

23 JULY – 29 JULY 2006

Spot prices for the week averaged between \$28/MWh in Queensland and \$41/MWh in South Australia. These prices are around half those of the previous week.

Turnover in the energy market was \$144 million. The total cost of ancillary services for the week was \$209 000, or 0.15 per cent of energy market turnover.

Significant variations between actual prices and those forecast 4 and 12 hours ahead occurred in 62, or 18 per cent of all trading intervals. Demand forecasts produced 4 and 12 hours ahead varied from actual by more than 5 per cent in 12 per cent of all trading intervals across the market. These variations were most frequent in Tasmania, occurring in around a quarter 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 financial year to date.

Figure 1: national demand and spot prices

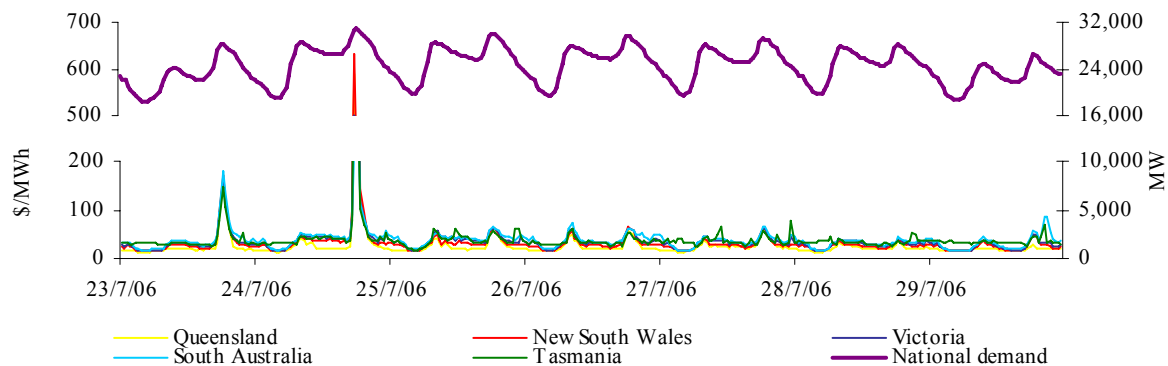


Figure 2: volume weighted average spot price for energy market (\$/MWh)

	QLD	NSW	VIC	SA	TAS
Last week	28	35	37	41	40
Previous week	51	104	89	79	86
Same quarter last year	22	29	30	34	100
Financial year 2005 - 06	31	43	36	44	59
% change from previous week*	▼45%	▼66%	▼58%	▼48%	▼54%
% change from same quarter last year**	▲29%	▲24%	▲25%	▲21%	-

*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.

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

Figure 3: Queensland

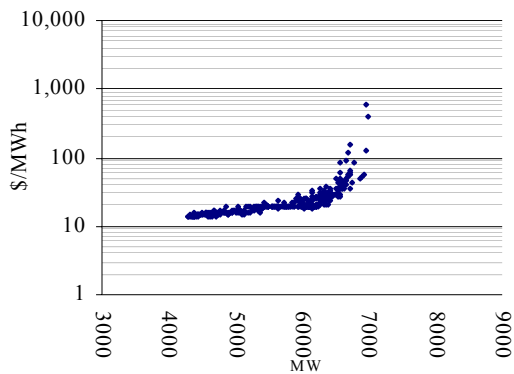


Figure 4: New South Wales

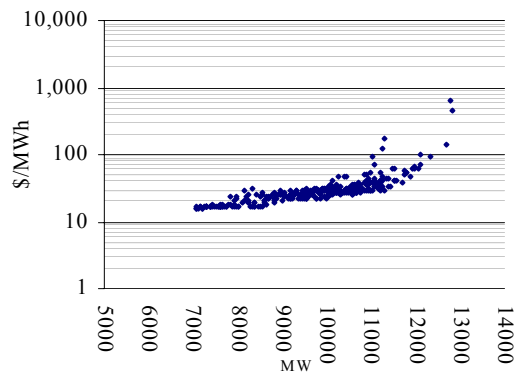


Figure 5: Victoria

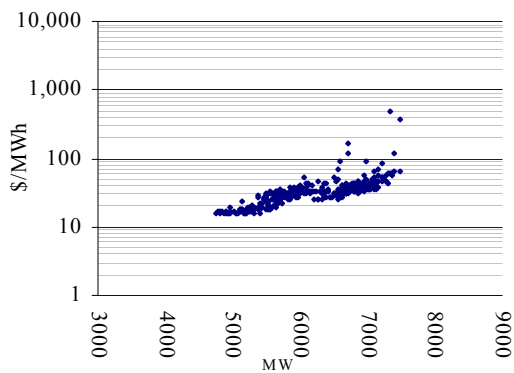


Figure 6: South Australia

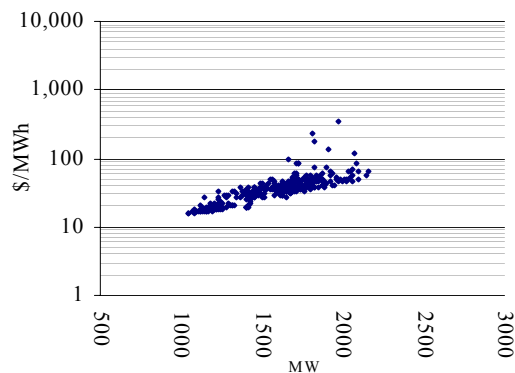
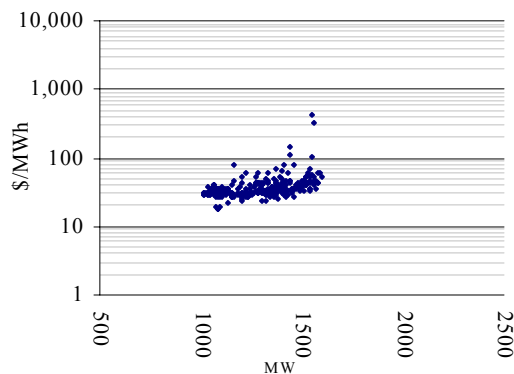


Figure 7: Tasmania



Maximum spot prices for the week were \$590/MWh in Queensland, \$630/MWh in New South Wales, \$498/MWh in Victoria, \$336/MWh in South Australia and \$437/MWh in Tasmania, all occurring on Monday during the evening peak. 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	0.94	0.67	0.58	0.51	0.59
Previous week	1.43	1.12	0.90	0.80	0.81
Same quarter last year	0.64	0.86	0.86	0.83	0.81

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

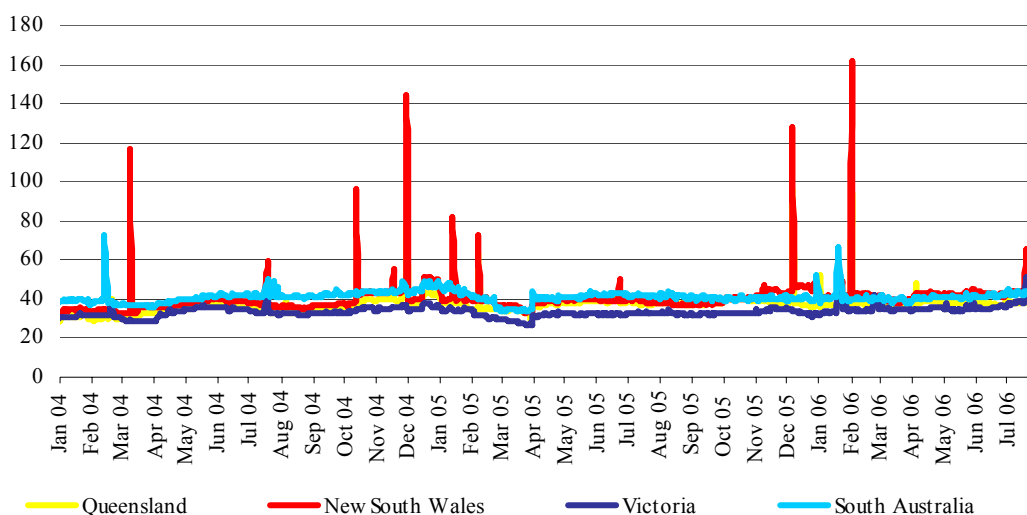
Figure 9 sets out the d-cyphaTrade wholesale electricity price index (WEPI)* for each region throughout the week excluding Tasmania. Figure 10 sets out the WEPI since 1 January 2004.

Figure 9: d-cyphaTrade WEPI for the week

	Monday	Tuesday	Wednesday	Thursday	Friday
Queensland	39.28	38.36	38.28	38.85	38.58
New South Wales	46.73	46.83	45.28	45.04	44.53
Victoria	39.30	41.28	40.13	40.29	40.02
South Australia	43.85	43.91	44.13	44.85	44.48

* A 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

Figure 10: d-cyphaTrade WEPI



Reserve

There were no low reserve conditions forecast.

Figures 11 to 15: spot price, net import and limit at time of weekly maximum demand

Figure 11: Queensland

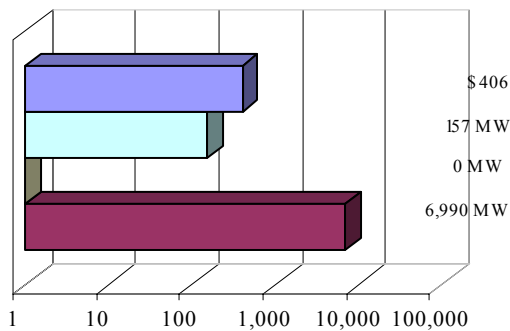


Figure 12: New South Wales

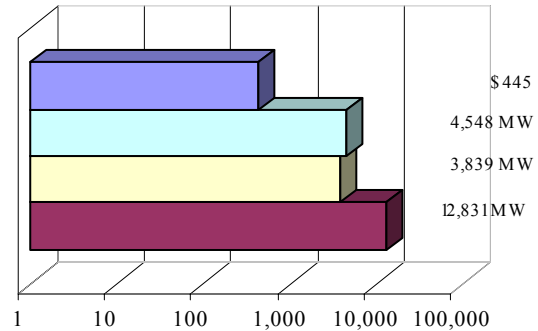


Figure 13: Victoria

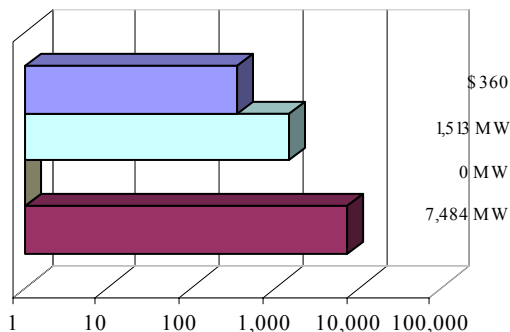


Figure 14: South Australia

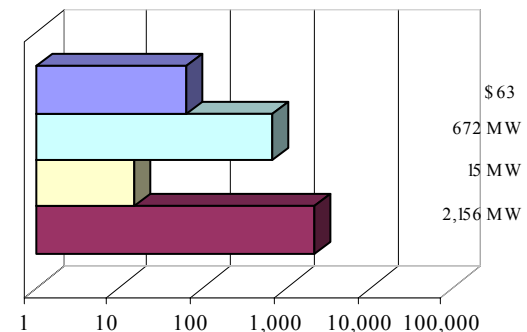
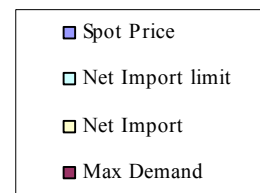
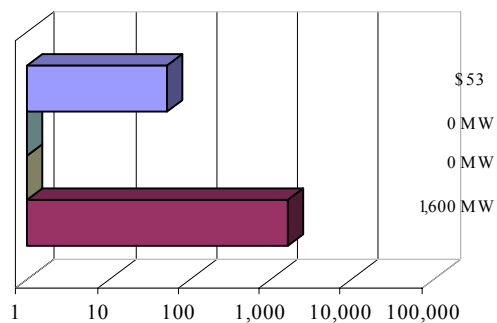


Figure 15: Tasmania



Price variations

There were 62 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 versus 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

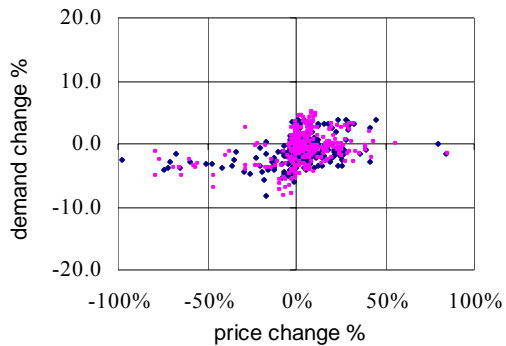


Figure 17: New South Wales

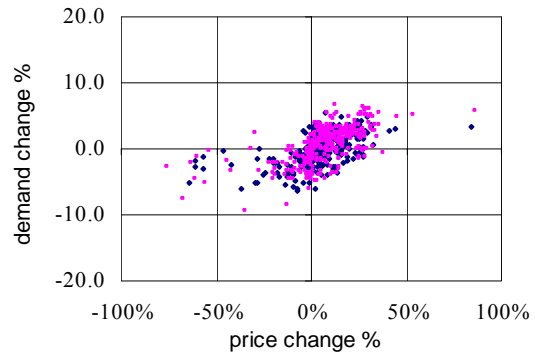


Figure 18: Victoria



Figure 19: South Australia

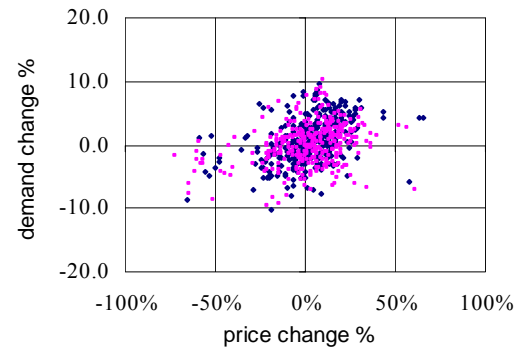


Figure 20: Tasmania

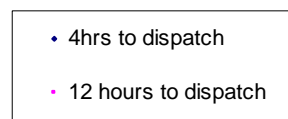
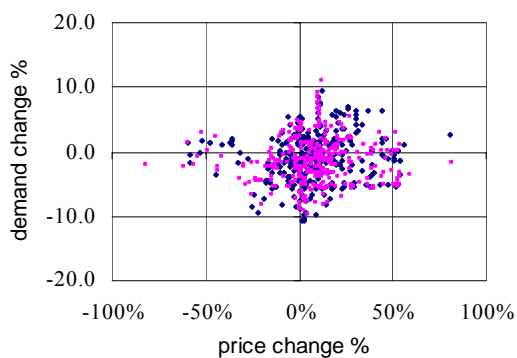
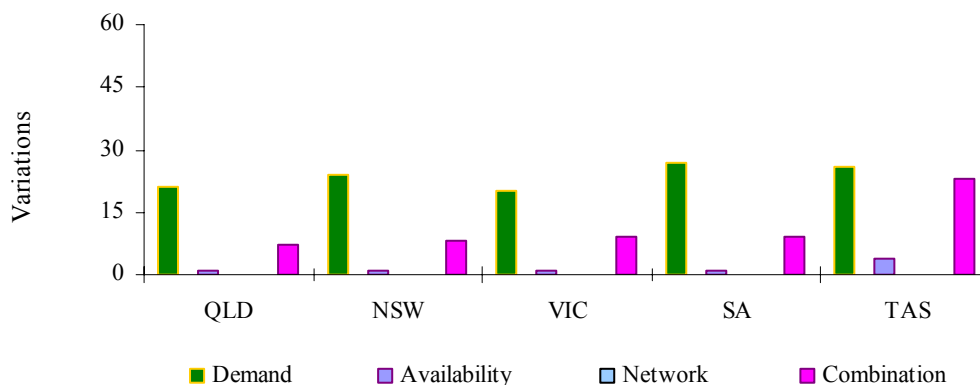


Figure 21 summarises the number and most probable reason for variations between forecast and actual prices.

Figure 21: reasons for variations between forecast and actual prices



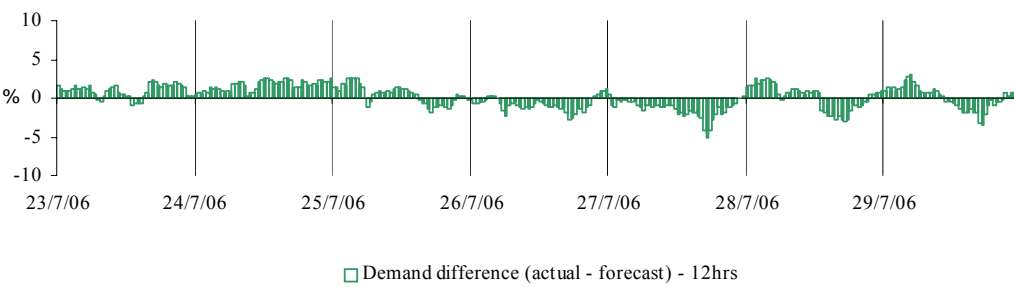
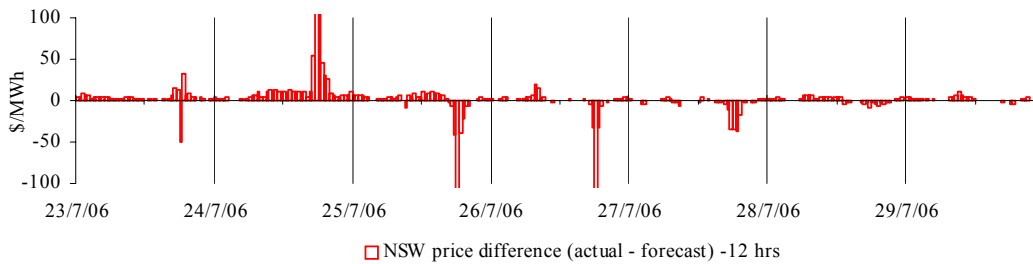
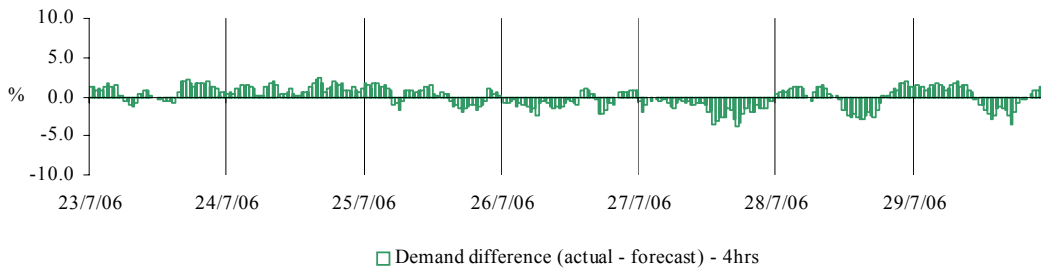
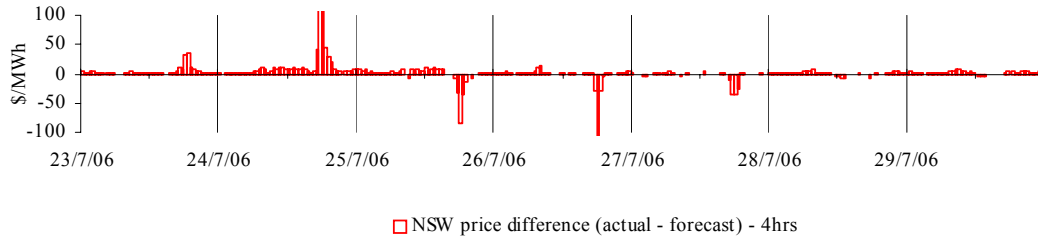
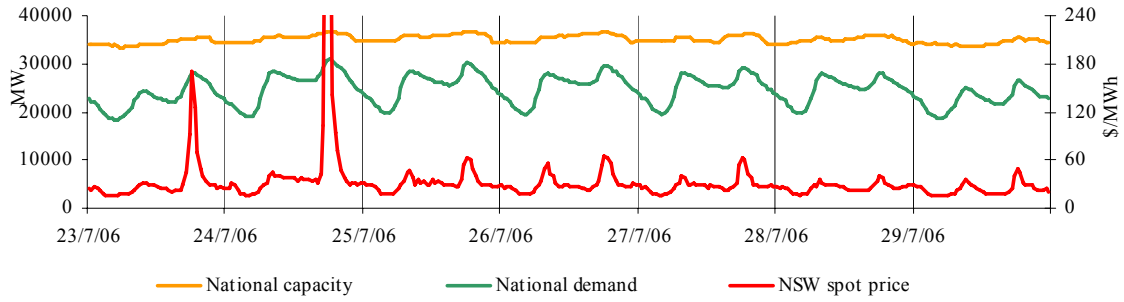
Price and demand

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.

The regions within the national market are regularly aligned, with conditions in one region reflected across all others. The national market outcomes section highlights 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 to represent a pseudo national price under these conditions.

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, the occurrences of all prices for the week greater than three times the average have been presented. The price forecast is compared to the demand and availability forecasts made 4 and 12 hours ahead, with significant changes to these forecasts explained.

Figures 22-26: National market outcomes



There were five trading intervals where spot prices were generally aligned across the market and the New South Wales price¹ was greater than three times the New South Wales weekly average price of \$35/MWh. In Queensland, 5-minute dispatch prices did at times separate from the rest of the market during these periods. These occasions are considered as part of a national analysis.

National market outcomes

Sunday, 23 July

6:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	170.92	139.76	221.32
Demand (MW)	28086	27702	27684
Available capacity (MW)	35298	35354	35048
7:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	126.24	92.24	92.85
Demand (MW)	28086	27584	27580
Available capacity (MW)	35324	35354	35048

Conditions at the time saw national demand up to 500 MW higher than forecast four hours ahead. Prices were aligned across the market.

There was only 200 MW of available capacity across the market priced between \$90/MWh and \$140/MWh and no significant rebidding.

Monday, 24 July

6:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	630.05	97.65	89.46
Demand (MW)	30521	30199	30064
Available capacity (MW)	36500	36275	36405
6:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	445.49	248.36	243.64
Demand (MW)	30905	30517	30451
Available capacity (MW)	36529	36265	36370
7:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	141.90	97.71	96.48
Demand (MW)	30728	30100	30008
Available capacity (MW)	36523	36275	36370

Conditions at the time saw national demand up to 600 MW higher than forecast four hours ahead. Available capacity was close to forecast four hours ahead with prices aligned across the market.

At 4.11 pm LYMMCO rebid 205 MW of available capacity at Loy Yang units one, two and four from below \$600/MWh to above \$9600/MWh. The rebid reasons given were “Demand tracking well ahead of PD at 16:10” and “Change in Basslink IC limits”.

¹ The New South Wales spot price has been used to represent a pseudo national price under these conditions.

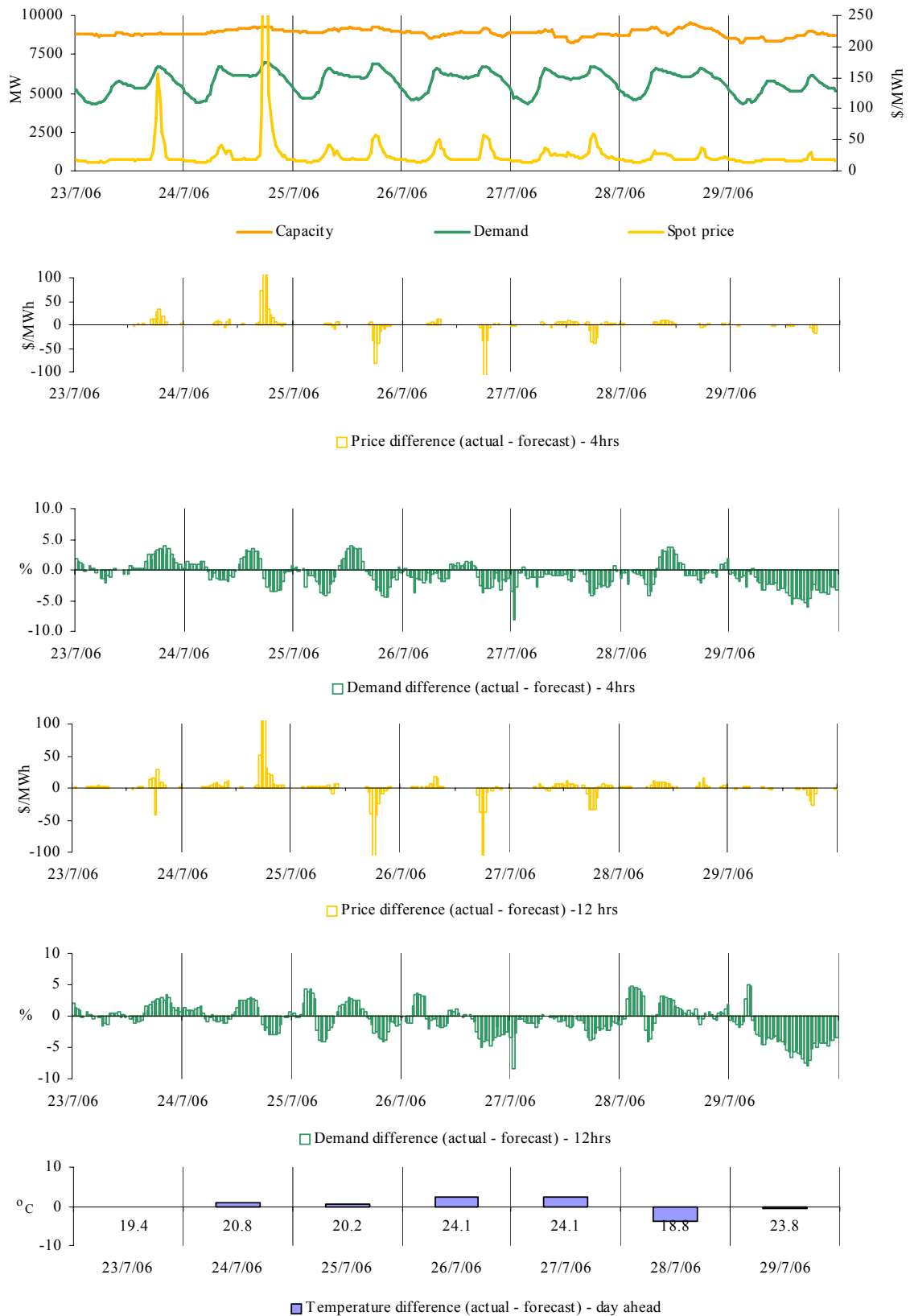
At 4.23 pm Macquarie Generation rebid 760 MW of available capacity at Bayswater from prices below \$85/MWh to above \$8000/MWh. At the same time it rebid 80 MW of available capacity at Liddell units one and two from prices below \$90/MWh to above \$6500/MWh. The rebid reason given for both was “Demand expected to exceed forecast”.

At 4.42 pm and 4.49 pm, Ecogen responded by rebidding 350 MW of available capacity at Jeeralang from prices of \$9264/MWh to less than \$300/MWh, committing five generators. The reason given was “Band adj due to PD market conditions.” A further 110 MW of fast start generation was committed elsewhere in response to the change in forecast price.

At 5.01 pm, Millmerran Energy rebid 140 MW of available capacity across its portfolio from prices below \$10/MWh to above \$9500/MWh. The rebid reason given was “Financial optimisation-changed predispatch”.

There was no other significant rebidding.

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



There were seven occasions where the spot price in Queensland was greater than three times the weekly average price of \$28/MWh. Five of these occurred when prices were generally aligned across all regions and are detailed in the national market section. The remaining two occasions are presented below.

Sunday, 23 July

6:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	84.47	73.85	68.54
Demand (MW)	6580	6382	6435
Available capacity (MW)	8831	8854	8854

Conditions at the time saw demand in Queensland around 200 MW higher than forecast and available capacity close to forecast four hours ahead. Prices were aligned across the market.

There was no significant rebids.

Monday, 24 July

5:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	92.46	19.20	40.76
Demand (MW)	6661	6657	6663
Available capacity (MW)	9224	9091	9093

Conditions at the time saw demand and available capacity in Queensland close to forecast. Prices were aligned across the market.

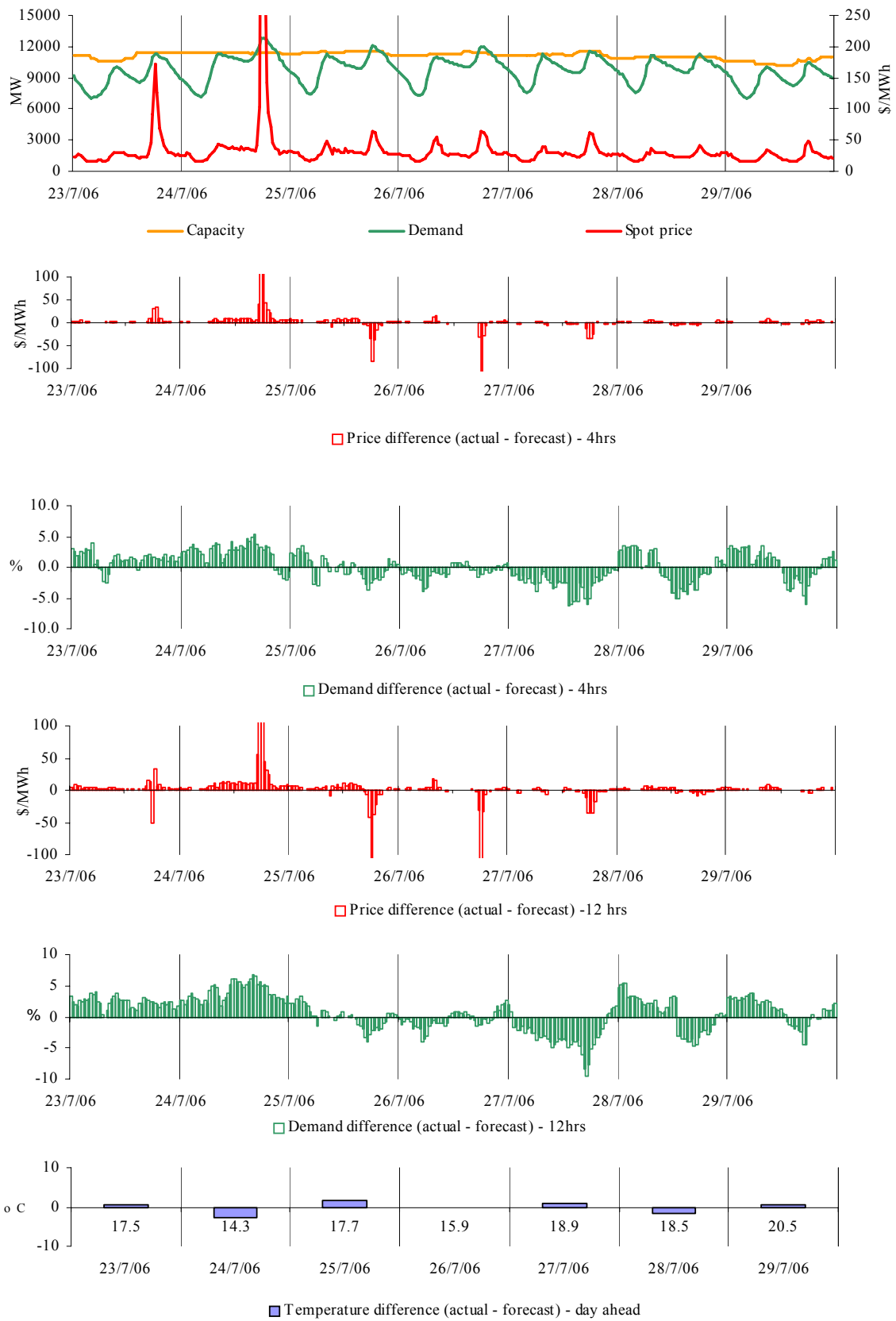
Forecasts prepared four hours ahead saw maximum exports south into New South Wales resulting in price separation with the other regions. Actual export capability was greater than forecast and the interconnectors were not constrained leading to price alignment with the rest of the market.

At 5.10 pm Millmerran Energy rebid 140 MW of available capacity across its two units from a price of \$5/MWh to above \$9500/MWh. The rebid reason given was “Financial optimisation - changed predispach”.

At 5.20 pm Callide Power Trading rebid 60 MW of available capacity across its portfolio from prices below \$15/MWh to above \$9000/MWh. The rebid reason given was “Financial optimisation, changed PD”.

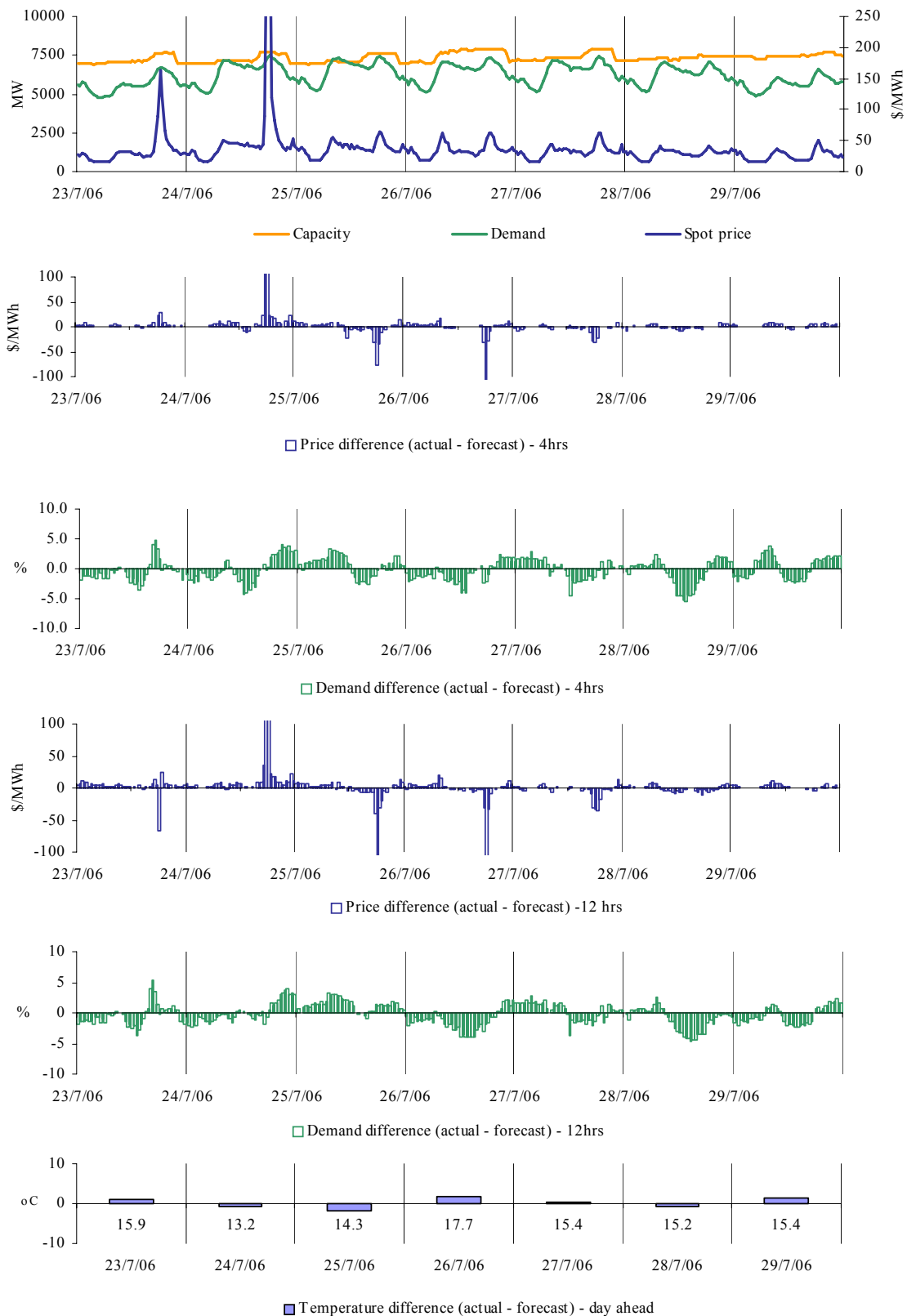
There was no other significant rebids.

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



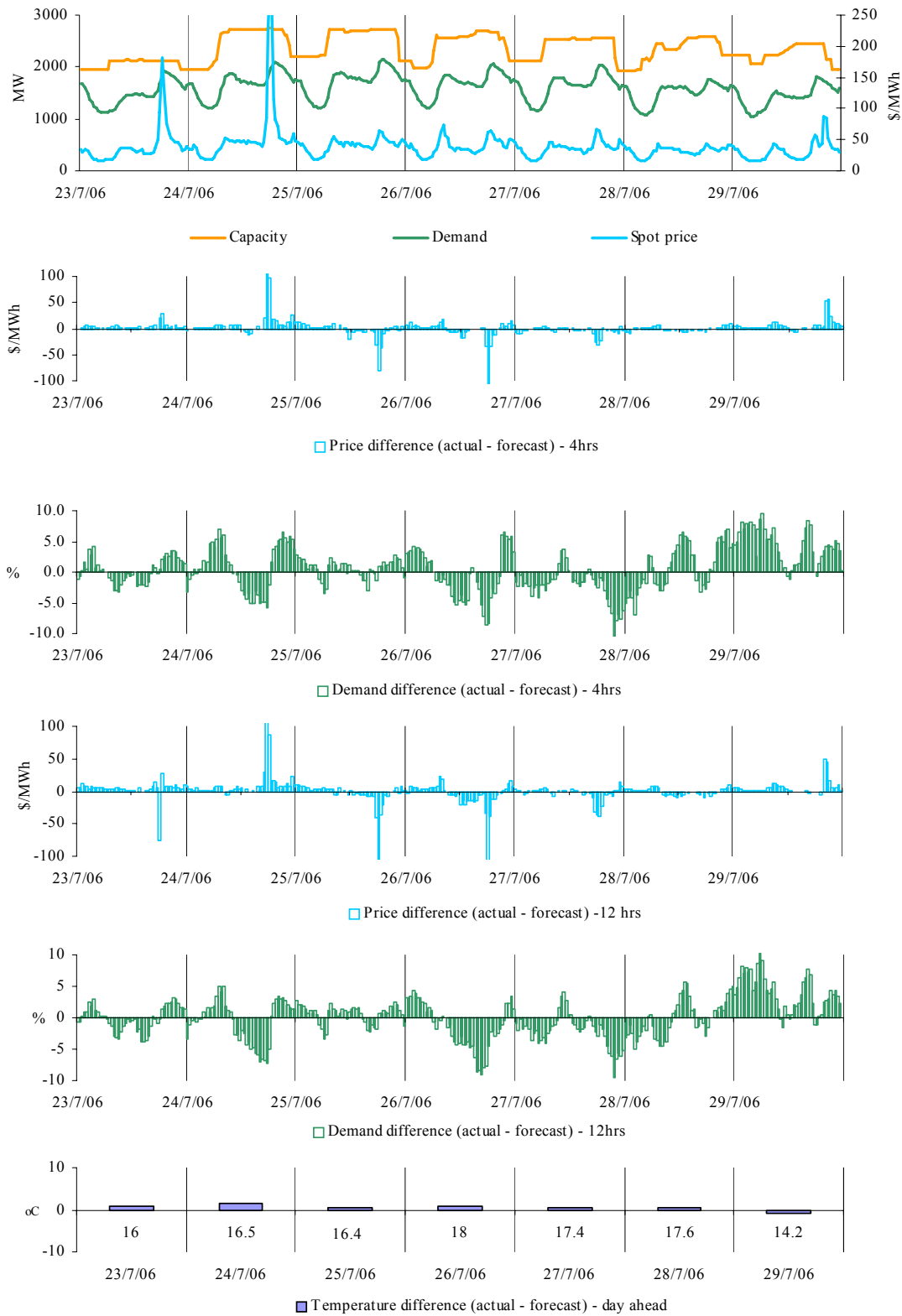
There were five occasions where the spot price in New South Wales was greater than three times the weekly average price of \$35/MWh. All these prices occurred when prices were aligned across the market and are detailed in the national market section.

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



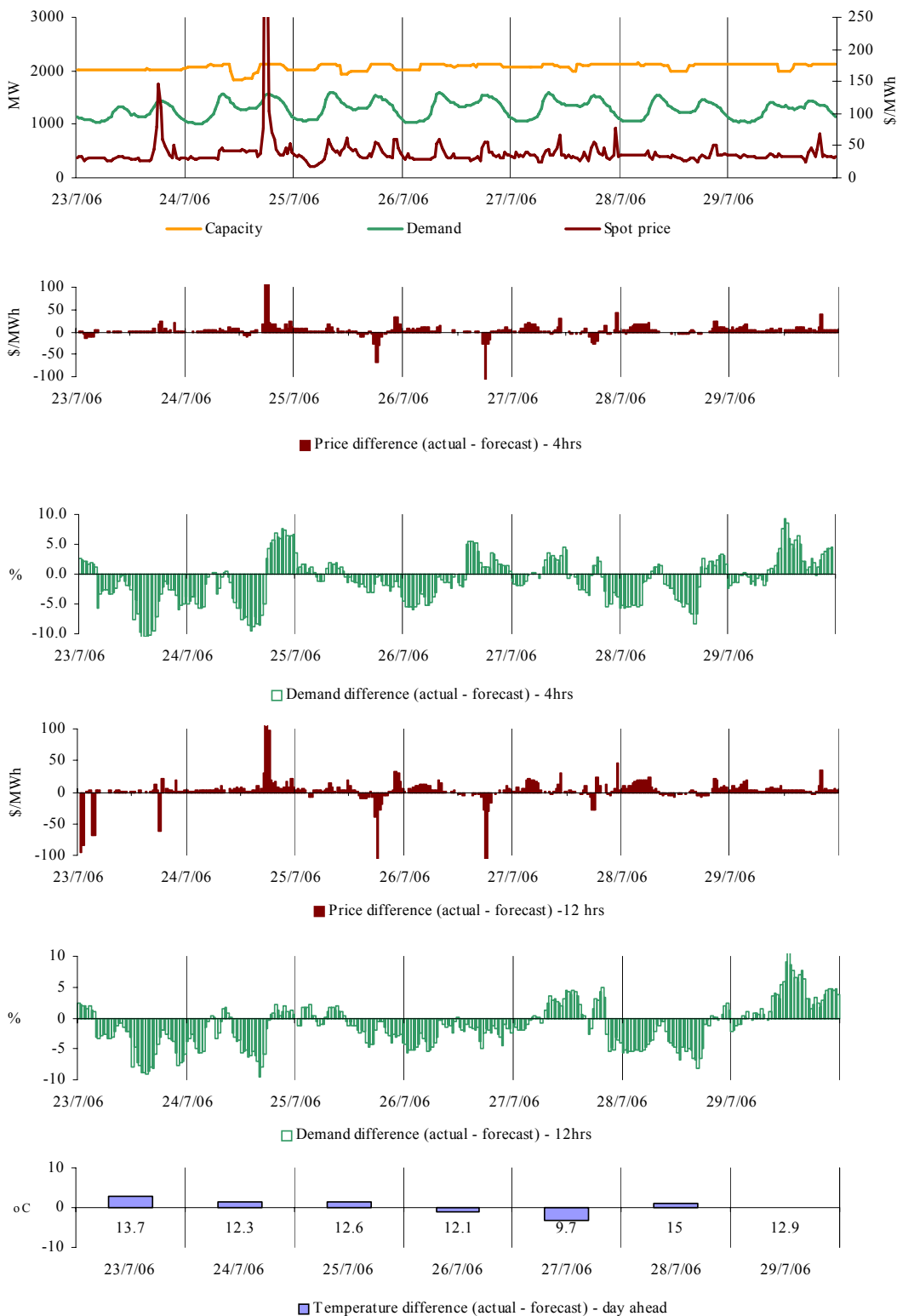
There were five occasions where the spot price in Victoria was greater than three times the weekly average price of \$37/MWh. All these prices occurred when prices were aligned across the market and are detailed in the national market section.

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



There were four occasions where the spot price in South Australia was greater than three times the weekly average price of \$41/MWh. All these prices occurred when prices were aligned across the market and are detailed in the national market section.

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



There were three occasions where the spot price in Tasmania was greater than three times the weekly average price of \$40/MWh. All these prices occurred when prices were aligned across the market and are detailed in the national market section.

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

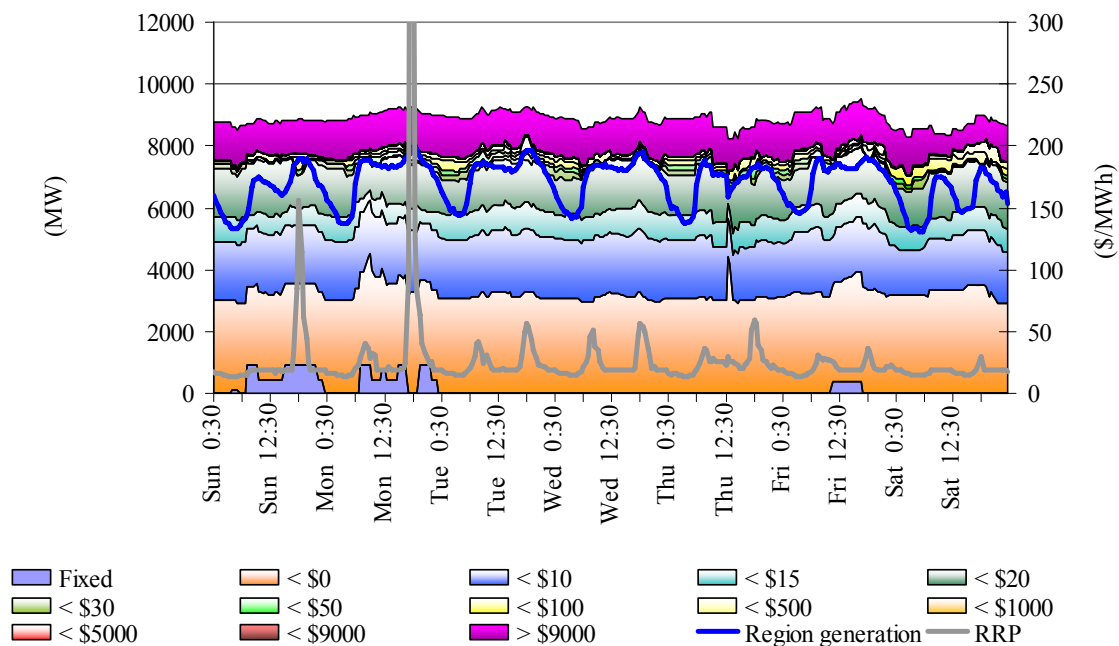


Figure 58: New South Wales closing bid prices, dispatched generation and spot price

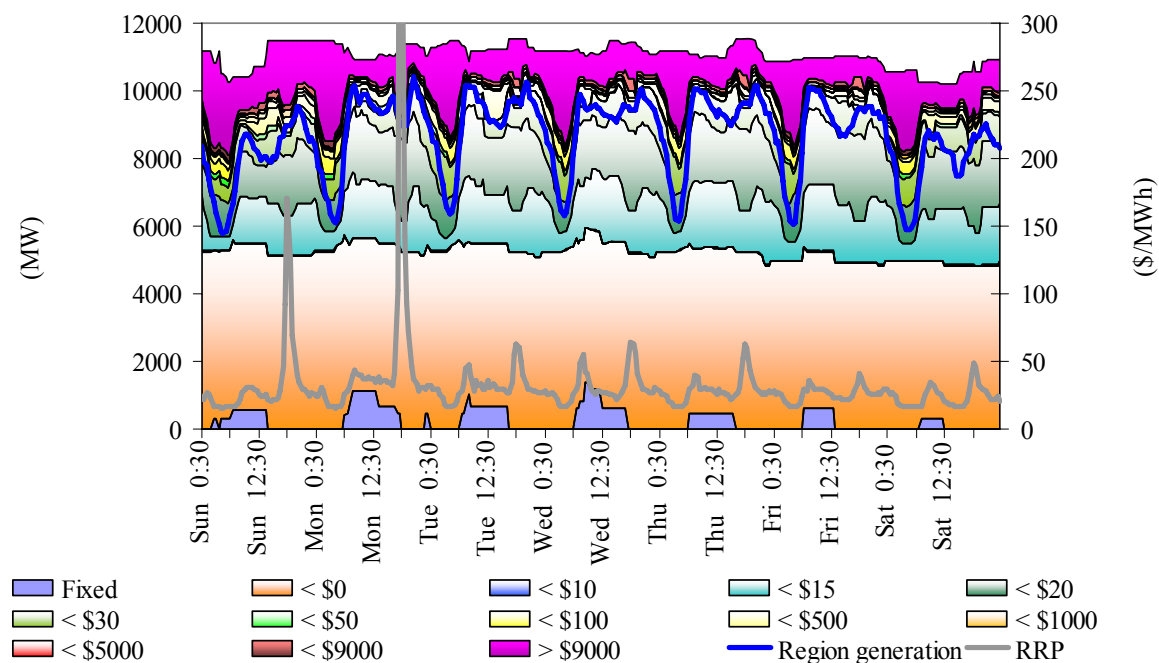


Figure 59: Victoria closing bid prices, dispatched generation and spot price

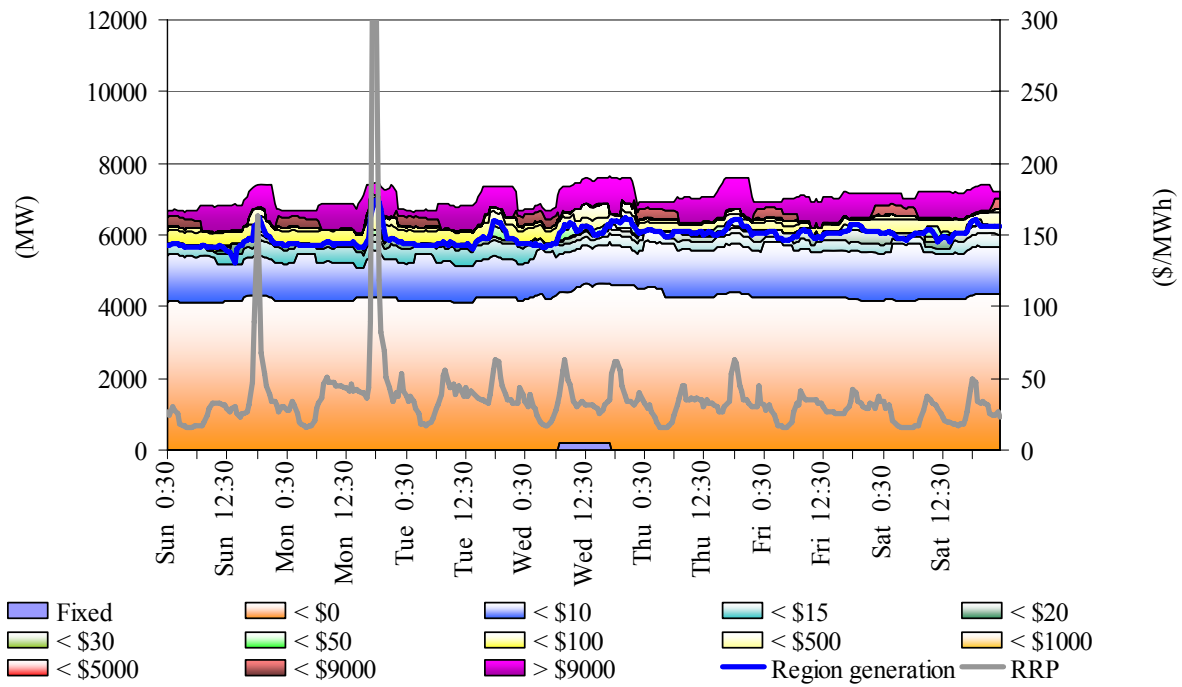


Figure 60: South Australia closing bid prices, dispatched generation and spot price

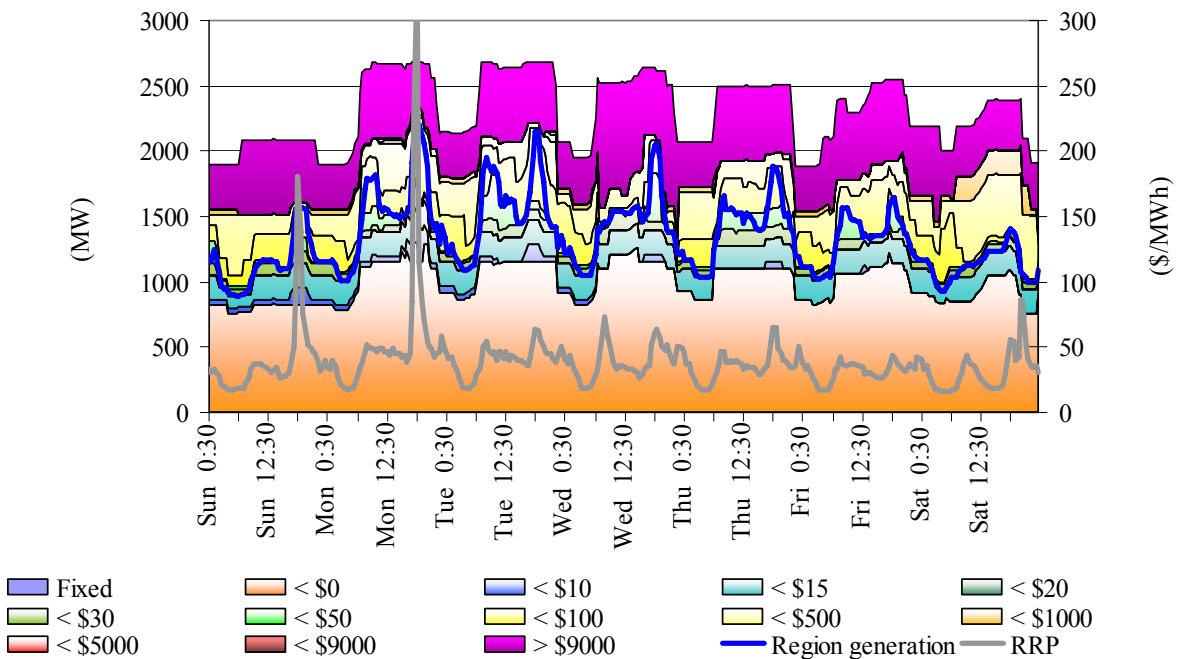
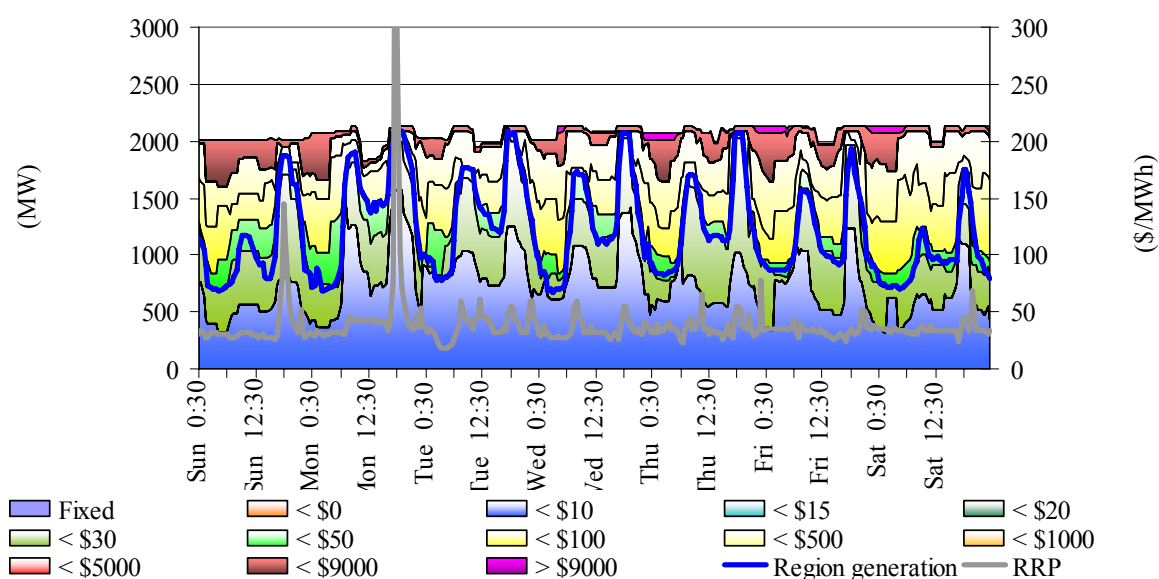


Figure 61: Tasmania closing bid prices, dispatched generation and spot price



Ancillary service market

The total cost of ancillary services on the mainland for the week was \$119 000 or 0.1 per cent of 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)	0.47	0.10	0.58	2.01	0.15	0.09	0.32	0.88
Previous week (\$/MW)	0.56	0.13	0.76	2.50	0.17	0.30	0.63	1.19
Last quarter (\$/MW)	1.76	0.73	1.15	1.54	0.39	2.28	5.00	1.93
Market Cost (\$1000s)	\$18	\$3	\$32	\$48	\$0	\$0	\$5	\$14
% of energy market	0.01%	0.01%	0.02%	0.04%	0.01%	0.01%	0.01%	0.01%

The total cost of ancillary services in Tasmania for the week was \$90 000 or 1 per cent of the total turnover in the energy market in Tasmania. 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)	3.49	0.16	1.64	2.33	5.92	0.15	0.61	0.86
Previous week (\$/MW)	3.99	0.20	1.76	3.01	188.53	0.13	0.53	0.83
Last quarter (\$/MW)	7.89	1.05	1.05	1.58	4.43	1.06	1.06	1.97
Market Cost (\$1000s)	\$16	\$2	\$20	\$6	\$30	\$3	\$9	\$4
% of energy market	0.18%	0.02%	0.24%	0.07%	0.35%	0.03%	0.11%	0.05%

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

Figure 64: daily frequency control ancillary service costs

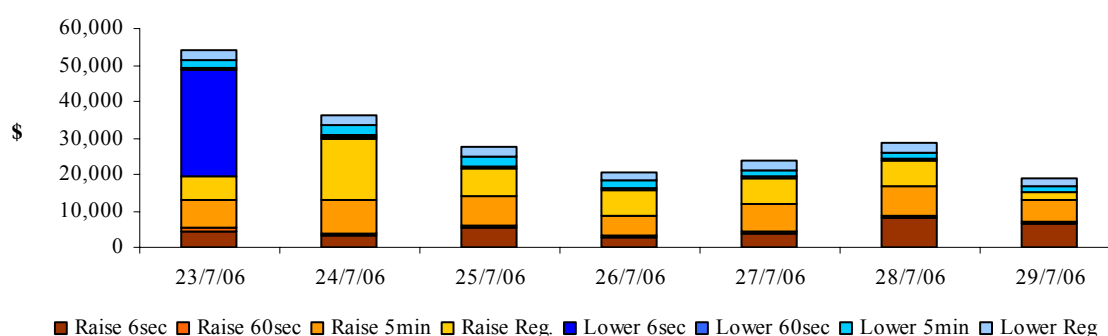
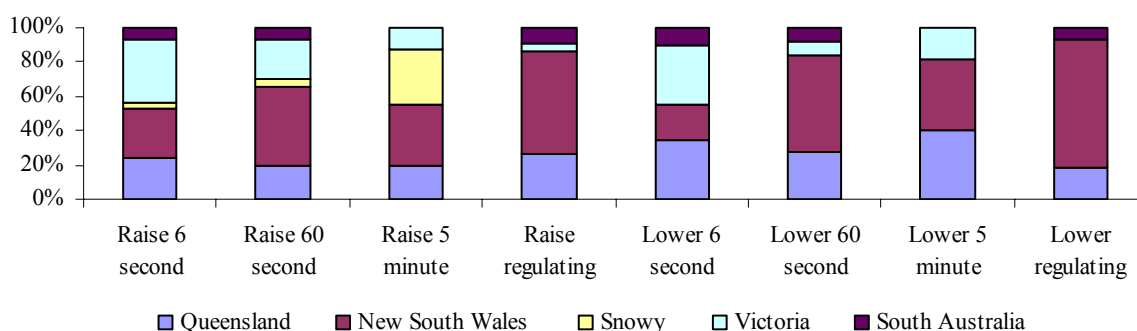


Figure 65 shows the contribution, on a percentage basis, that frequency control ancillary service providers are utilised (in each mainland region) to satisfy the total requirement for each service.

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

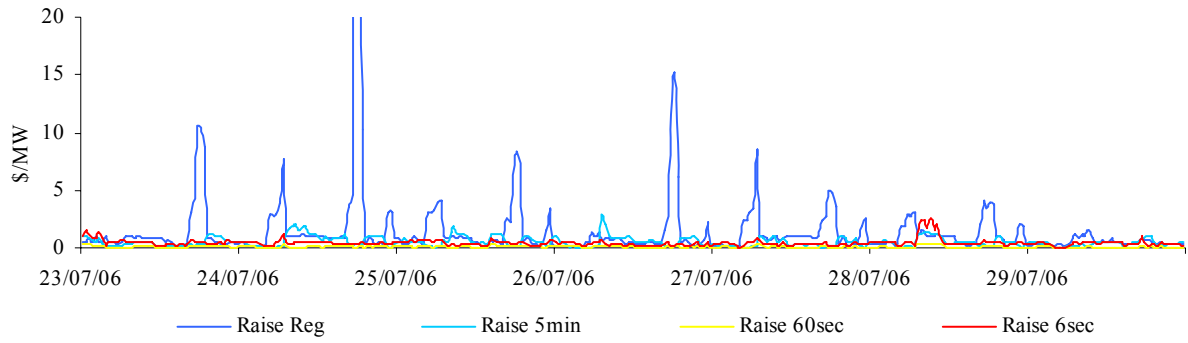


Figure 66A: prices for raise services - Tasmania

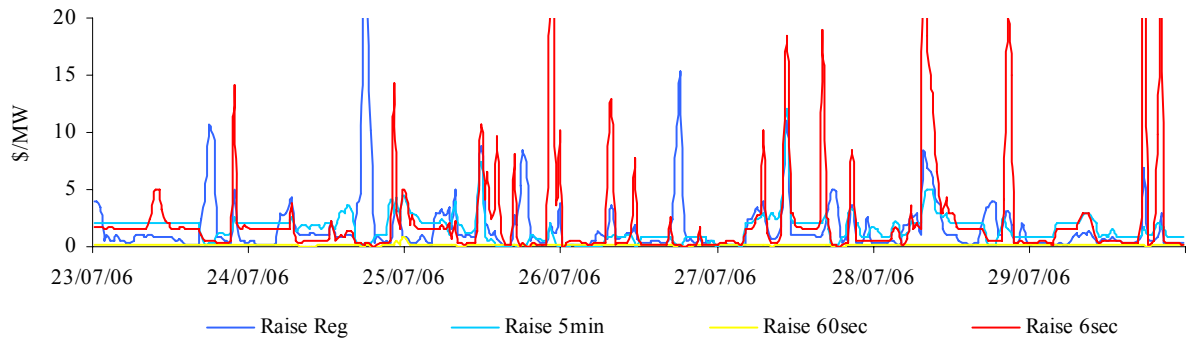


Figure 67: prices for lower services

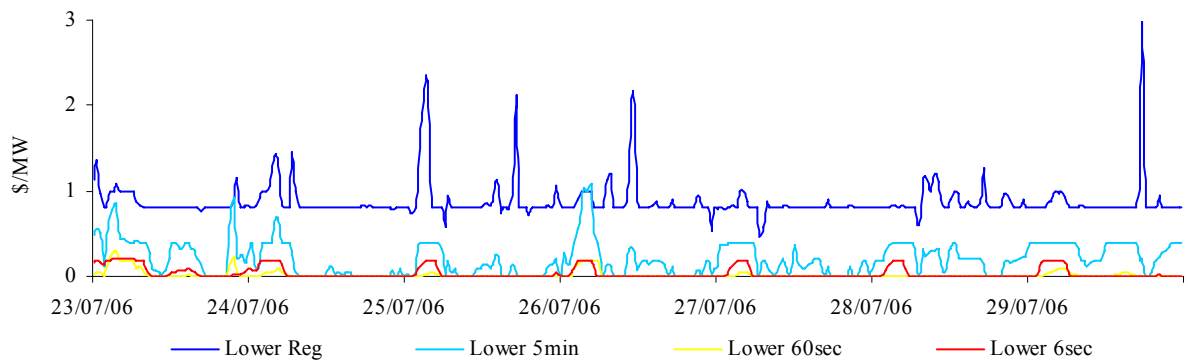
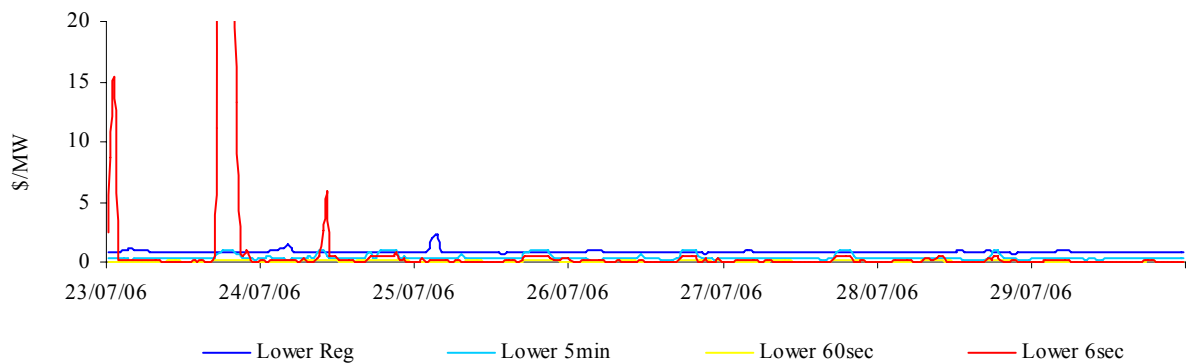


Figure 67A: prices for lower services – Tasmania



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

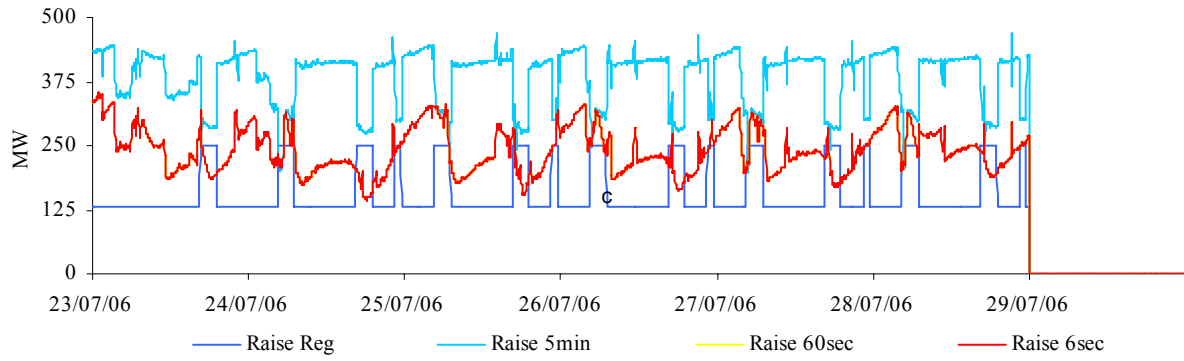


Figure 68A: raise requirements - Tasmania

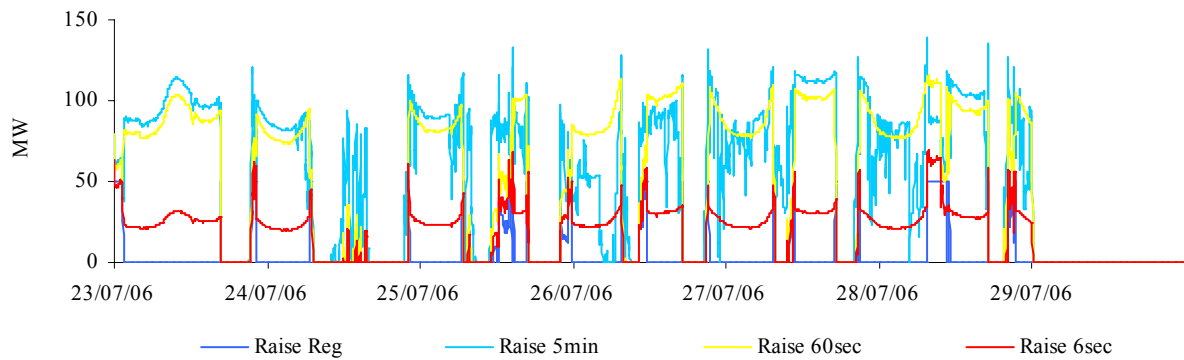


Figure 69: lower requirements

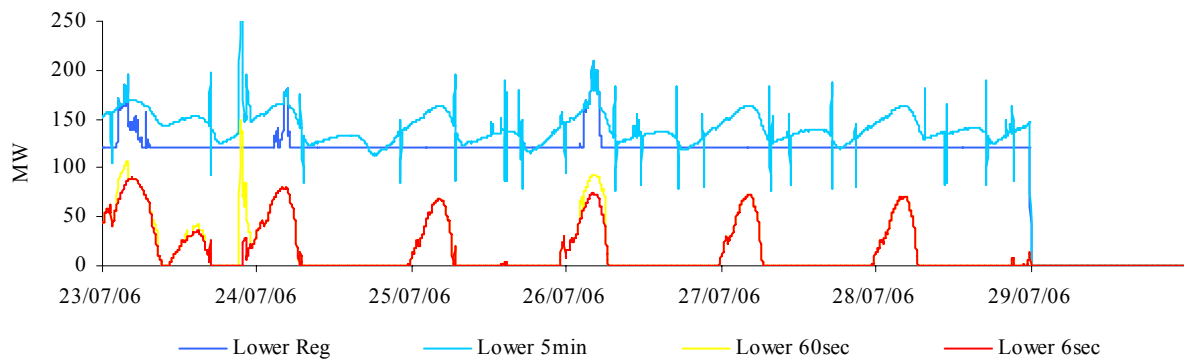


Figure 69A: lower requirements - Tasmania

