

Spot prices for the week averaged between \$30/MWh in Queensland and \$44/MWh in South Australia. These prices represented a reduction from the previous week across all regions, consistent with mild temperatures and lower demand in New South Wales and Victoria.

Turnover in the energy market was \$129 million. The total cost of ancillary services for the week was \$285 000, or 0.2 per cent of energy market turnover.

Significant variations between actual prices and those forecast 4 and 12 hours ahead occurred in 97, or 29 per cent of all trading intervals. Demand forecasts produced 4 and 12 hours ahead varied from actual by more than 5 per cent in a quarter of all trading intervals across the market. These variations were most frequent in South Australia, occurring in over a half 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

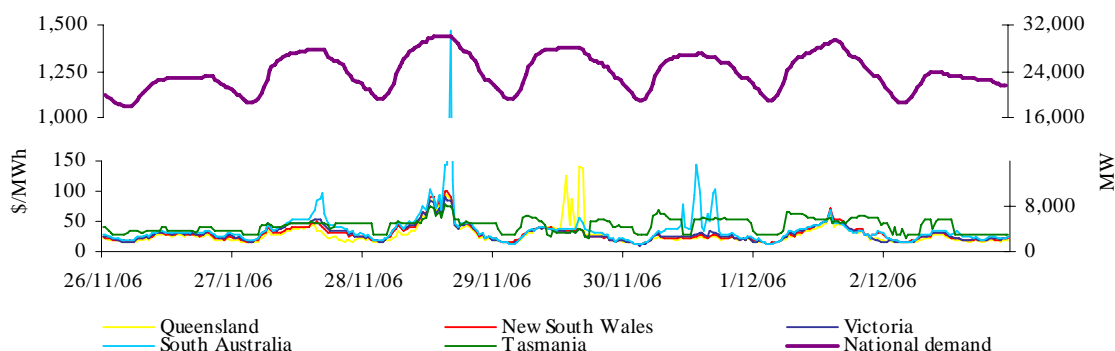


Figure 2: volume weighted average spot price for energy market (\$/MWh)

	QLD	NSW	VIC	SA	TAS
Last week	30	31	31	44	43
Previous week	41	55	53	45	46
Same quarter last year	39	73	32	47	63
Financial year to date	25	35	36	40	40
% change from previous week*	▼27%	▼43%	▼42%	▼2%	▼4%
% change from same quarter last year**	▼25%	▼57%	▼3%	▼5%	▼31%
% change from year to date***	▲12%	▼14%	▲23%	▲11%	▼55%

*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

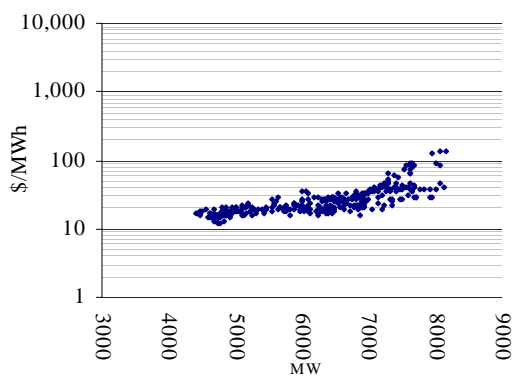


Figure 4: New South Wales

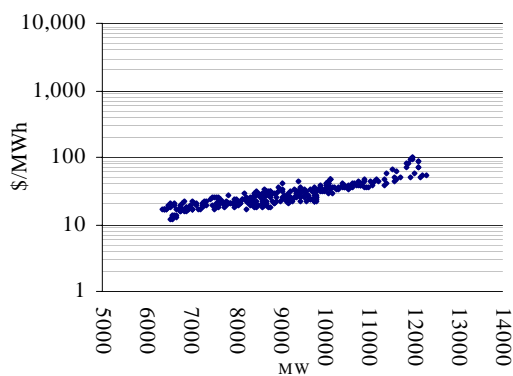


Figure 5: Victoria

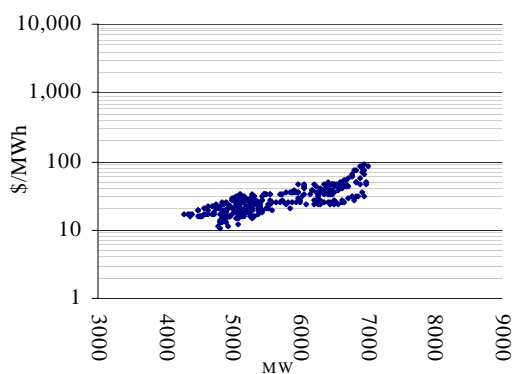


Figure 6: South Australia

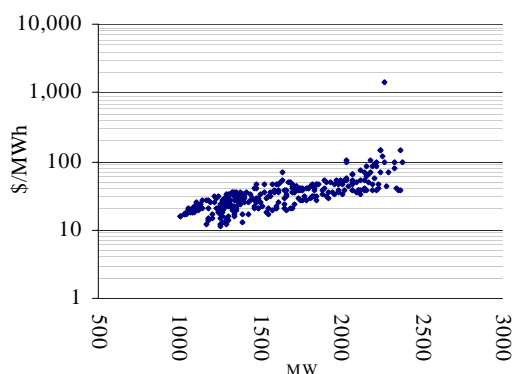
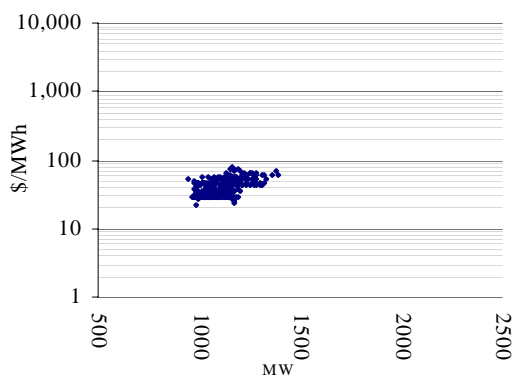


Figure 7: Tasmania



The maximum spot prices for the week ranged from \$79/MWh in Tasmania to \$1468/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	0.83	0.77	0.71	0.99	0.38
Previous week	1.23	1.82	1.40	0.97	0.72
Same quarter last year	1.12	1.03	0.83	0.76	0.61

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

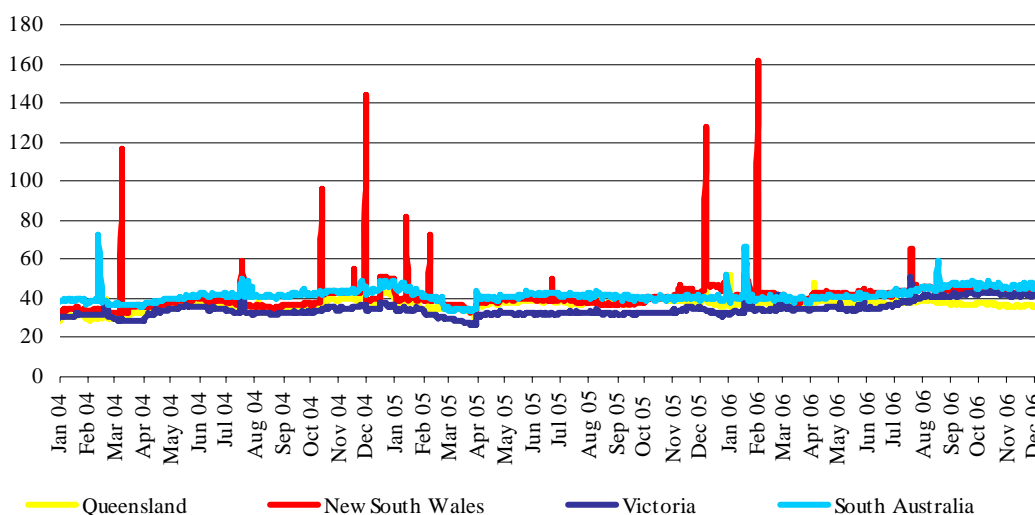
Figure 9 sets out the d-cyphaTrade wholesale electricity price index (WEPI)* for each region throughout the week excluding Tasmania. Figure 10 sets out the WEPI since 1 January 2004.

Figure 9: d-cyphaTrade WEPI for the week

	Monday	Tuesday	Wednesday	Thursday	Friday
Queensland	36.70	36.99	37.01	35.69	35.97
New South Wales	42.66	44.33	42.36	42.15	43.50
Victoria	41.49	42.03	40.90	41.55	41.57
South Australia	47.67	48.18	47.11	47.87	45.43

* 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 two periods of low reserve conditions forecast for the week in South Australia. On Sunday afternoon, NEMMCO forecast that there would be low reserves on Monday for 6 hours. A participant response within 1 hour of the notice restored the reserves. On Thursday at 11.30 am a 10 per cent increase in forecast demand for the afternoon led to forecasts of low reserves between 1.30 pm and 6 pm. There was no participant response, but the condition was resolved at 3.30 pm with a cool change leading to reduced demand.

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

Figure 11: Queensland

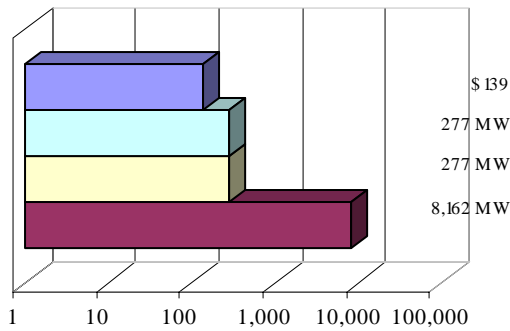


Figure 12: New South Wales

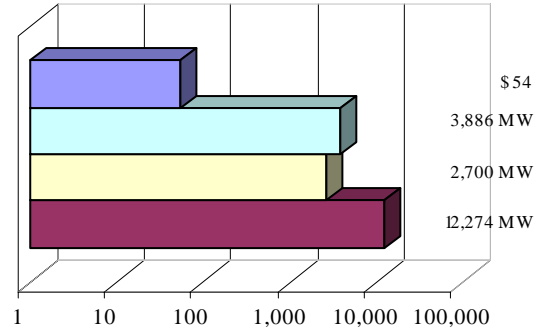


Figure 13: Victoria

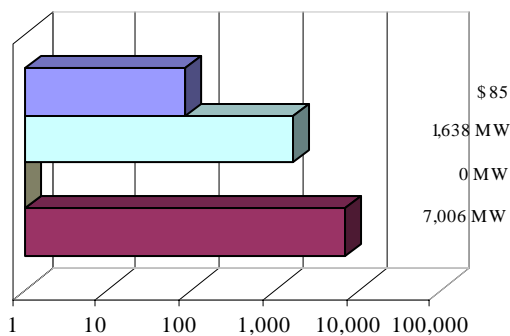


Figure 14: South Australia

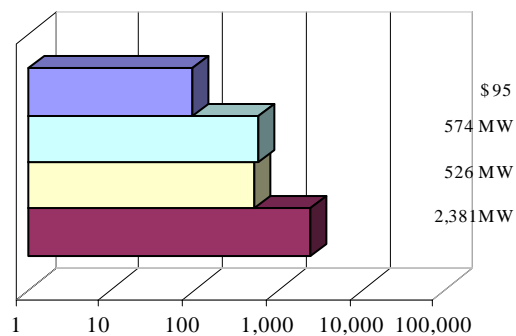
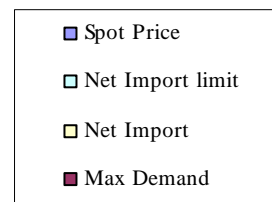
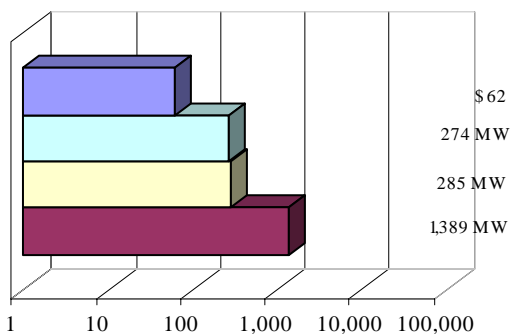


Figure 15: Tasmania



Price variations

There were 97 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

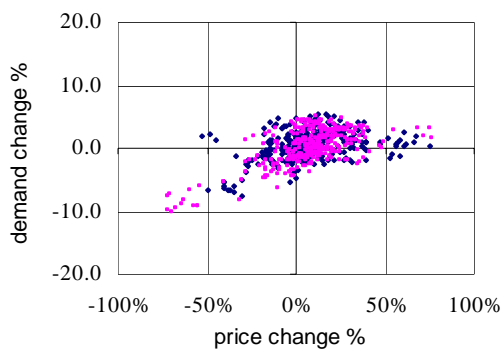


Figure 17: New South Wales



Figure 18: Victoria

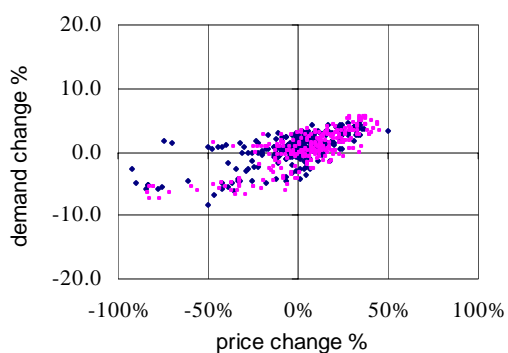


Figure 19: South Australia

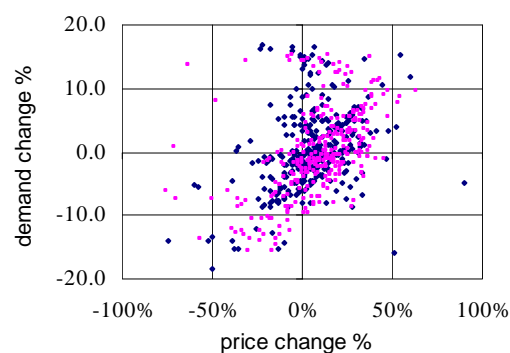


Figure 20: Tasmania

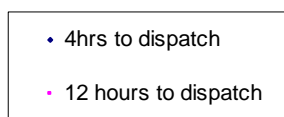
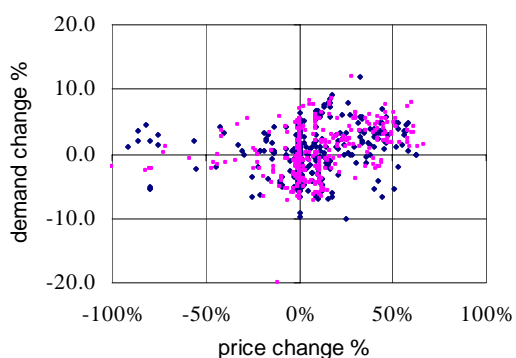
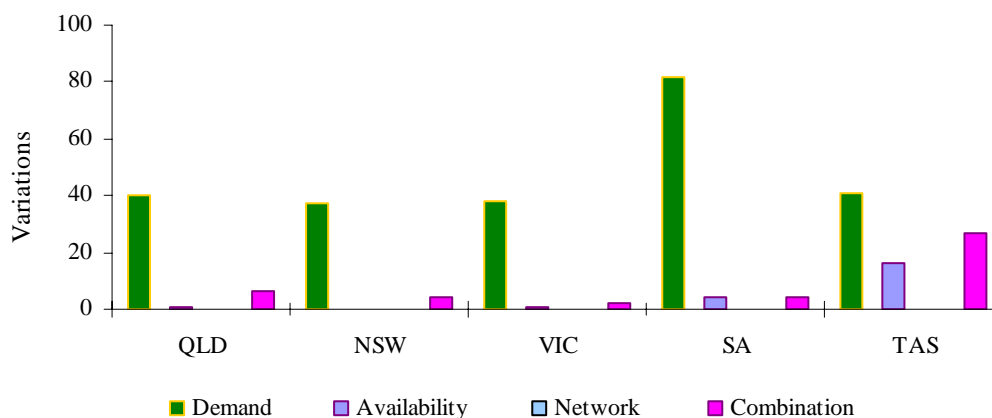


Figure 21 summarises the number and most probable reason for variations between forecast and actual prices.

Figure 21: reasons for variations between forecast and actual prices



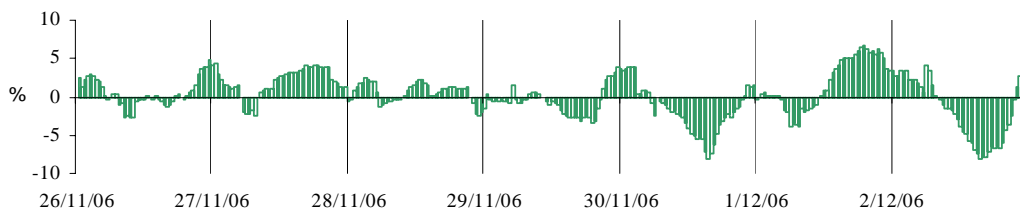
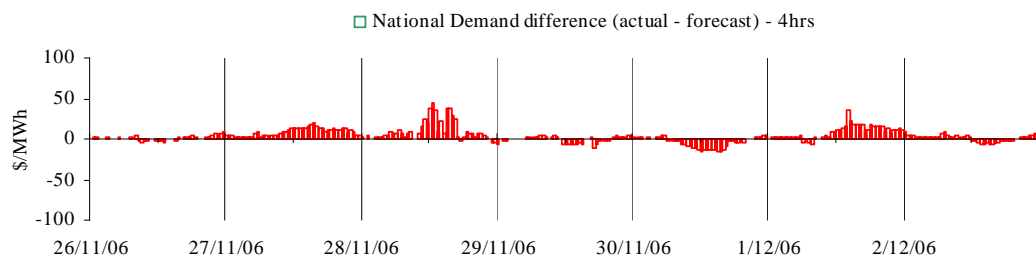
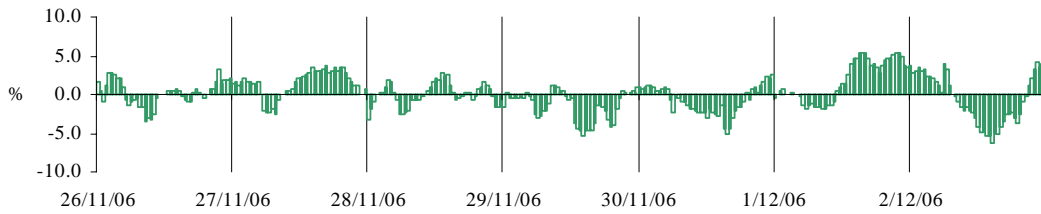
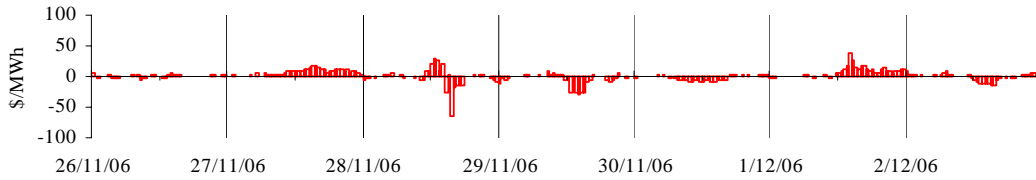
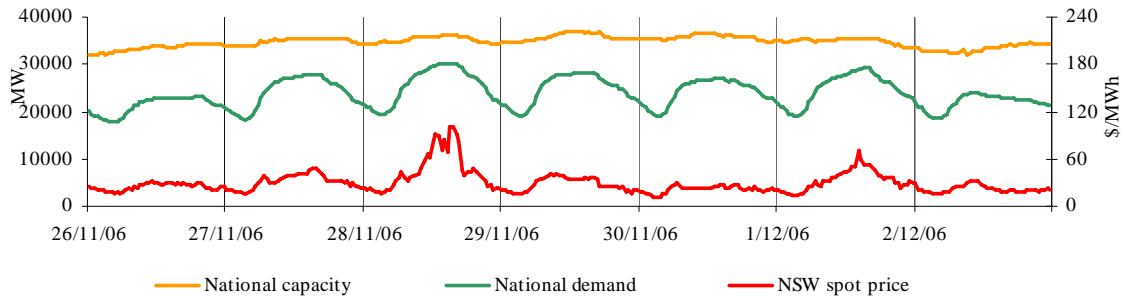
Price and demand

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 two occasions where spot prices were aligned nationally and the New South Wales price¹ was greater than three times the New South Wales weekly average price of \$31/MWh.

Tuesday, 28 November

3:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	100.19	96.27	62.57
Demand (MW)	30007	29957	29984
Available capacity (MW)	36102	36343	36603
4:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	100.56	165.71	62.18
Demand (MW)	30088	30269	29989
Available capacity (MW)	36139	36339	36601

Conditions at the time saw demand and prices close to forecast.

At 6.06 am Delta Electricity delayed the return to service of 300 MW at Munmorah unit four, all of which was priced below zero. The unit returned to service the following morning.

At 10.01 am Millmerran Energy Trader shifted 108 MW of capacity across its portfolio from prices below \$10/MWh to above \$9500/MWh. The rebid reason given was “Optimisation decision::adjust MW dist”.

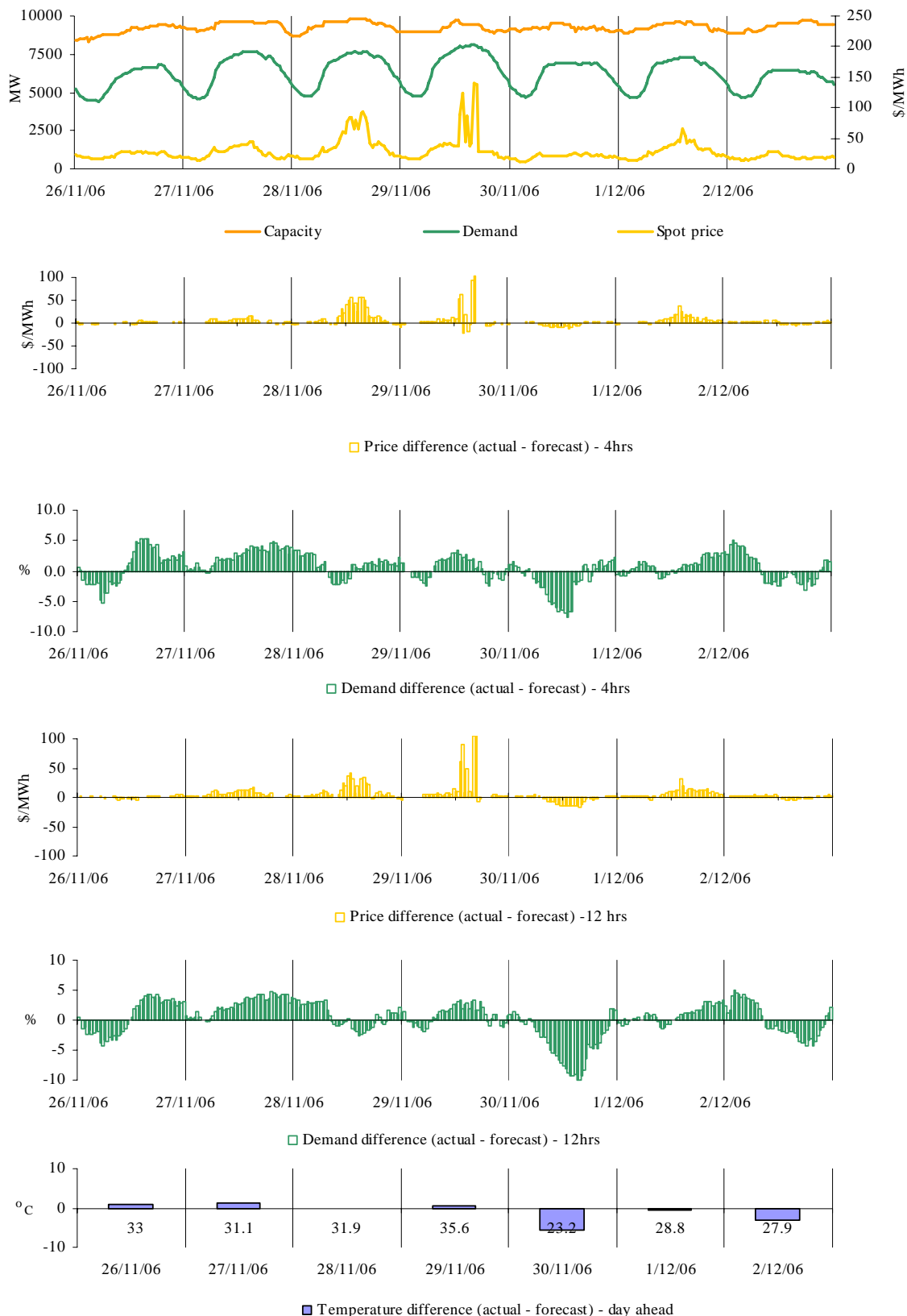
At 10.12 am Callide Power Trading shifted 51 MW of capacity across its portfolio from prices below \$15/MWh to above \$9000/MWh. The rebid reason given was “Optimisation decisn::adjust MW dist”.

At 3.20 pm Stanwell Corporation shifted 120 MW of capacity across Stanwell units one, two and three from prices below \$75/MWh to above \$270/MWh. The rebid reason given was “Actual price materially different to PD”.

There was no other significant rebidding.

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

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



There were five occasions where the spot price in Queensland was greater than three times the weekly average price of \$30/MWh. Two of these occurred when prices were generally aligned across all regions and is detailed in the national market outcomes section. The remaining three occasions are presented below.

Wednesday, 29 November

2:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	124.40	60.57	35.05
Demand (MW)	7956	7825	7806
Available capacity (MW)	9437	9517	9546
4:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	139.32	44.71	35.06
Demand (MW)	8162	8000	7893
Available capacity (MW)	9404	9745	9784
5:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	138.60	35.01	33.06
Demand (MW)	8061	8026	7920
Available capacity (MW)	9405	9744	9791

Conditions at the time saw demand close to forecast four hours ahead. Demand reached 8162 MW, the highest since February and 1200 MW higher than the average weekday peak for November.

At 1.02 pm Stanwell Corporation shifted 240 MW of capacity from prices below \$35/MWh to above \$270/MWh. The rebid reason given was “Manage transmission constraint”.

At 1.16 pm CS Energy’s Swanbank B unit three tripped from around 110 MW. All of this capacity was priced below \$50/MWh.

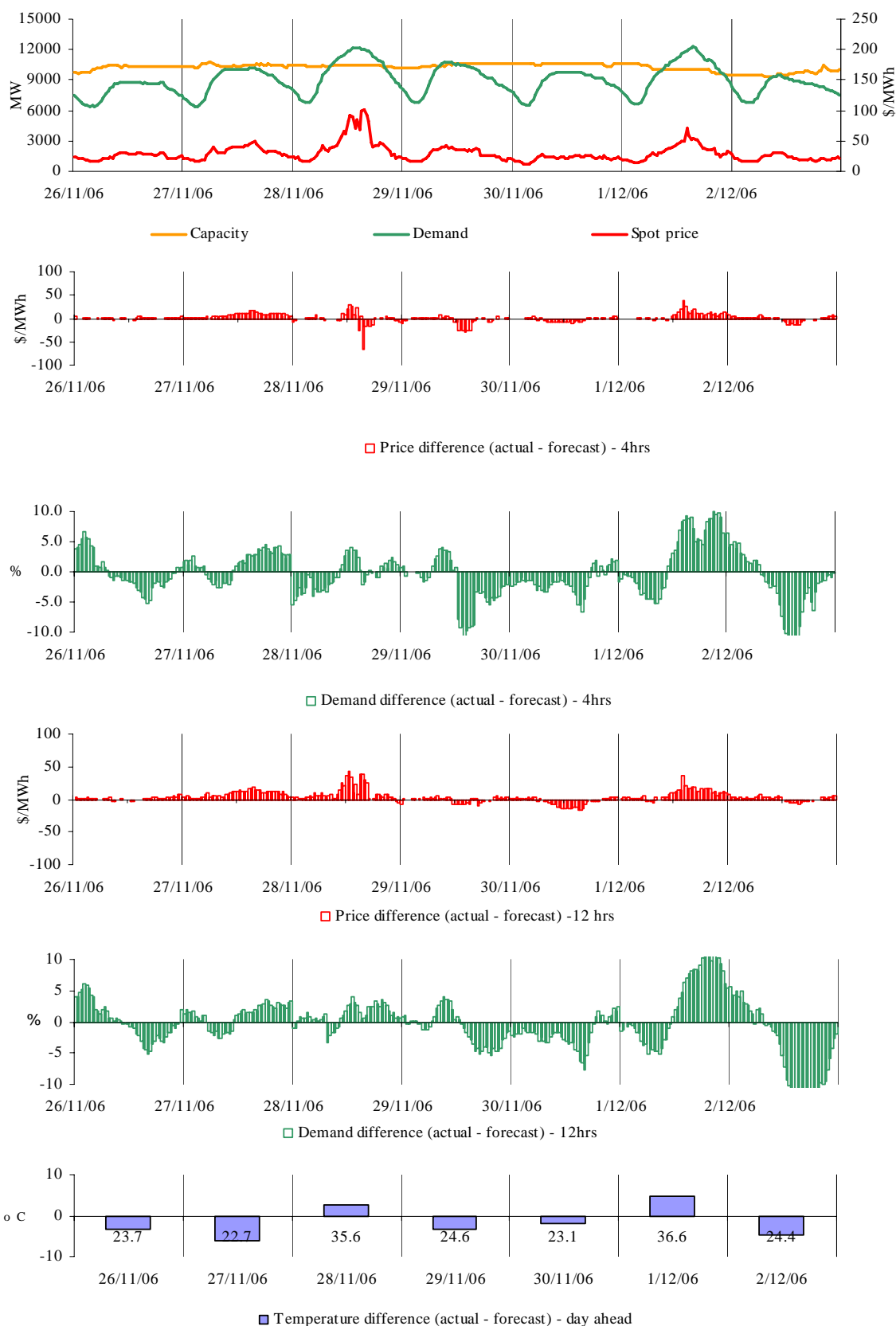
At 2.37 pm Tarong Energy shifted 200 MW of capacity across its Tarong units from prices below \$15/MWh to above \$280/MWh. The rebid reason given was “Change in contract position::adjust profile”.

Over two further rebids at 4.25 pm and 4.46 pm, Stanwell Corporation shifted 150 MW of capacity across its Stanwell units from prices below \$35/MWh to above \$270/MWh. The rebid reason given was “Changed predispatch”.

At 4.26 pm Tarong Energy shifted a further 150 MW of capacity across Tarong units one, two and four from prices below \$15/MWh to above \$280/MWh. The rebid reason given was “Significant change in QNI limit::adjust profile”.

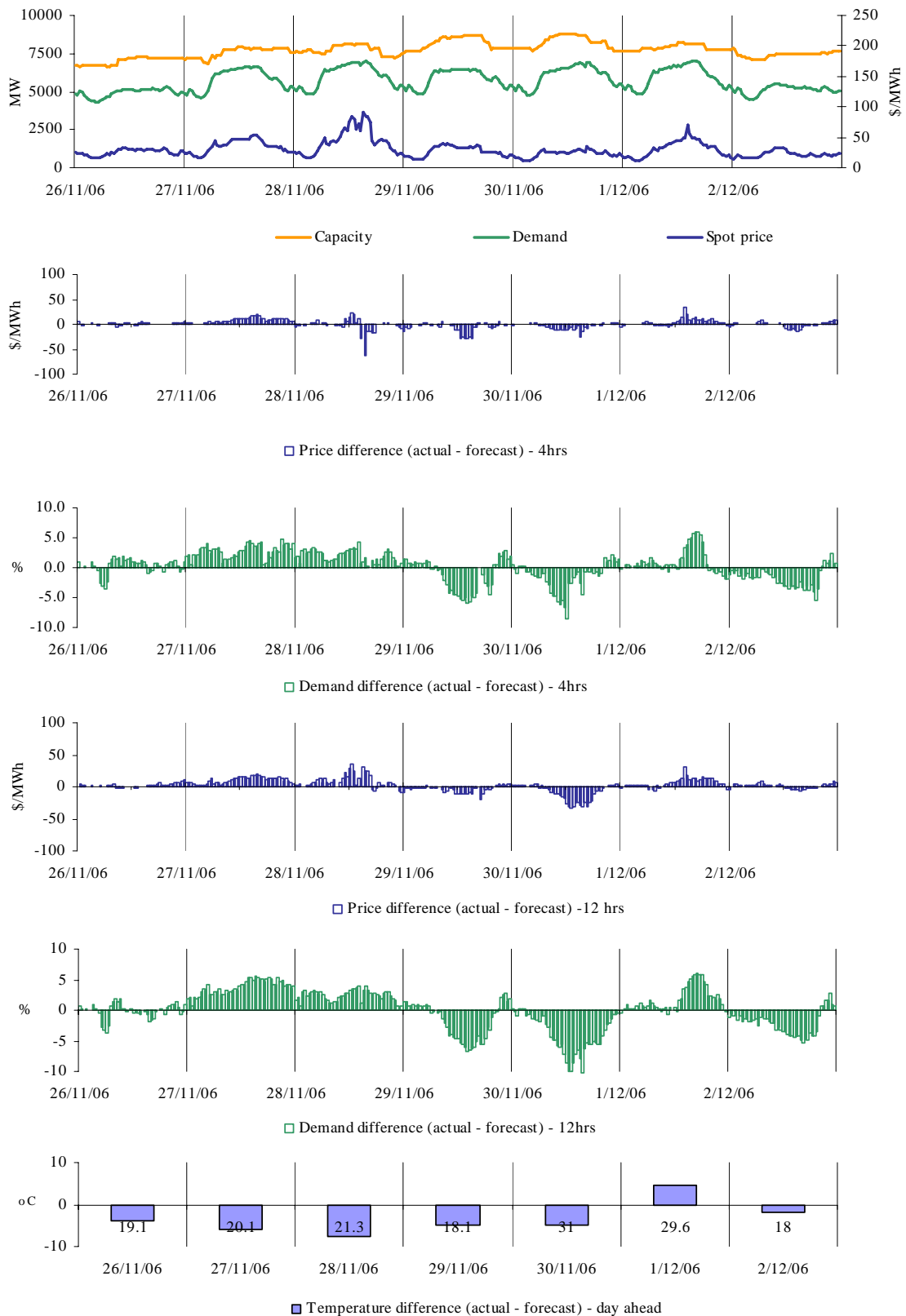
There were no other significant rebids.

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



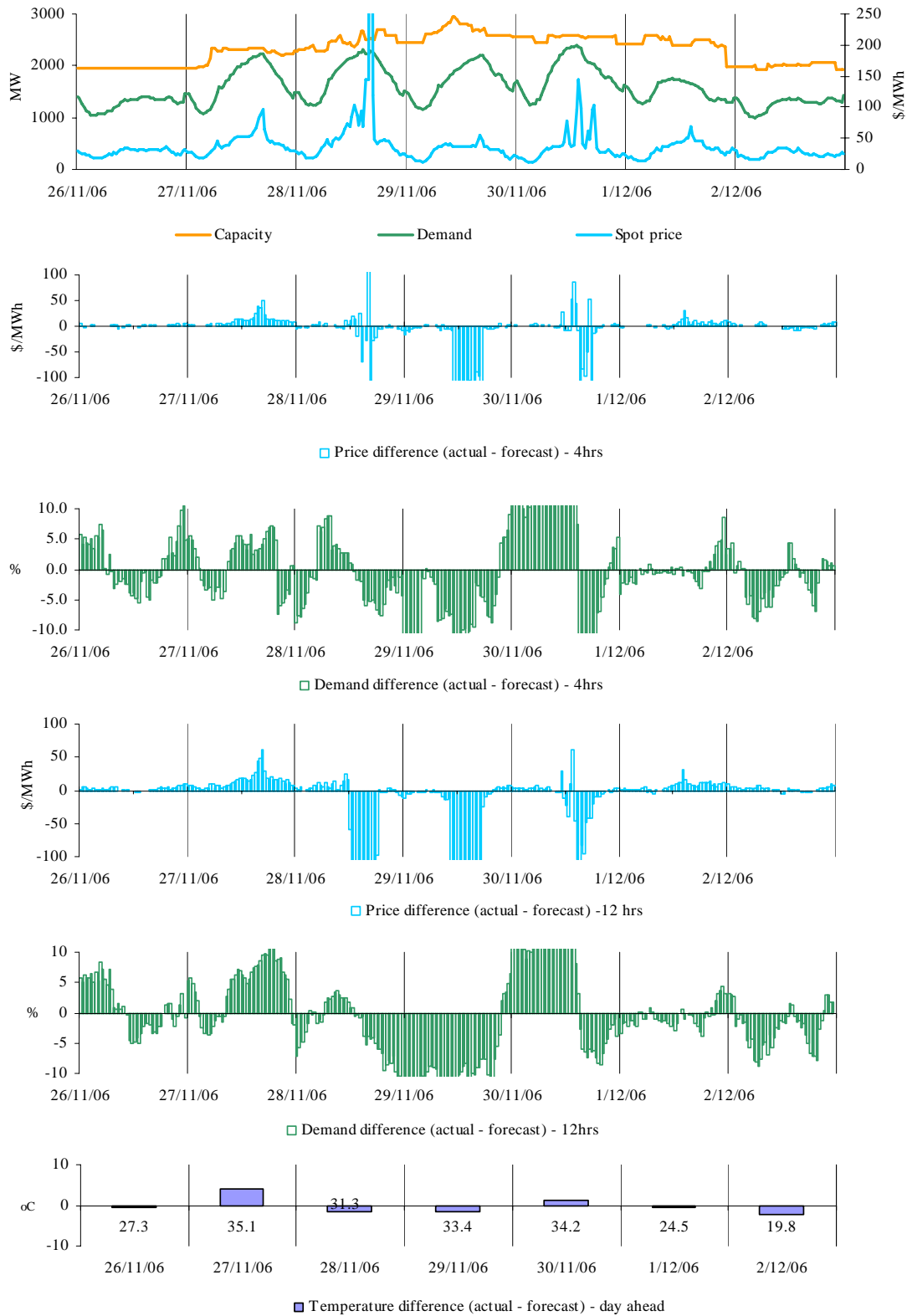
There were two occasions where the spot price in New South Wales was greater than three times the weekly average price of \$31/MWh. At the time, prices were aligned across the market. The circumstances of these events are detailed under the national market outcomes section.

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 weekly average price of \$31/MWh.

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 \$44/MWh. Two of these occurred when prices were generally aligned across all regions and are detailed in the national market outcomes section. The remaining two occasions are presented below.

Tuesday, 28 November

4:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	1468.14	145.00	9017.43
Demand (MW)	2275	2389	2364
Available capacity (MW)	2531	2713	2611

Conditions at the time saw demand close to that forecast four hours ahead.

At 3.44 pm, effective at 4.05 pm (the start of the 4.30 pm trading interval), AGL Hydro shifted 80 MW of capacity at Hallett priced at zero to above \$7900/MWh. The rebid reason given was “Predispatch demand change::forecast demand change”.

During the trading interval, Torrens Island B unit four was committed after tripping off earlier in the day. The unit, however, failed to start.

There were counter price flows of around 80 MW from South Australia to Victoria across Murraylink. The constraint causing the counter price flows was related to a network outage in Victoria.

For much of the day there was no capacity in South Australia priced between \$145/MWh and \$8000/MWh. At 4.20 pm the five-minute dispatch price spiked to \$8128/MWh, when 4 MW of capacity was dispatched at that price.

There was no other significant rebidding.

Thursday, 30 November

2:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	145.00	58.16	84.37
Demand (MW)	2374	2092	2110
Available capacity (MW)	2575	2572	2611

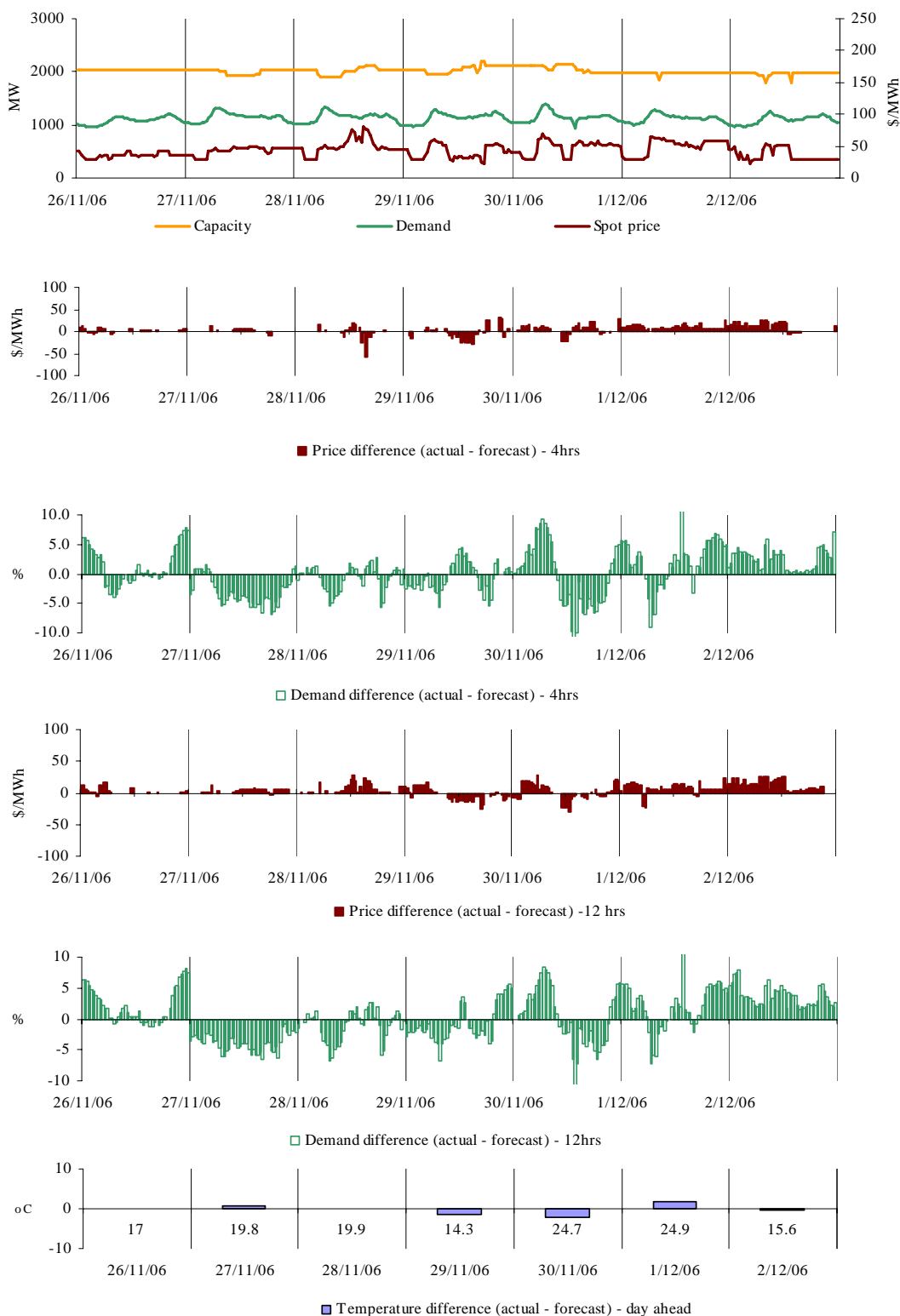
Conditions at the time saw demand 280 MW higher than forecast four hours ahead. The temperature on the day reached 34.2°C, close to the 33°C forecast the previous night.

At 11 am, NEMMCO increased the forecast demand for 2 pm from 2089 MW to 2388 MW, or almost 300 MW. Following this revision, NEMMCO notified the market of expected low reserves between 1.30 pm and 6 pm. There was no market response. Actual low reserves occurred between 1.30 pm and 3.30 pm, until a cool change led to reduced demand.

Over three rebids from 10.56 am, AGL Hydro shifted 126 MW of capacity at Hallett from prices above \$9000/MWh to zero. The rebid reasons given were “Price change in market::changed energy band” and “Plant limitations::changed energy band”.

There was no other significant rebidding.

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 weekly average price of \$43/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

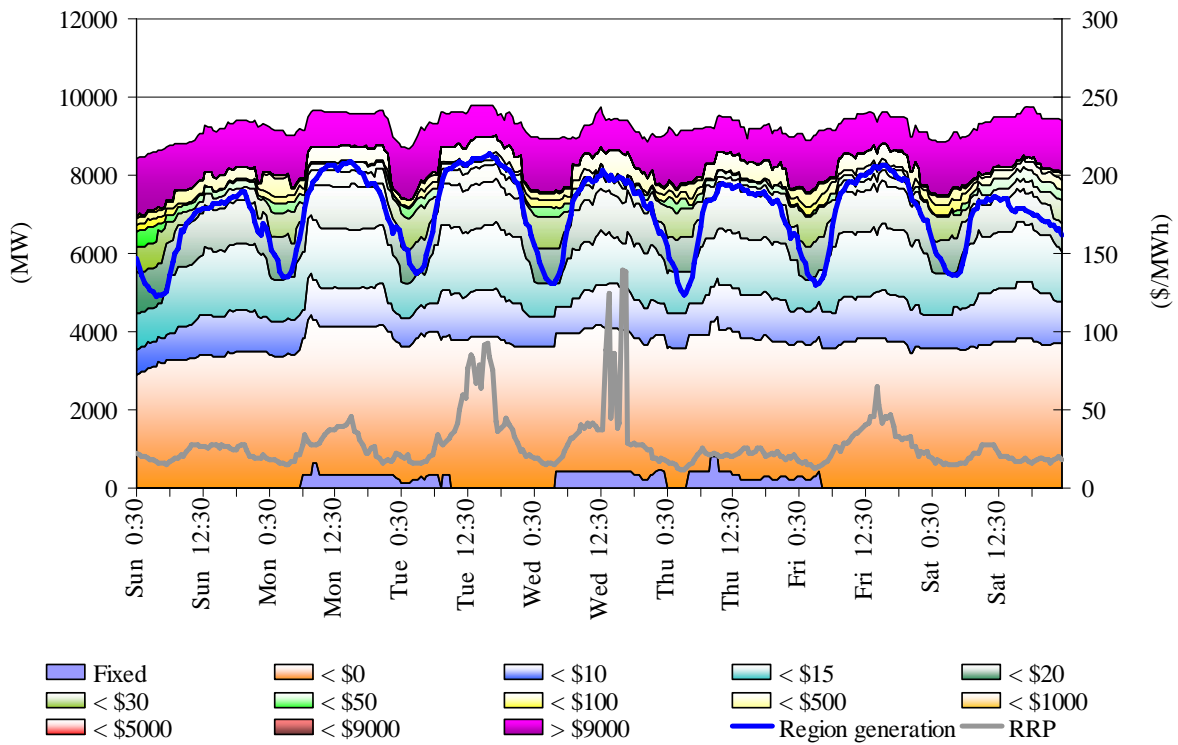


Figure 58: New South Wales closing bid prices, dispatched generation and spot price

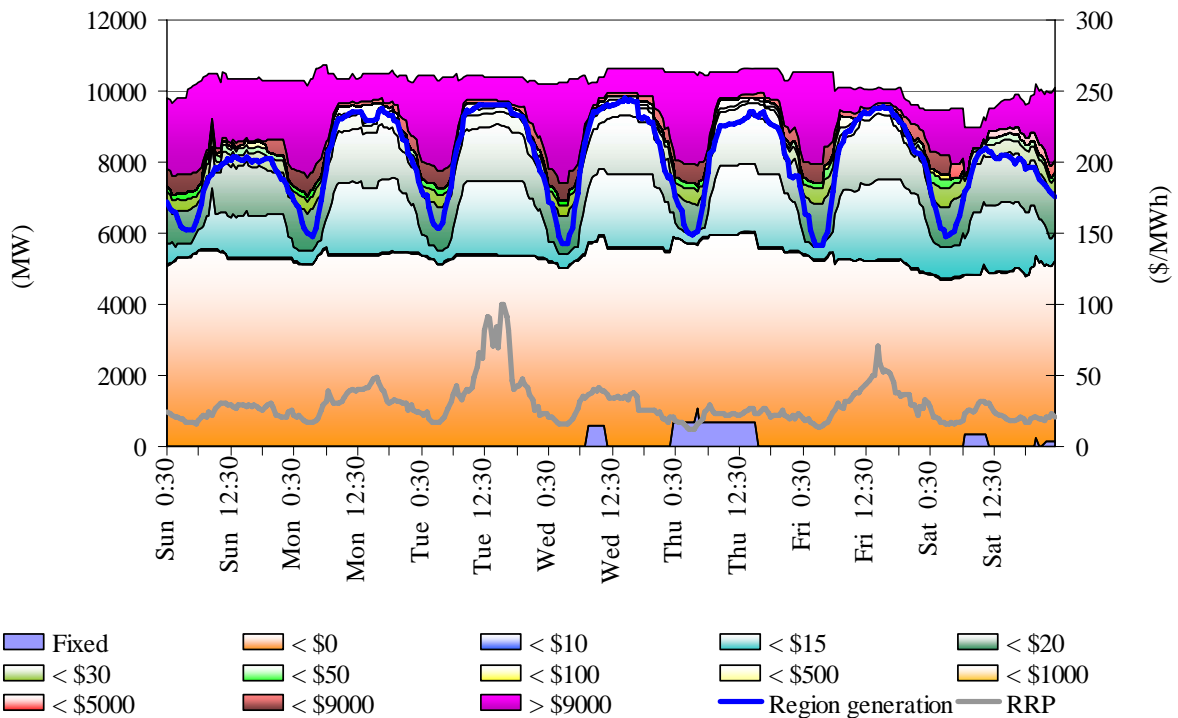


Figure 59: Victoria closing bid prices, dispatched generation and spot price

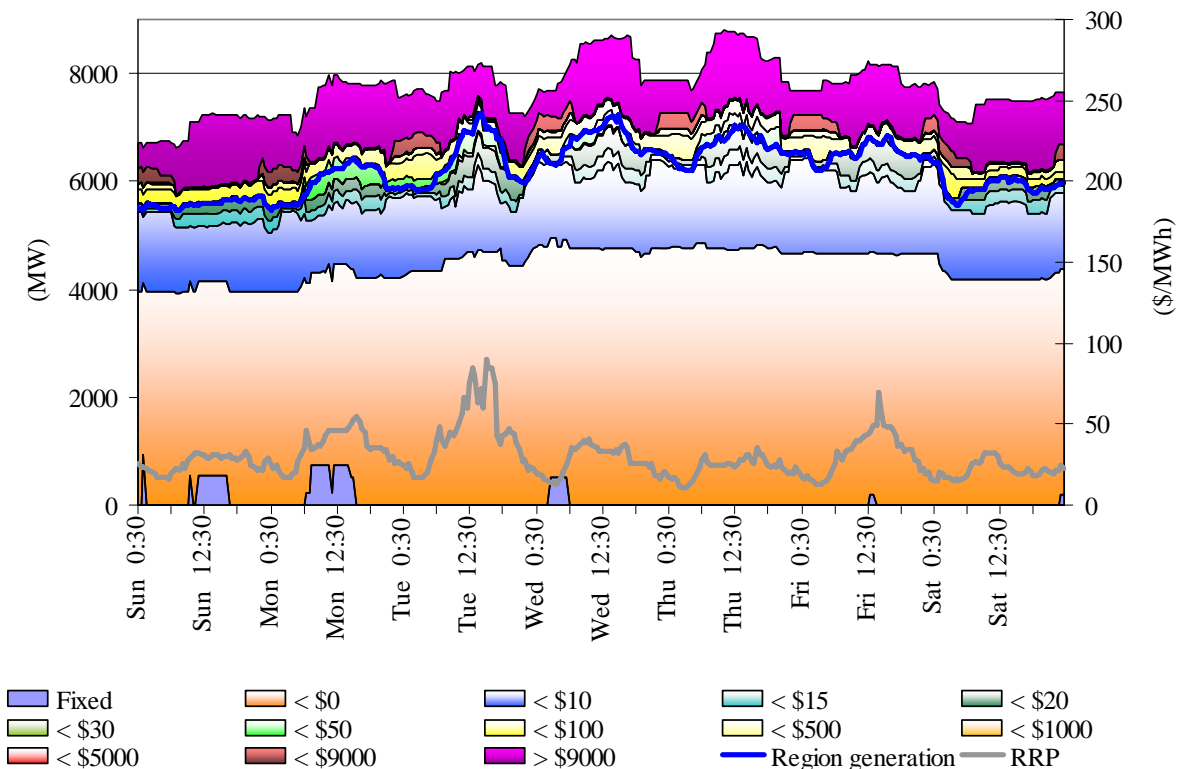


Figure 60: South Australia closing bid prices, dispatched generation and spot price

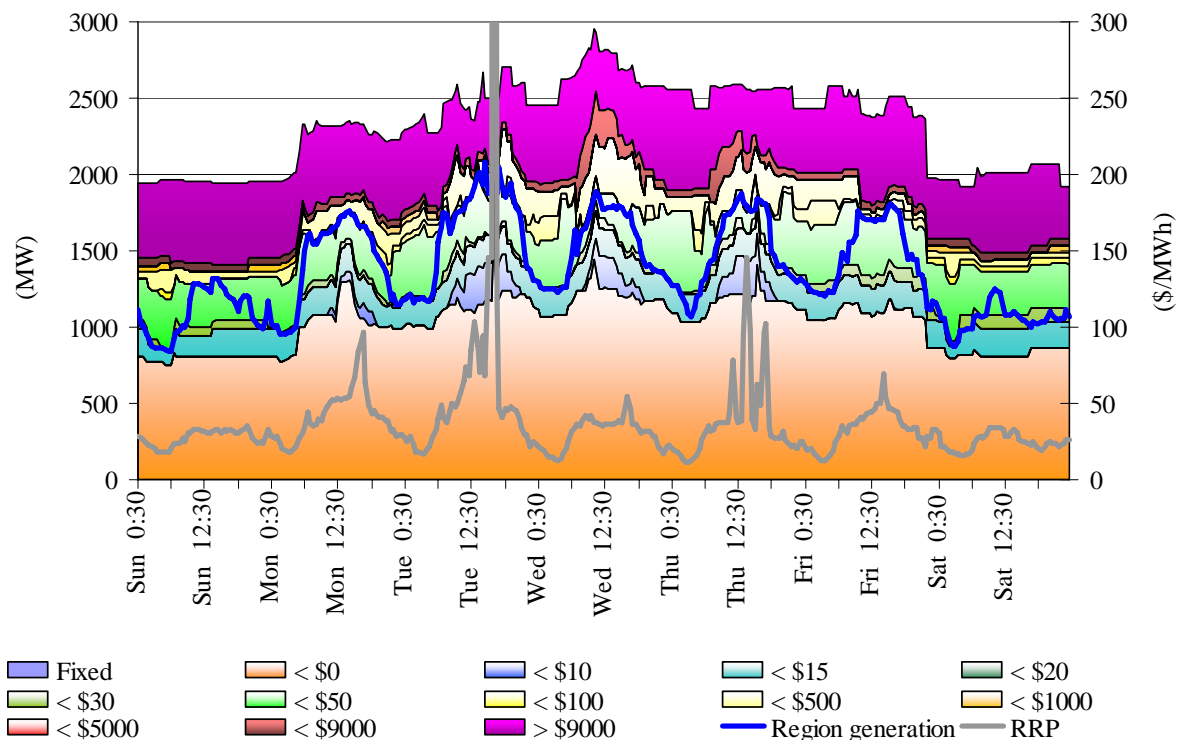
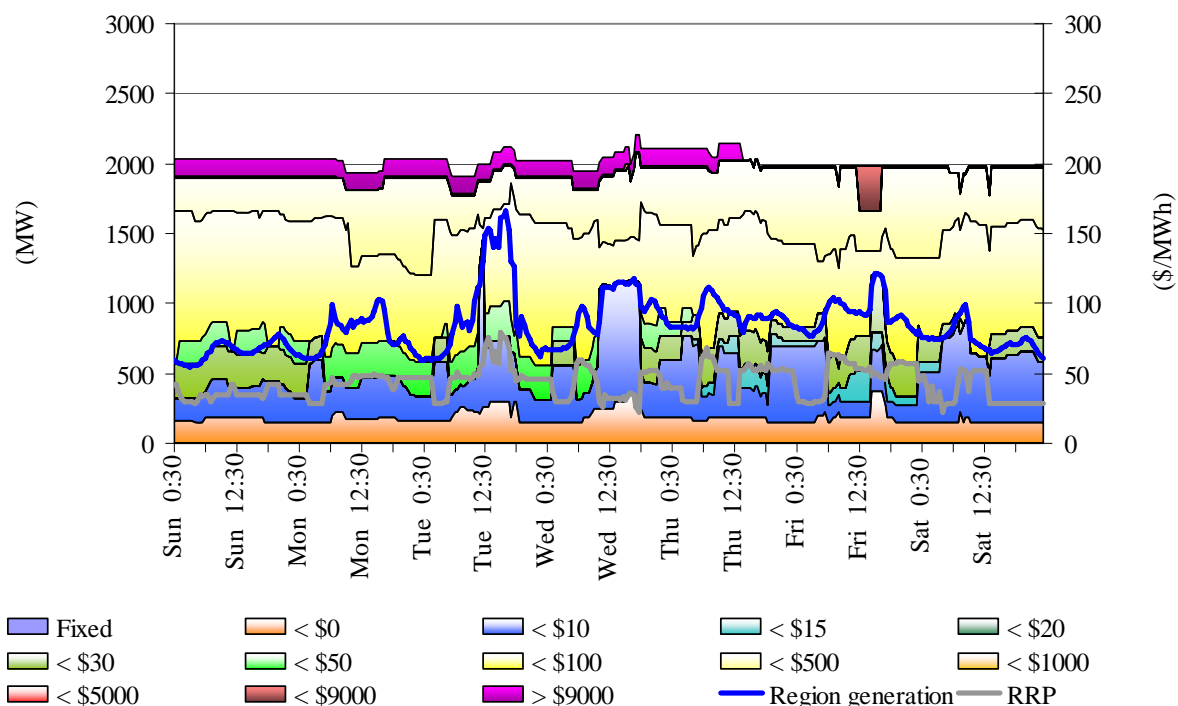


Figure 61: Tasmania closing bid prices, dispatched generation and spot price



Ancillary service market

The total cost of ancillary services on the mainland for the week was \$182 000 or 0.2 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)	0.35	0.13	1.23	2.61	1.25	0.42	0.89	1.05
Previous week (\$/MW)	0.52	0.22	1.17	3.11	0.13	0.50	2.05	0.97
Last quarter (\$/MW)	1.76	0.73	1.15	1.54	0.39	2.28	5.00	1.93
Market Cost (\$1000s)	\$15	\$4	\$66	\$56	\$3	\$4	\$20	\$15
% of energy market	0.01%	0.01%	0.05%	0.05%	0.01%	0.01%	0.02%	0.01%

The total cost of ancillary services in Tasmania for the week was \$103 000 or 1.3 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)	10.17	0.67	1.43	3.02	0.11	0.19	0.45	1.04
Previous week (\$/MW)	4.65	0.73	1.89	3.98	19.73	0.68	12.13	0.92
Last quarter (\$/MW)	4.97	0.49	2.93	3.00	12.67	0.43	0.82	0.45
Market Cost (\$1000s)	\$46	\$10	\$23	\$14	\$0	\$1	\$2	\$7
% of energy market	0.56%	0.12%	0.28%	0.17%	0.01%	0.01%	0.02%	0.08%

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

Figure 64: daily frequency control ancillary service cost

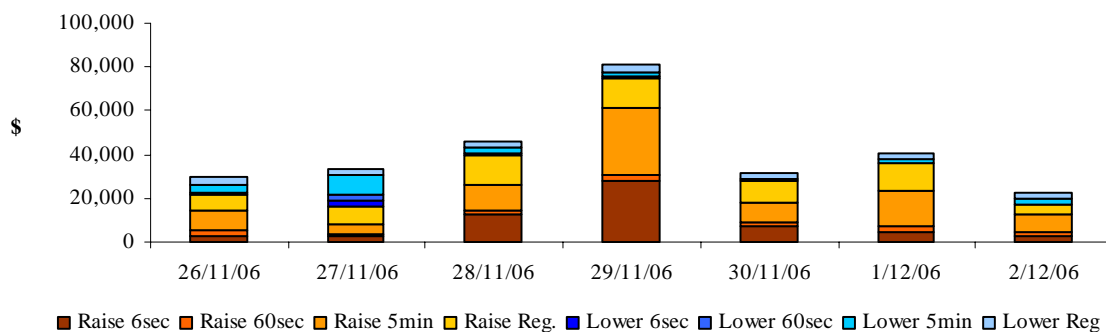
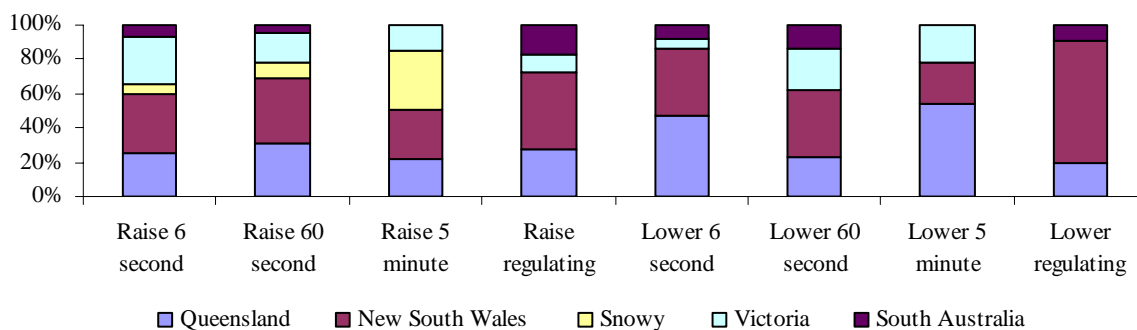


Figure 65 shows the contribution, on a percentage basis, that frequency control ancillary service providers are utilised (in each mainland region) to satisfy the total requirement for each service.

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

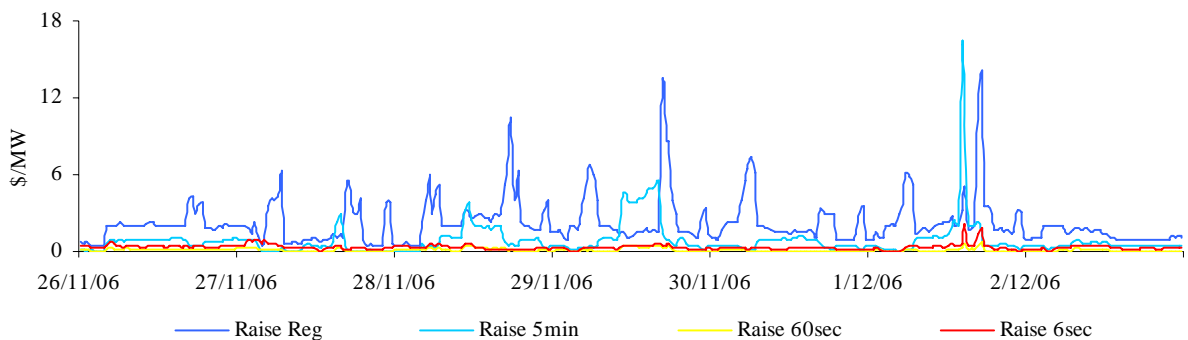


Figure 66A: prices for raise services – Tasmania

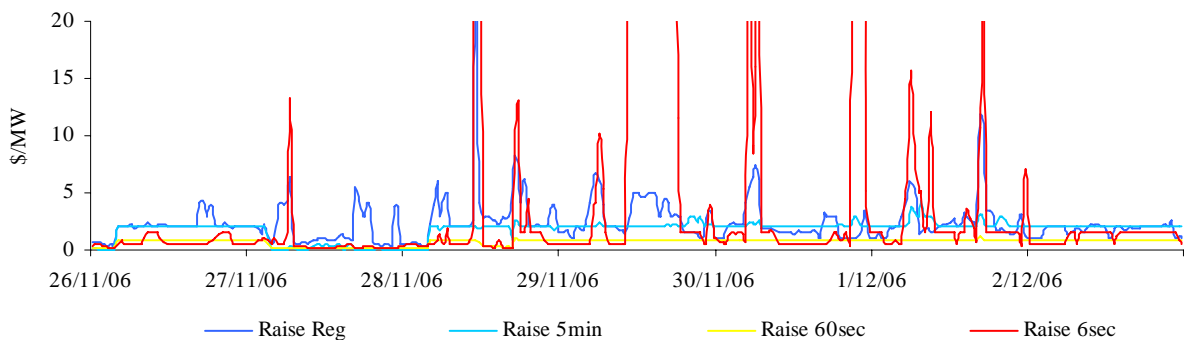


Figure 67: prices for lower services

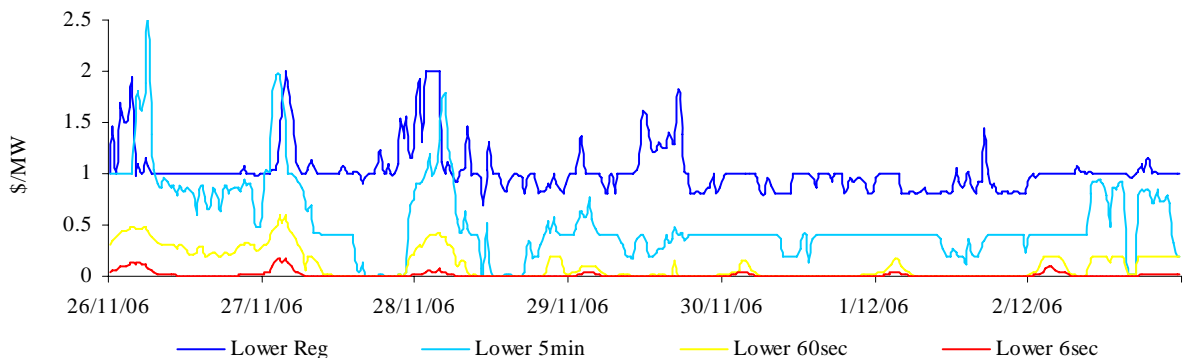
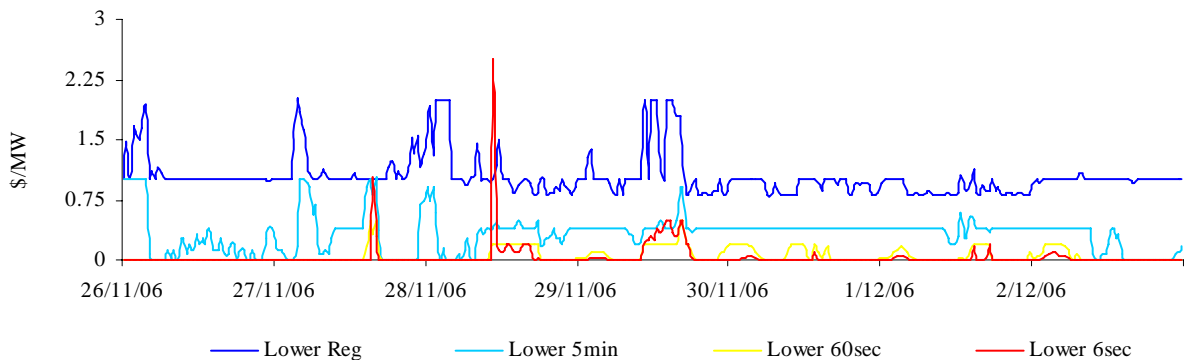


Figure 67A: prices for lower services – Tasmania



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

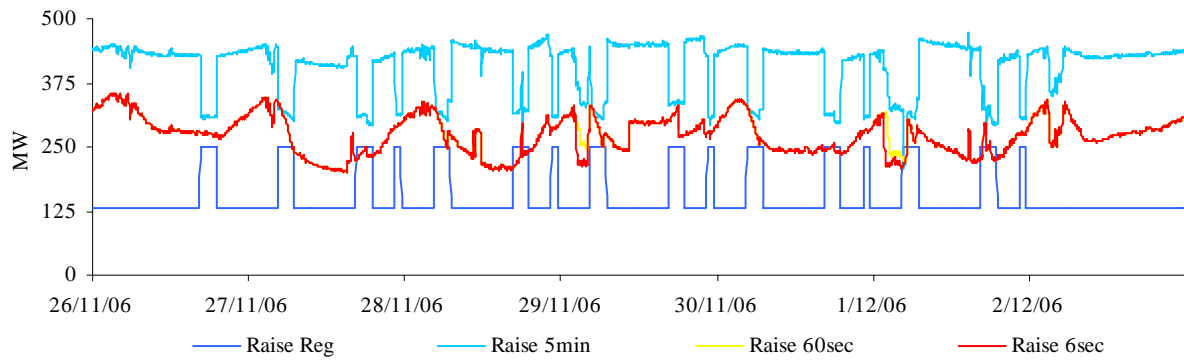


Figure 68A: raise requirements – Tasmania

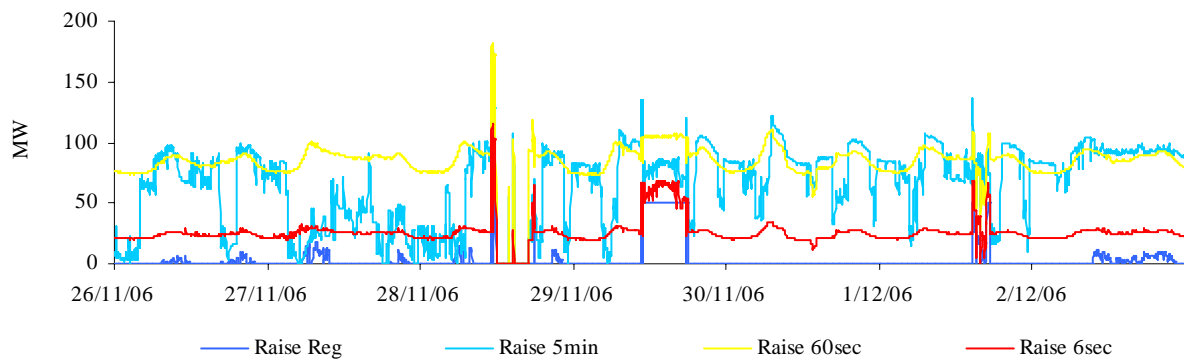


Figure 69: lower requirements

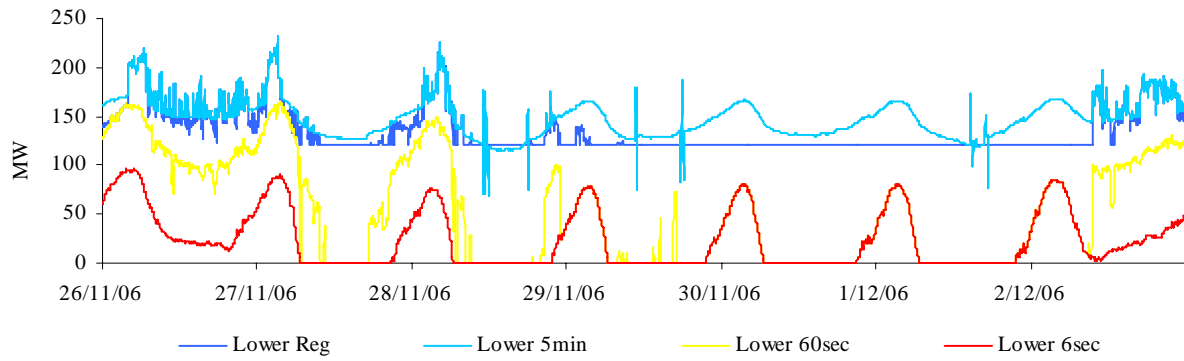


Figure 69A: lower requirements – Tasmania

