Market analysis

AUSTRALIAN ENERGY REGULATOR

20 January – 26 January 2008

Summary

Spot prices for the week averaged between $27/MWh Queensland and $54/MWh in Tasmania. The spot price in the Snowy region reached $5100/MWh at 1 pm on Saturday afternoon when network constraints, designed to manage a planned outage in Victoria, bound. 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 26 January was $119 million. The total cost of ancillary services for the week was $630 000 or 0.5 per cent of energy market turnover.

Significant variations between actual prices and those forecast 4 and 12 hours ahead occurred in 117, or a third of all trading intervals. Demand forecasts produced 4 and 12 hours ahead varied from actual by more than 5 per cent in a fifth of all trading intervals across the market. In South Australia these variations occurred in 57 per cent 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

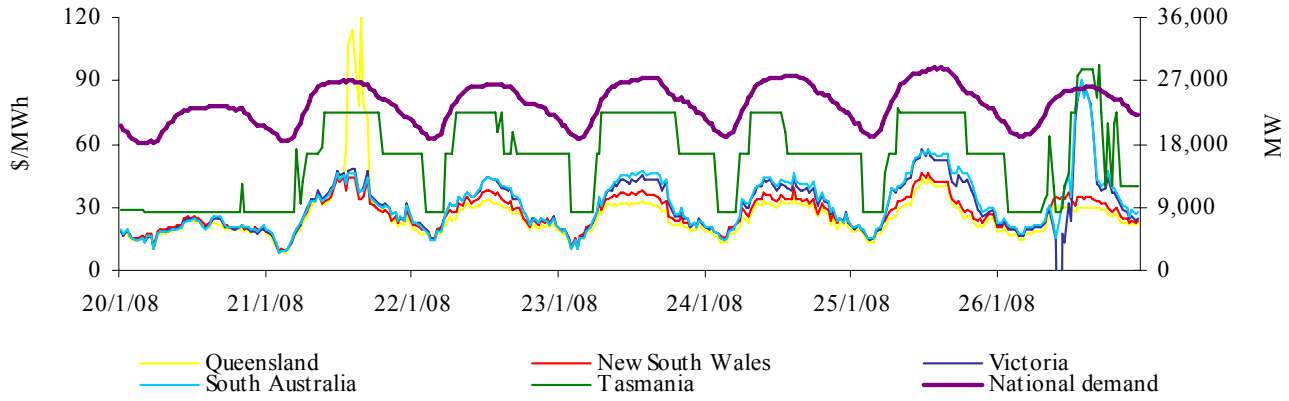


Figure 2: volume weighted average spot price for energy market ($/MWh)

	QLD	NSW	VIC	SA	TAS
Last week	27	28	31	34	54
Previous week	31	34	35	36	51
Same quarter last year	60	57	75	69	50
Financial year to date	53	49	52	74	54
% change from previous week*	▼11%	▼17%	▼12%	▼6%	▲6%
% change from same quarter last year**	▼54%	▼51%	▼58%	▼51%	▲8%
% change from year to date***	▲61%	▲29%	▲13%	▲52%	▲35%

*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

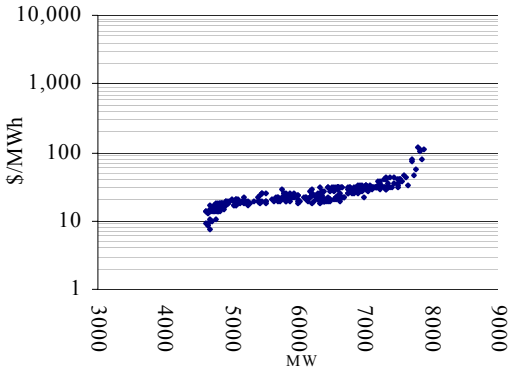


Figure 4: New South Wales

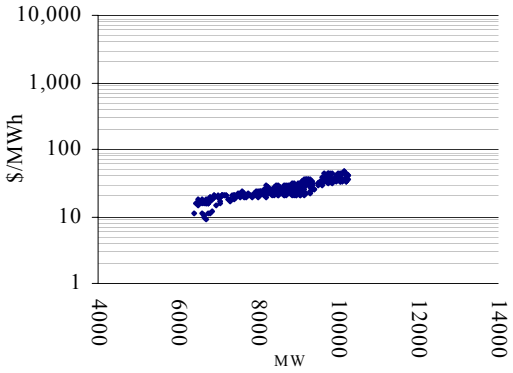


Figure 5: Victoria

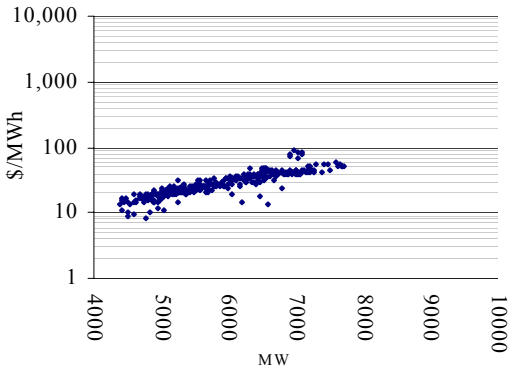


Figure 6: South Australia

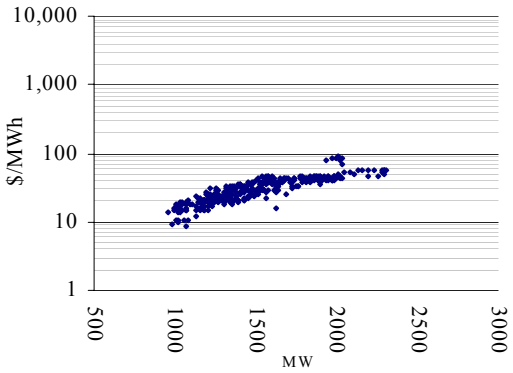
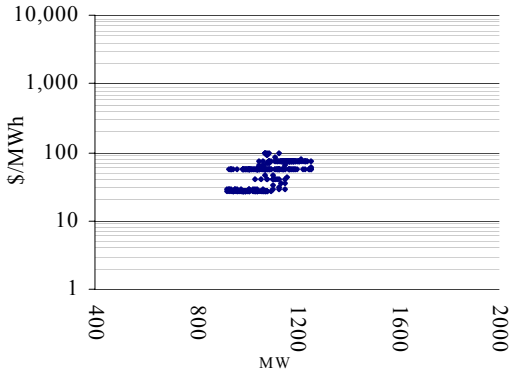


Figure 7: Tasmania



Maximum spot prices for the week ranged from $46/MWh in New South Wales to $121/MWh in Queensland. 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	0.56	0.43	0.51	0.50	0.27
Previous week	0.66	0.62	0.53	0.51	0.52
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

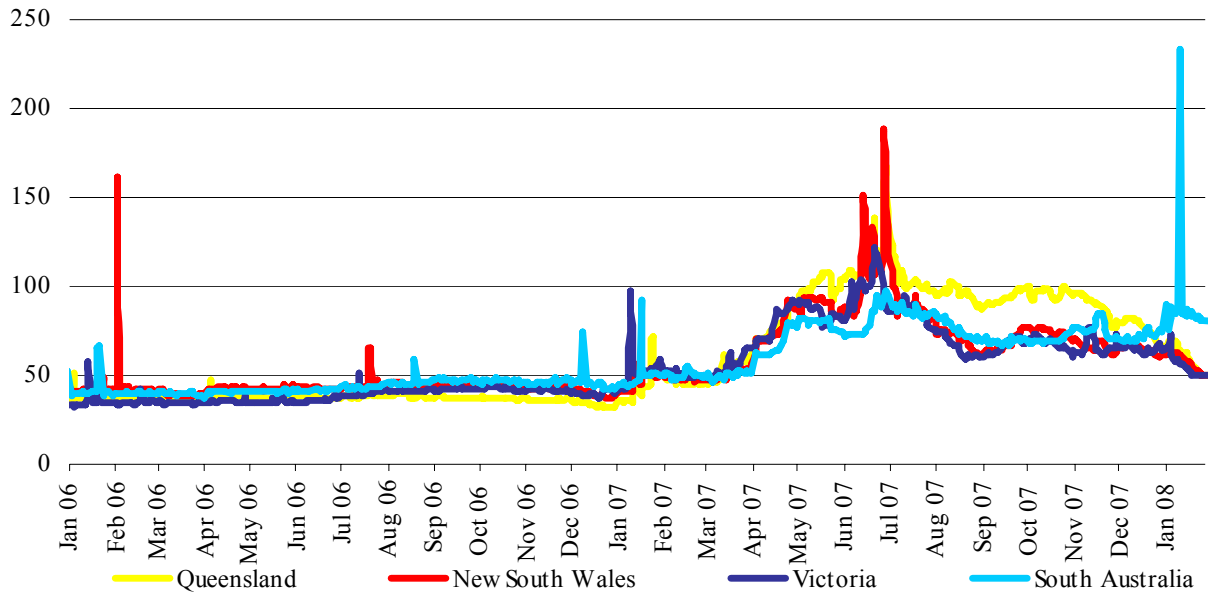
Figure 9 sets out the d-cyphaTrade wholesale electricity price index (WEPI)* for each region throughout the week excluding Tasmania. Figure 10 sets out the WEPI since 1 January 2006.

Figure 9: d-cyphaTrade WEPI for the week

	Monday	Tuesday	Wednesday	Thursday	Friday
Queensland	53.52	51.78	50.34	50.01	50.34
New South Wales	53.10	52.40	51.07	50.50	50.00
Victoria	53.87	53.43	52.10	51.25	49.55
South Australia	81.60	83.11	82.49	81.23	80.56

* 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

No low reserve conditions were forecast.

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

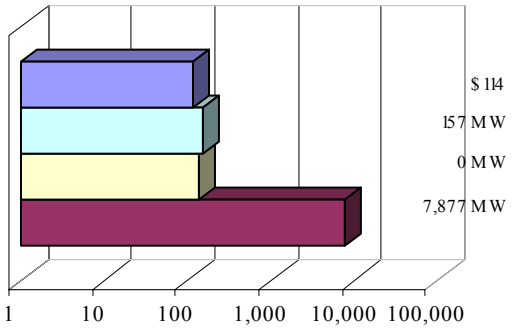


Figure 12: New South Wales

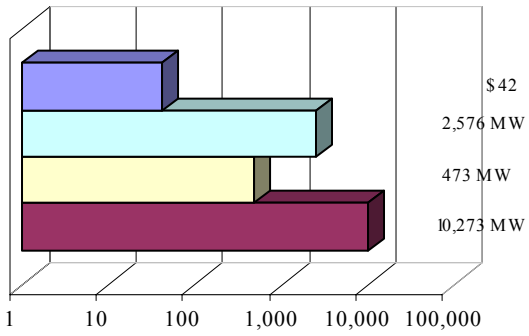


Figure 13: Victoria

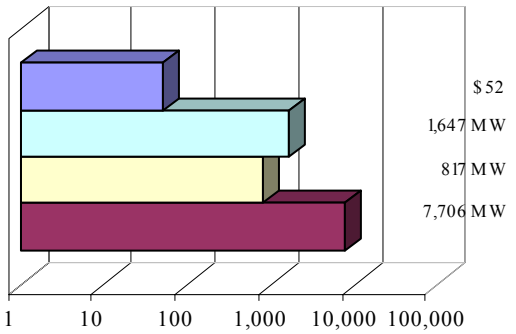


Figure 14: South Australia

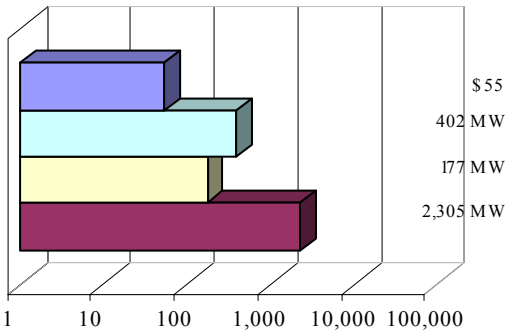
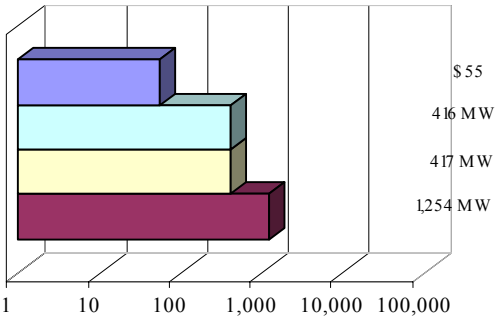


Figure 15: Tasmania



Price variations

There were 117 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

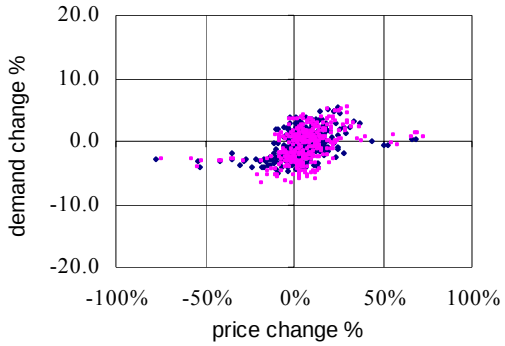


Figure 17: New South Wales

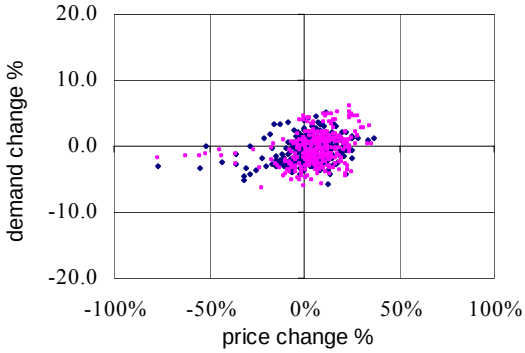


Figure 18: Victoria

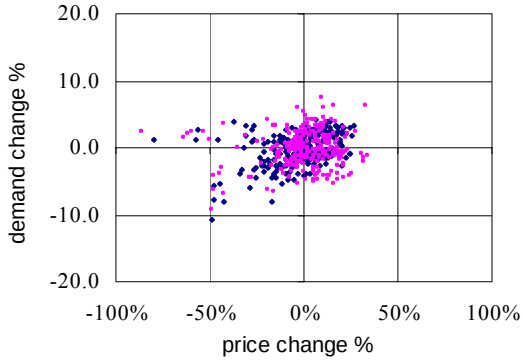


Figure 19: South Australia

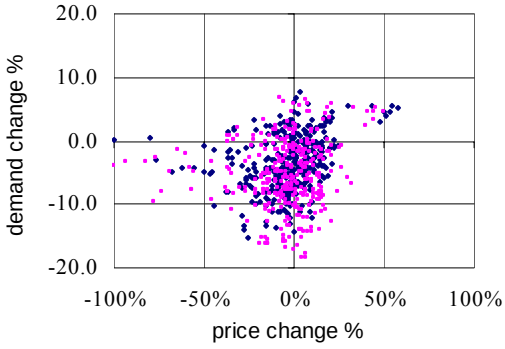
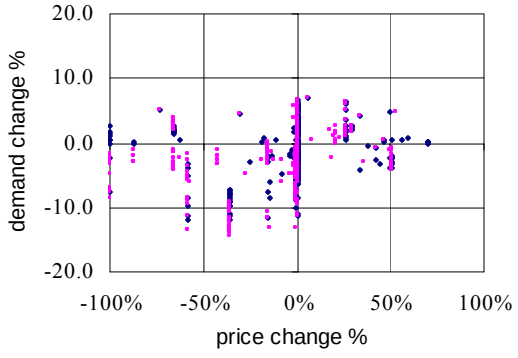


Figure 20: Tasmania



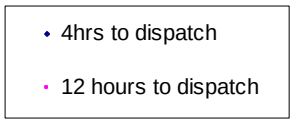
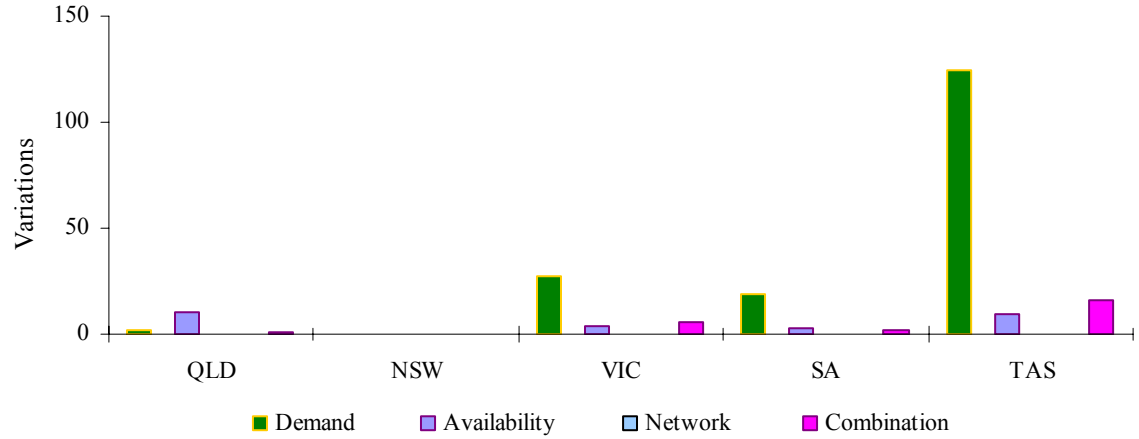


Figure 21 summarises the number and most probable reason for variations between forecast and actual prices.

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.

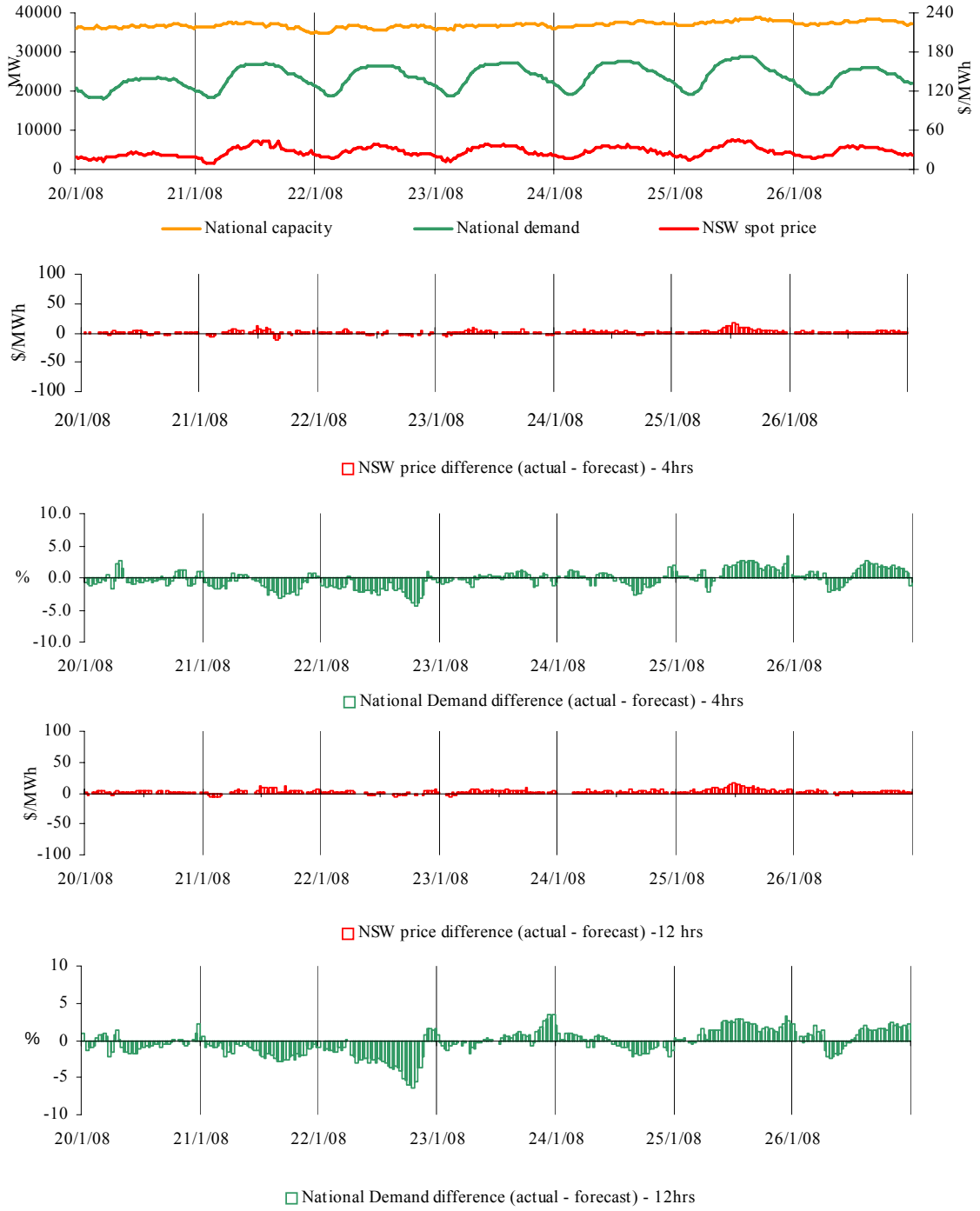
On a regional basis the differences between the maximum temperature and the temperature forecast at around 6.00 pm the day before are also included.

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

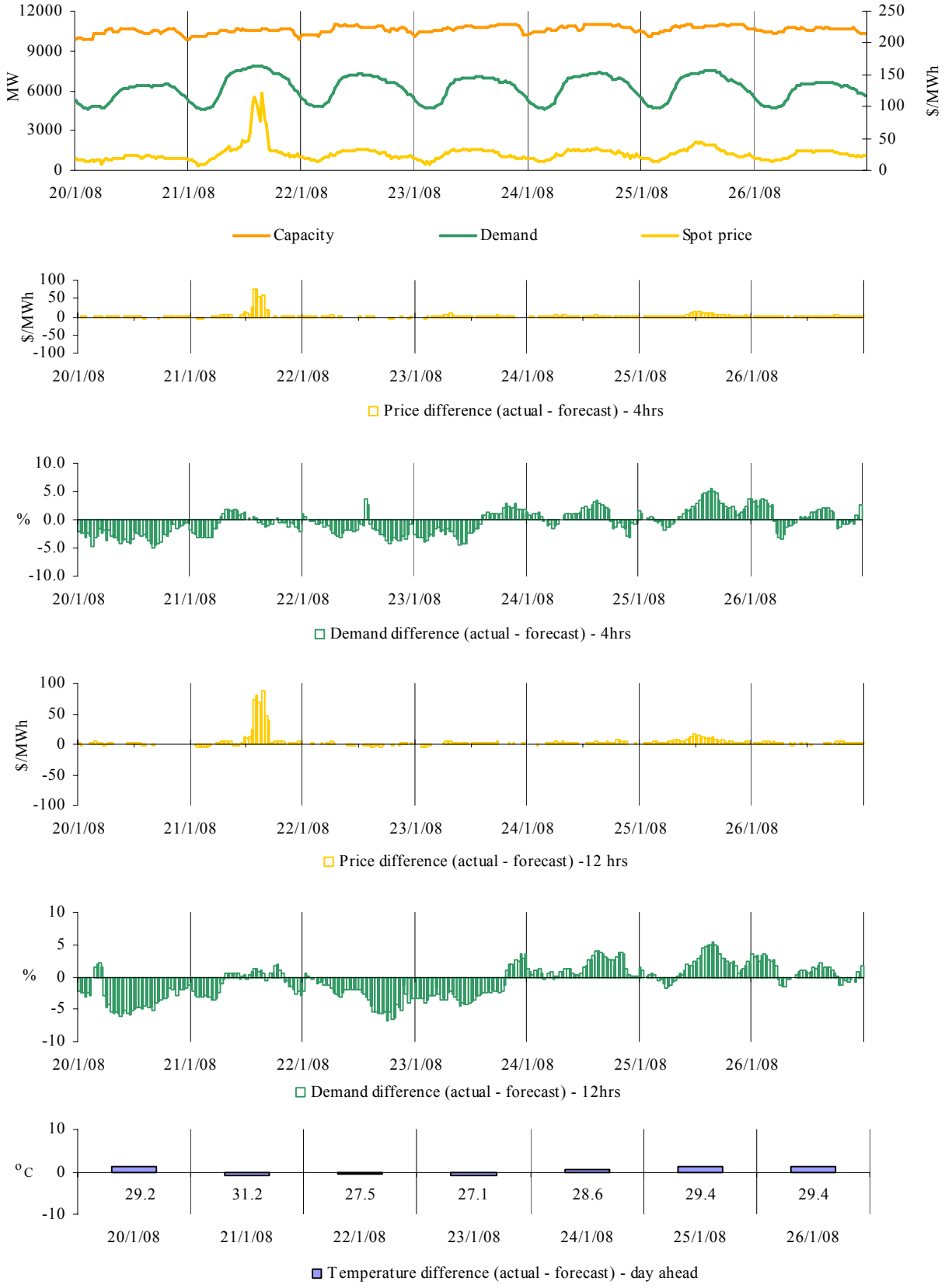


There was no occasion where the spot price aligned nationally and the New South Wales price was greater than three times the New South Wales weekly average price of $28/MWh.

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 four occasions where the spot price in Queensland was greater than three times the Queensland weekly average price of $27/MWh.

Monday, 21 January

2:00 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	107.24	33.55	33.97
Demand (MW)	7831	7796	7736
Available capacity (MW)	10 525	10 764	10 955
2:30 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	114.25	37.90	34.20
Demand (MW)	7877	7852	7777
Available capacity (MW)	10 536	10 729	10 955
3:00 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	101.35	47.49	34.20
Demand (MW)	7836	7883	7774
Available capacity (MW)	10 543	10 727	10 955
4:00 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	120.90	60.03	32.60
Demand (MW)	7796	7851	7743
Available capacity (MW)	10 694	10 709	10 955

Conditions at the time saw demand close to forecast four hours ahead and available capacity up to 200 MW lower than forecast four hours ahead.

Flows into Queensland across QNI and Terranora were at their limits of around 105 MW and 50 MW respectively, close to forecast but well below their nominal limits.

At 10.27 am, Millmerran Energy Trader rebid 365 MW of capacity at Millmerran from prices below $25/MWh to above $9000/MWh. The rebid was effective immediately and lasted until 5.30 pm. The reason given was “Optimisation decision::Adjust MW dist”.

From 12.09 pm through several rebids across its portfolio CS Energy reduced availability by 80 MW and shifted as much as 339 MW of capacity from below $75/MWh to above $200/MWh. The reasons given included “Change in predispatch”, “unit trip” and “Kogan ashing repaired”.

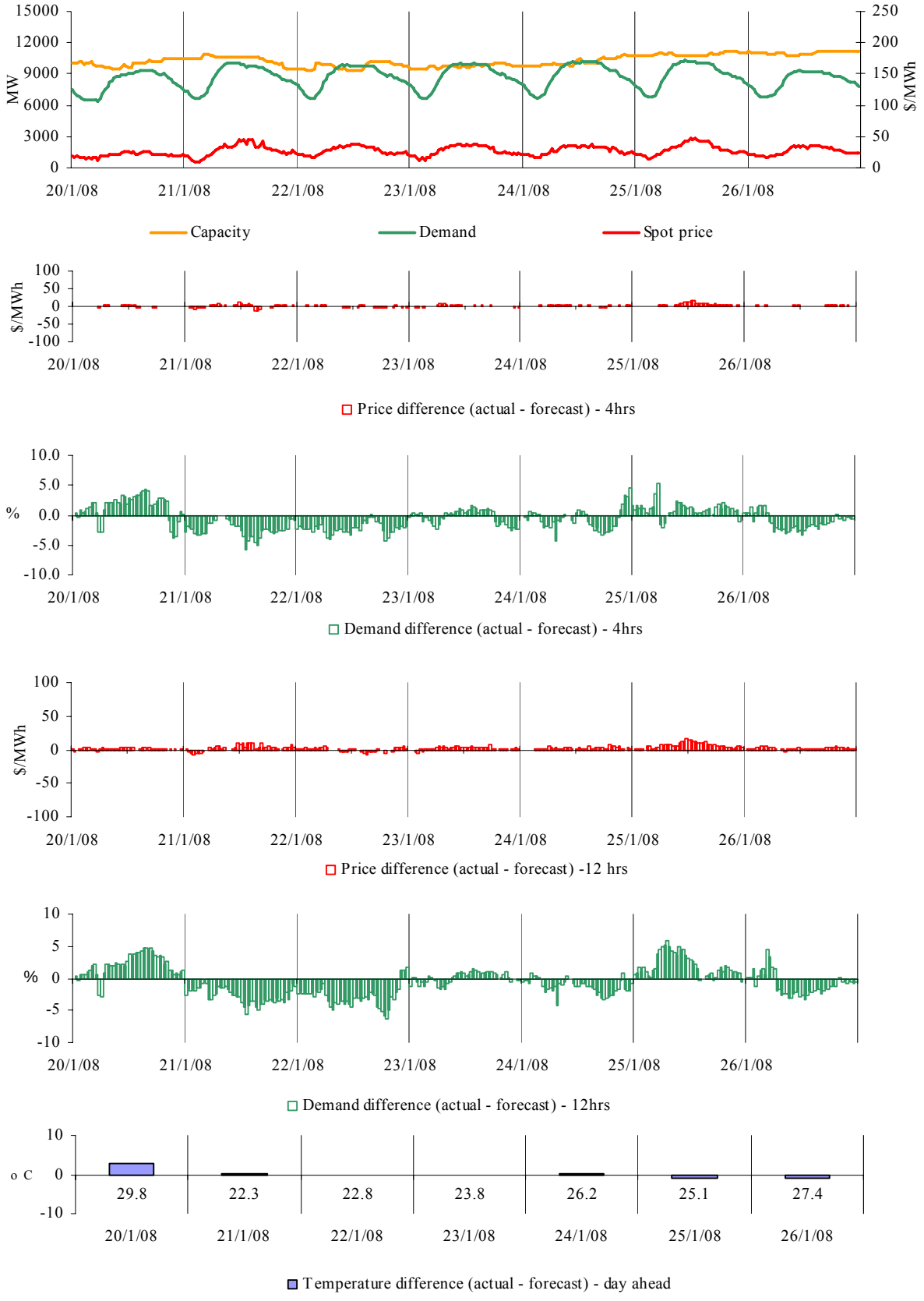
Over a number of rebids Callide Power Trading shifted a total of 204 MW of capacity at Callide C units three and four from prices below $15/MWh to above $250/MWh. Unit four, which has mostly been operating under an inflexible operating requirement since October at its nominal full load level, rebid to remove this inflexibility at 3.20 pm. At the same time, 102 MW of capacity was shifted from prices of less than $20/MWh to $7400/MWh. The full load inflexible operating requirement was re-instated from 5 pm. The reasons given across both units included “Optimisation decision::change MW dist” and “Chge PD::change MW dist”.

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

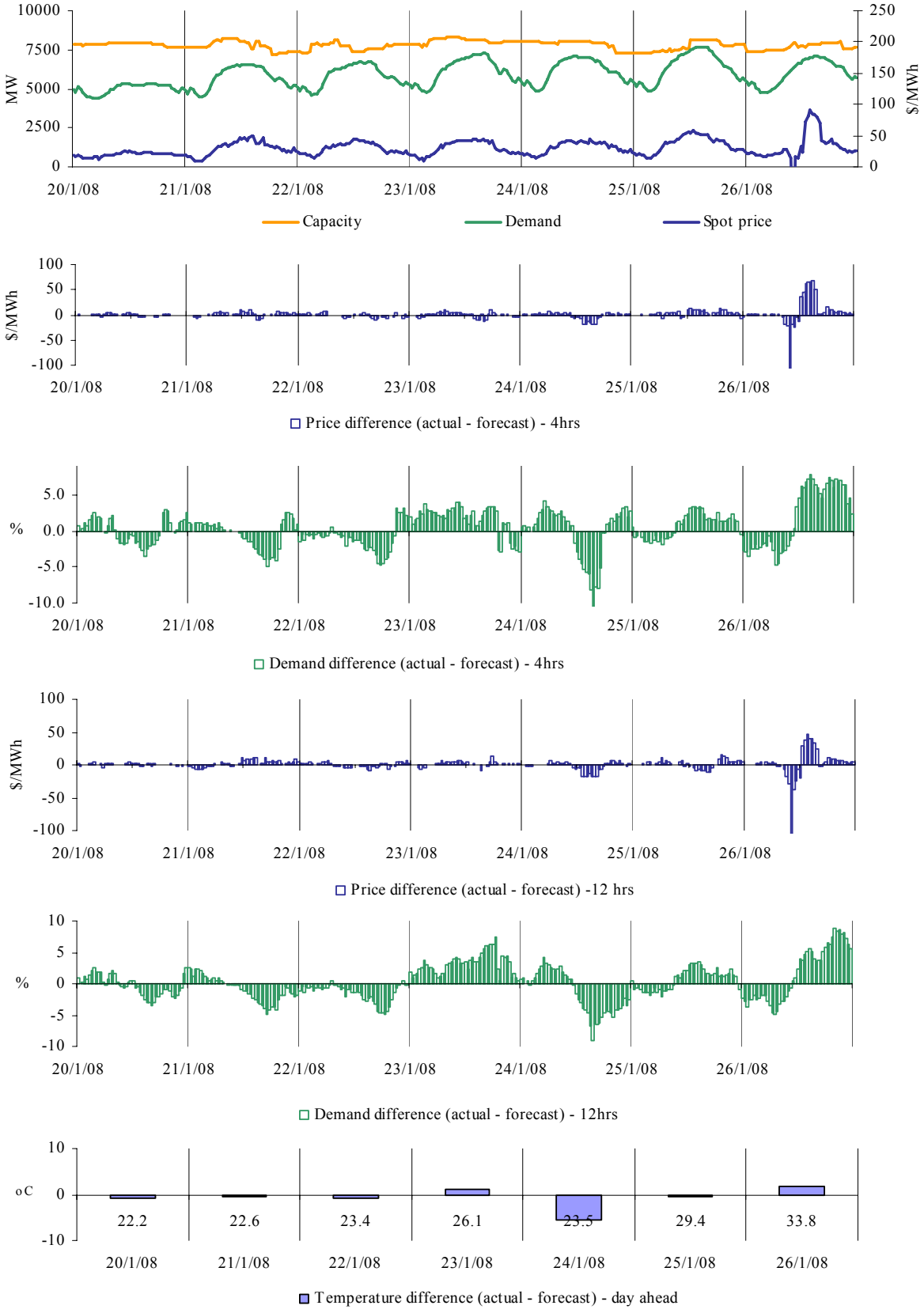


There was no occasion where the spot price in New South Wales was greater than three times the New South Wales weekly average price of $28/MWh.

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

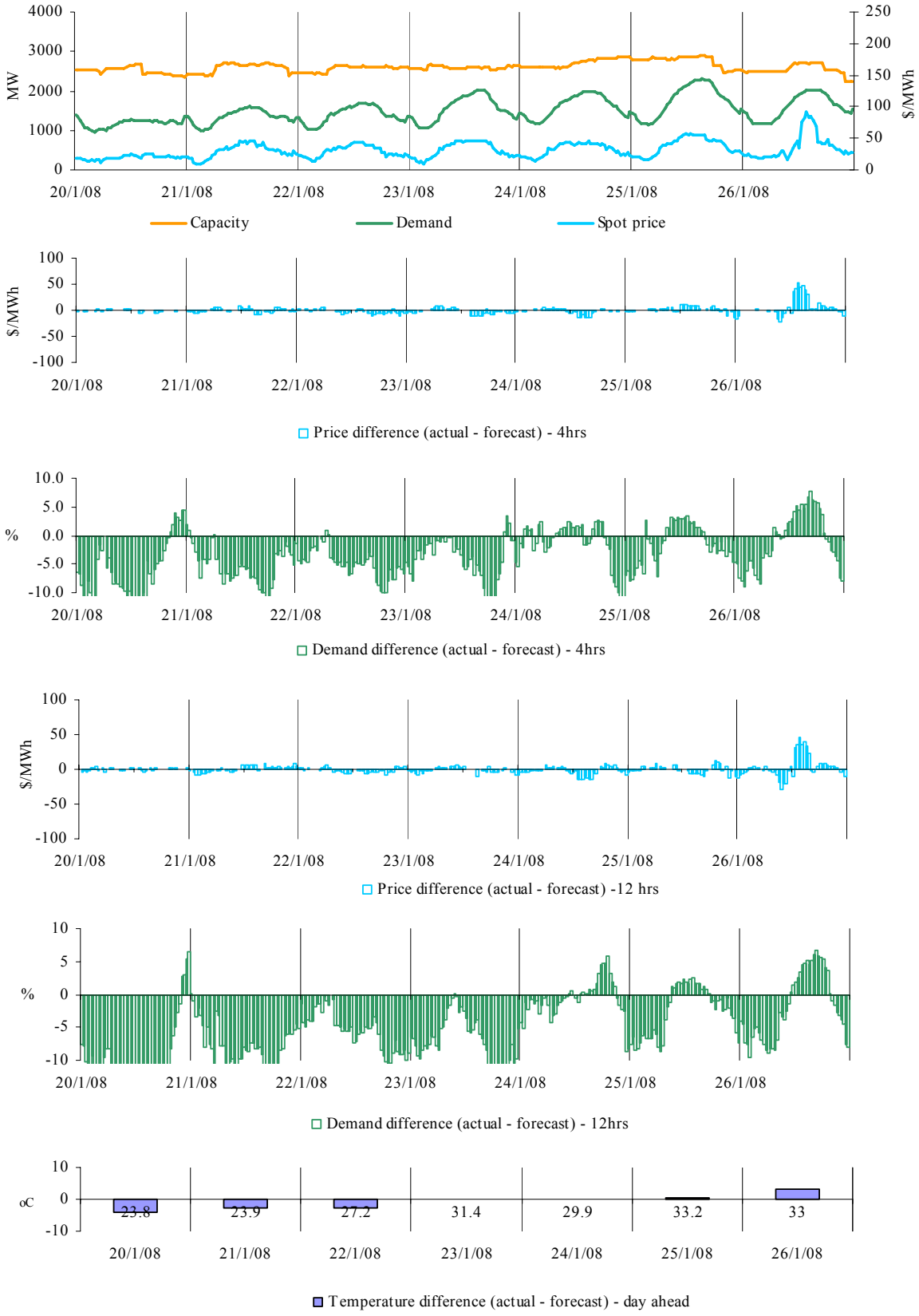


There was no occasion where the spot price in Victoria was greater than three times the Victoria weekly average price of $31/MWh.

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

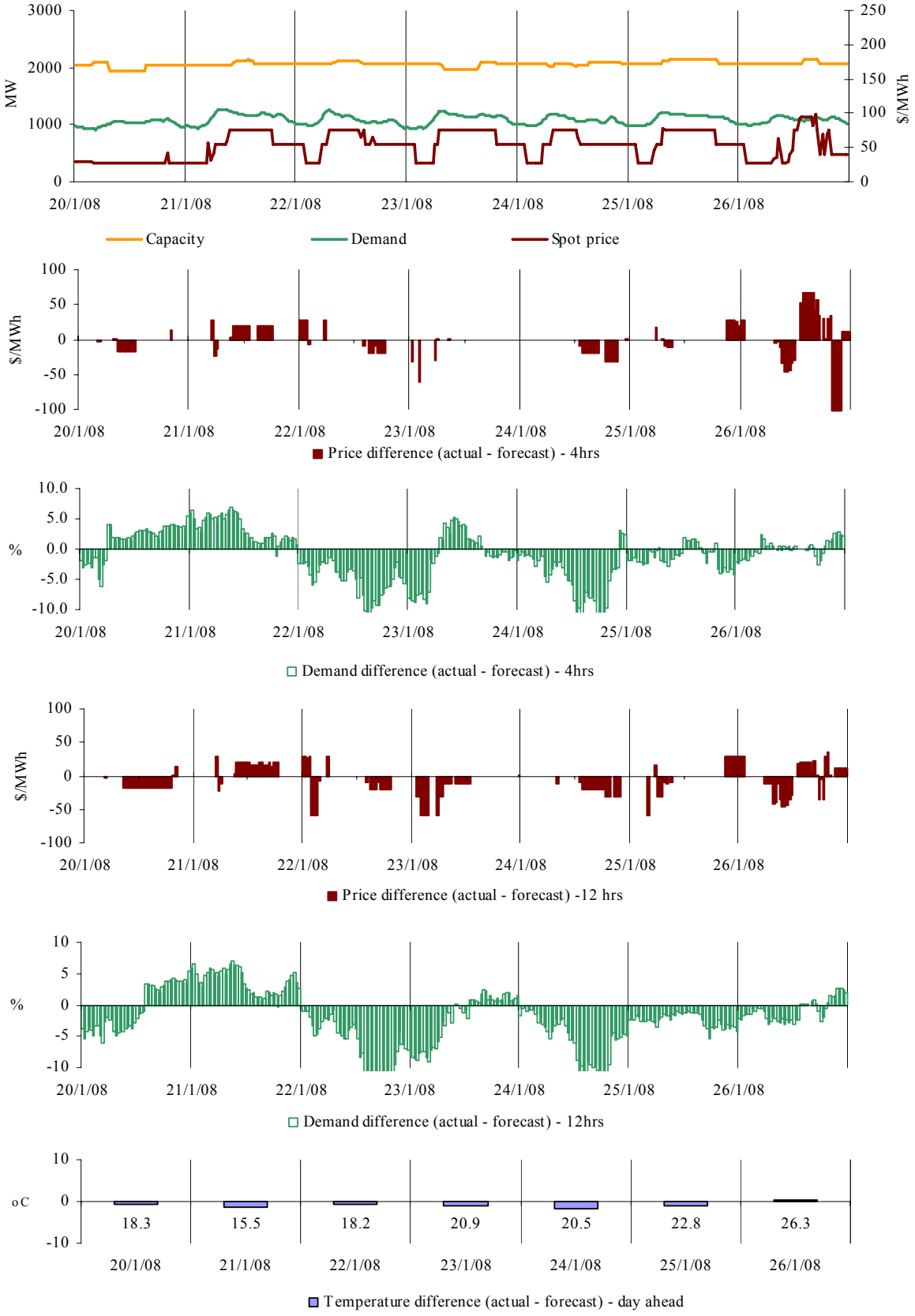


There was no occasion where the spot price in South Australia was greater than three times the South Australia weekly average price of $34/MWh.

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 no occasion where the spot price in Tasmania was greater than three times the Tasmania weekly average price of $54/MWh.

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

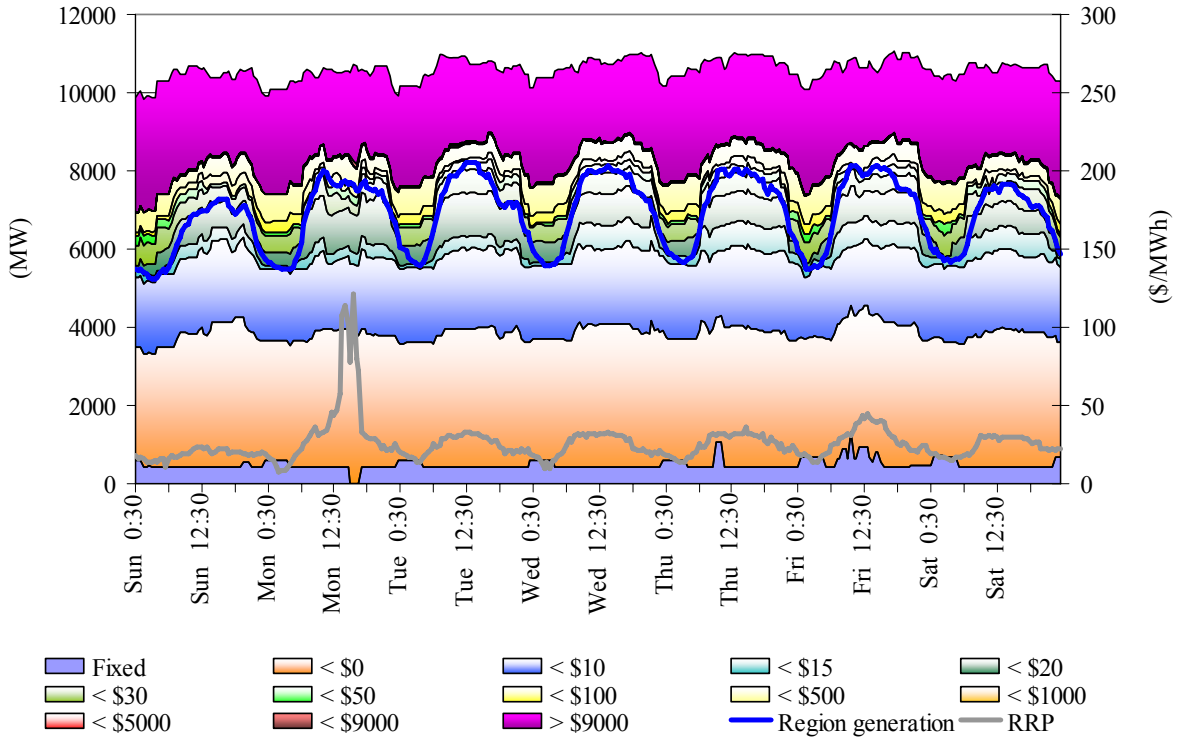


Figure 58: New South Wales closing bid prices, dispatched generation and spot price

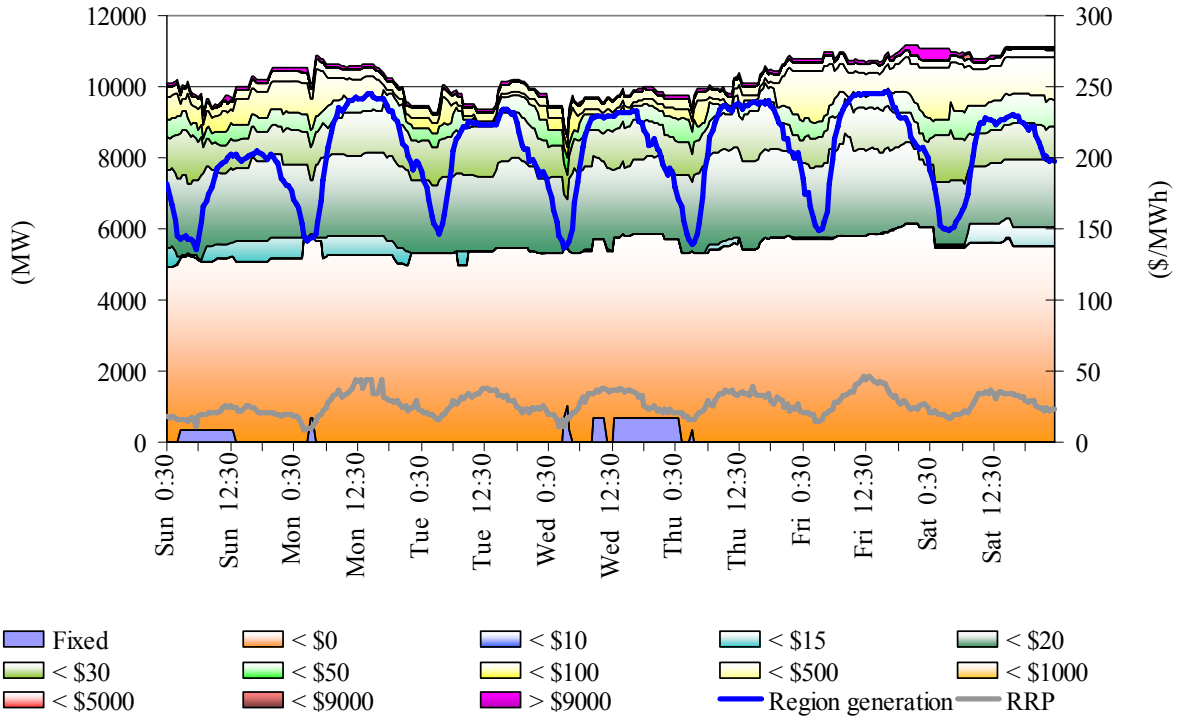


Figure 59: Victoria closing bid prices, dispatched generation and spot price

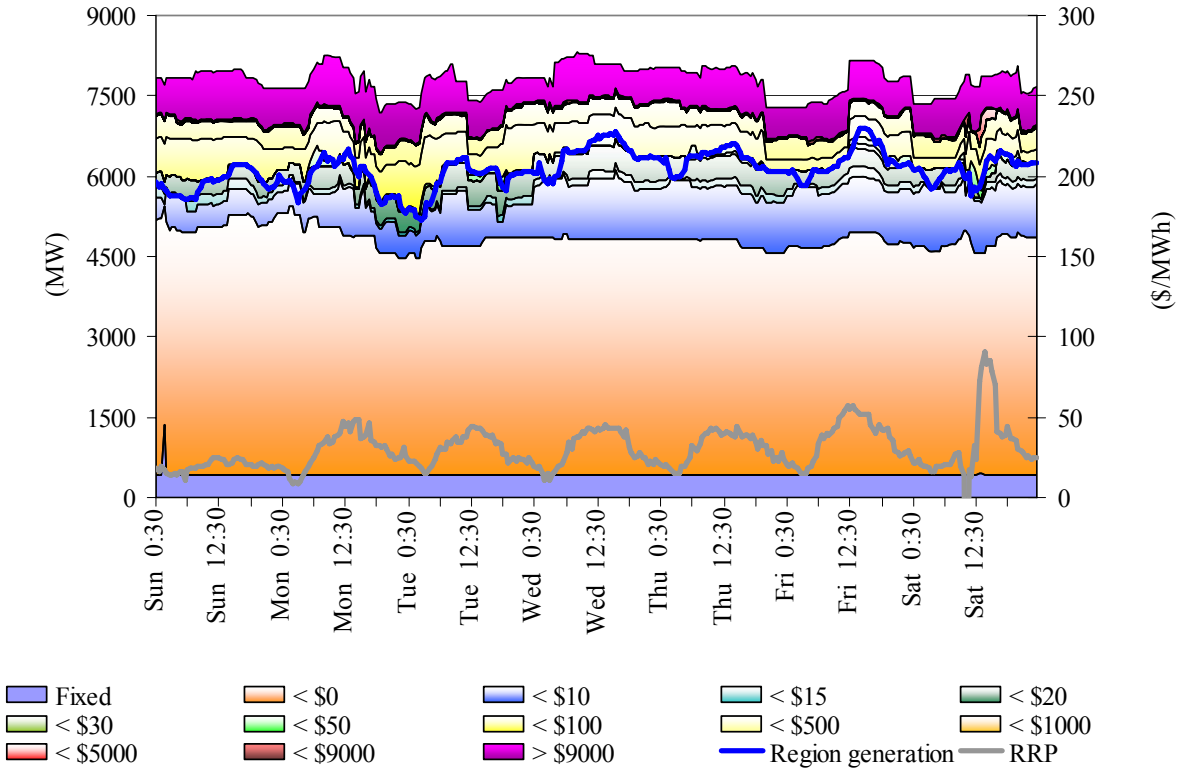


Figure 60: South Australia closing bid prices, dispatched generation and spot price

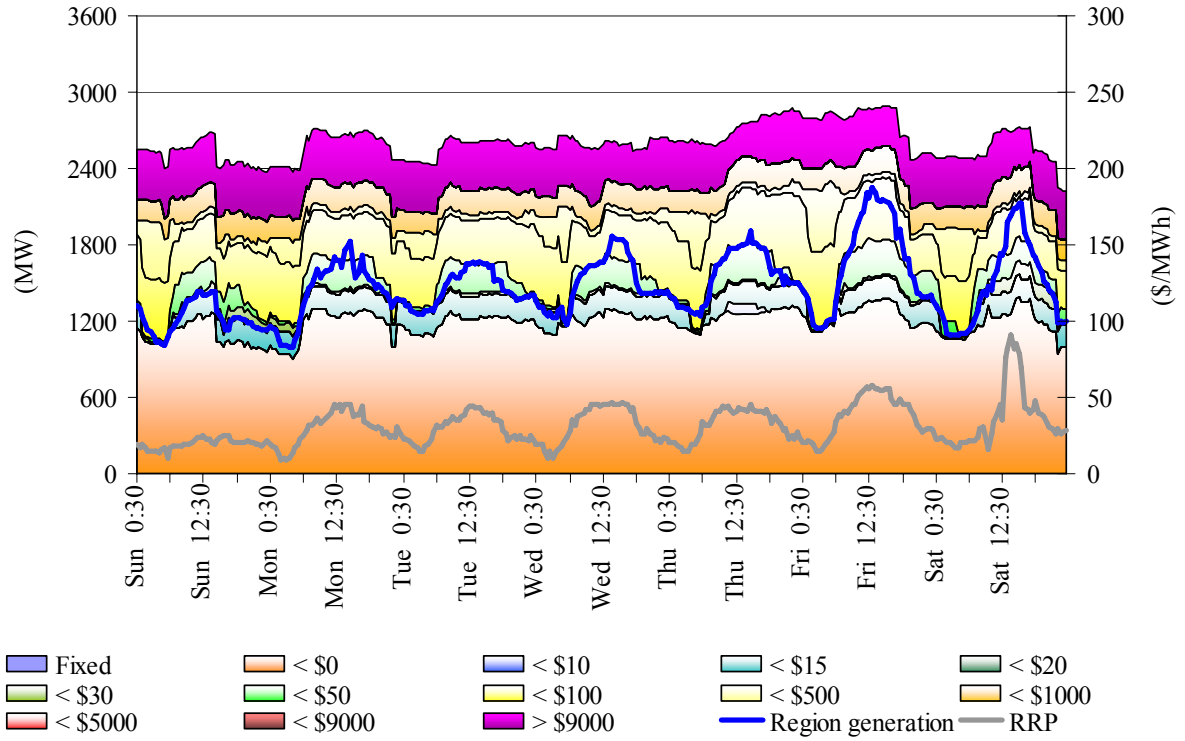
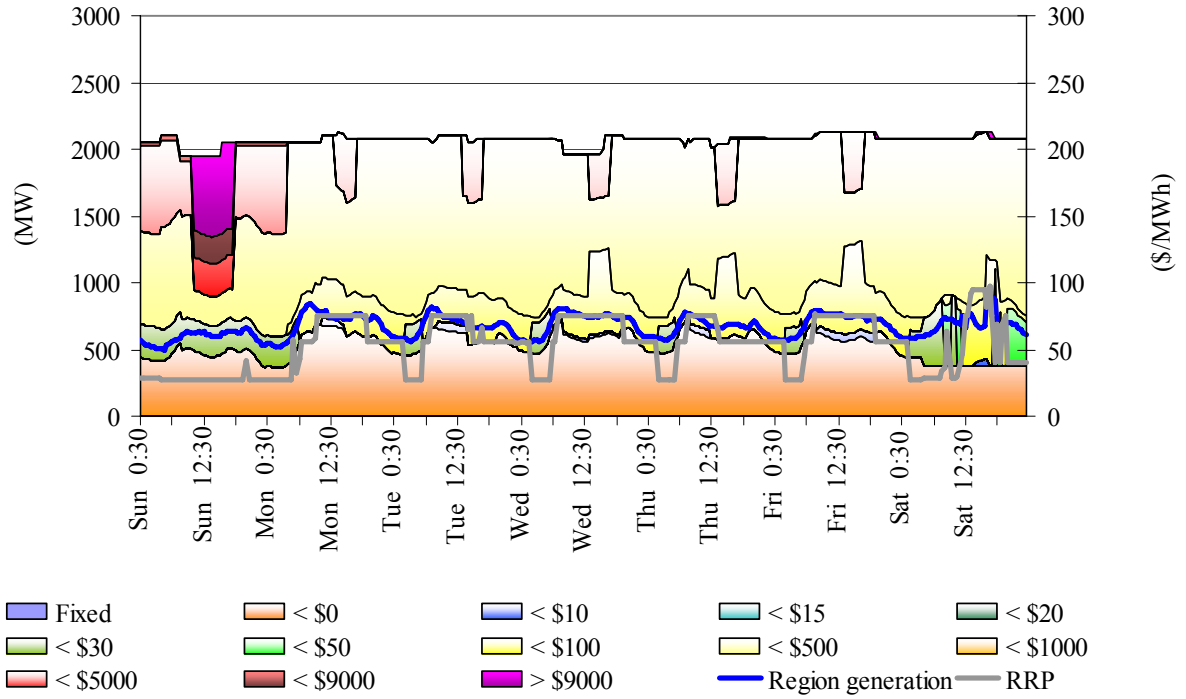


Figure 61: Tasmania closing bid prices, dispatched generation and spot price



Ancillary service market

The total cost of ancillary services on the mainland for the week was $244 000 or 0.2 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 ($/MW)	1.39	0.58	1.55	1.19	0.16	0.23	0.50	2.45
Previous week ($/MW)	2.79	0.75	2.76	1.17	0.52	0.30	0.53	1.84
Last quarter ($/MW)	3.43	0.83	2.05	6.07	0.06	0.14	0.48	1.84
Market Cost ($1000s)	$58	$18	$90	$25	$1	$3	$11	$39
% of energy market	0.05%	0.02%	0.08%	0.02%	0.01%	0.01%	0.01%	0.04%

The total cost of ancillary services in Tasmania for the week was $385 000 or 4 per cent of the turnover in the Tasmanian energy market. On Thursday at 11.15 am effective from 11.25 am Hydro Tasmania rebid 354 MW of raise 5 minute services at Gordon and Liapootah, Wayatinah and Catagunya from prices below $10/MW to $10 000/MW with the reason “Energy and FCAS co-opt”. The five minute price went to $10 000/MW at 11.25 am and stayed there until 11.35 am. At 11.30 am effective 11.40 am a further rebid reversed 240 MW of the previous bid at Gordon and the price returned to previous levels.

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 ($/MW)	6.75	1.66	21.93	1.99	0.50	0.03	0.02	2.46
Previous week ($/MW)	5.48	0.92	8.96	1.31	0.50	0.08	0.01	1.85
Last quarter ($/MW)	9.36	1.98	3.68	5.15	9.32	1.87	1.58	1.52
Market Cost ($1000s)	$29	$26	$318	$2	$0	$0	$0	$11
% of energy market	6.75	1.66	21.93	1.99	0.50	0.03	0.02	2.46

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

Figure 64: daily frequency control ancillary service cost

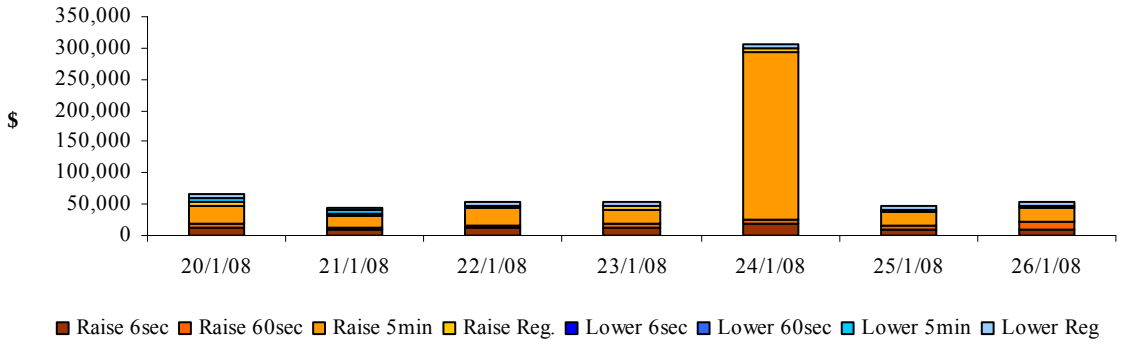
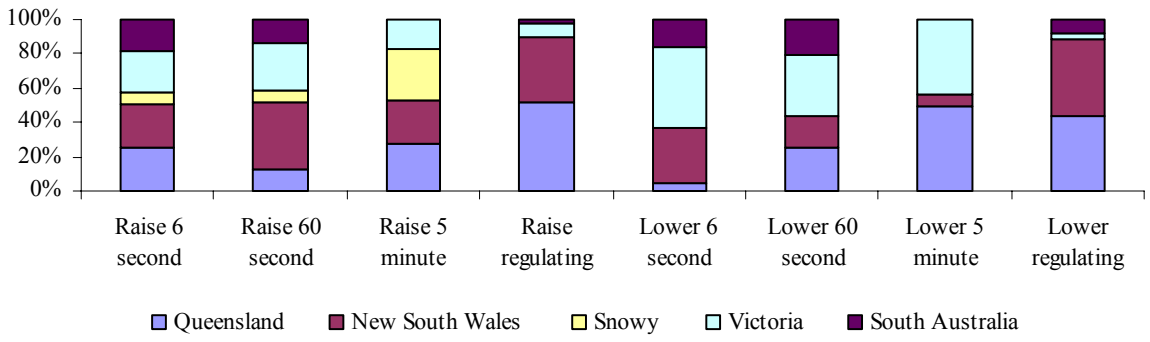


Figure 65 shows the contribution, on a percentage basis, that frequency control ancillary service providers are utilised (in each mainland region) to satisfy the total requirement for each service.

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

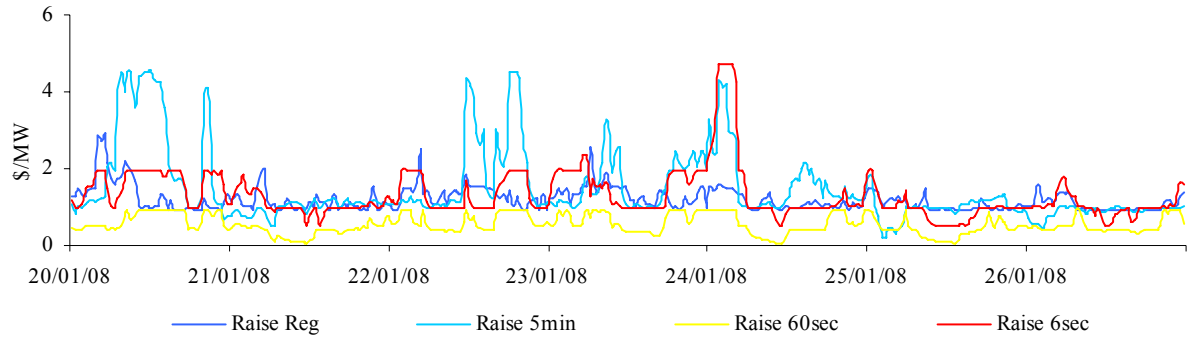


Figure 66A: prices for raise services – Tasmania

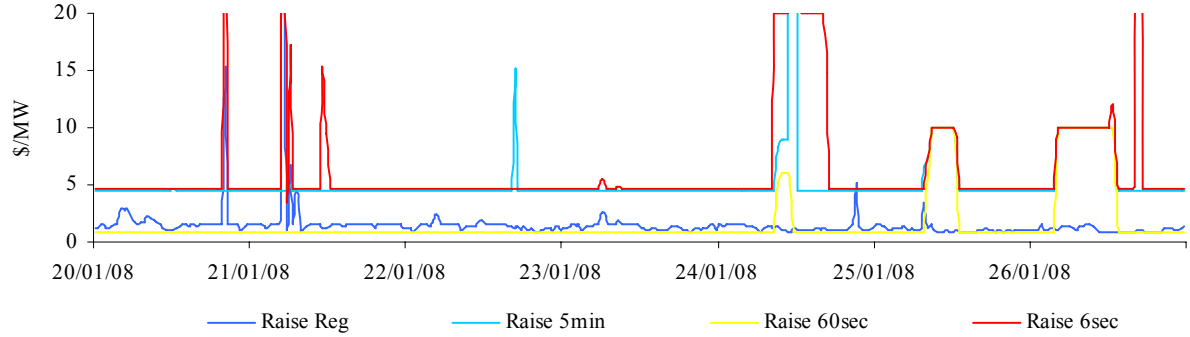


Figure 67: prices for lower services

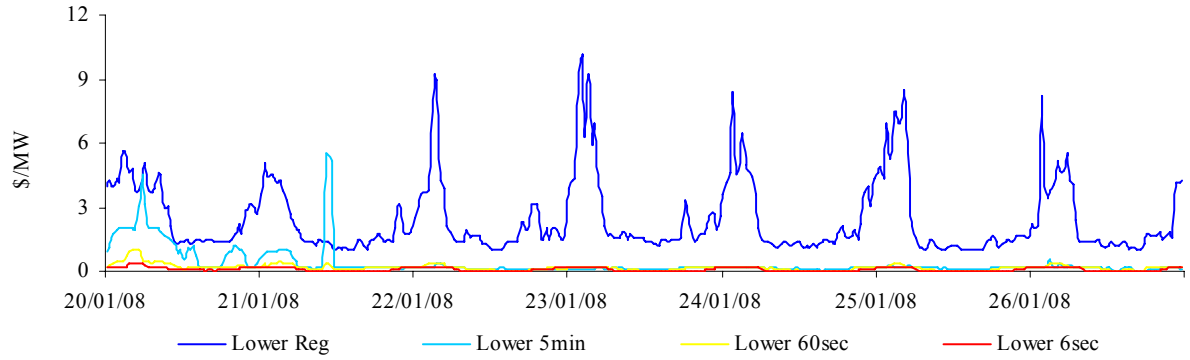
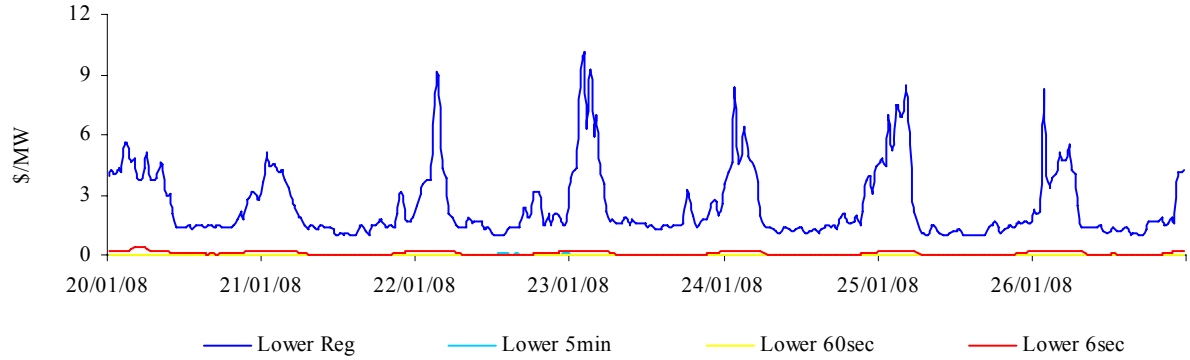


Figure 67A: prices for lower services – Tasmania



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

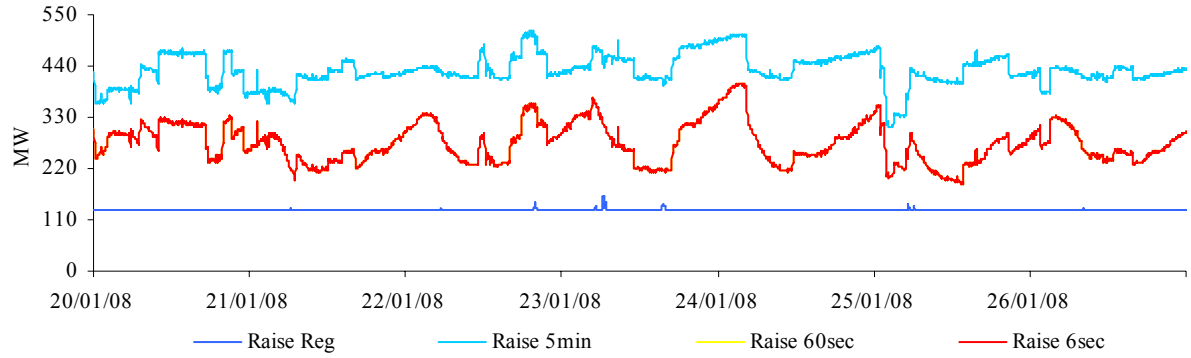


Figure 68A: raise requirements – Tasmania

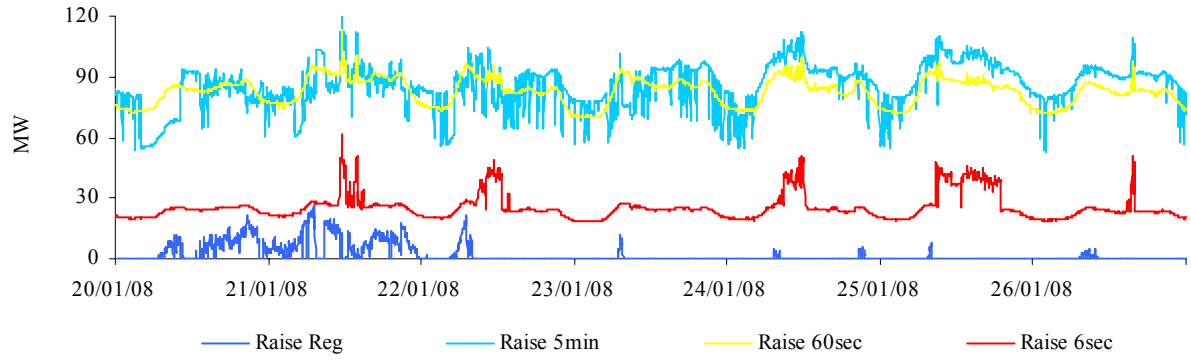


Figure 69: lower requirements

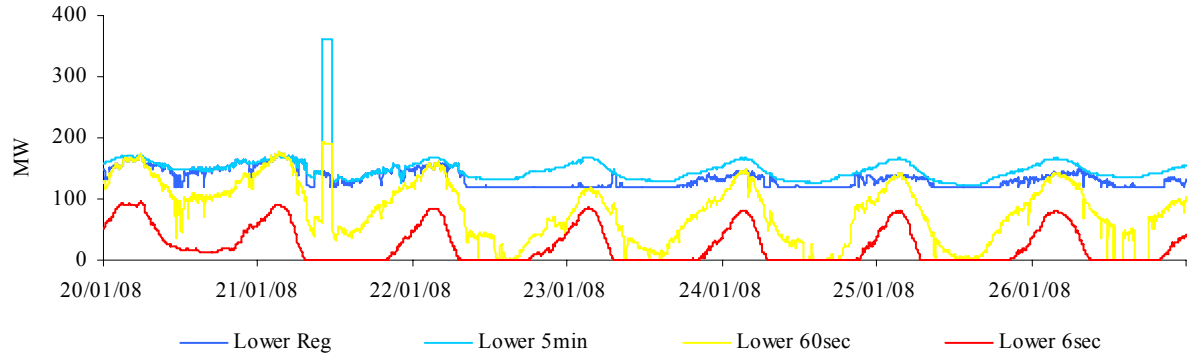
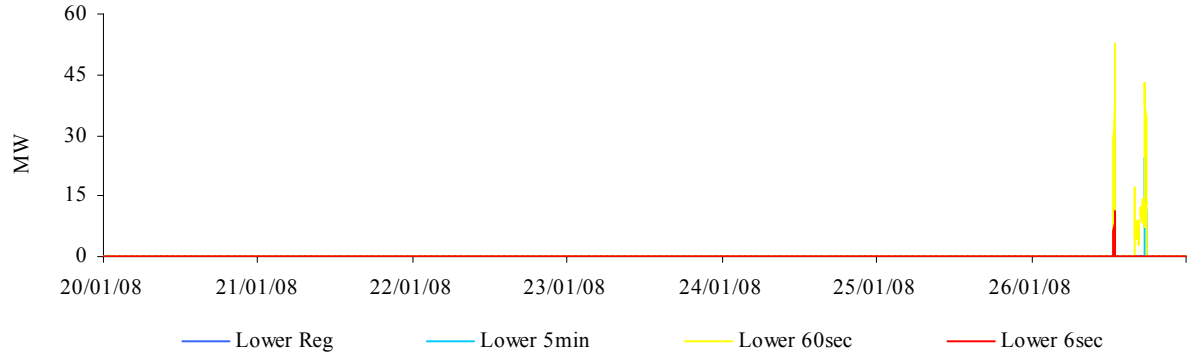


Figure 69A: lower requirements – Tasmania



Australian Energy Regulator

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