

18 November – 24 November 2007

Summary

Spot prices for the week averaged between \$47/MWh in New South Wales and \$52/MWh in Tasmania. Prices were down by around 20 per cent in South Australia and Victoria despite demands increasing to its highest levels since last summer and at near record levels on Monday.

Turnover in the energy market in the week ended 24 November was \$194 million. The total cost of ancillary services for the week was \$3 million or 2 per cent of energy market turnover.

Significant variations between actual prices and those forecast 4 and 12 hours ahead occurred in 74, or 22 per cent of all trading intervals. Demand forecasts produced 4 and 12 hours ahead varied from actual by more than 5 per cent in 19 per cent of all trading intervals across the market. These variations were most frequent in South Australia, occurring in over 40 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

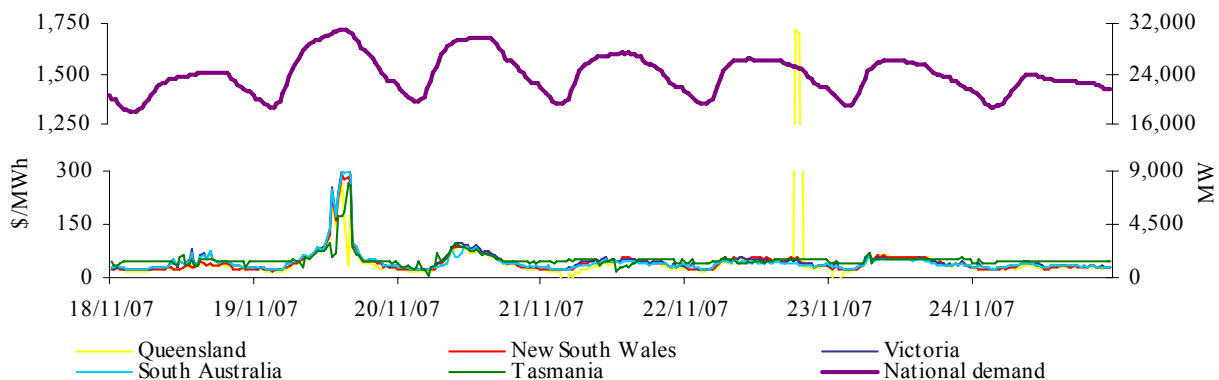


Figure 2: volume weighted average spot price for energy market (\$/MWh)

	QLD	NSW	VIC	SA	TAS
Last week	48	47	51	49	52
Previous week	35	38	63	64	47
Same quarter last year	23	27	29	40	37
Financial year to date	60	53	53	54	56
% change from previous week*	▲ 39%	▲ 23%	▼ 19%	▼ 22%	▲ 10%
% change from same quarter last year**	▲ 108%	▲ 71%	▲ 77%	▲ 23%	▲ 40%
% change from year to date***	▲ 141%	▲ 49%	▲ 48%	▲ 38%	▲ 40%

*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

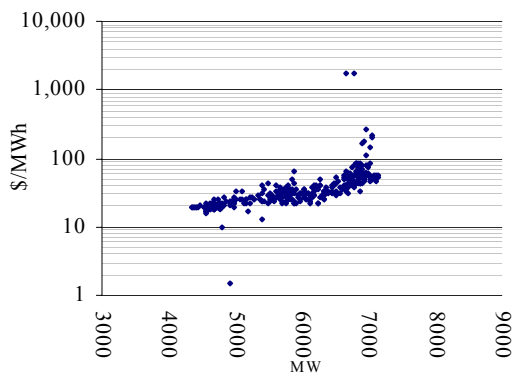


Figure 4: New South Wales

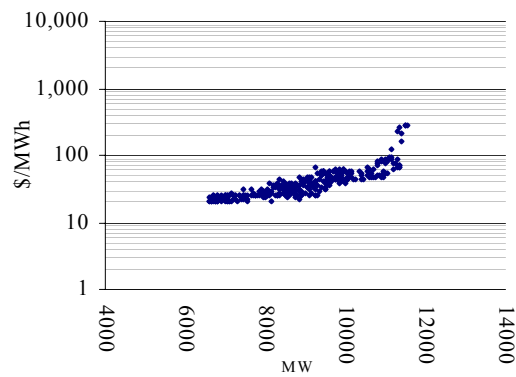


Figure 5: Victoria

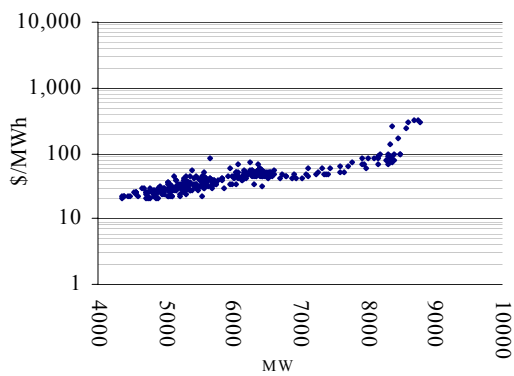


Figure 6: South Australia

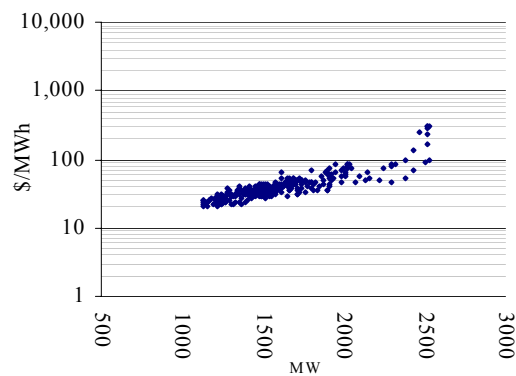
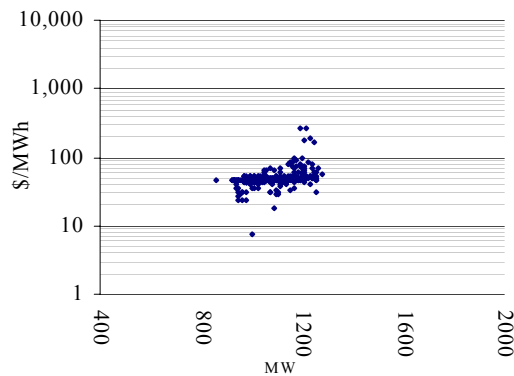


Figure 7: Tasmania



Maximum spot prices for the week were between \$266/MWh in Tasmania and \$1716/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	0.90	0.77	0.91	0.84	0.53
Previous week	0.83	0.75	0.67	0.72	0.60
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>

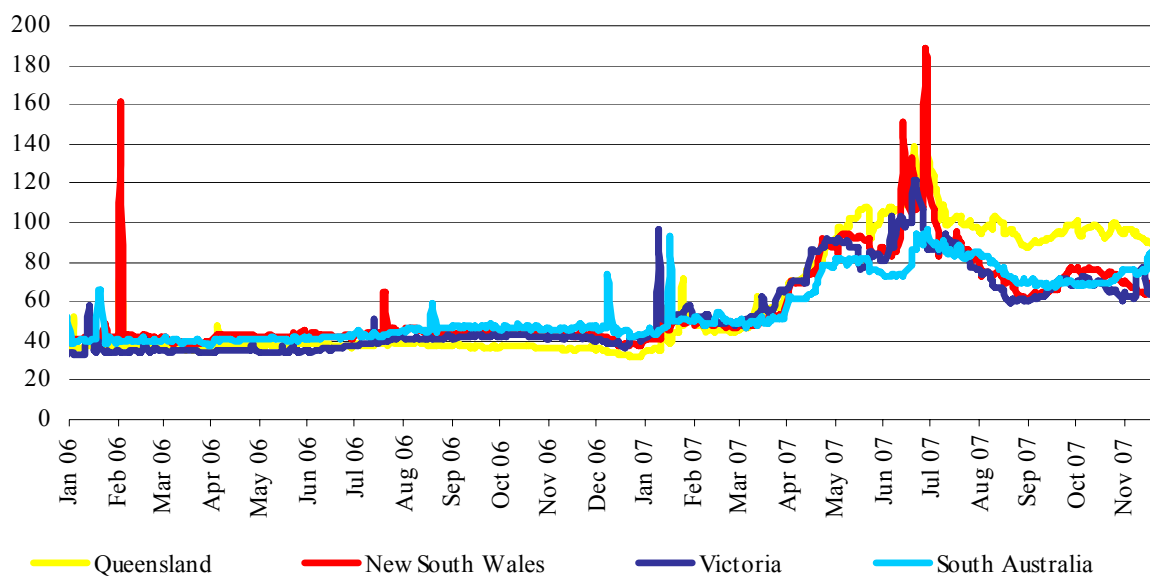
Figure 9 sets out the d-cyphaTrade wholesale electricity price index (WEPI)* for each region throughout the week excluding Tasmania. Figure 10 sets out the WEPI since 1 January 2006.

Figure 9: d-cyphaTrade WEPI for the week

	Monday	Tuesday	Wednesday	Thursday	Friday
Queensland	88.93	86.65	85.22	85.39	83.40
New South Wales	69.10	68.30	66.21	64.54	63.04
Victoria	77.44	72.01	66.66	64.25	64.01
South Australia	84.86	79.30	75.84	72.34	70.60

* 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

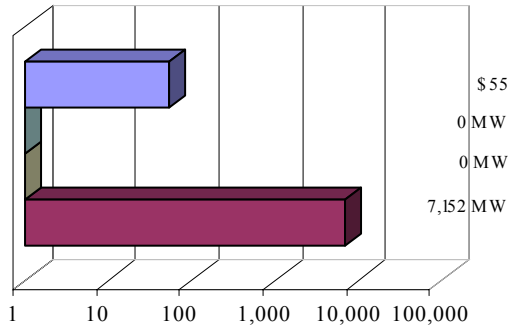


Figure 12: New South Wales

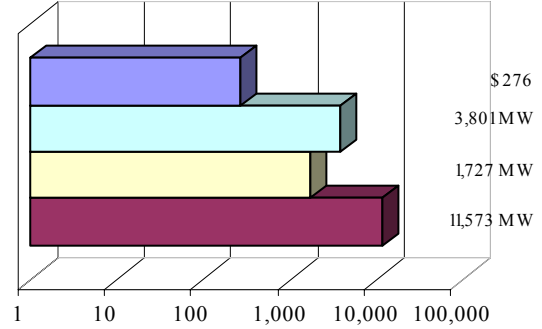


Figure 13: Victoria

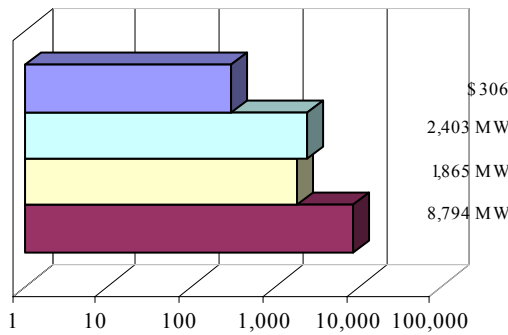


Figure 14: South Australia

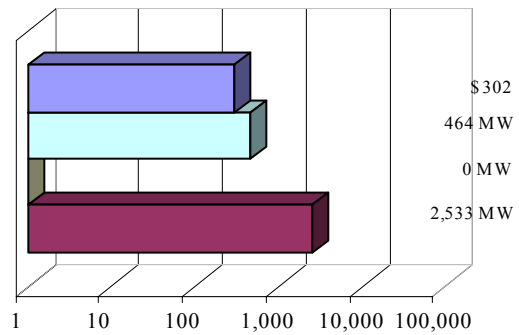
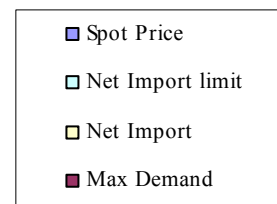
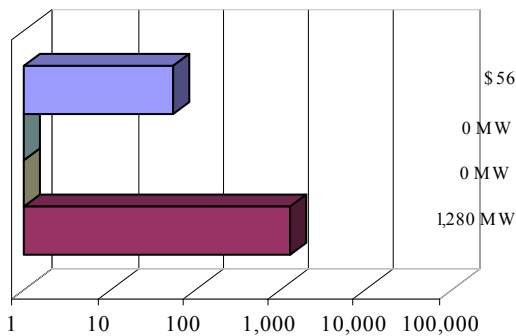


Figure 15: Tasmania



Price variations

There were 74 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

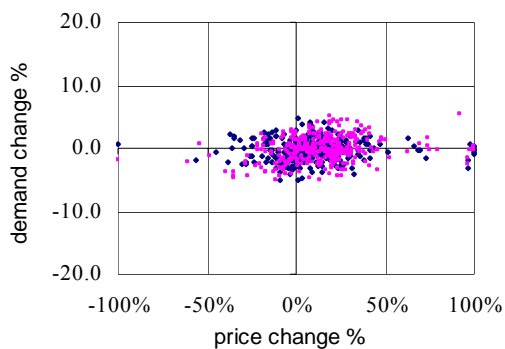


Figure 17: New South Wales

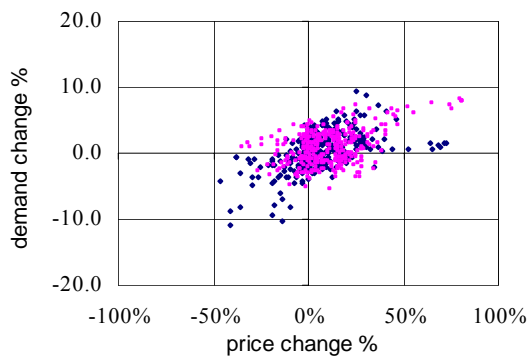


Figure 18: Victoria

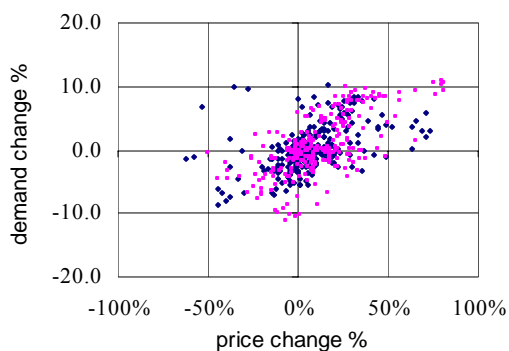


Figure 19: South Australia

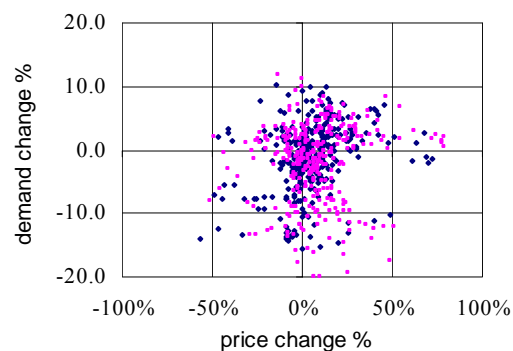


Figure 20: Tasmania

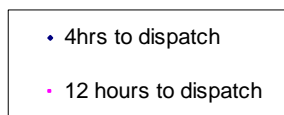
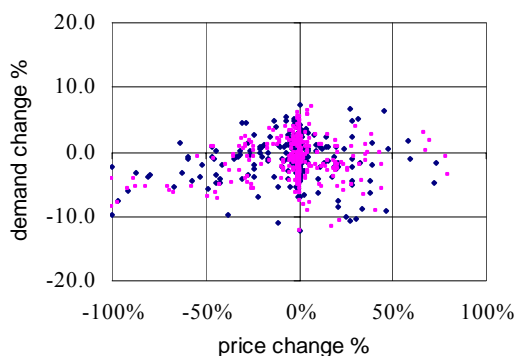
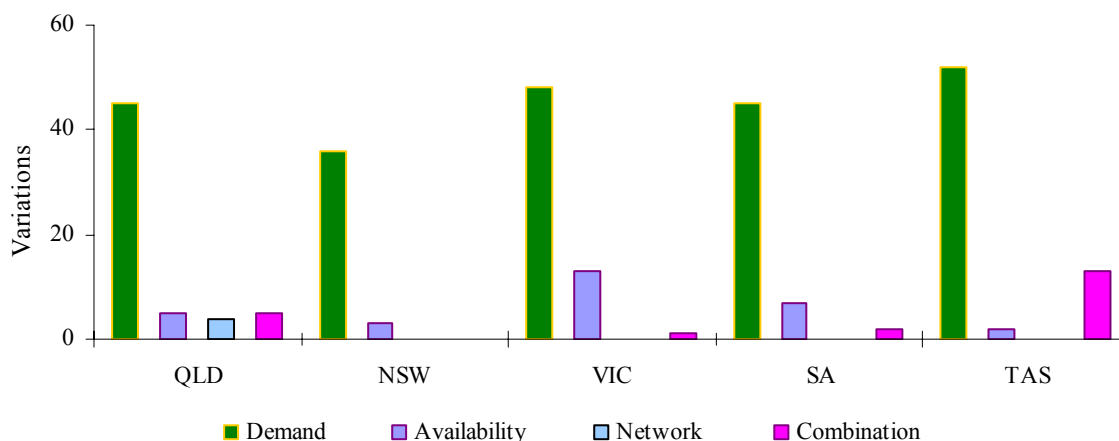


Figure 21 summarises the number and most probable reason for variations between forecast and actual prices.

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.

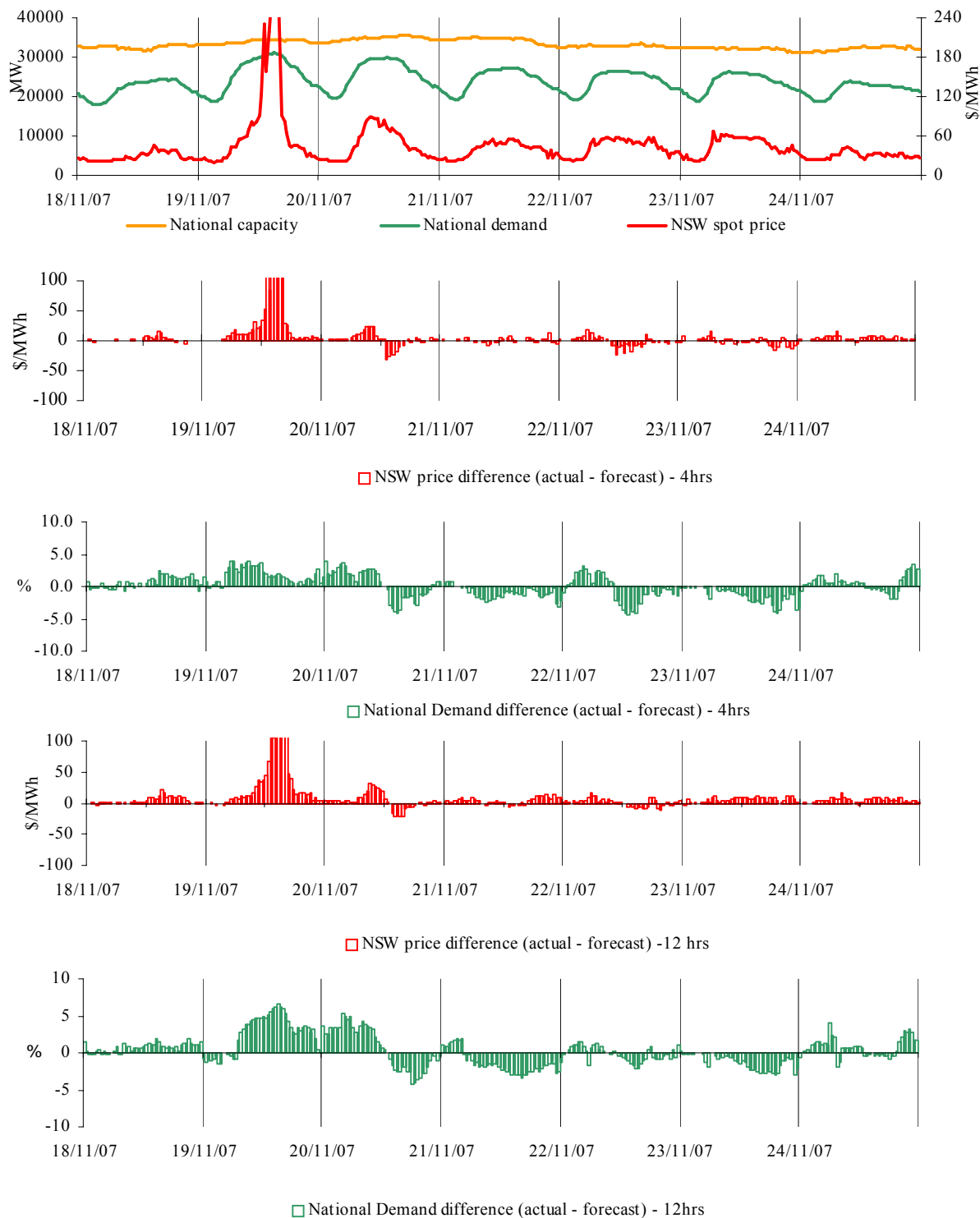
On a regional basis the differences between the maximum temperature and the temperature forecast at around 6 pm the day before are also included.

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 were seven occasions where spot prices aligned nationally and the New South Wales price was greater than three times the New South Wales weekly average price of \$47/MWh.

Monday, 19 November

1:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	231.15	72.56	54.94
Demand (MW)	30 429	29 919	28 868
Available capacity (MW)	34 425	34 827	35 337
2:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	158.88	75.93	54.92
Demand (MW)	30 651	30 200	28 964
Available capacity (MW)	34 383	34 850	35 315
2:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	217.39	74.70	54.92
Demand (MW)	30 808	30 275	28 959
Available capacity (MW)	34 358	34 840	35 315
3:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	286.11	86.30	54.55
Demand (MW)	30 950	30 309	29 013
Available capacity (MW)	34 486	34 753	35 315
3:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	275.83	100.00	54.20
Demand (MW)	31 087	30 557	29 061
Available capacity (MW)	34 503	34 718	35 305
4:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	279.85	75.22	53.86
Demand (MW)	30 950	30 472	29 039
Available capacity (MW)	34 439	34 977	35 305
4:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	263.81	75.23	49.68
Demand (MW)	30 638	30 262	28 838
Available capacity (MW)	34 267	34 822	35 075

Conditions at the time saw demand up to 650 MW higher than forecast four hours ahead and at its highest levels since winter. Demands in Victoria and South Australia were both approaching record levels. Victoria reached 8794 MW, 218 MW short of the record set on 16 January this year. South Australia reached 2533 MW, 340 MW short of the record set on 20 January last year.

There was around 670 MW of capacity priced between the forecast price of around \$75/MWh and the actual price for most of this period of \$280/MWh.

From 3.52 am, over several rebids TRU Energy reduced the availability at Yallourn unit one and two by a total of 120 MW. All of this capacity was priced below zero. At the time, Yallourn unit one was the only Yallourn unit online following the collapse of the coal mine early on Tuesday 13 November. Unit two, offline since Wednesday 14 November was attempting to return to service. The reasons given were “Unit RTS Delay:: Reduced availability”, “Plant conditions:: Capacity limit” and “Unit trip on run up adj capacity”

From 8.44 am, over several rebids, Delta Electricity reduced its total availability by 340 MW. The majority of this capacity (280 MW) was priced below \$100/MWh. The reasons given

include “Feeder limit:: Capacity limit change”, “Mill Limit:: Capacity limit change” and “Back press:: Capacity limit change”.

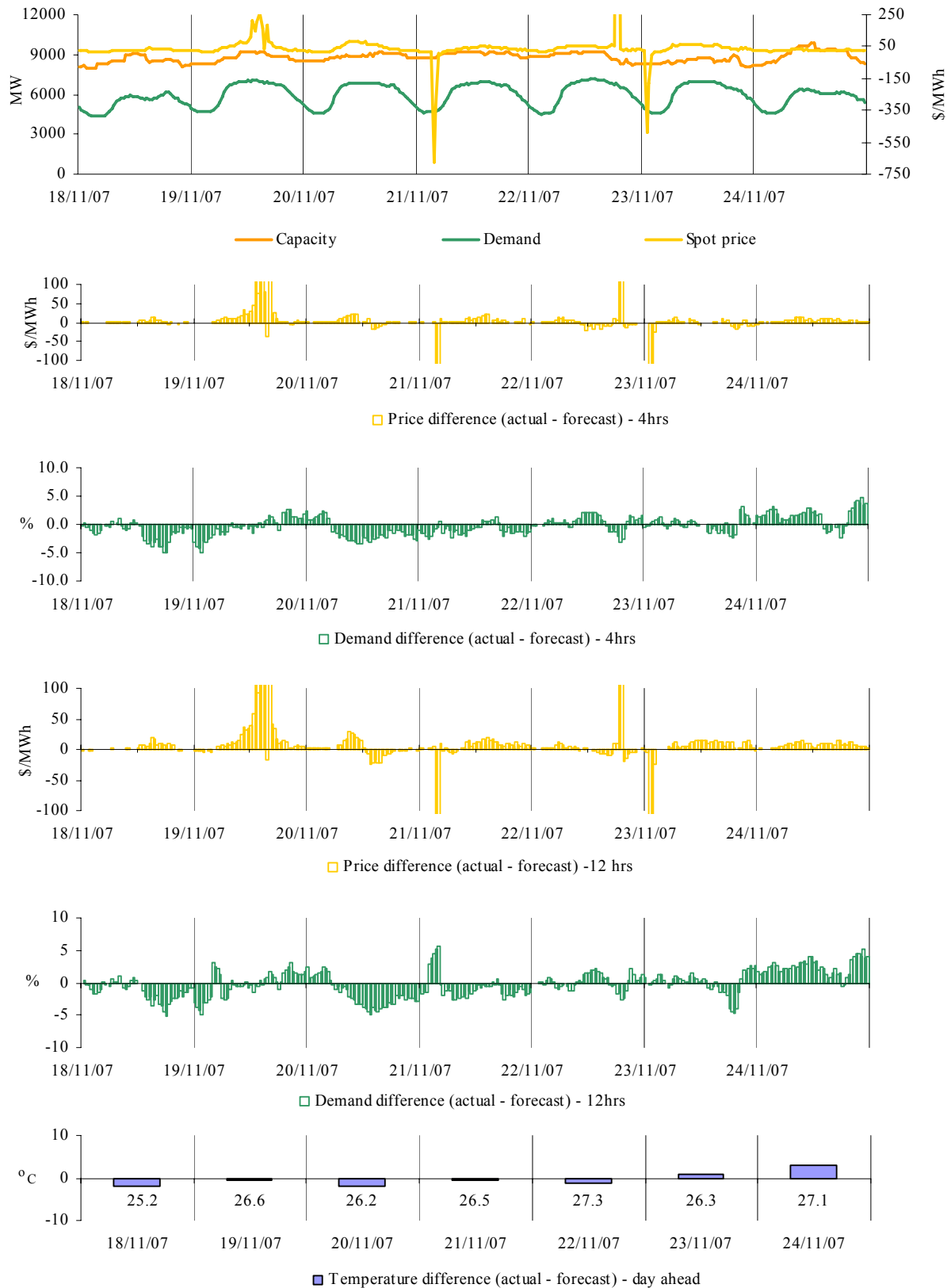
At 1.11 pm Tarong Energy rebid 200 MW at Wivenhoe unit two from prices below \$150/MWh to prices above \$260/MWh. The rebid reason given was “Rough running target :: adjust profile”.

There were no other significant rebids.

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 eight occasions where the spot price in Queensland was greater than three times the Queensland weekly average price of \$48/MWh. Six of these occurred on Monday when prices were generally aligned across all regions and this is detailed in the national market outcomes section. The remaining two occasions are presented below.

Thursday, 22 November

7:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	1716.21	55.22	54.47
Demand (MW)	6793	6933	6900
Available capacity (MW)	8679	8723	8764
7:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	1699.31	48.34	54.37
Demand (MW)	6649	6860	6822
Available capacity (MW)	8523	8733	8714

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

At 5.14 pm CS Energy's Swanbank B1 tripped from 120 MW. All of this capacity was priced at less than \$30/MWh. The rebid reason given was "Swan B1 trip loss of flame". The unit returned to service at 6.30 pm, reaching full load by 8.30 pm.

Over a number of rebids from 6.16 pm, Stanwell shifted as much as 120 MW of capacity from prices of less than \$50/MWh to prices above \$200/MWh. A further 80 MW of capacity was shifted to prices around \$100/MWh. The rebid reason given was "Portfolio optimisation::changed MW distrib".

At 6.55 pm, NEMMCO declared the simultaneous trip of the Braemar to Tarong 275 kV lines as a credible contingency, due to lightning in the vicinity. As a result, NEMMCO invoked the Q>>BRTR_NTH-PRE constraint, directly affecting 2382 MW of generation in south west Queensland as well as limiting flow north into Queensland across QNI. This saw the QNI export limit change from 171 MW into Queensland at 6.55 pm to 680 MW into New South Wales at 7 pm and the dispatch target change from 24 MW (into Queensland) to 264 MW (into New South Wales). The constraint was violated at 7 pm for two dispatch intervals and then bound until it was revoked at 9.30 pm.

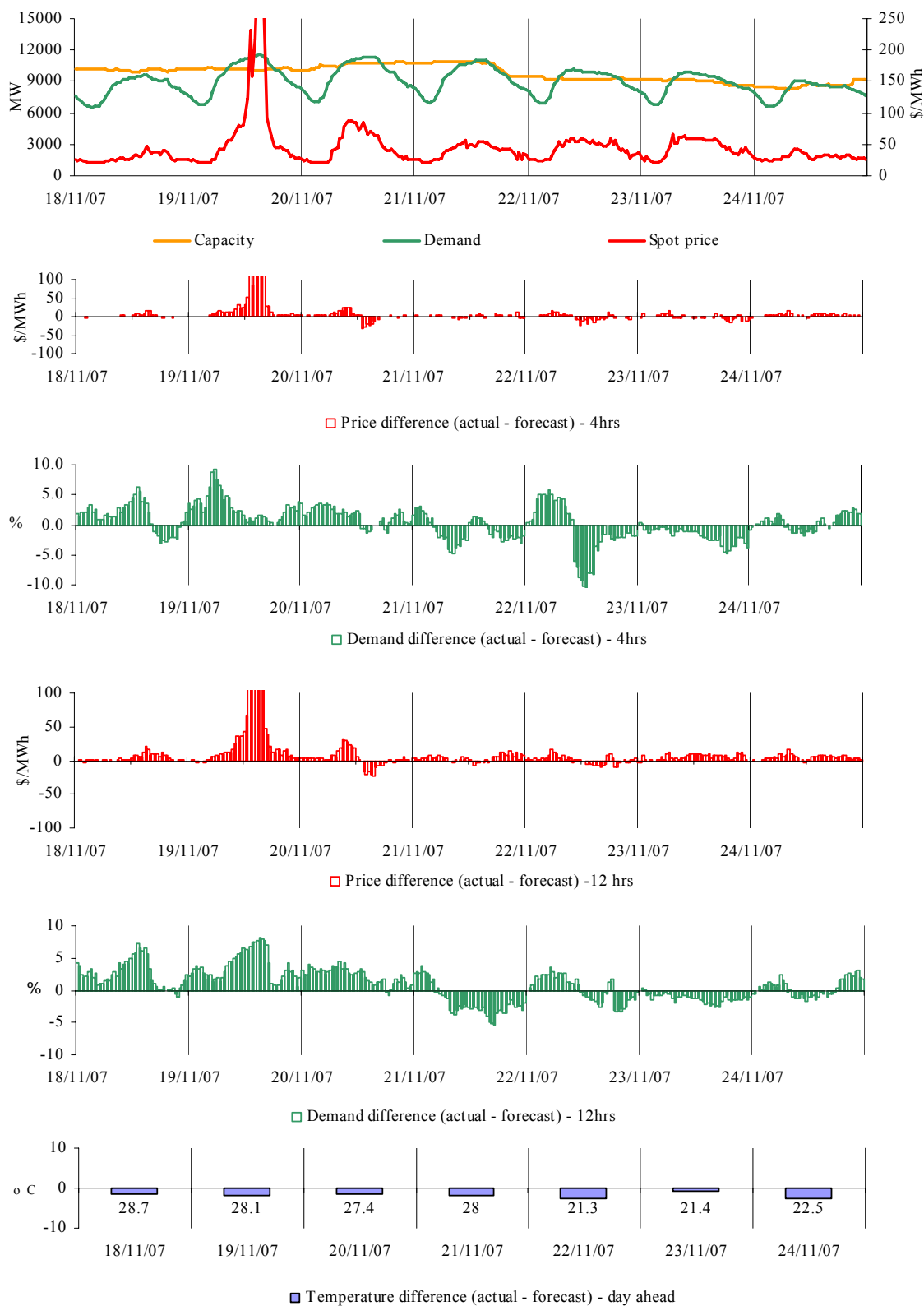
In addition to forcing flow out of Queensland the constraint reduced the dispatch of south west Queensland generation, causing NEMDE to dispatch generation further up the Queensland supply curve and the five-minute energy price increased from \$62/MWh at 6.55 pm to \$10 000/MWh at 7 pm and 7.05 pm. Price returned to \$50/MWh at 7.10 pm.

There were no other significant rebids.

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

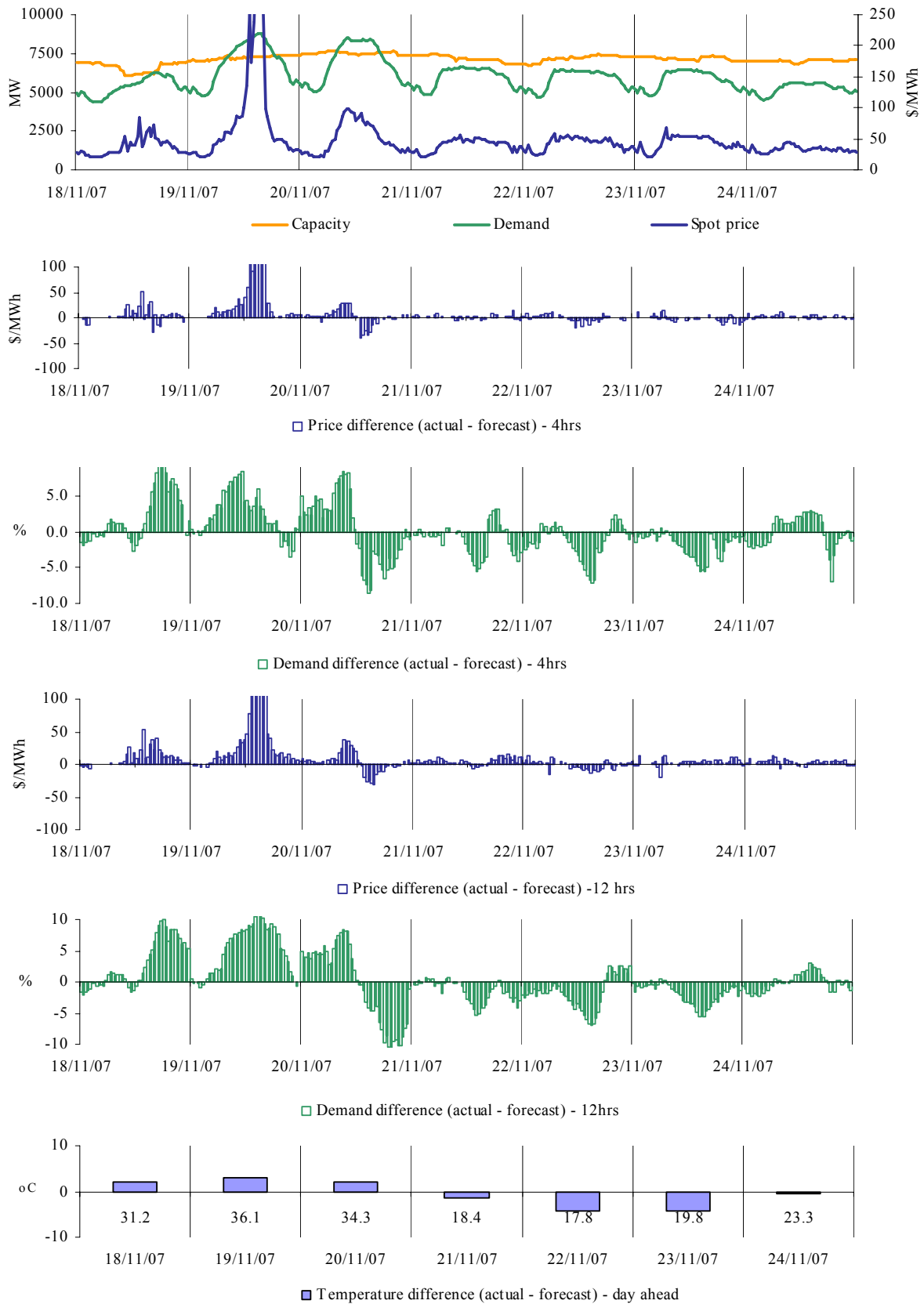


There were seven occasions where the spot price in New South Wales was greater than three times the New South Wales weekly average price of \$47/MWh. These occurred when prices were generally aligned across all regions and is detailed in the national market outcomes section.

Victoria

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

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

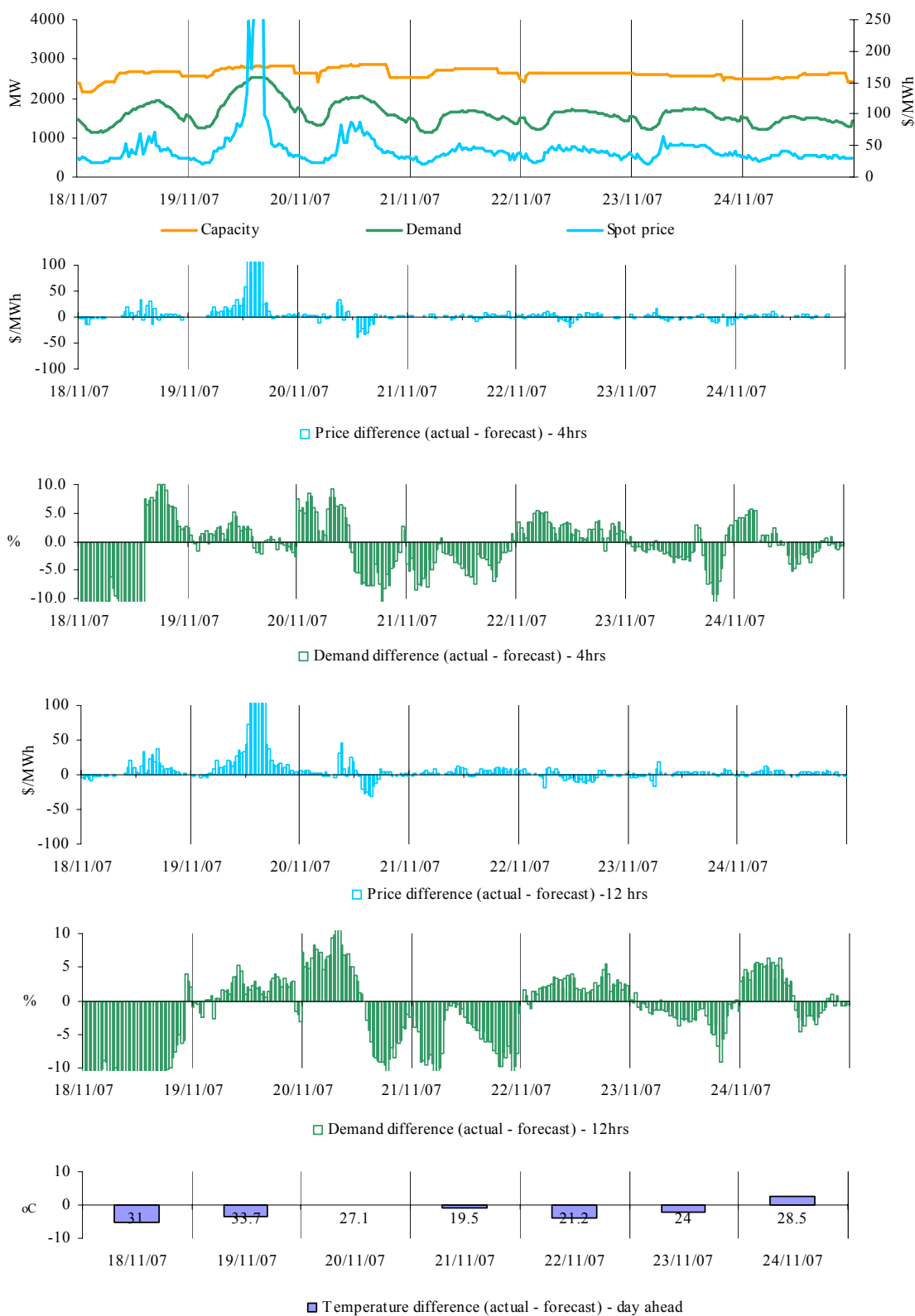


There were seven occasions where the spot price in Victoria was greater than three times the Victoria weekly average price of \$51/MWh. These occurred when prices were generally aligned across all regions and is detailed in the national market outcomes section.

South Australia

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

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

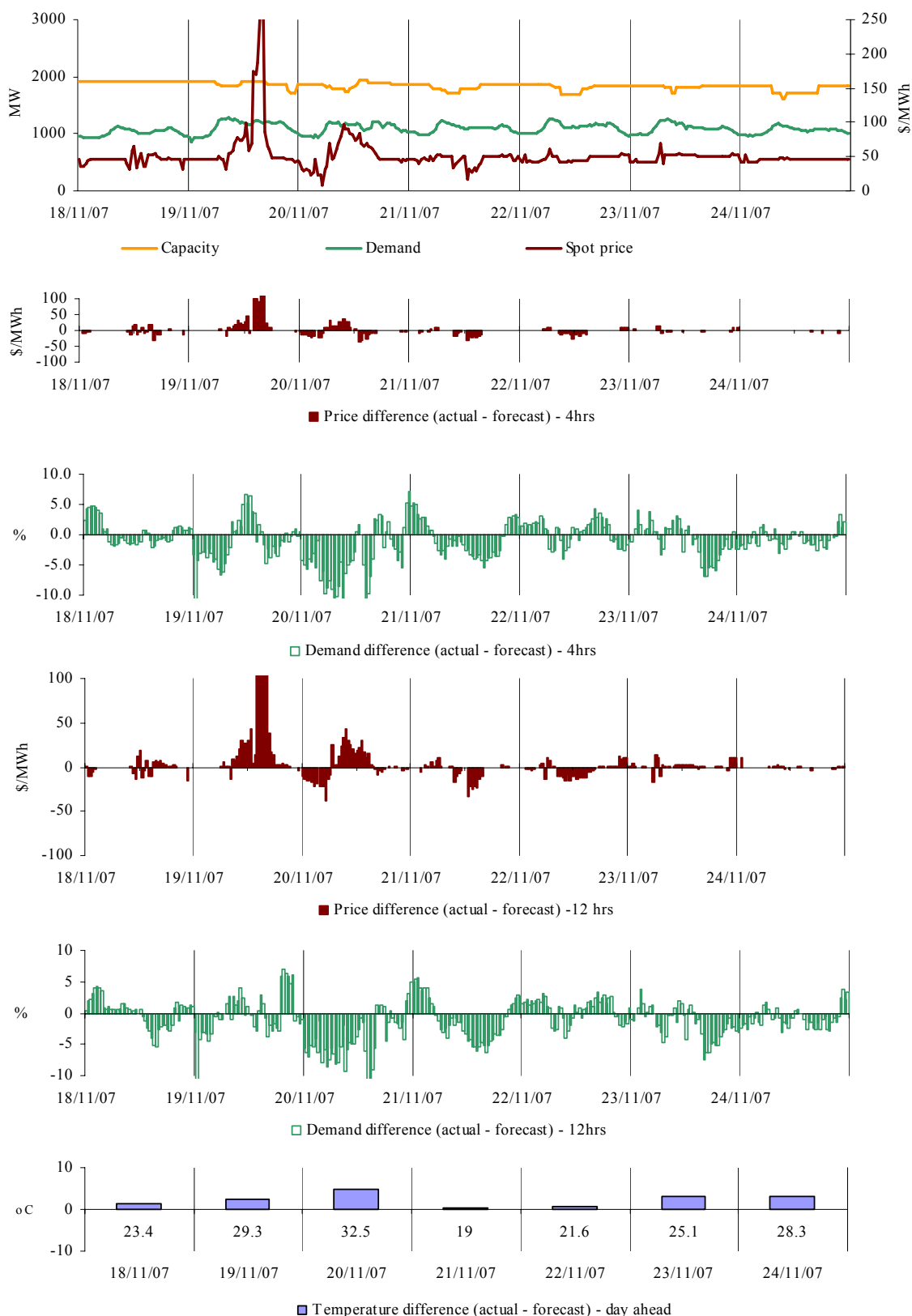


There were seven occasions where the spot price in South Australia was greater than three times the South Australia weekly average price of \$49/MWh. These occurred when prices were generally aligned across all regions and is detailed in the national market outcomes section.

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 were five occasions where the spot price in Tasmania was greater than three times the Tasmania weekly average price of \$52/MWh. These occurred when prices were generally aligned across all regions and is detailed in the national market outcomes section.

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

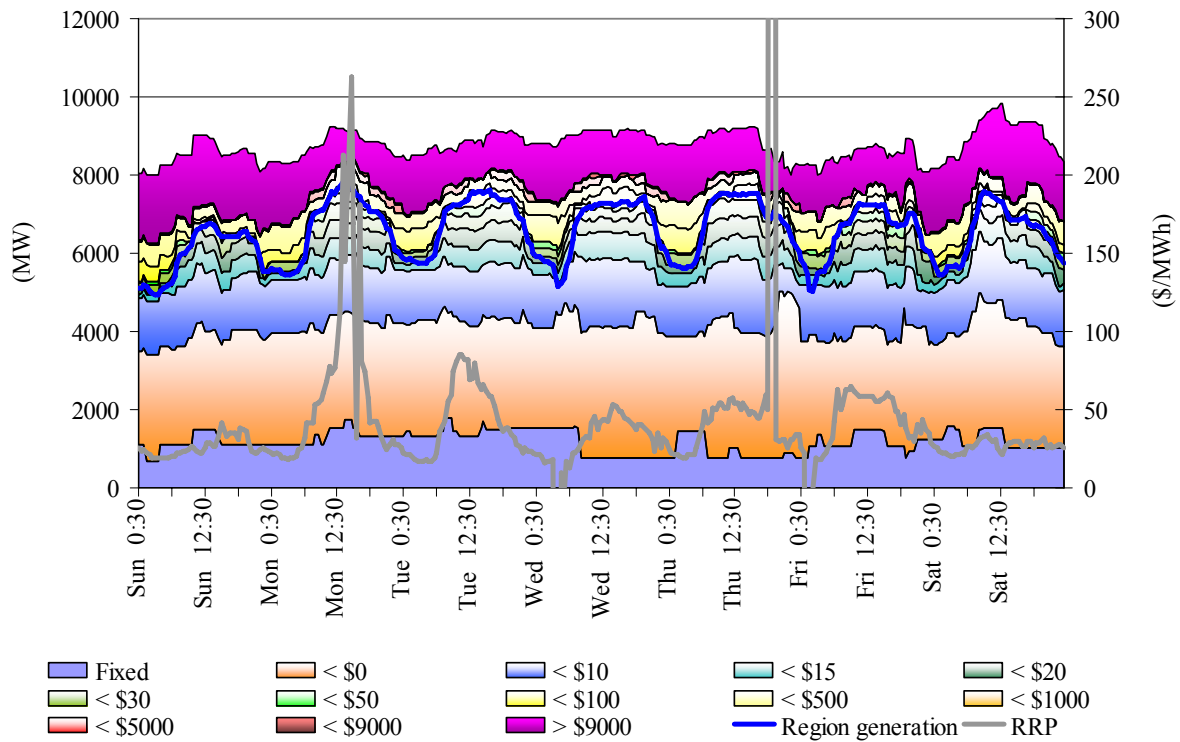


Figure 58: New South Wales closing bid prices, dispatched generation and spot price

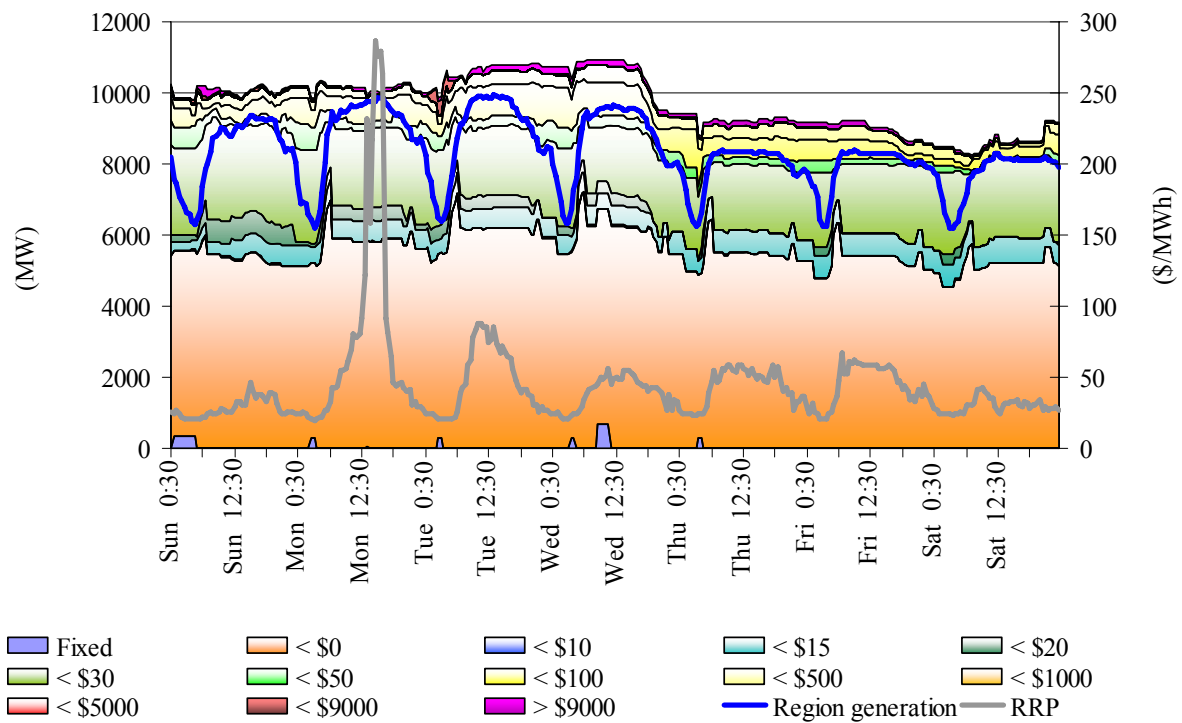


Figure 59: Victoria closing bid prices, dispatched generation and spot price

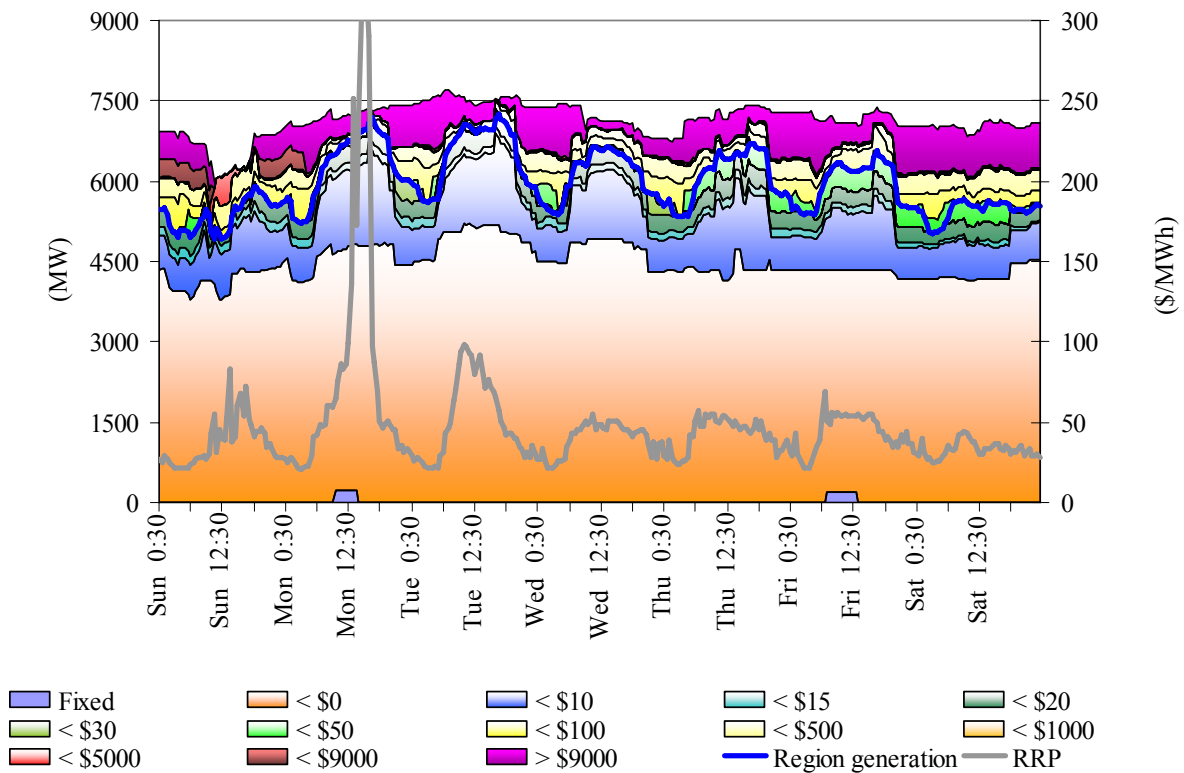


Figure 60: South Australia closing bid prices, dispatched generation and spot price

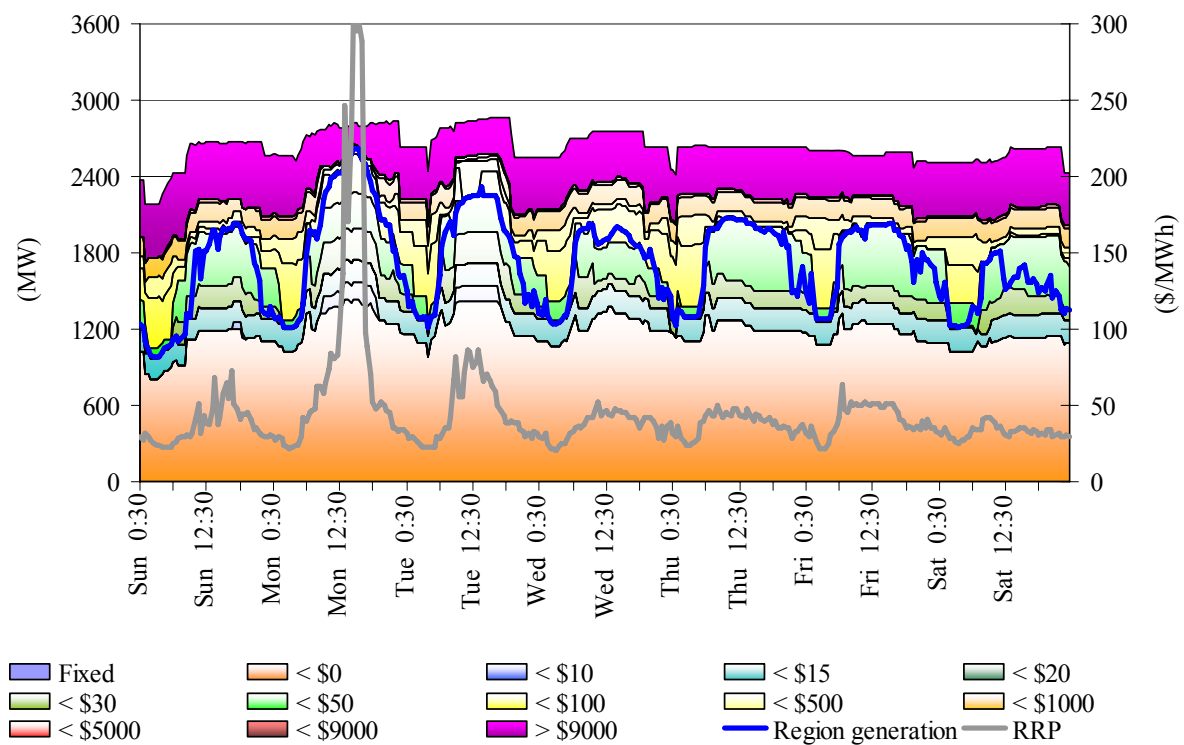
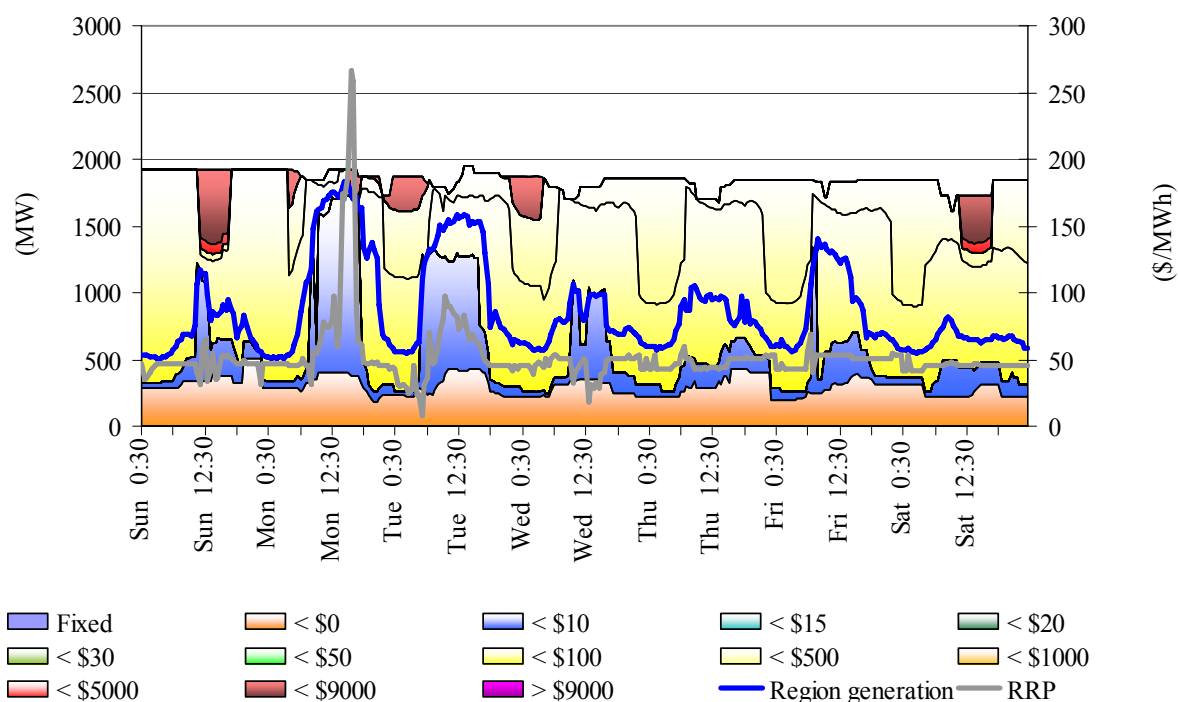


Figure 61: Tasmania closing bid prices, dispatched generation and spot price



Ancillary service market

The total cost of ancillary services on the mainland for the week was \$3.2 million or two per cent of turnover in the energy market. On Thursday evening, lightning led to the reclassification of the loss of the double circuit Bulli Creek to Dumaresq lines. The reclassification of these lines, which are part of the Queensland to New South Wales interconnector, requires Queensland to source its lower contingency frequency control services locally. Subsequently, the increased requirement led to an increased price for all lower contingency services, approaching \$10 000/MWh for lower five minute and lower 6 second. The cost of these services totalled around \$2.35 million during the period of this reclassification. 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)	3.82	0.78	5.23	5.14	190.08	35.22	51.26	1.62
Previous week (\$/MW)	13.13	2.36	7.26	3.03	0.23	0.59	1.39	1.99
Last quarter (\$/MW)	1.76	0.73	1.15	1.54	0.39	2.28	5.00	1.93
Market Cost (\$1000s)	\$174	\$29	\$298	\$123	\$1,171	\$417	\$941	\$27
% of energy market	0.09%	0.02%	0.16%	0.07%	0.63%	0.23%	0.51%	0.01%

The total cost of ancillary services in Tasmania for the week was \$165 000 or two per cent of the turnover in the Tasmanian energy market. Figure 63 summarises for Tasmania the prices and costs for the eight frequency control ancillary services.

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

	Raise 6 sec	Raise 60 sec	Raise 5 min	Raise reg	Lower 6 sec	Lower 60 sec	Lower 5 min	Lower reg
Last week (\$/MW)	11.43	1.14	2.94	3.02	0.70	1.91	0.92	1.58
Previous week (\$/MW)	18.65	1.43	3.14	6.15	0.50	10.34	0.99	2.89
Last quarter (\$/MW)	4.97	0.49	2.93	3.00	12.67	0.43	0.82	0.45
Market Cost (\$1000s)	\$63	\$17	\$45	\$12	\$1	\$13	\$8	\$6
% of energy market	0.67%	0.18%	0.47%	0.12%	0.01%	0.14%	0.08%	0.06%

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

Figure 64: daily frequency control ancillary service cost

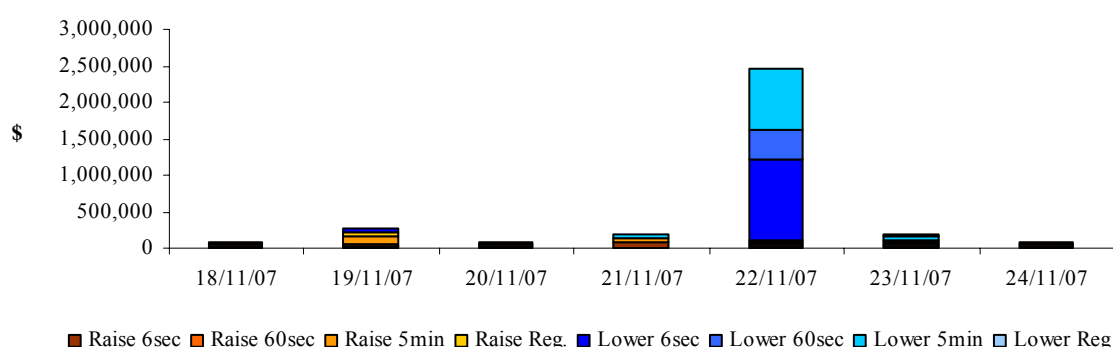
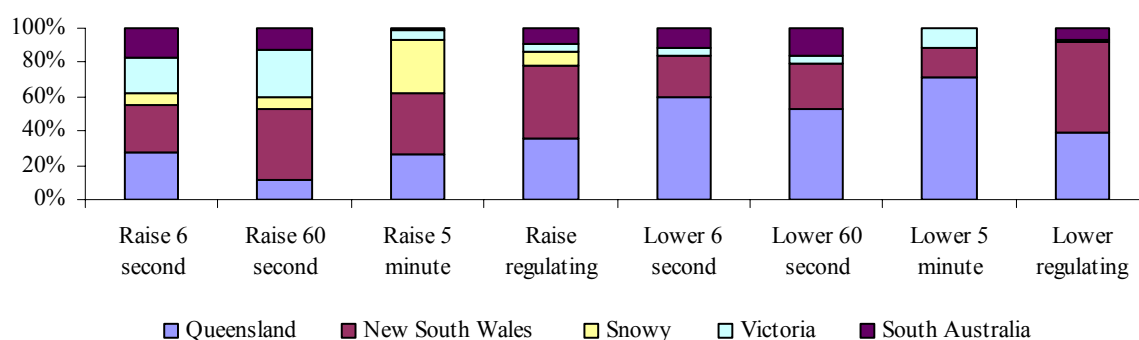


Figure 65 shows the contribution, on a percentage basis, that frequency control ancillary service providers are utilised (in each mainland region) to satisfy the total requirement for each service.

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

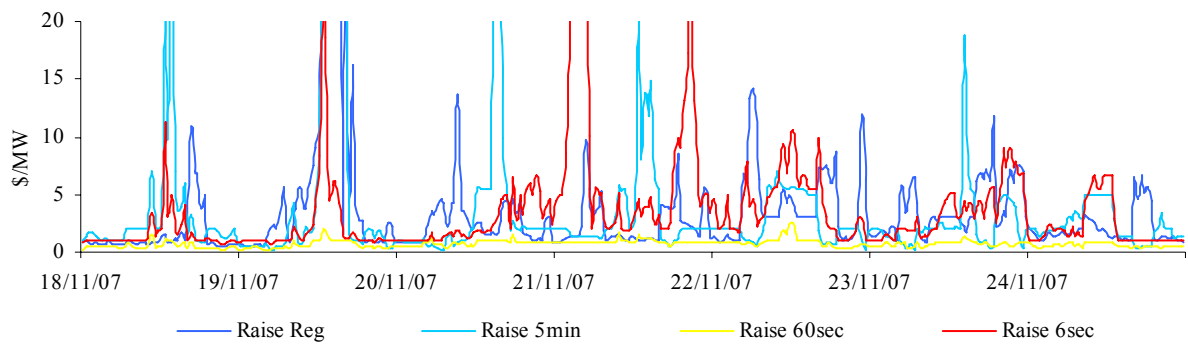


Figure 66A: prices for raise services – Tasmania

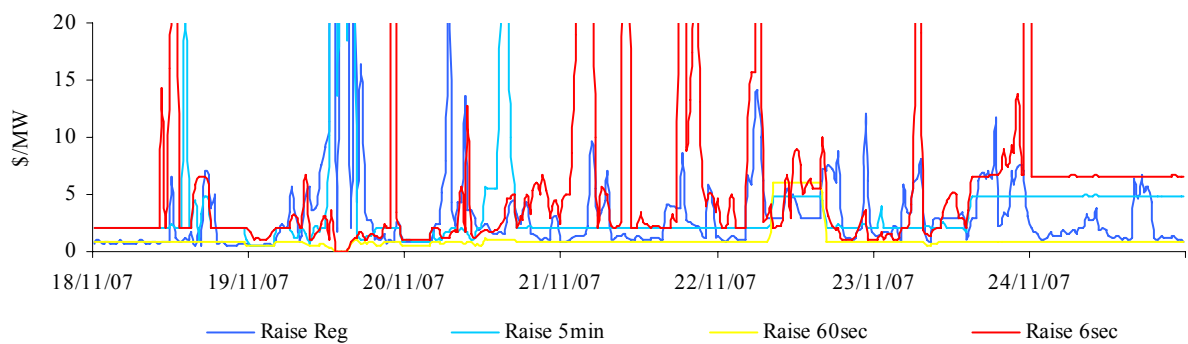


Figure 67: prices for lower services

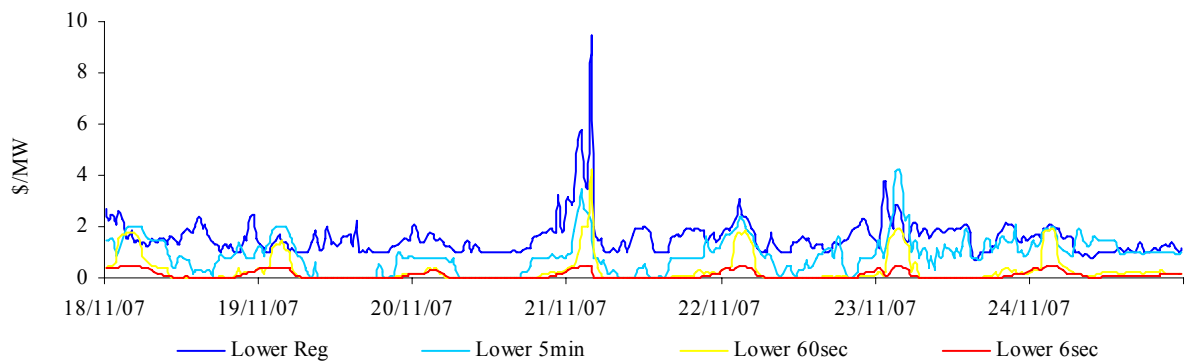
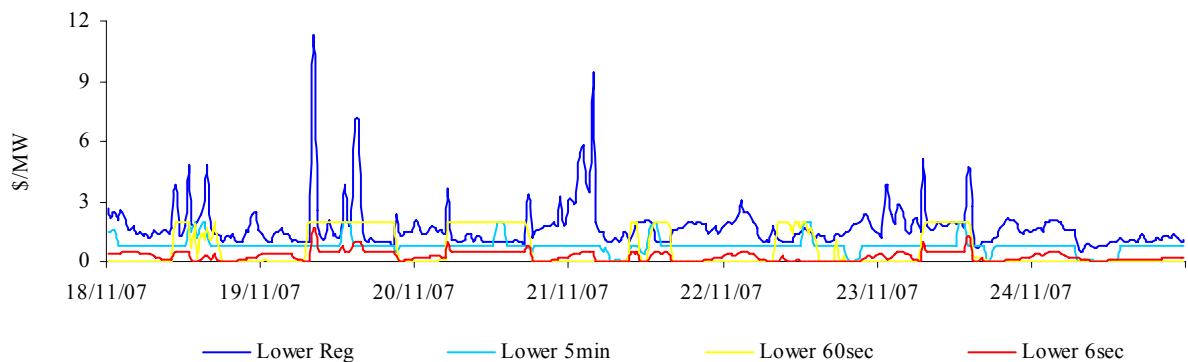


Figure 67A: prices for lower services – Tasmania



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

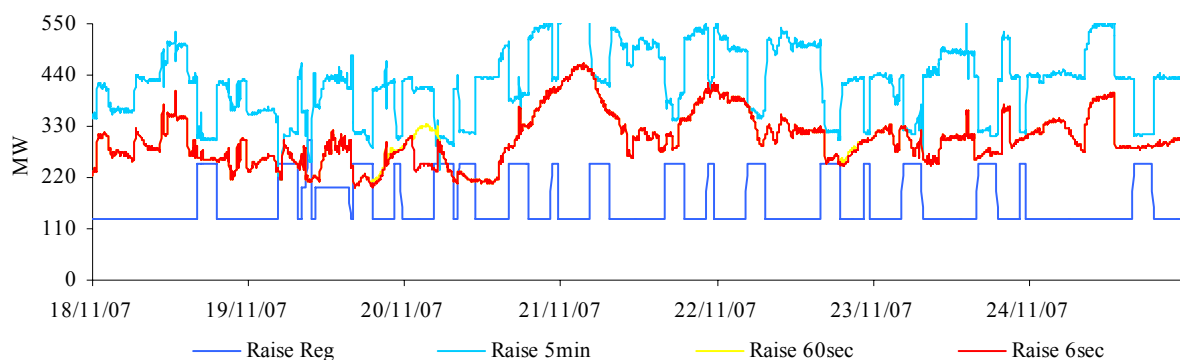


Figure 68A: raise requirements – Tasmania

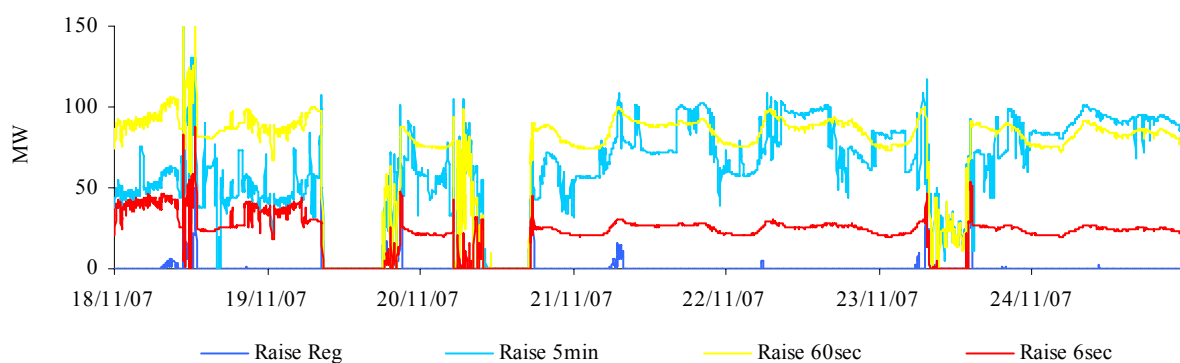


Figure 69: lower requirements

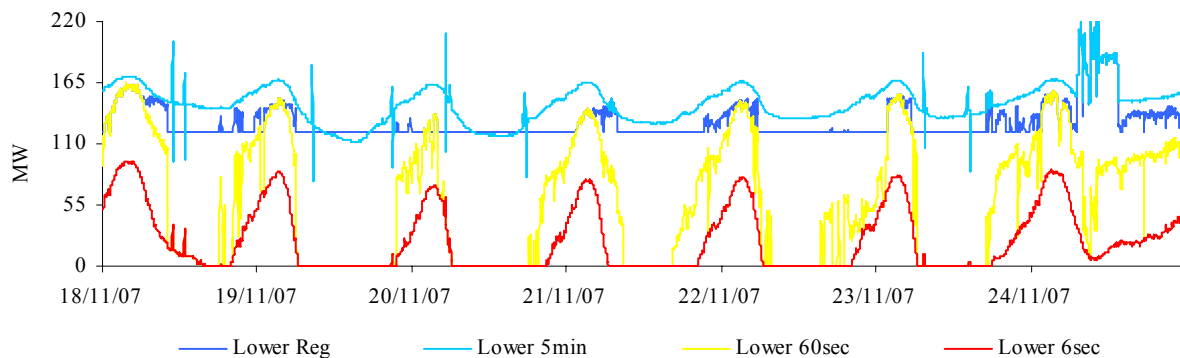


Figure 69A: lower requirements – Tasmania

