

5 August – 11 August 2007

Summary

Spot prices for the week averaged between \$39/MWh and \$43/MWh.

Turnover in the energy market in the week ended 11 August was \$170 million. The total cost of ancillary services for the week was \$864 000, or 0.5 per cent of energy market turnover.

Significant variations between actual prices and those forecast 4 and 12 hours ahead occurred in 99, or around 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. These variations were most frequent in Tasmania, occurring in over 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 previous financial year.

Figure 1: national demand and spot prices

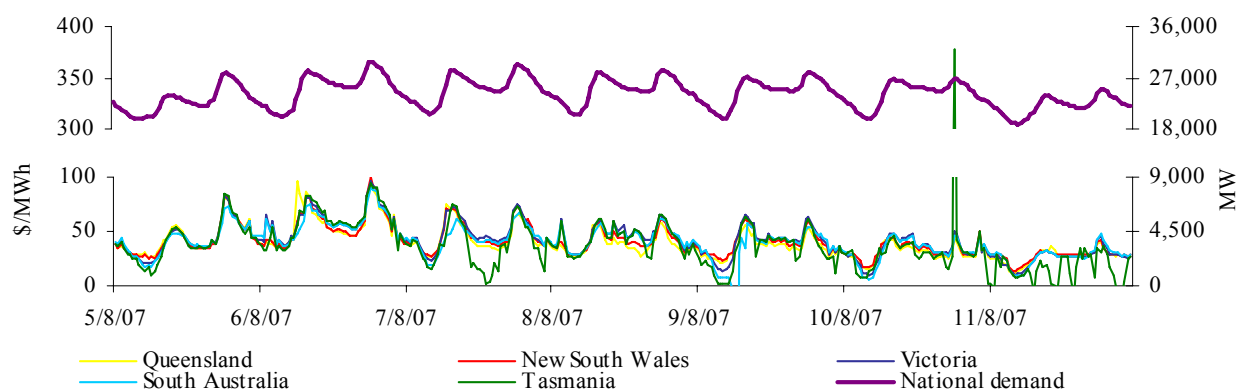


Figure 2: volume weighted average spot price for energy market (\$/MWh)

	QLD	NSW	VIC	SA	TAS
Last week	40	42	43	40	39
Previous week	52	56	61	61	75
Same quarter last year	26	39	39	43	42
Financial year to date	67	74	79	81	89
% change from previous week*	▼22%	▼24%	▼29%	▼34%	▼48%
% change from same quarter last year**	▲56%	▲10%	▲11%	▼6%	▼8%
% change from year to date***	▲116%	▲53%	▲67%	▲55%	▲84%

*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

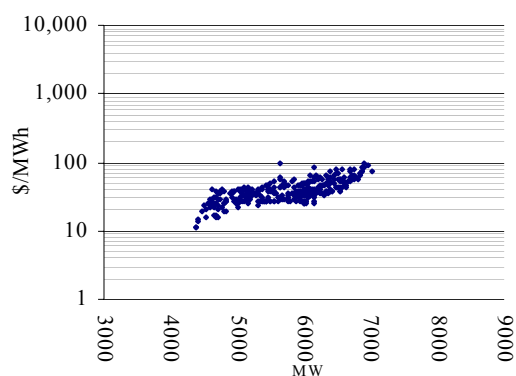


Figure 4: New South Wales

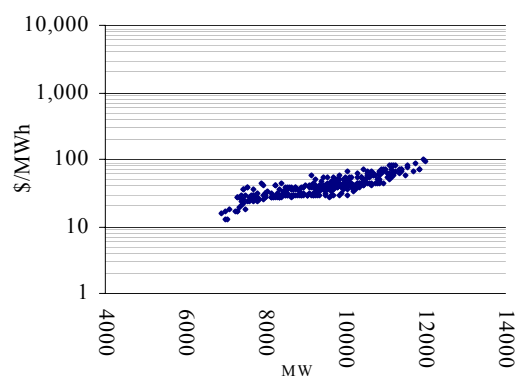


Figure 5: Victoria

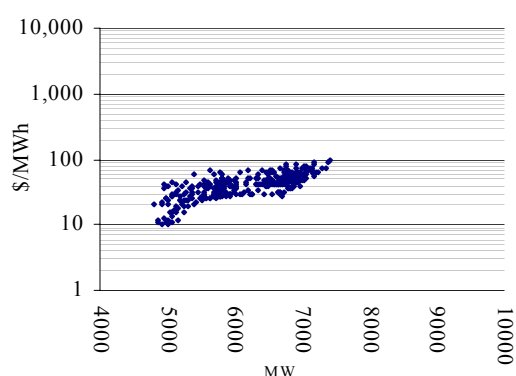


Figure 6: South Australia

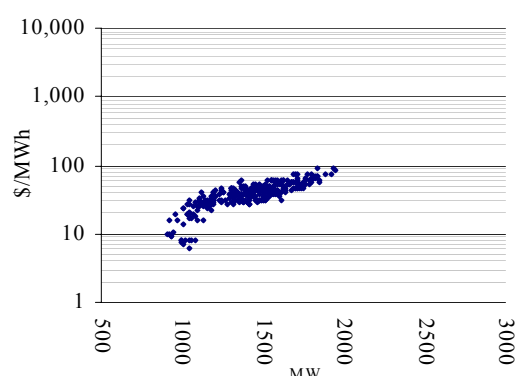
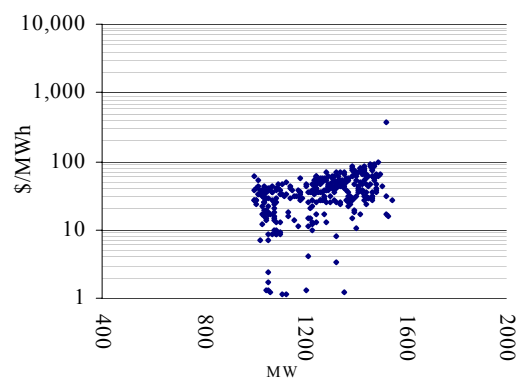


Figure 7: Tasmania



Maximum spot prices for the week ranged from \$91/MWh in South Australia to \$378/MWh in Tasmania. At 6.30 am on Thursday the spot price in South Australia fell to -\$889/MWh as a result of an outage of one circuit of the Victoria to South Australia (Heywood) interconnector. The market was first informed of this outage at around 6 pm the previous evening. 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	0.75	0.68	0.61	0.56	0.96
Previous week	0.75	0.80	0.78	0.87	0.63
Same quarter last year	1.07	0.96	0.96	0.94	0.29

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

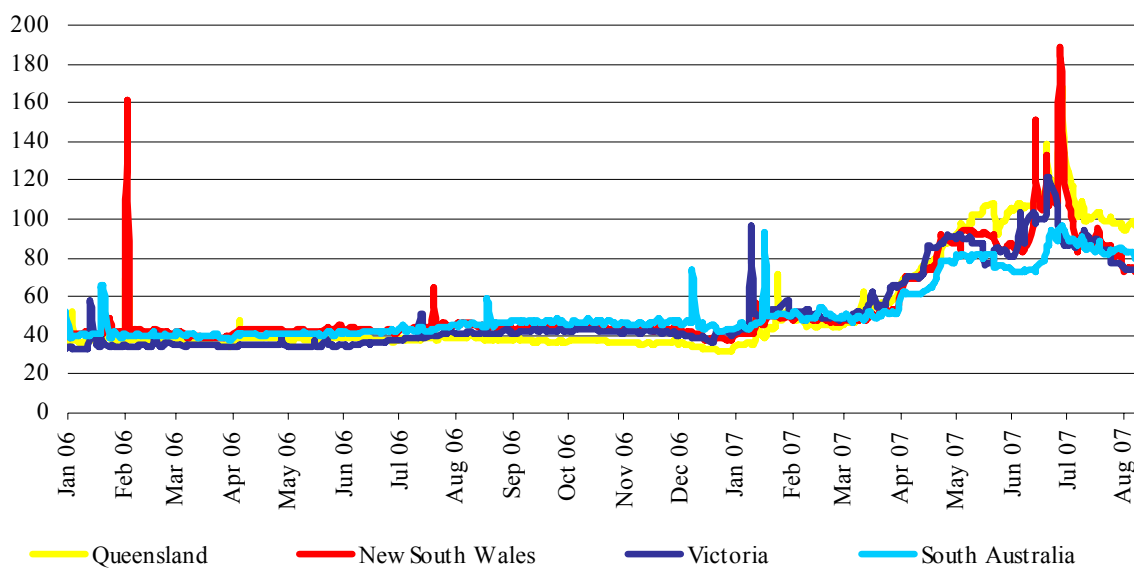
Figure 9 sets out the d-cyphaTrade wholesale electricity price index (WEPI)* for each region throughout the week excluding Tasmania. Figure 10 sets out the WEPI since 1 January 2006.

Figure 9: d-cyphaTrade WEPI for the week

	Monday	Tuesday	Wednesday	Thursday	Friday
Queensland	98.37	97.40	96.56	100.48	74.00
New South Wales	75.14	73.89	72.44	73.77	103.15
Victoria	75.65	75.83	74.88	74.15	79.42
South Australia	82.73	79.00	80.13	79.50	79.42

* 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

There were no low reserves 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

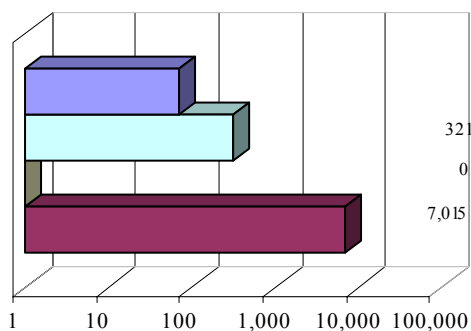


Figure 12: New South Wales

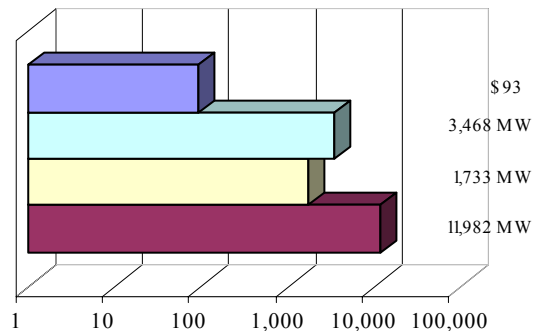


Figure 13: Victoria

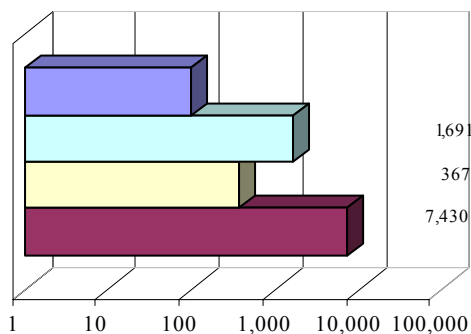


Figure 14: South Australia

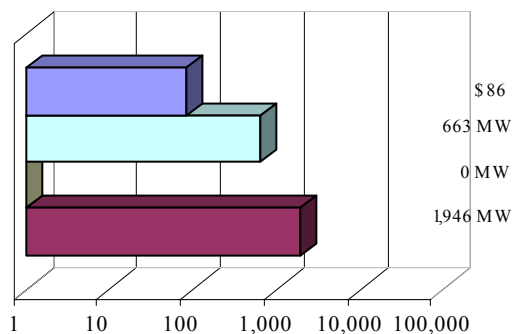
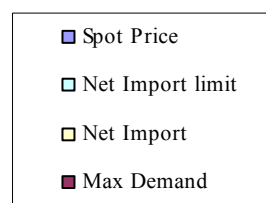
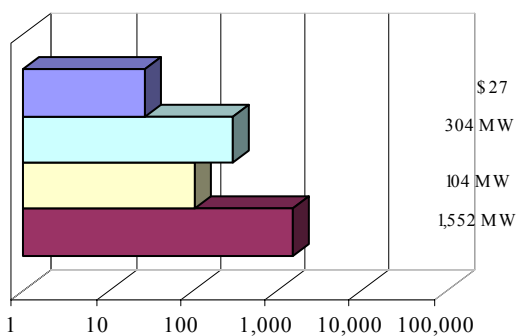


Figure 15: Tasmania



Price variations

There were 99 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

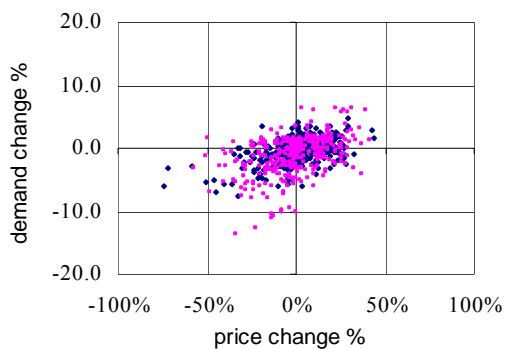


Figure 17: New South Wales

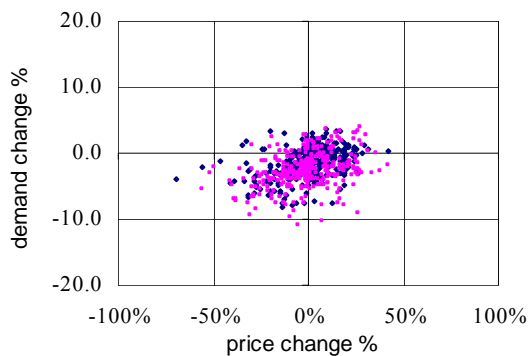


Figure 18: Victoria

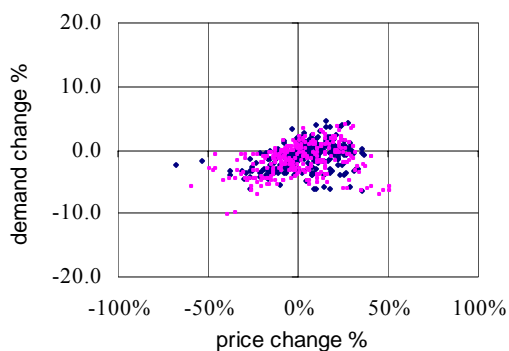


Figure 19: South Australia

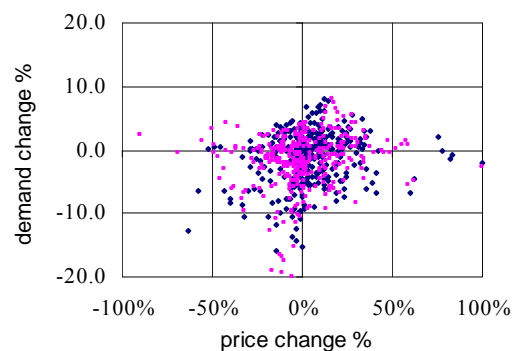


Figure 20: Tasmania

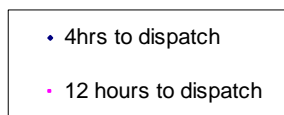
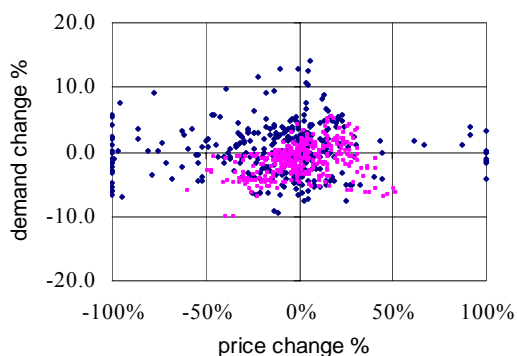
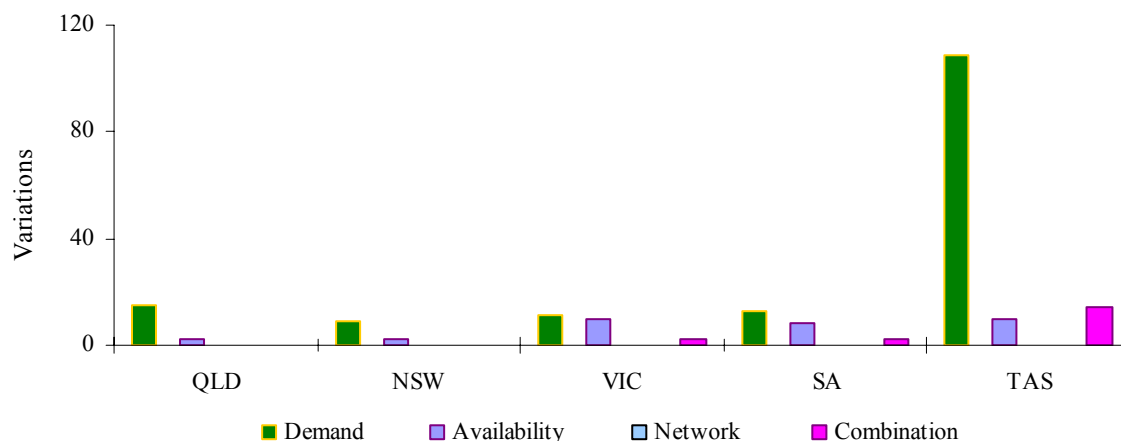


Figure 21 summarises the number and most probable reason for variations between forecast and actual prices.

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.

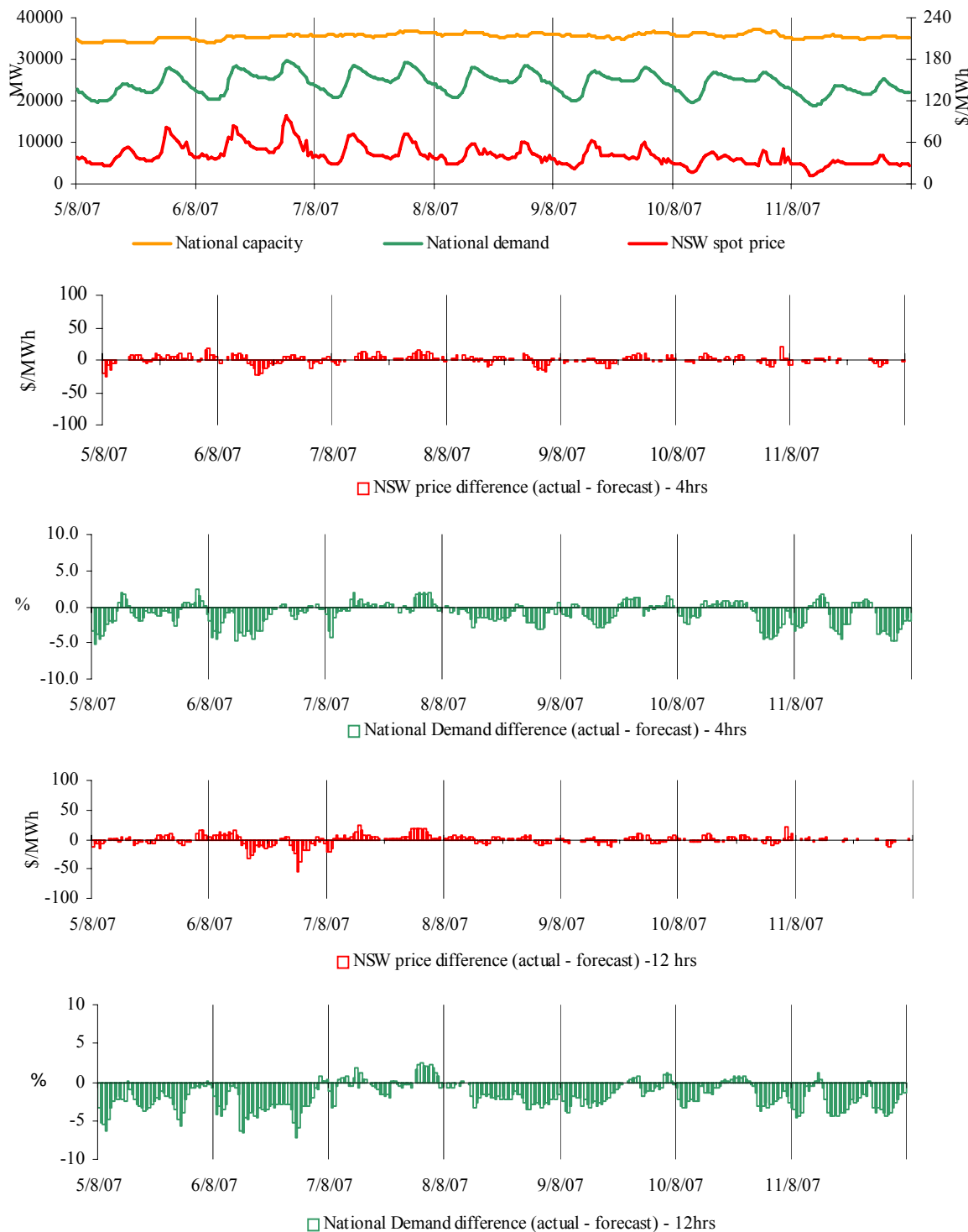
On a regional basis the differences between the maximum temperature and the temperature forecast at around 6.00 pm the day before are also included.

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

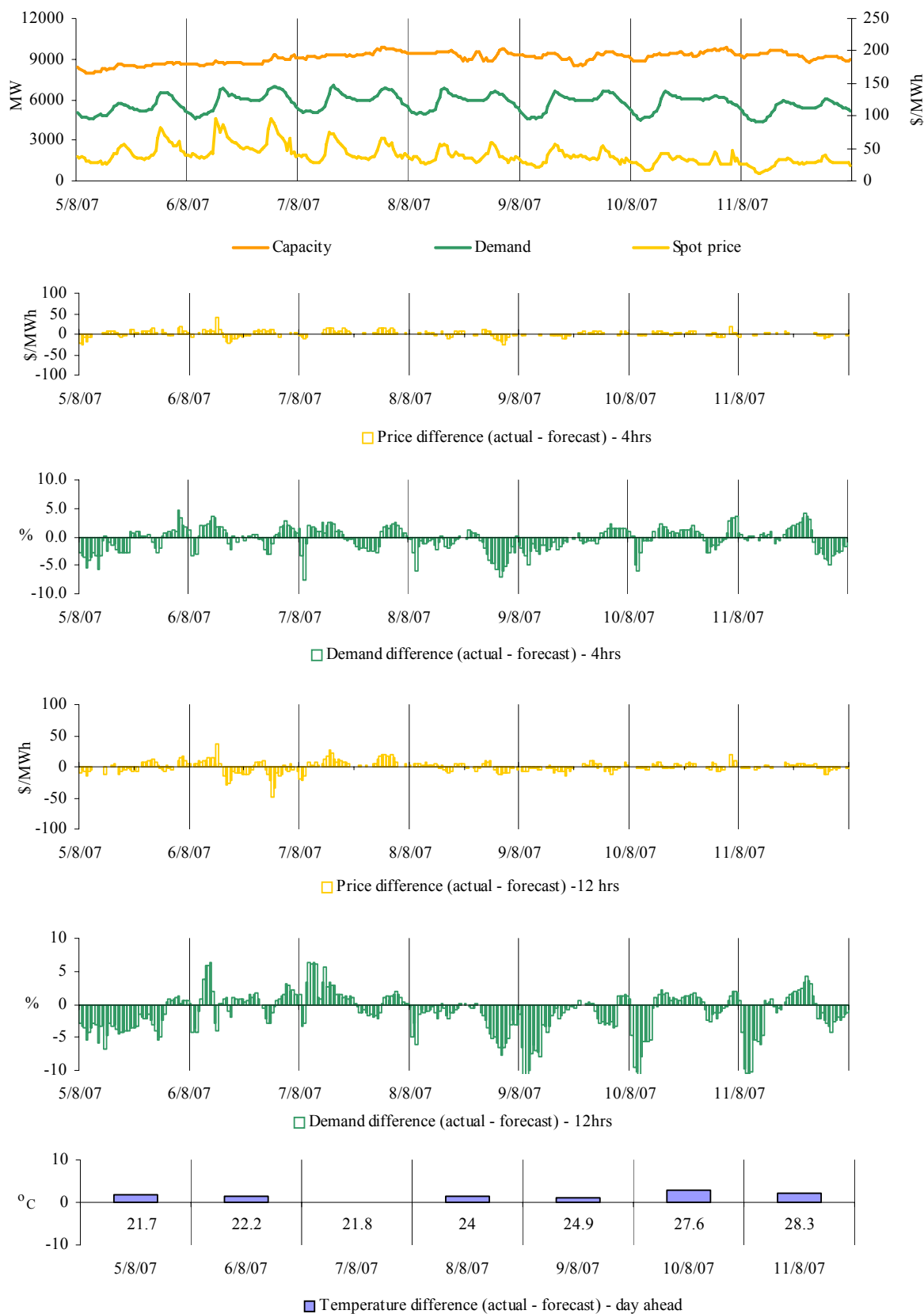


There was no occasion where spot prices were nationally aligned and the New South Wales price was greater than three times the New South Wales weekly average price of \$42/MWh.

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

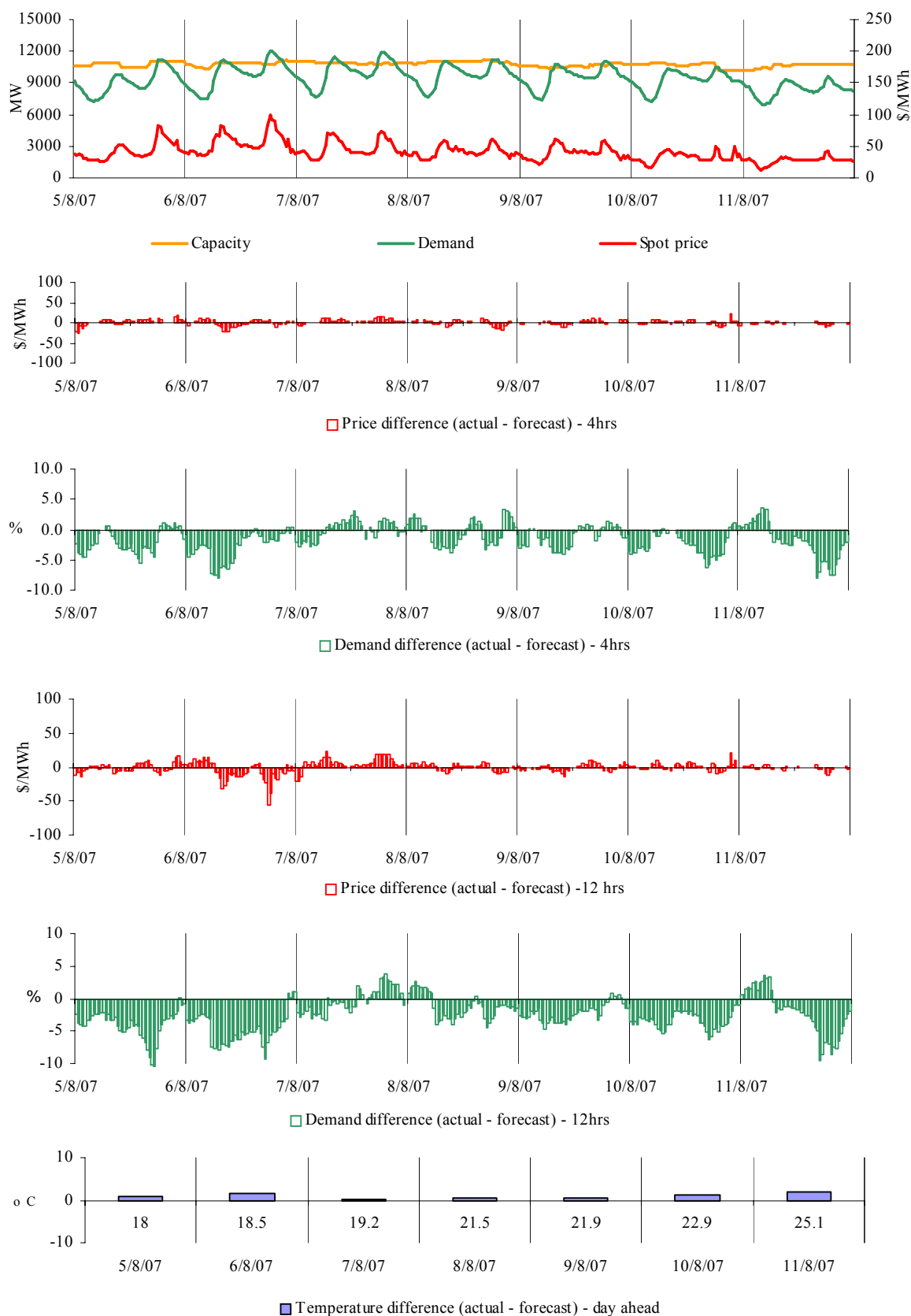


There were no occasions where the spot price in Queensland was greater than three times the Queensland weekly average price of \$40/MWh.

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

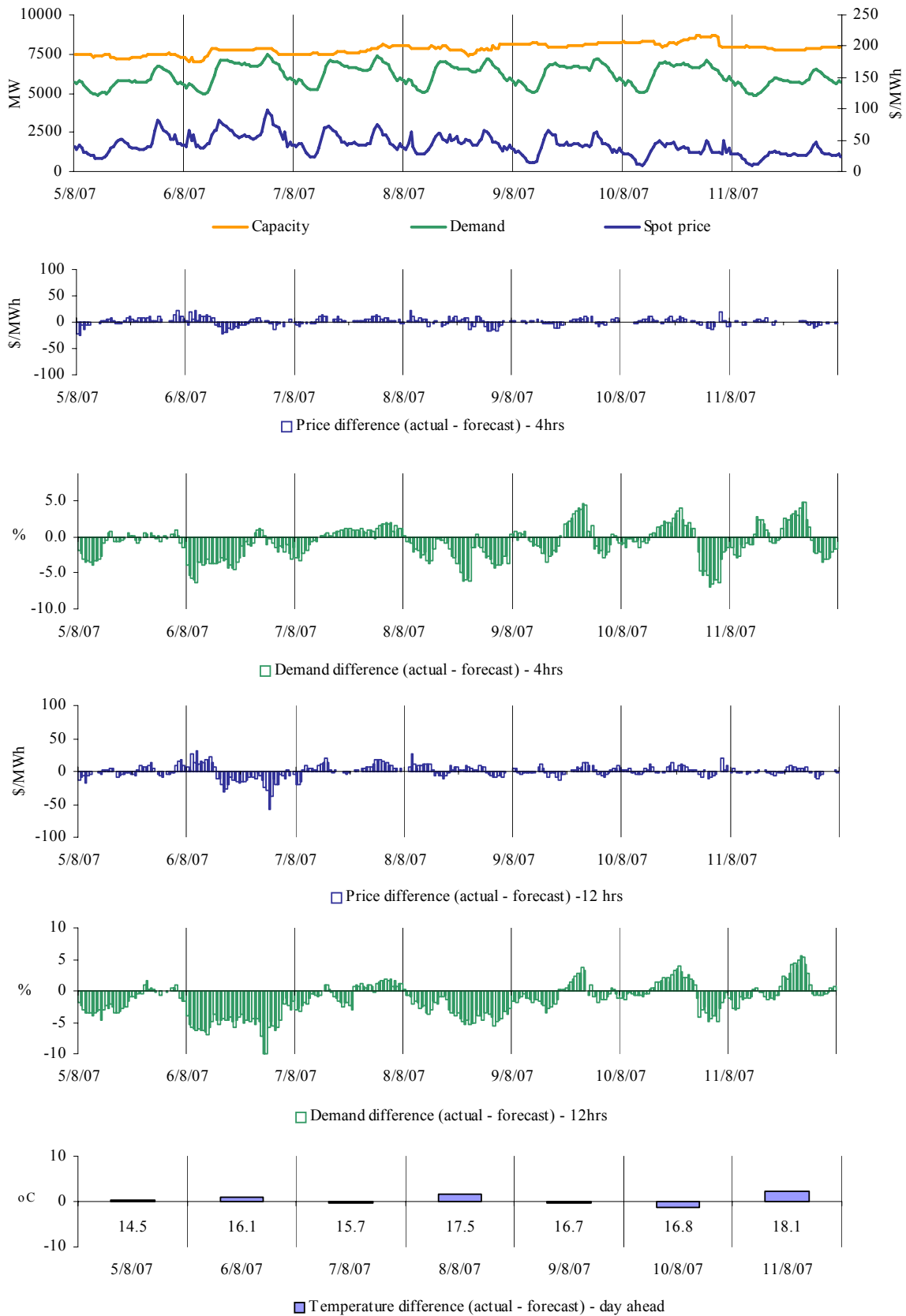


There were no occasions where the spot price in New South Wales was greater than three times the New South Wales weekly average price of \$42/MWh.

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

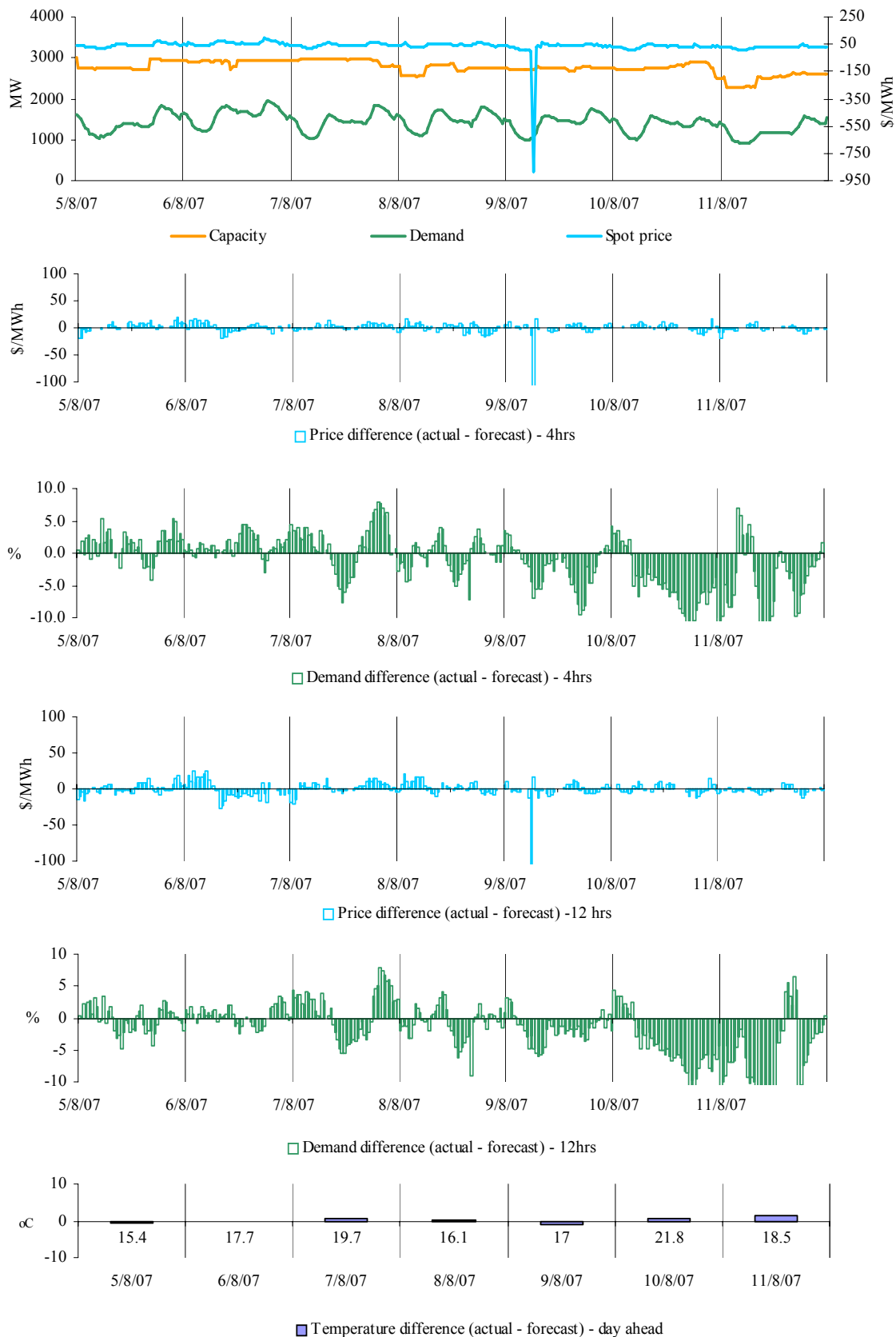


There were no occasions where the spot price in Victoria was greater than three times the Victoria weekly average price of \$43/MWh.

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

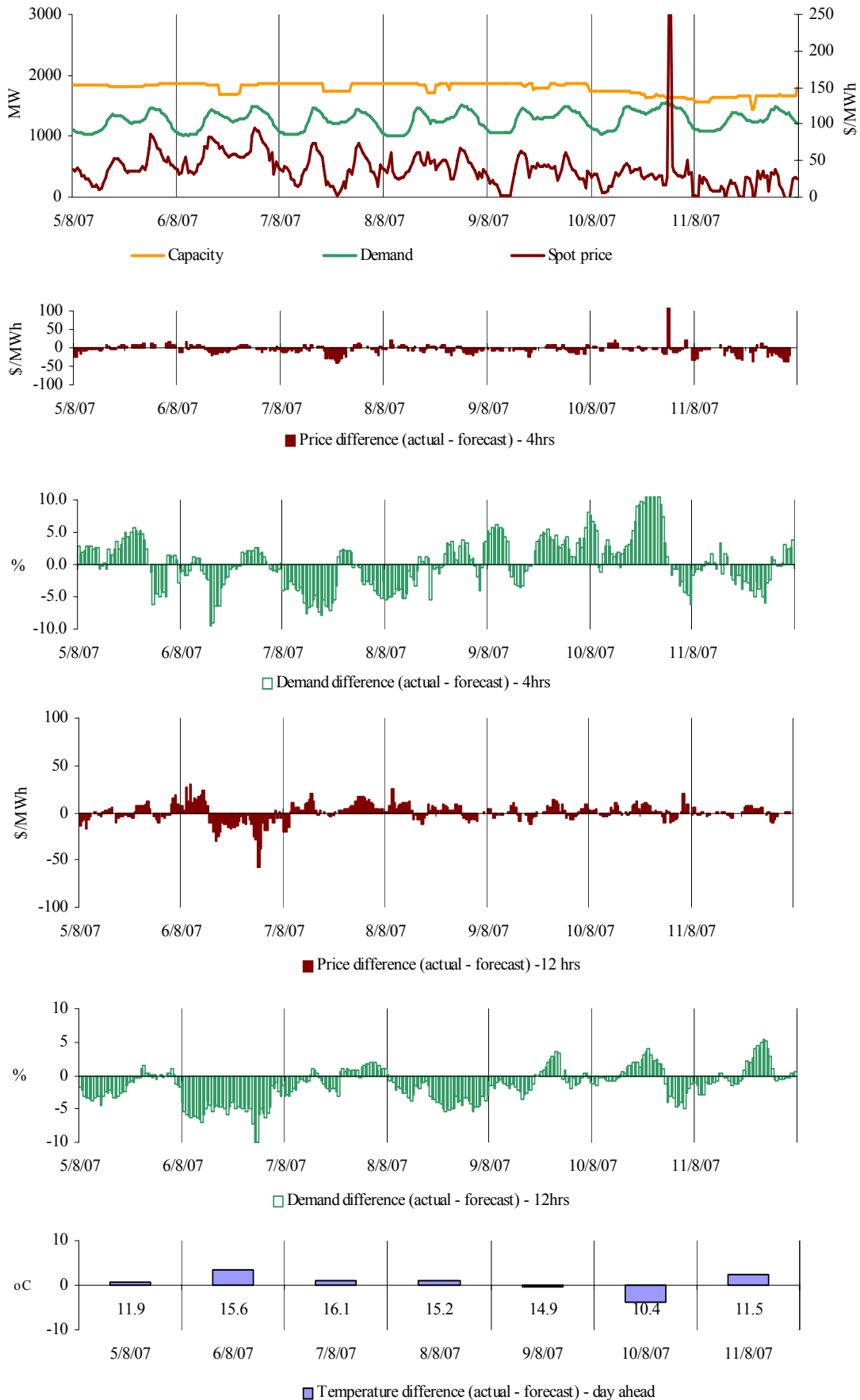


There were no occasions where the spot price in South Australia was greater than three times the South Australia weekly average price of \$40/MWh.

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 one occasion where the spot price in Tasmania was greater than three times the Tasmania weekly average price of \$39/MWh.

Friday, 10 August

6:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	378.13	50.12	47.91
Demand (MW)	1523	1505	1399
Available capacity (MW)	1630	1636	1857

Conditions at the time saw demand and available capacity close to that forecast four hours ahead. Demand was 125 MW higher and available capacity and was 225 MW lower than forecast 12 hours ahead.

At 6.04 pm Eraring Energy's unit three tripped from 630 MW. This caused generation output in Tasmania to increase, forcing flow on Basslink into the no-go zone. When in the no-go zone Frequency Control Ancillary Services (FCAS) cannot be transferred across Basslink and Tasmania has to supply its own services. .

At 6.10 pm, with Basslink in the no go-zone there was a requirement for 130 MW of raise 6 second services in Tasmania, but only 80 MW of services available. This shortage led to over constrained dispatch and the price of raise 6 second service reaching \$10 000/MW. The interaction between the 6 second service and energy saw the energy price for the dispatch interval spike to \$2068/MWh.

At 6.15 pm imports across Basslink increased, taking it out of the no-go zone and enabling the mainland to transfer FCAS to Tasmania. Prices returned to their previous levels.

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

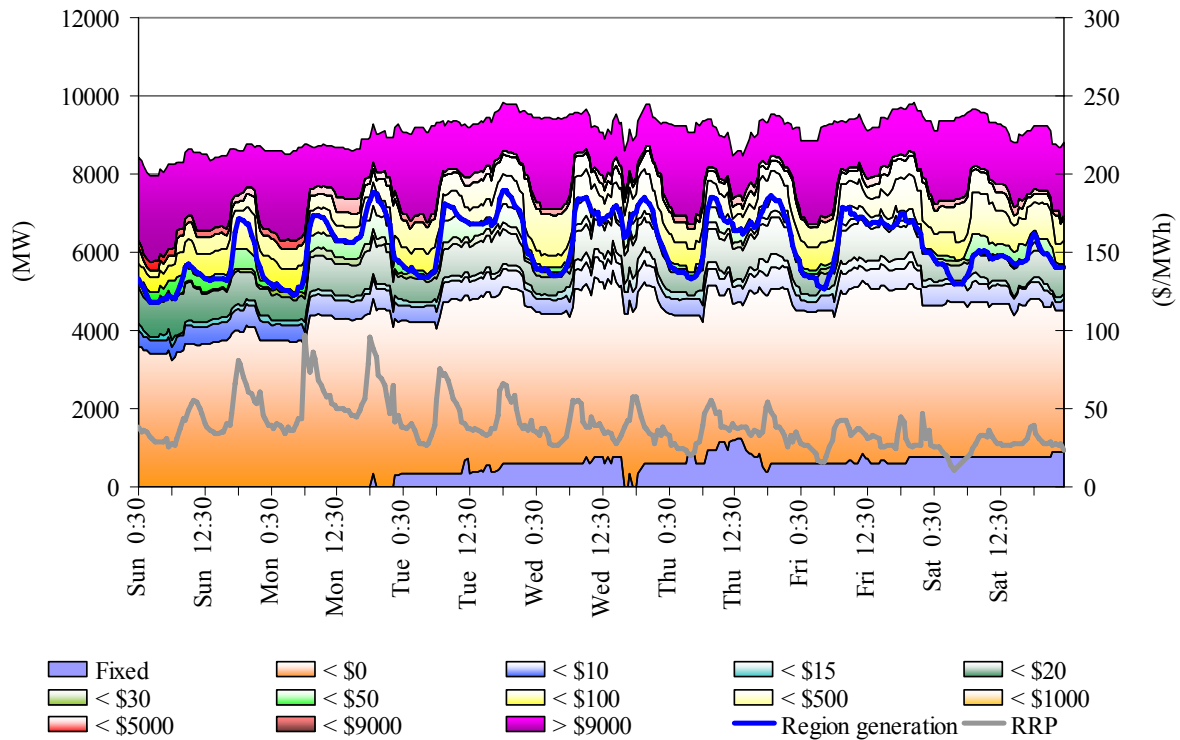


Figure 58: New South Wales closing bid prices, dispatched generation and spot price

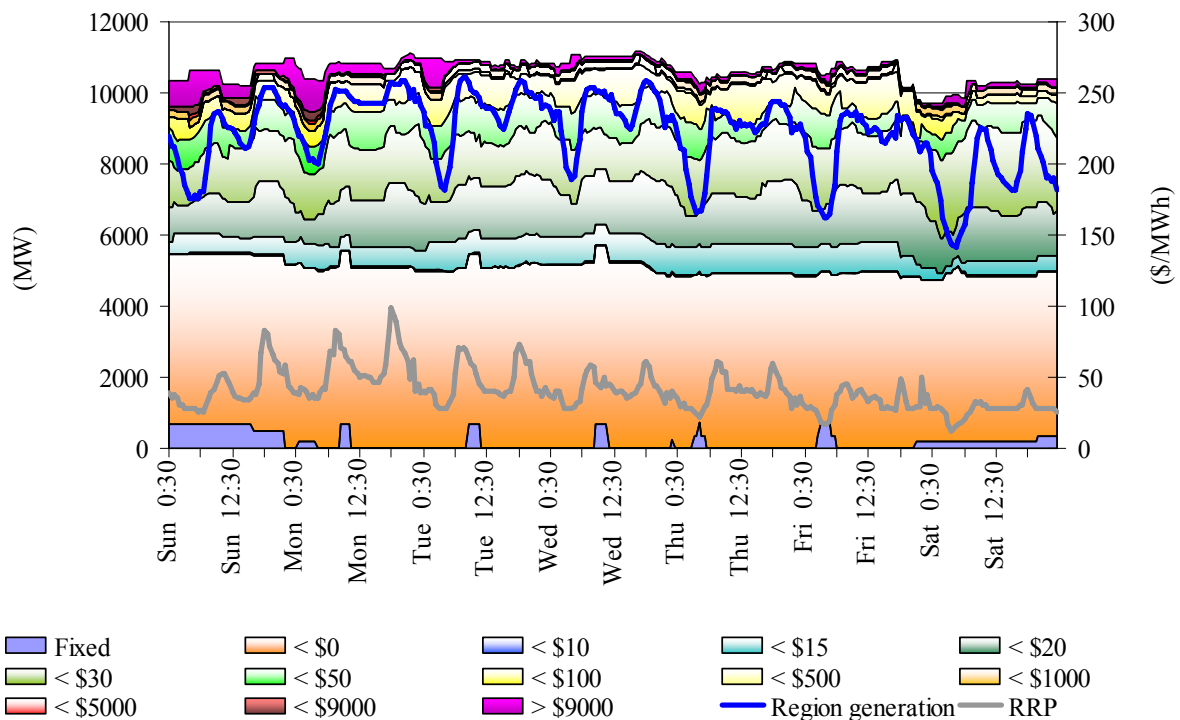


Figure 59: Victoria closing bid prices, dispatched generation and spot price

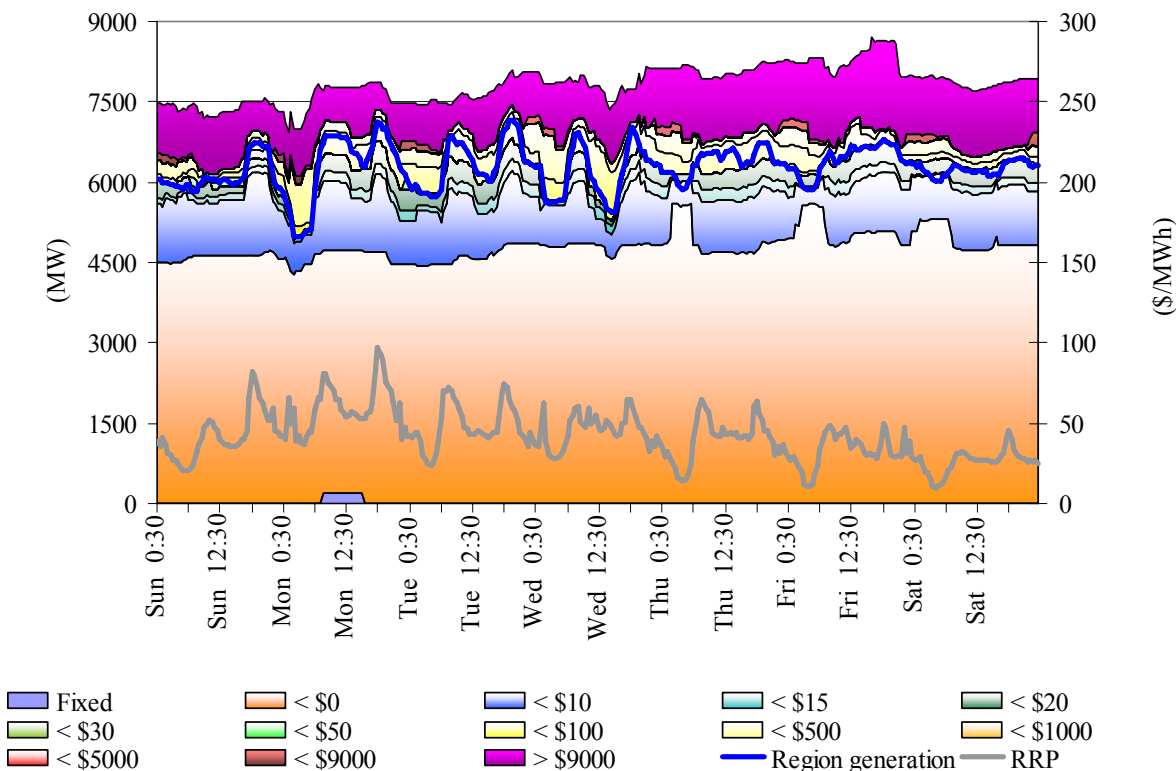


Figure 60: South Australia closing bid prices, dispatched generation and spot price

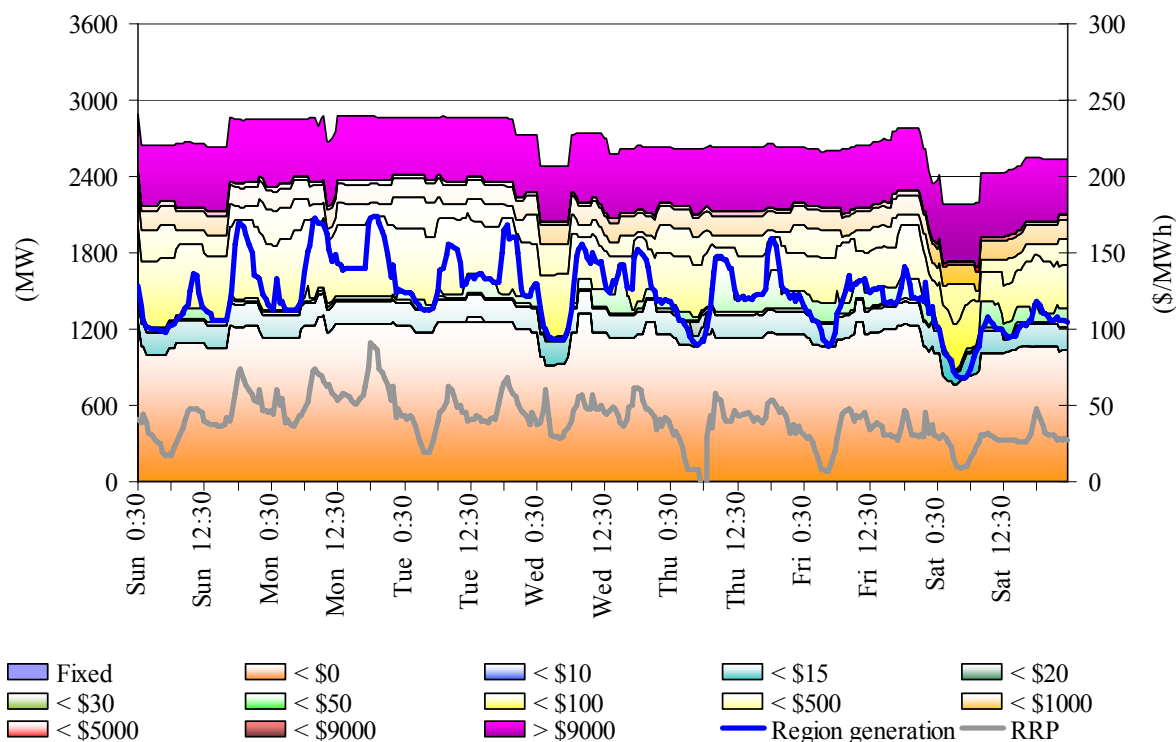
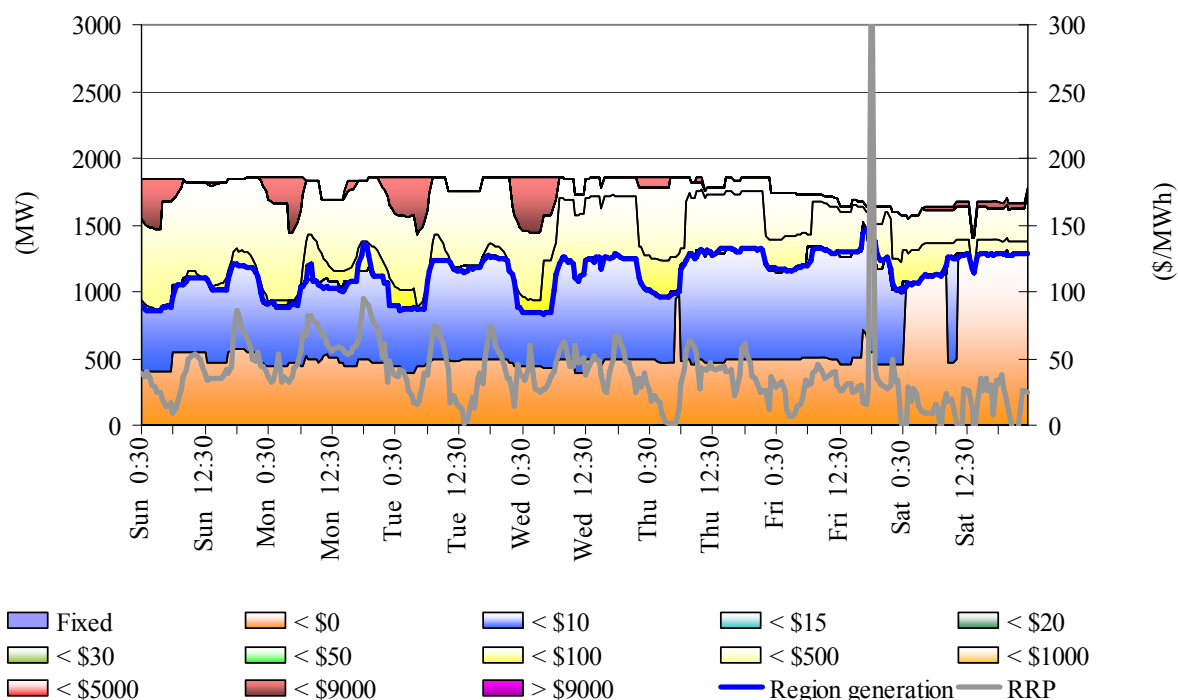


Figure 61: Tasmania closing bid prices, dispatched generation and spot price



Ancillary service market

The total cost of ancillary services on the mainland for the week was \$526 000 or 0.3 per cent of turnover in the energy market. From Friday evening as a result of sustained output from Kogan Creek at 750 MW¹, the requirement for and cost of mainland raise contingency services increased. 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)	4.66	1.10	1.91	5.06	0.05	0.04	0.20	1.96
Previous week (\$/MW)	0.77	0.17	0.75	5.59	0.08	0.19	0.51	1.73
Last quarter (\$/MW)	1.76	0.73	1.15	1.54	0.39	2.28	5.00	1.93
Market Cost (\$1000s)	\$212	\$45	\$117	\$115	\$0	\$0	\$3	\$33
% of energy market	0.13%	0.03%	0.07%	0.07%	0.01%	0.01%	0.01%	0.02%

The total cost of ancillary services in Tasmania for the week was \$339 000 or 4.1 per cent of the turnover in the Tasmanian energy market. At 6.10 pm on Friday raise 6 second services

¹ The requirement for raise contingency services is calculated in real-time and is proportional to the largest MW output from a single generating unit. Kogan Creek is the largest generator in the NEM, followed by a number of New South Wales generators that normally generate at a maximum of around 660 MW, but have recently increased to around 700 MW at times.

reached \$10 000/MW when Basslink entered the no-go zone and Tasmania had to source their own services, but there was insufficient available. 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)	22.36	1.61	4.53	8.00	4.68	1.94	1.72	1.86
Previous week (\$/MW)	6.02	2.00	2.20	4.59	2.00	1.96	1.83	1.31
Last quarter (\$/MW)	4.97	0.49	2.93	3.00	12.67	0.43	0.82	0.45
Market Cost (\$1000s)	\$127	\$27	\$63	\$42	\$20	\$29	\$21	\$9
% of energy market	1.54%	0.33%	0.76%	0.51%	0.24%	0.35%	0.25%	0.11%

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

Figure 64: daily frequency control ancillary service cost

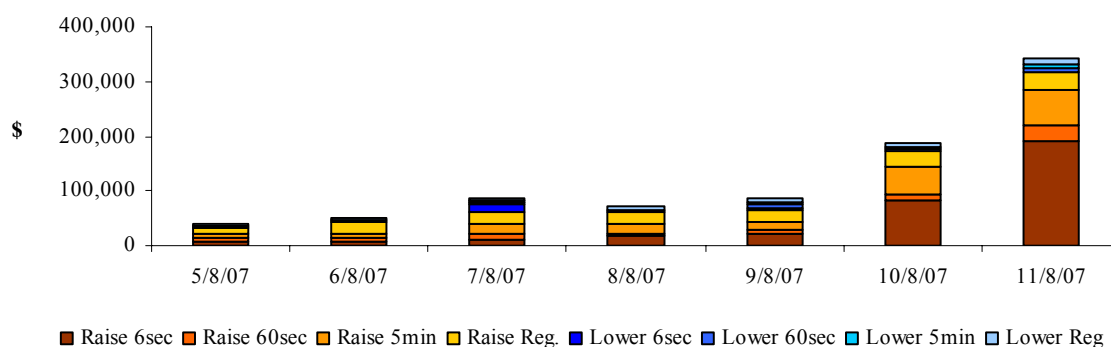
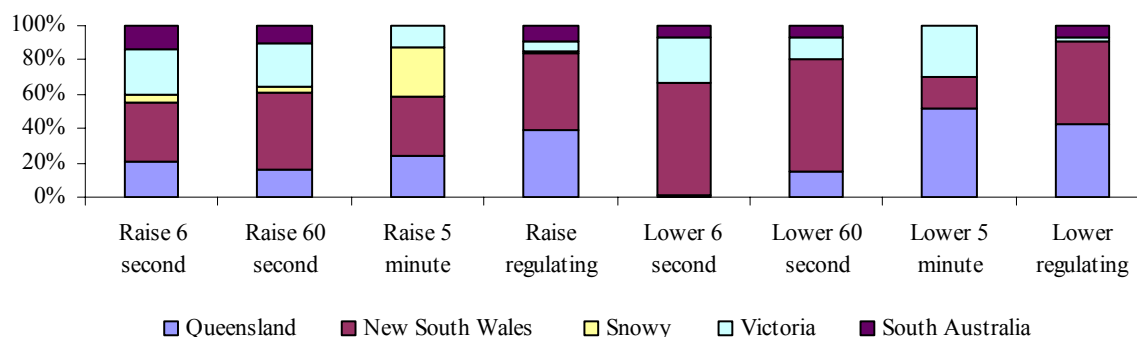


Figure 65 shows the contribution, on a percentage basis, that frequency control ancillary service providers are utilised (in each mainland region) to satisfy the total requirement for each service.

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

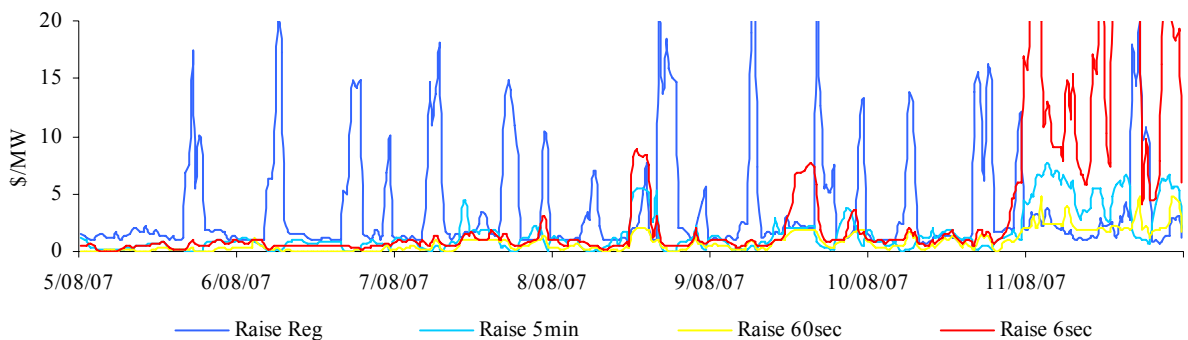


Figure 66A: prices for raise services – Tasmania

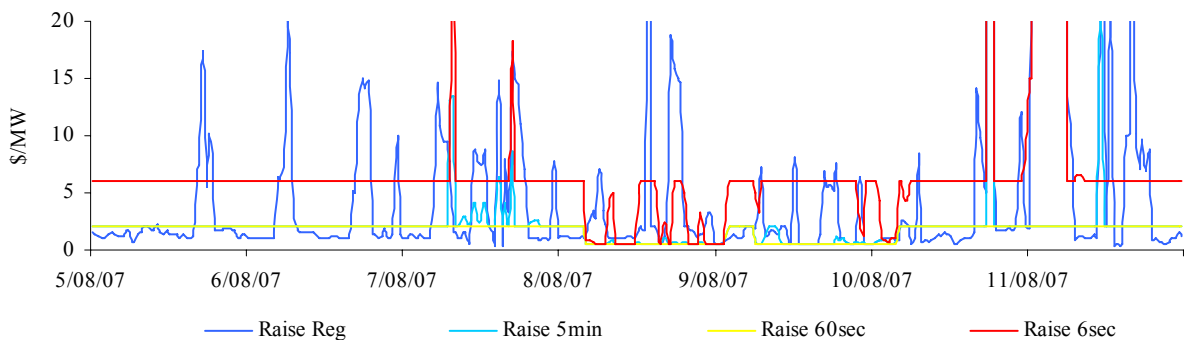


Figure 67: prices for lower services

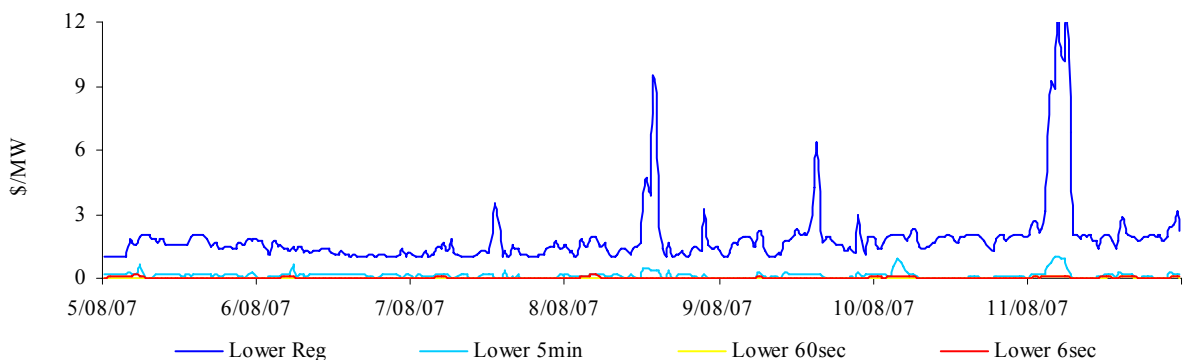
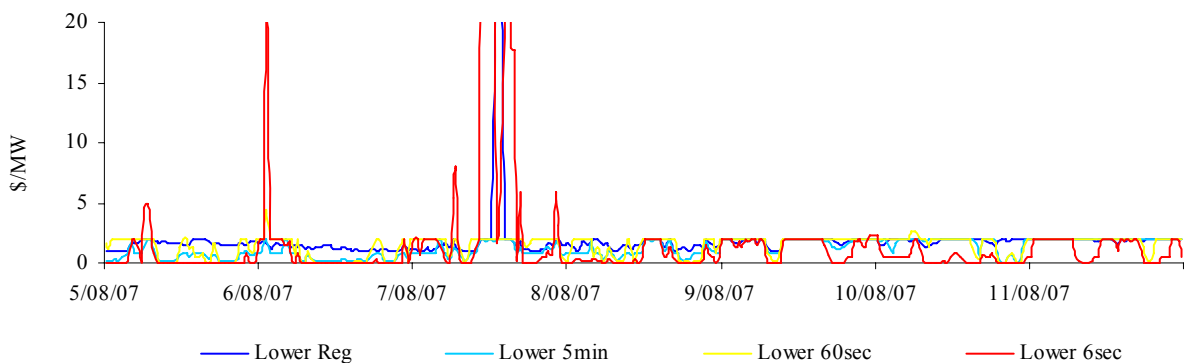


Figure 67A: prices for lower services – Tasmania



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

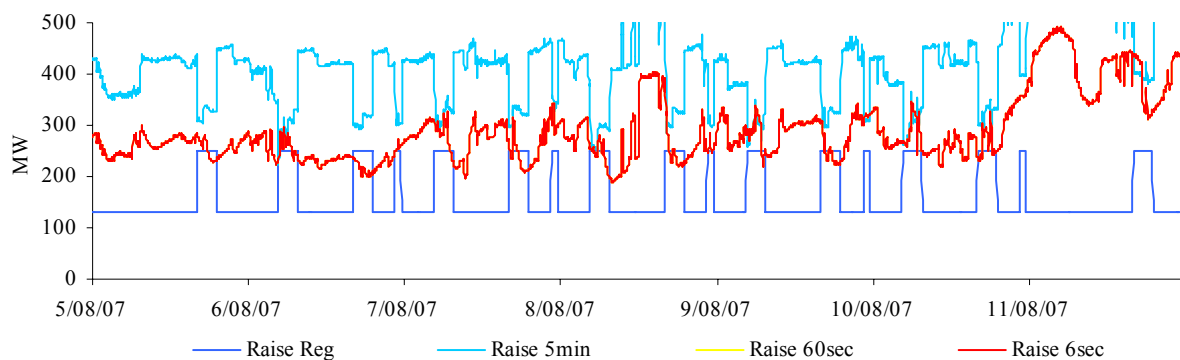


Figure 68A: raise requirements – Tasmania

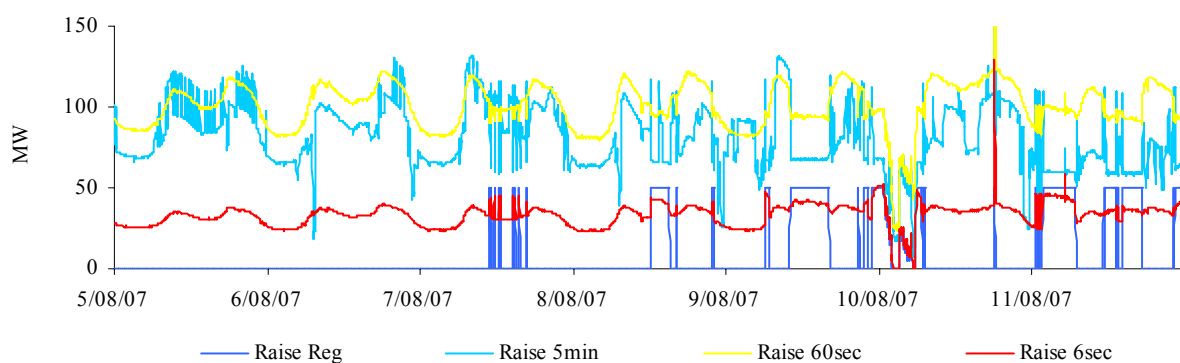


Figure 69: lower requirements

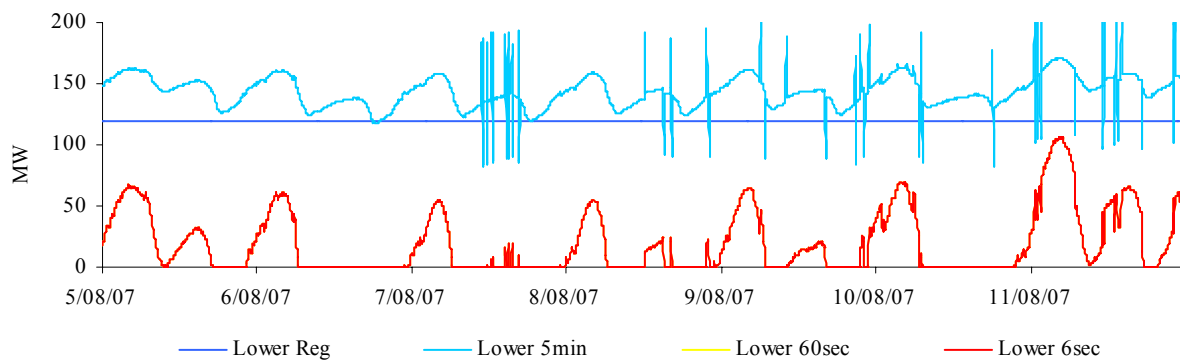


Figure 69A: lower requirements – Tasmania

