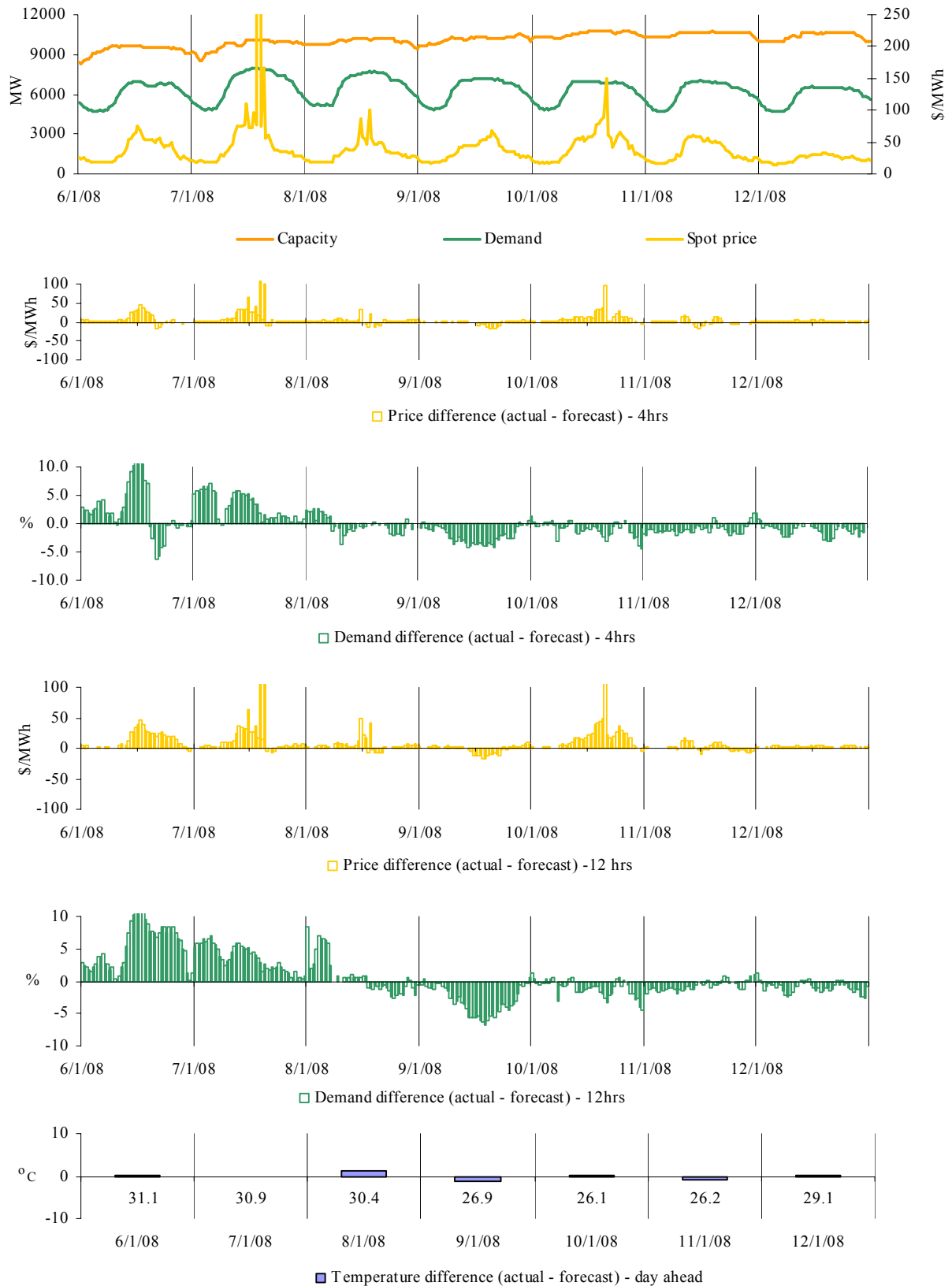


There was no occasion where the spot price aligned nationally and the New South Wales price was greater than three times the New South Wales weekly average price of \$41/MWh.

Queensland

Figures 27-32 show spot market prices in Queensland over the week along with actual demand and differences between actual and forecast demand and prices.

Figures 27-32: Queensland actual spot price, demand and forecast differences



There were two occasions where the spot price in Queensland was greater than three times the Queensland weekly average price of \$51/MWh.

Monday, 7 January

2:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	3396.26	66.35	60.03
Demand (MW)	7958	7818	7724
Available capacity (MW)	10 142	10 162	10 307
3:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	166.47	67.98	61.71
Demand (MW)	7978	7845	7759
Available capacity (MW)	10 106	10 164	10 307

Conditions at the time saw demand 140 MW higher than forecast four hours ahead and at its highest levels since last summer.

At 7.20 am on Sunday a network constraint was invoked to manage an unplanned outage of the Palmwoods 275/132kV number 2 transformer. The constraint invoked did not affect dispatch until 2.15 pm on Monday, when it was violated. This coincided with five-minute demand in Queensland reaching its highest level for the day. The constraint limits flows from New South Wales into Queensland across QNI and Terranora interconnectors as well as all generation in Queensland except for the recently commissioned Kogan Creek power station.

The five-minute price increased from \$111/MWh at 2.10 pm to \$10 000/MWh at 2.15 pm and 2.20 pm and then returned to \$124/MWh at 2.25 pm. The constraint bound at times over the rest of the afternoon, and sometimes coincident with high prices before being revoked at 3.20 pm and replaced with a less conservative constraint. The new constraint included the Kogan Creek generator.

At 12.34 pm Tarong Energy rebid 200 MW of capacity at Wivenhoe unit one from prices below \$50/MWh to above \$9000/MWh. The reason given was “Change to Wiv environmntl run reqmts::portfolio rearran” or “change to Wivenhoe environmental run requirements::portfolio rearrangement”.

At 2.06 pm first effective 2.15 pm, CS Energy shifted 92 MW of capacity across its portfolio from prices of less than \$75/MWh to prices above \$200/MWh. The rebid reason given was “Change in PD and Dispatch”.

At 2.07 pm first effective 2.15 pm Origin Energy rebid 34 MW of capacity at Mount Stuart unit one from prices of \$10 000/MWh to around \$300/MWh. The reason given was “Network Support”.

At 2.07 pm first effective 2.15 pm Stanwell Corporation rebid 120 MW of capacity at Stanwell from prices below \$50/MWh to above \$9000/MWh. The reason given was “Maintenance change availability”.

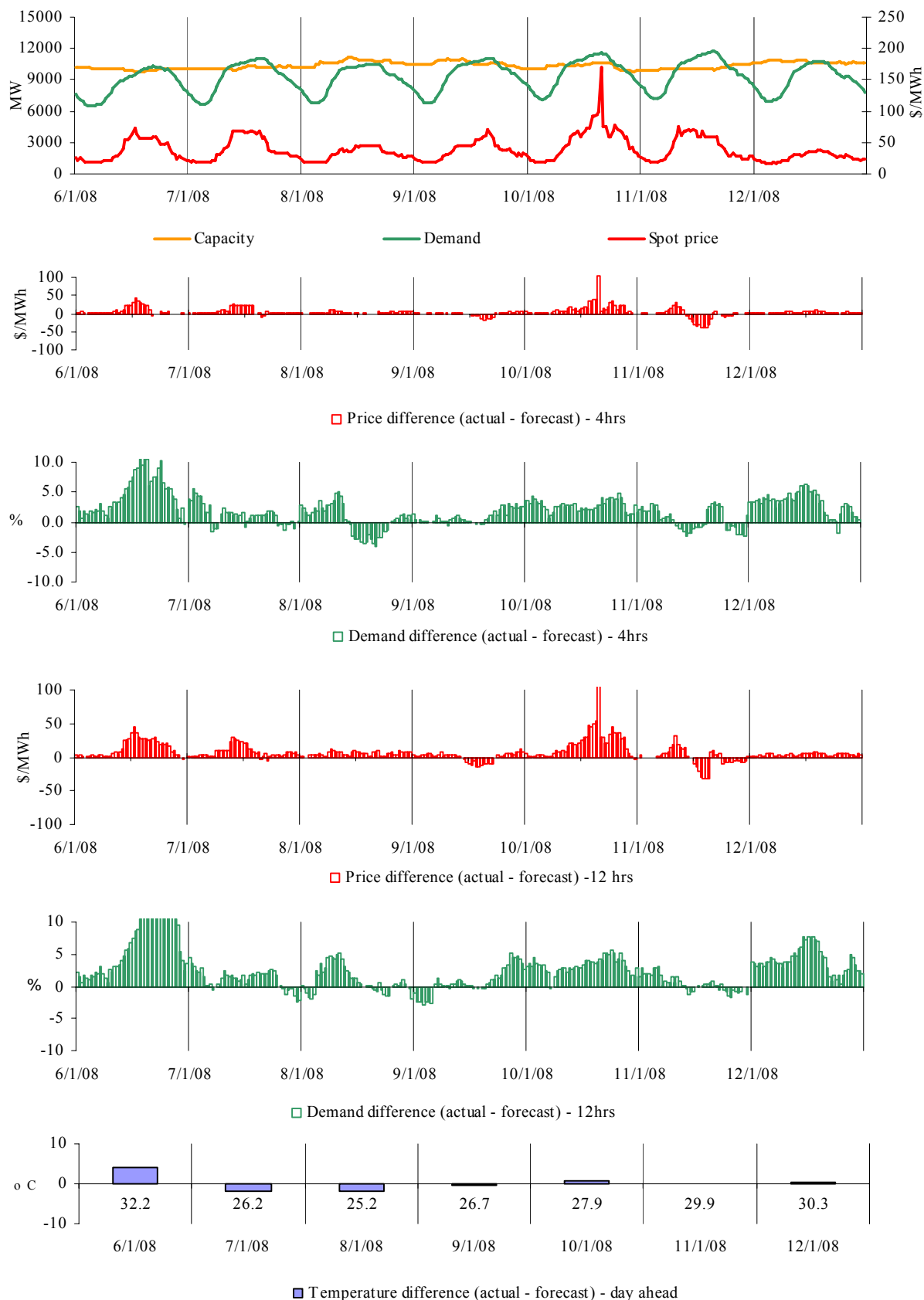
At 2.18 pm first effective 2.25 pm Tarong Energy rebid 300 MW of capacity at Wivenhoe unit two from prices above \$9000/MWh to below \$50/MWh. The reason given was “Change in PD::Adjust profile”.

There was no other significant rebidding.

New South Wales

Figures 33-38 show spot market prices in New South Wales over the week along with actual demand and differences between actual and forecast demand and prices.

Figures 33-38 New South Wales actual spot price, demand and forecast differences



There was one occasion where the spot price in New South Wales was greater than three times the New South Wales weekly average price of \$41/MWh.

Thursday, 10 January

4:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	169.00	64.16	45.10
Demand (MW)	11 569	11 248	11 084
Available capacity (MW)	10 603	10 733	10 733

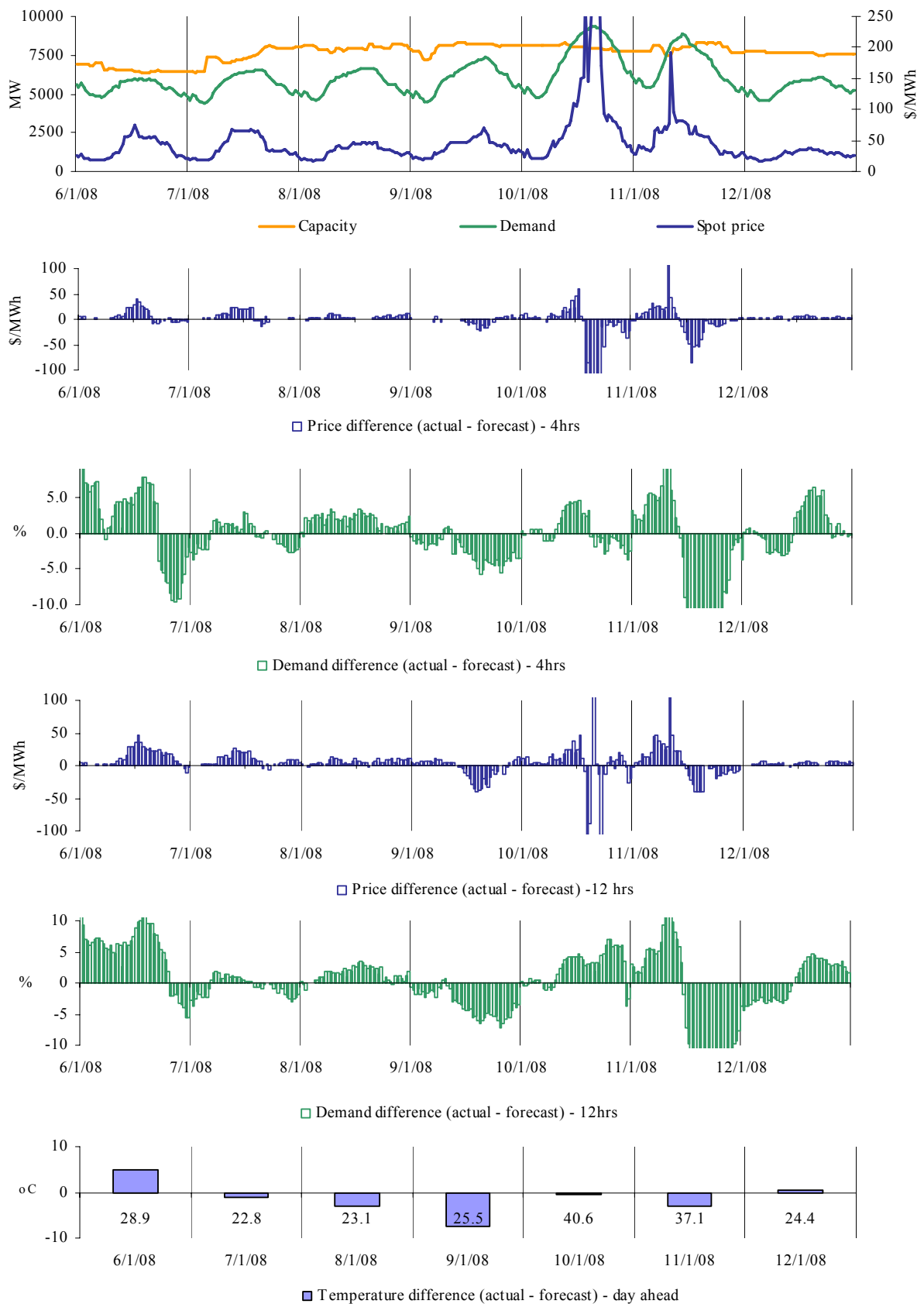
Conditions at the time saw demand 320 MW higher than forecast four hours ahead and available capacity 130 MW lower than forecast four hours ahead.

There was no significant rebidding.

Victoria

Figures 39-44 show spot market prices in Victoria over the week along with actual demand and differences between actual and forecast demand and prices.

Figures 39-44: Victoria actual spot price, demand and forecast differences



There were seven occasions where the spot price in Victoria was greater than three times the Victoria weekly average price of \$57/MWh.

Thursday, 10 January

2:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	269.69	272.94	278.85
Demand (MW)	9089	8842	8745
Available capacity (MW)	7980	8293	8214
3:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	198.12	283.32	287.65
Demand (MW)	9232	8946	8951
Available capacity (MW)	7976	8186	8214
3:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	290.27	7876.86	289.32
Demand (MW)	9313	9361	9034
Available capacity (MW)	7954	8090	8214
4:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	1516.94	9013.31	281.50
Demand (MW)	9344	9390	9031
Available capacity (MW)	7945	8058	8219
4:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	284.25	8973.11	281.43
Demand (MW)	9216	9391	9039
Available capacity (MW)	7935	8047	8219
5:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	266.30	8701.76	280.28
Demand (MW)	9287	9336	8985
Available capacity (MW)	7919	7988	8229

Conditions at the time saw demand reach a new record of 9344 MW at 4 pm but it was still lower than that forecast four hours ahead. Available capacity was up to 300 MW lower than forecast four hours ahead.

Prices were below that forecast four hours ahead.

Over several rebids from 9.25 am TRUenergy reduced the availability at Yallourn by 170 MW priced below \$5/MWh. The reasons given were “Vacuum limit::reduce availability” and “Adjust capacity-advised plant condition”.

There was no other significant rebidding.

Friday, 11 January

8:30 am	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	192.14	49.25	49.48
Demand (MW)	8247	7292	7298
Available capacity (MW)	7441	8140	8120

Conditions at the time saw demand 950 MW higher than forecast four and twelve hours ahead and 300 MW higher than forecast at the beginning of the trading interval. Available capacity was 700 MW lower than that forecast four and twelve hours ahead.

At 6.15 am LYMMCO's Loy Yang A unit two tripped reducing availability from 508 MW to zero. All of this capacity was priced below \$30/MWh. The unit returned to service from 8.30 am.

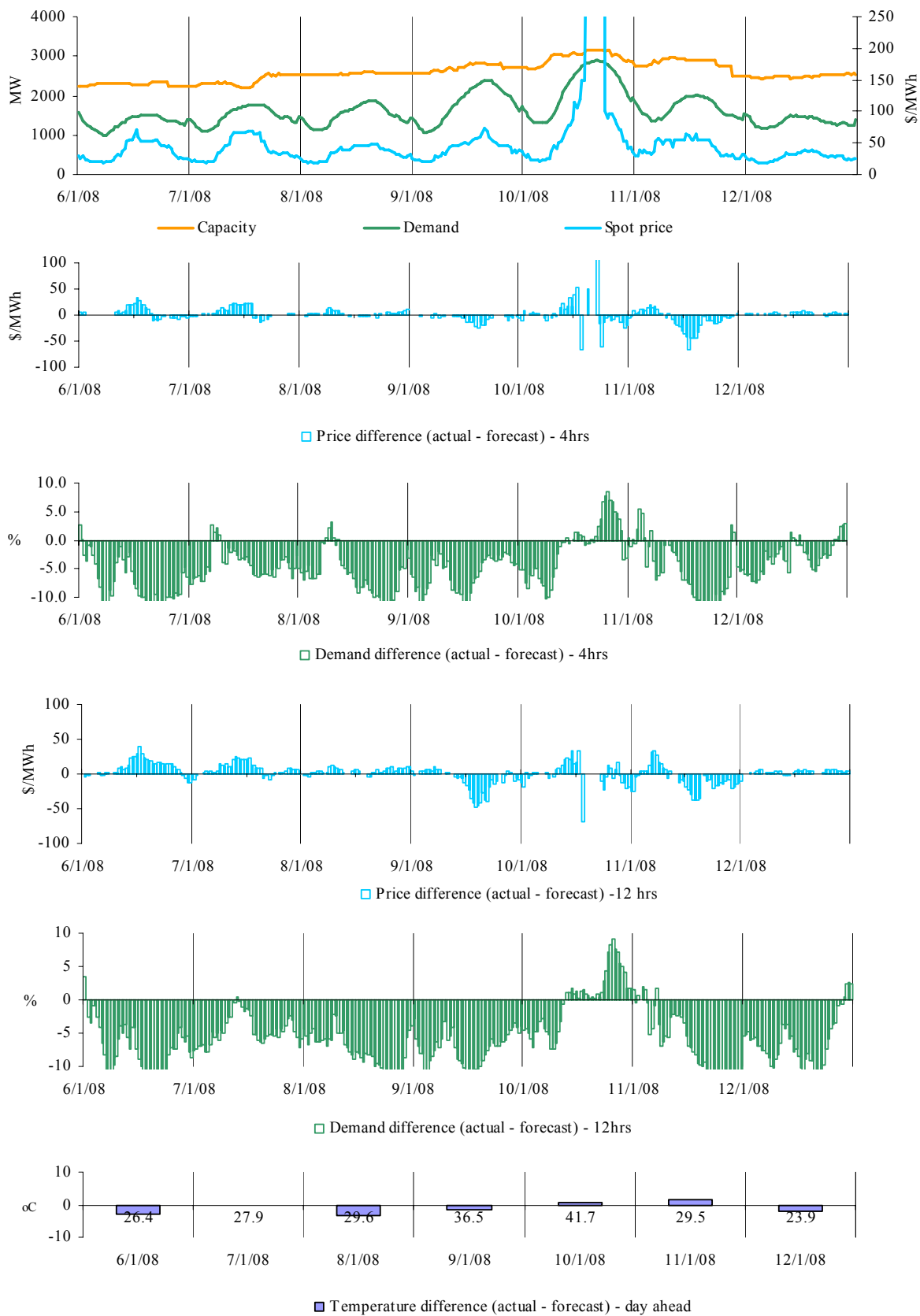
From 7.11 am and over several rebids TRUenergy reduced the availability across its Yallourn units by 175 MW priced below \$5/MWh, 85 MW of this capacity was removed at the beginning of the trading interval. The reason given was "Capacity adjustments due to plant conditions".

There was no other significant rebidding.

South Australia

Figures 45-50 show spot market prices in South Australia over the week along with actual demand and differences between actual and forecast demand and prices.

Figures 45-50: South Australia actual spot price, demand and forecast differences



There were seven occasions where the spot price in South Australia was greater than three times the South Australia weekly average price of \$416/MWh.

Thursday, 10 January

2:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	9999.72	9999.72	9999.72
Demand (MW)	2835	2817	2817
Available capacity (MW)	3146	3152	3045
3:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	9999.72	9999.72	9999.72
Demand (MW)	2859	2883	2855
Available capacity (MW)	3171	3152	3045
3:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	9999.72	9950.71	9999.72
Demand (MW)	2879	2895	2869
Available capacity (MW)	3174	3152	3046
4:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	9999.72	9999.72	9999.72
Demand (MW)	2891	2906	2884
Available capacity (MW)	3155	3155	3037
4:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	9999.72	9999.72	9999.72
Demand (MW)	2916	2912	2889
Available capacity (MW)	3144	3155	3035
5:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	9999.72	9999.72	9999.72
Demand (MW)	2879	2891	2868
Available capacity (MW)	3148	3153	3035
5:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	9999.72	8999.72	9999.72
Demand (MW)	2852	2837	2819
Available capacity (MW)	3146	3128	3035

Conditions at the time saw demand, price and available capacity close to that forecast four and twelve hours ahead.

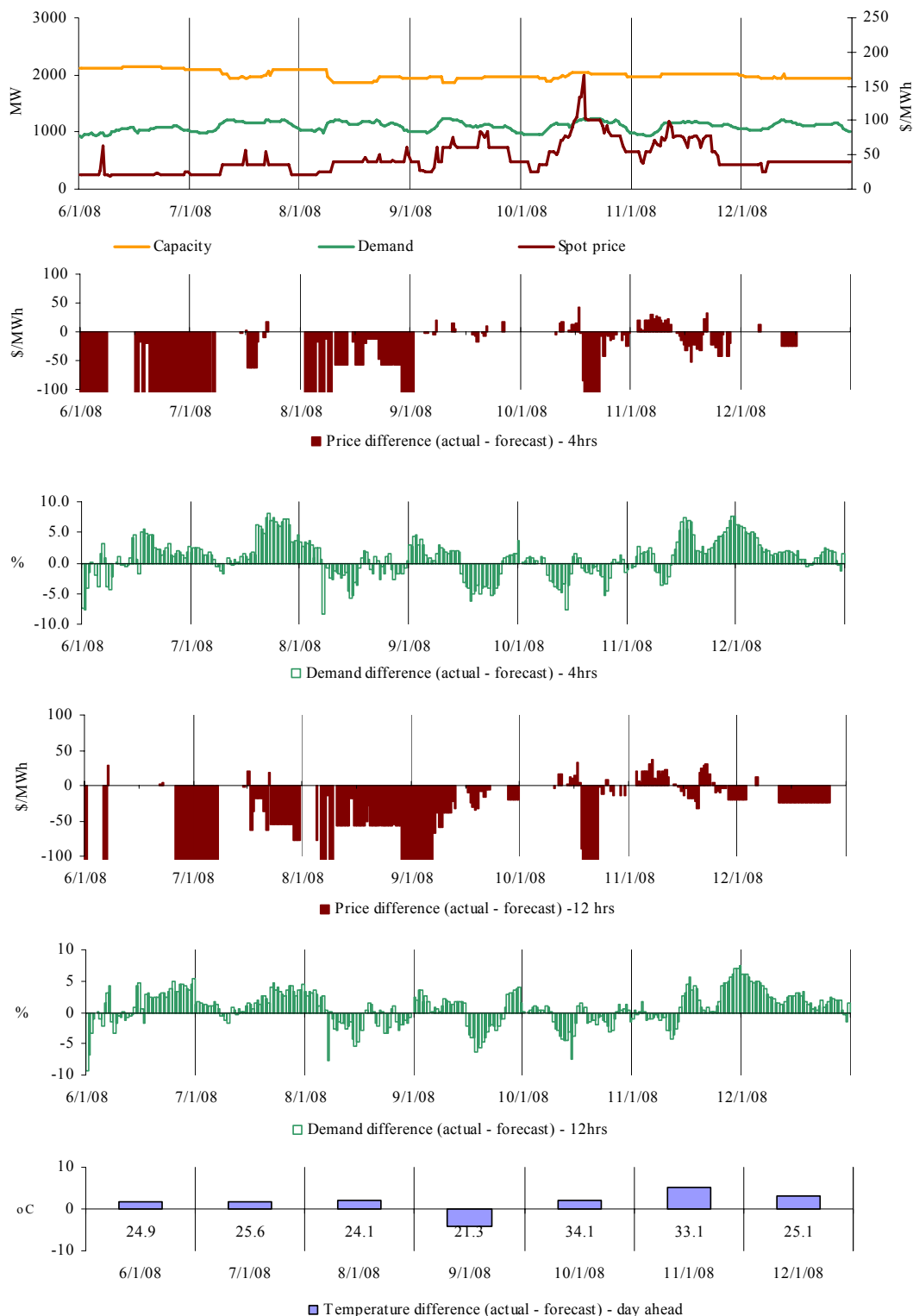
At 4.30 pm a new record demand of 2916 MW was reached reflecting the extreme temperatures. Record demand also occurred in Victoria at the same time. AGL SA Generation priced most of its capacity at Torrens Island at close to the price cap during this period.

The AER will be issuing a report into the circumstances of the day that led to the spot price exceeding \$5000/MWh in accordance with clause 3.13.7 of the Rules.

Tasmania

Figures 51-56 show spot market prices in Tasmania over the week along with actual demand and differences between actual and forecast demand and prices.

Figures 51-56: Tasmania actual spot price, demand and forecast differences



There was one occasion where the spot price in Tasmania was greater than three times the Tasmania weekly average price of \$46/MWh.

Thursday, 10 January

2:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	166.35	251.63	255.14
Demand (MW)	1226	1215	1217
Available capacity (MW)	2033	1998	1978

Conditions at the time saw demand and available capacity close to that forecast four and twelve hours ahead. Price was below that forecast four and twelve hours ahead

There was no significant rebidding.

Bidding patterns

Figures 57 – 61 set out for each region the extent of capacity offered into the market within a series of price thresholds. Actual price and generation dispatched in a region are overlaid.

Figure 57: Queensland closing bid prices, dispatched generation and spot price

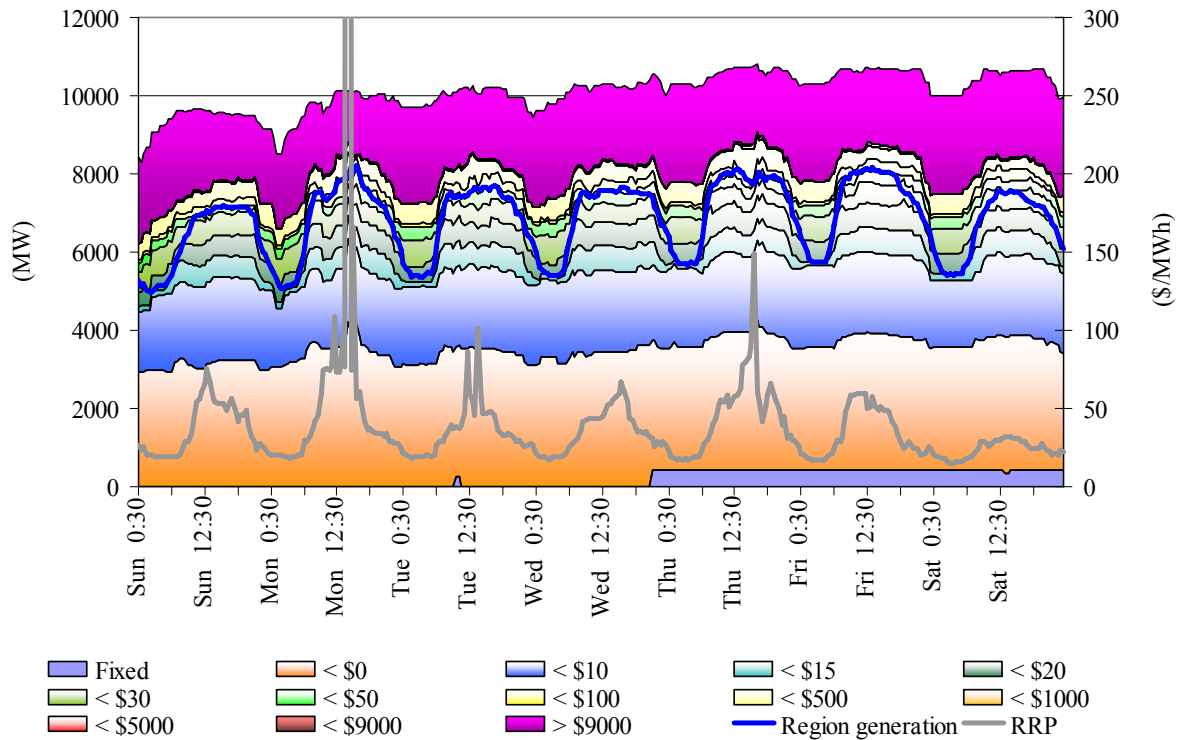


Figure 58: New South Wales closing bid prices, dispatched generation and spot price

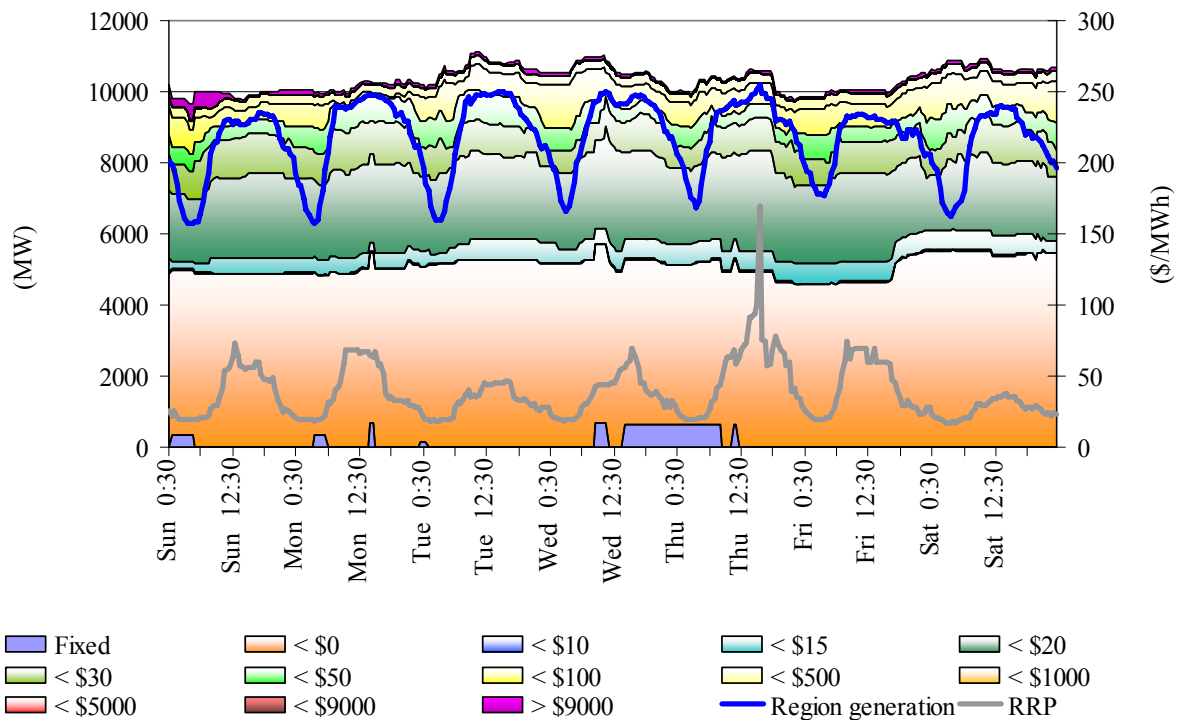


Figure 59: Victoria closing bid prices, dispatched generation and spot price

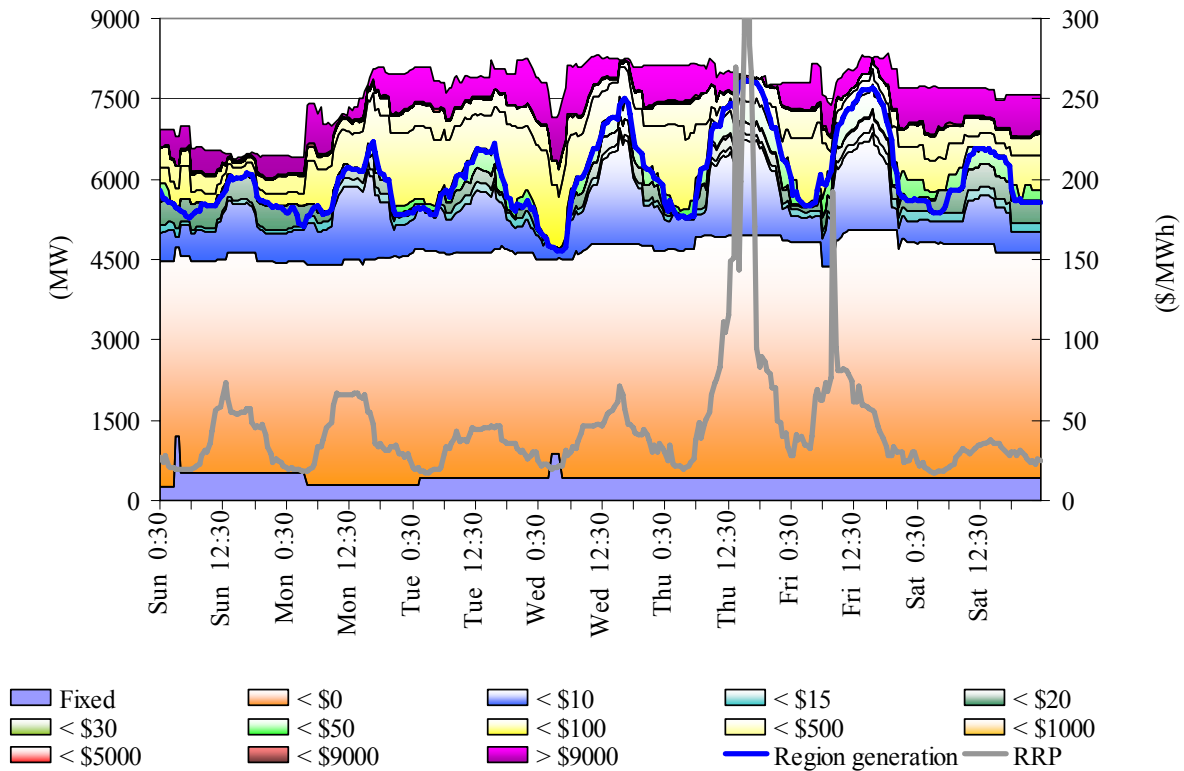


Figure 60: South Australia closing bid prices, dispatched generation and spot price

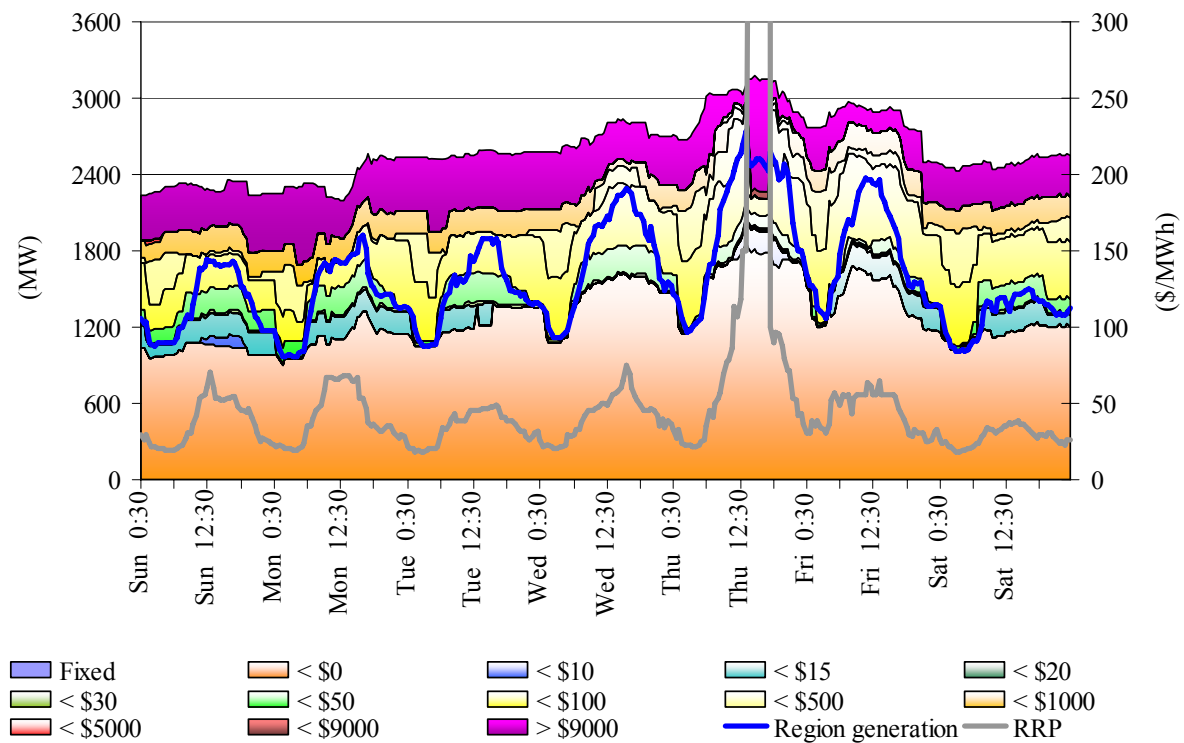
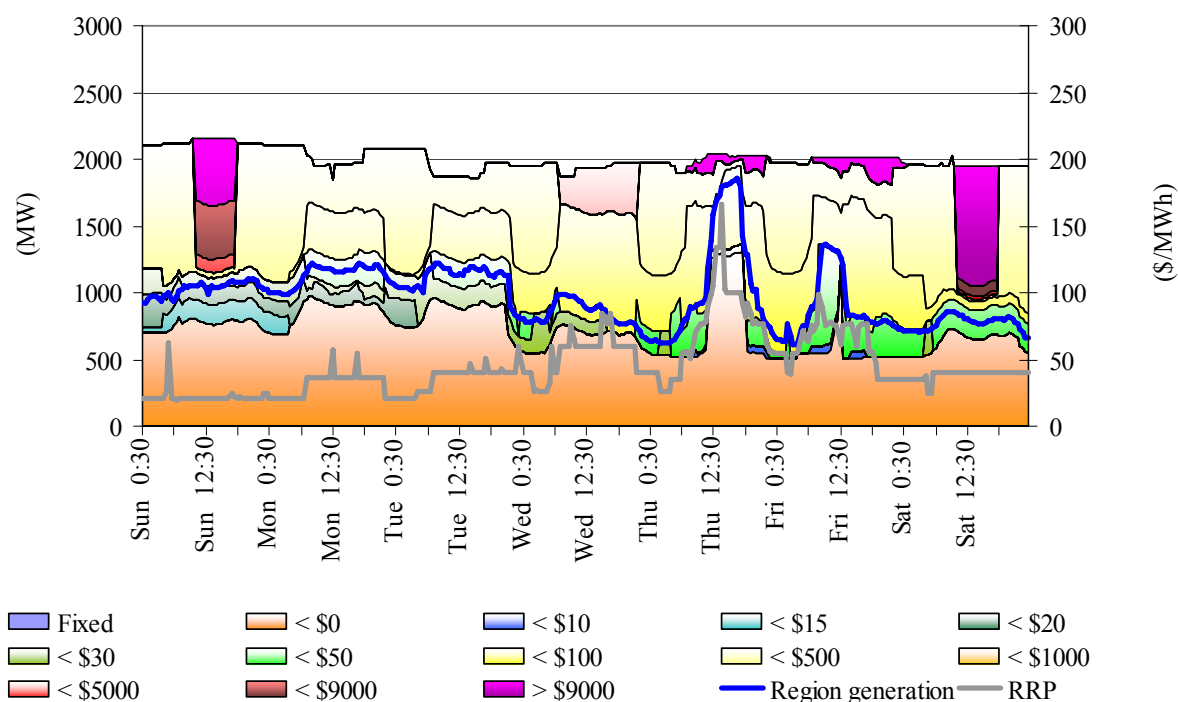


Figure 61: Tasmania closing bid prices, dispatched generation and spot price



Ancillary service market

The total cost of ancillary services on the mainland for the week was \$1.1 million or 0.4 per cent of turnover in the energy market. Figure 62 summarises the volume weighted average prices and costs for the eight frequency control ancillary services across the mainland.

Figure 62: frequency control ancillary service prices and costs for the mainland

	Raise 6 sec	Raise 60 sec	Raise 5 min	Raise reg	Lower 6 sec	Lower 60 sec	Lower 5 min	Lower reg
Last week (\$/MW)	4.32	1.13	9.84	1.26	0.33	0.23	0.80	1.90
Previous week (\$/MW)	12.84	2.57	17.85	2.31	0.27	0.20	0.99	2.70
Last quarter (\$/MW)	3.43	0.83	2.05	6.07	0.06	0.14	0.48	1.84
Market Cost (\$1000s)	\$230	\$53	\$716	\$23	\$2	\$1	\$13	\$34
% of energy market	0.08%	0.02%	0.25%	0.01%	0.01%	0.01%	0.01%	0.01%

The total cost of ancillary services in Tasmania for the week was \$214 000 or 2.5 per cent of the turnover in the Tasmanian energy market. Figure 63 summarises for Tasmania the prices and costs for the eight frequency control ancillary services.

Figure 63: frequency control ancillary service prices and costs for Tasmania

	Raise 6 sec	Raise 60 sec	Raise 5 min	Raise reg	Lower 6 sec	Lower 60 sec	Lower 5 min	Lower reg
Last week (\$/MW)	6.56	0.93	4.45	2.19	8.39	0.17	0.02	2.44
Previous week (\$/MW)	226.97	0.93	14.44	2.73	4.87	0.17	0.03	2.58
Last quarter (\$/MW)	9.36	1.98	3.68	5.15	9.32	1.87	1.58	1.52
Market Cost (\$1000s)	\$41	\$15	\$51	\$16	\$73	\$3	\$0	\$15
% of energy market	0.48%	0.18%	0.61%	0.20%	0.86%	0.03%	0.01%	0.17%

Figure 64 shows the daily breakdown of cost for each frequency control ancillary service.

Figure 64: daily frequency control ancillary service cost

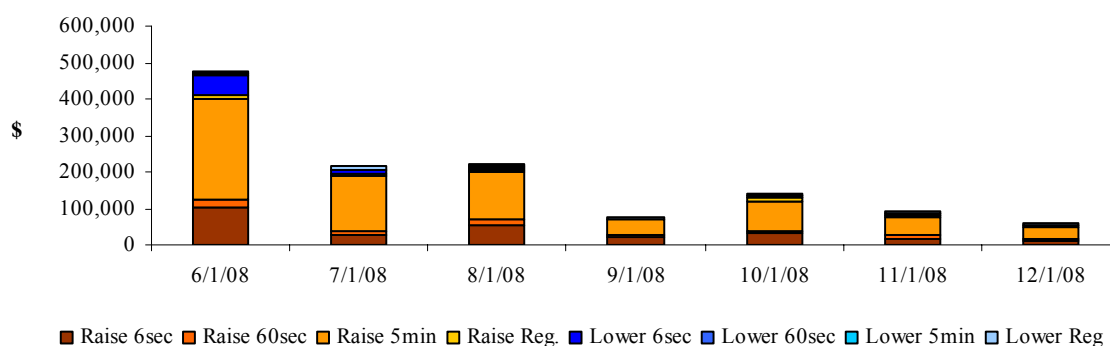
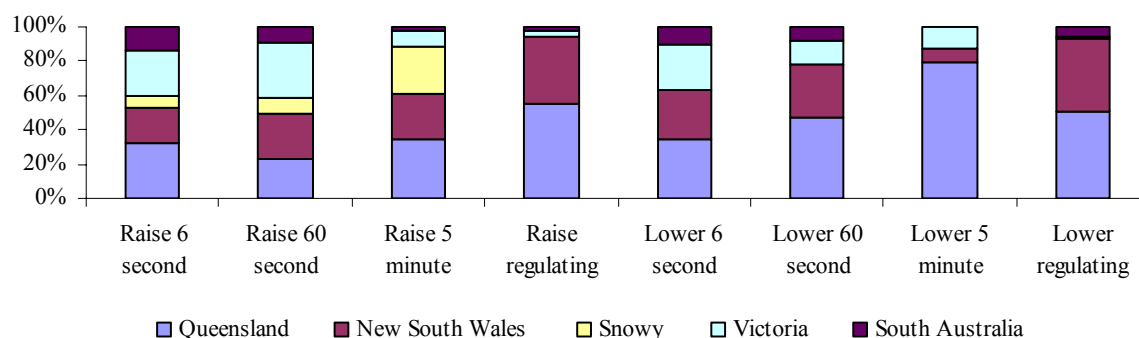


Figure 65 shows the contribution, on a percentage basis, that frequency control ancillary service providers are utilised (in each mainland region) to satisfy the total requirement for each service.

Figure 65: regional participation in ancillary services on the mainland



Figures 66 and 67 show 30-minute prices for each frequency control ancillary service throughout the week.

Figure 66: prices for raise services

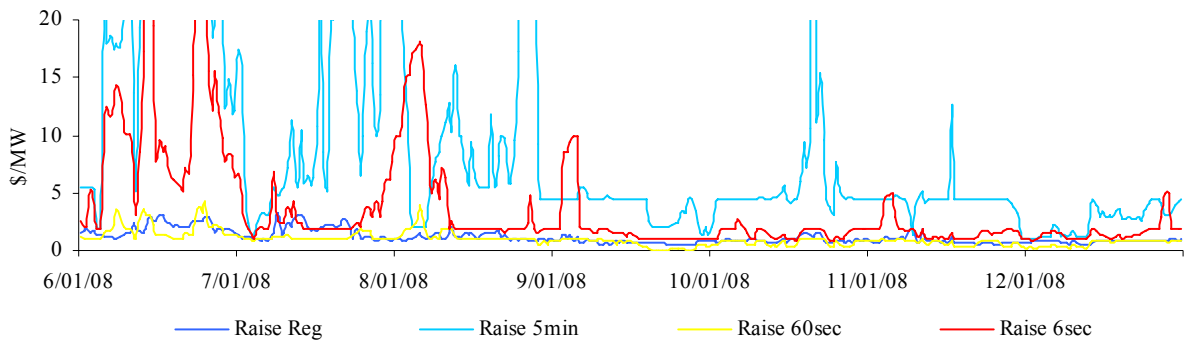


Figure 66A: prices for raise services – Tasmania

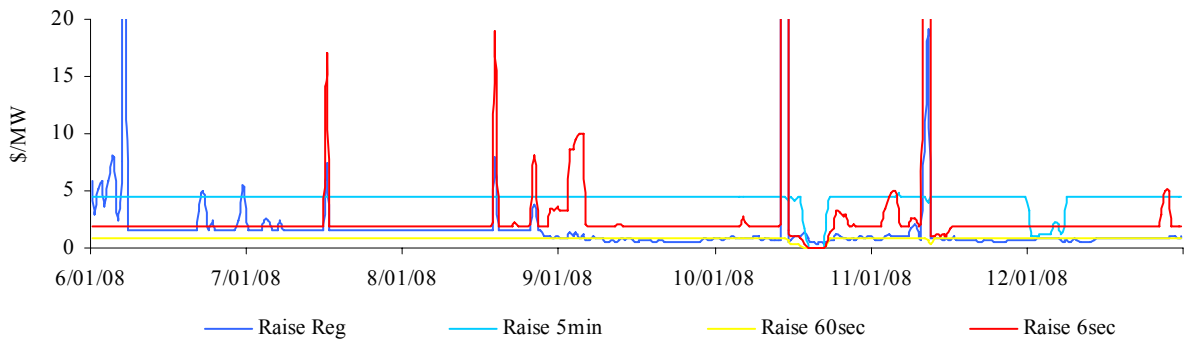


Figure 67: prices for lower services

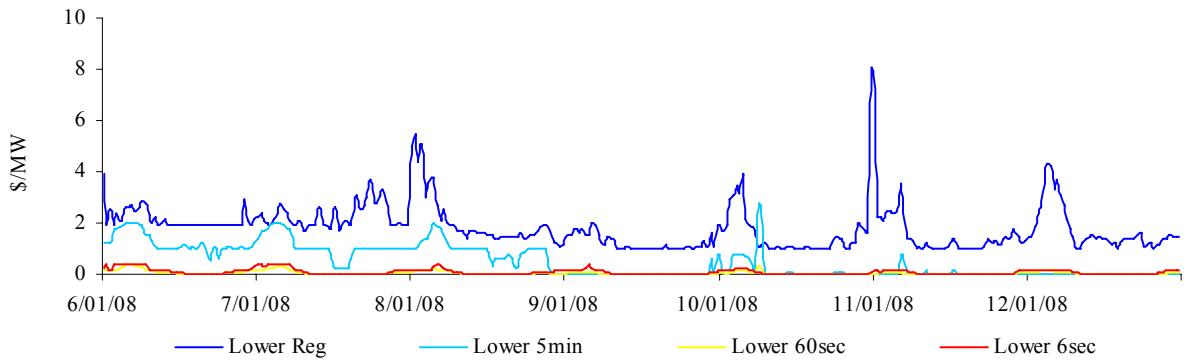
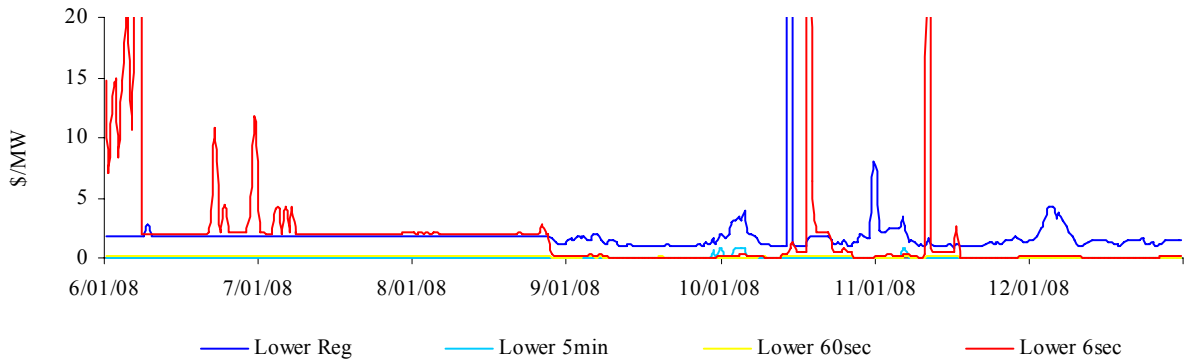


Figure 67A: prices for lower services – Tasmania



Figures 68 and 69 present for both raise and lower frequency control services the requirement, established by NEMMCO, for each service to satisfy the frequency standard.

Figure 68: raise requirements

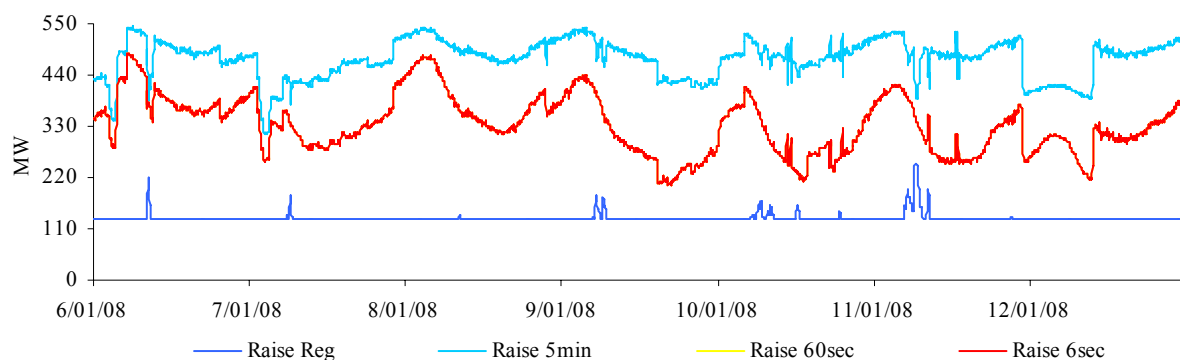


Figure 68A: raise requirements – Tasmania

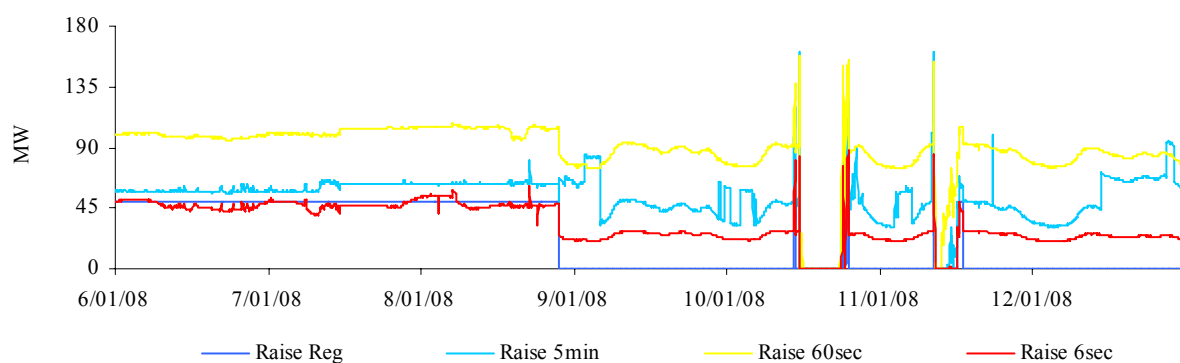


Figure 69: lower requirements

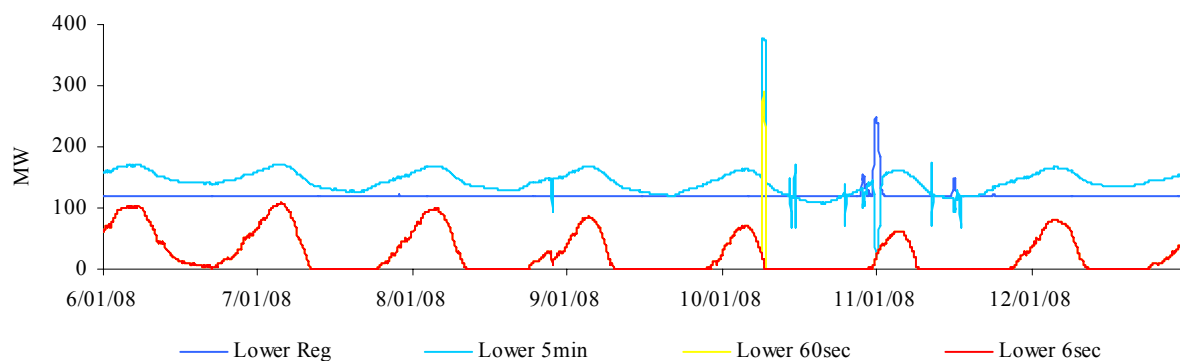
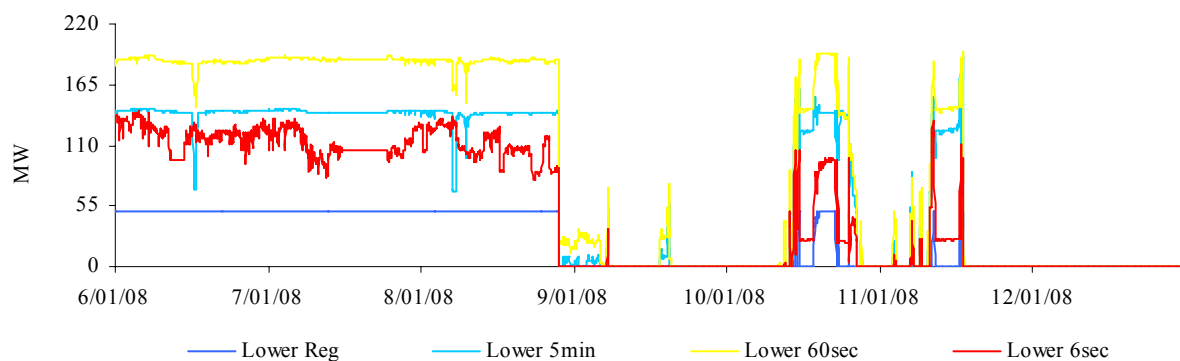


Figure 69A: lower requirements – Tasmania



Australian Energy Regulator

January 2008