

22–28 JANUARY 2006

Continuing hot weather early in the week across the mainland resulted in record demand in Queensland, and high demand in other regions. Average spot prices for the week were \$51/MWh in Queensland and \$45/MWh in New South Wales.

Spot prices in Victoria and South Australia averaged \$117/MWh and \$132/MWh respectively following high prices on Monday, and Thursday as temperatures in Melbourne and Adelaide exceeded 40 degrees. On Thursday, the Australia Day public holiday, spot prices peaked around \$7750/MWh when high temperatures coincided with a reduction of around 1000 MW of low priced capacity at TRU Energy's Yallourn and NRG Flinders' Northern power stations.

Prices in Tasmania averaged \$37/MWh, a slight rise on the previous week.

Turnover in the energy market for the mainland was \$283 million. The total cost of ancillary services for the week was around \$240 000, or less than 0.1 per cent of turnover. Turnover in Tasmania for the week was \$7 million with the cost of ancillary services totaling \$500 000 or 7.5 per cent of turnover.

Significant variations between actual prices and those forecast 4 and 12 hours ahead occurred in 150, or around half of all trading intervals. Demand forecasts produced 4 and 12 hours ahead varied from actual by more than 5 per cent in over 40 per cent of all trading intervals across the market. These variations were most frequent in South Australia occurring in around 70 per cent of all trading intervals.

Energy prices

Figure 1 sets out 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 3 compares the weekly price volatility index with the averages for the previous week and the same quarter last year.

Figure 1: national demand and spot prices

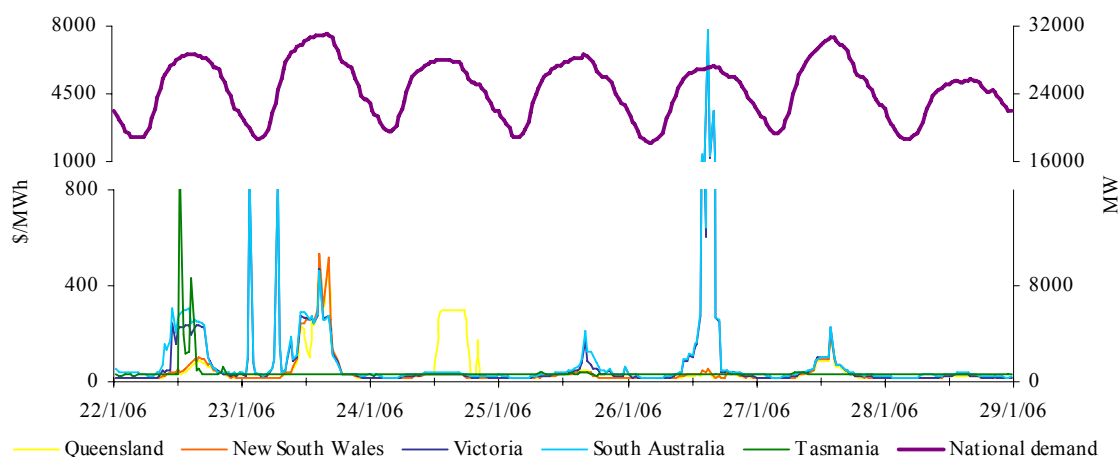


Figure 2: volume weighted average spot price for energy market (\$/MWh)

	QLD	NSW	VIC	SA	TAS
Last week	51	45	117	132	37
Previous week	20	24	115	198	35
Same quarter last year	25	35	22	31	-
Financial year to date	31	47	36	50	77
% change from previous week	▲156%	▲88%	▲2%	▼33%	▲4%
% change from same quarter last year	▲106%	▲27%	▲428%	▲323%	-
% change from year to date	▼11%	▼19%	▲14%	▲14%	-

Figure 3: volatility index during peak periods

	QLD	NSW	VIC	SA	TAS
Last week	6.86	2.56	5.15	4.80	0.08
Previous week	0.51	0.51	4.64	5.59	0.08
Same quarter last year	0.73	0.74	0.78	0.70	-

Figures 4 to 8 show the weekly correlation between spot price and demand.

Figure 4: Queensland

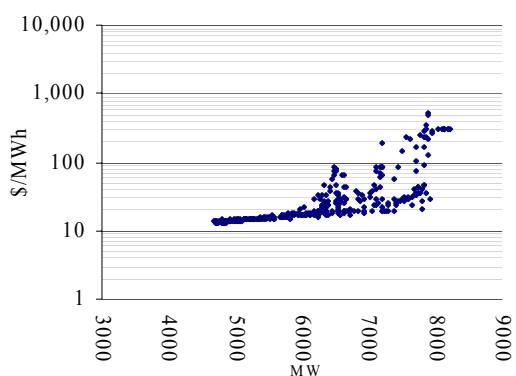


Figure 5: New South Wales

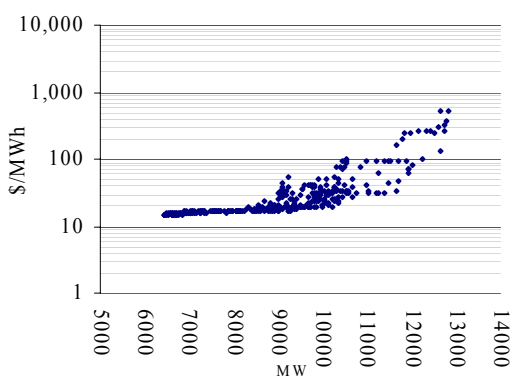


Figure 6: Victoria

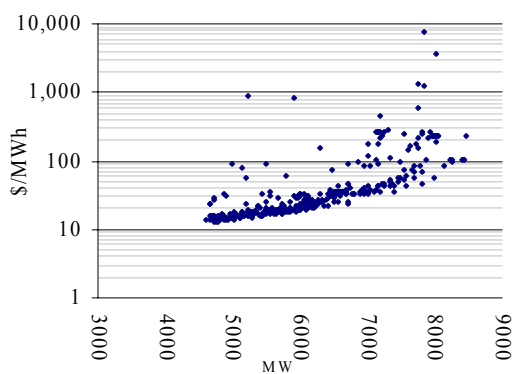


Figure 7: South Australia

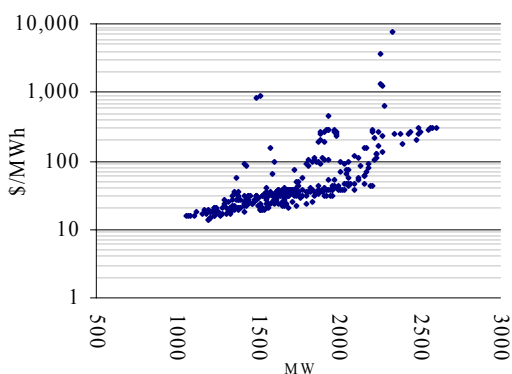
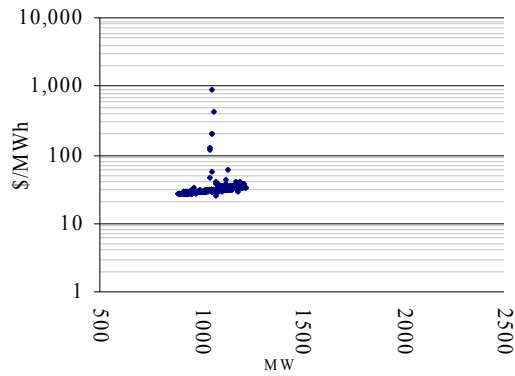


Figure 8: Tasmania



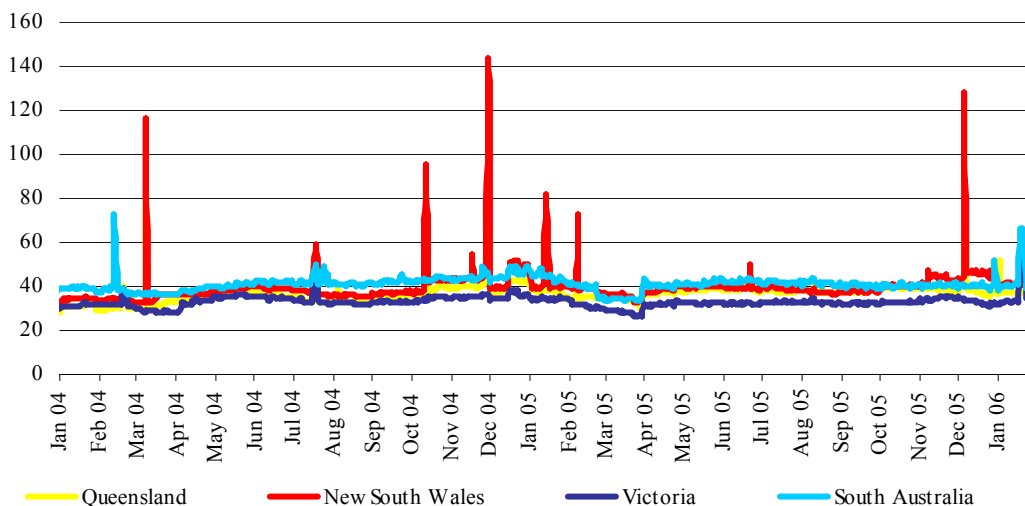
Maximum spot prices for the week were \$505/MWh in Queensland and \$530/MWh in New South Wales both occurring at 2.30pm on Monday as the combined demand in those regions approached 20 600 MW. Spot prices in Victoria and South Australia reached a high of \$7416/MWh and \$7760/MWh respectively at 3.30pm on Australia Day. In Tasmania, the highest price for the week, of \$911/MWh, occurred at 12.30pm on Sunday when a network limitation combined with a tight supply curve for the raise 6 second ancillary service saw 5-minute energy prices peak at \$4350/MWh and raise 6 second prices peak at \$10 000/MWh.

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	41.04	42.93	37.10	36.16	37.20
New South Wales	48.58	41.03	40.60	40.54	42.36
Victoria	35.65	34.38	35.20	40.13	36.28
South Australia	38.65	39.18	41.46	41.56	40.41

Figure 10: d-cyphaTrade WEPI

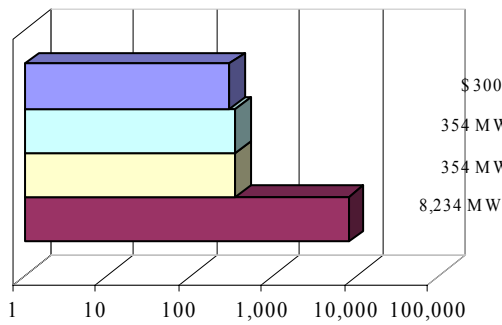


Reserve

There were no low reserve conditions forecast for the week. Figures 11 to 14 show spot price, net imports and limits at the time of weekly maximum demand.

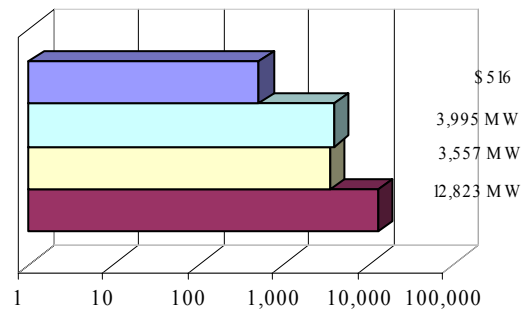
Figures 11 to 14: spot price, net import and limit at time of weekly maximum demand

Figure 11: Queensland



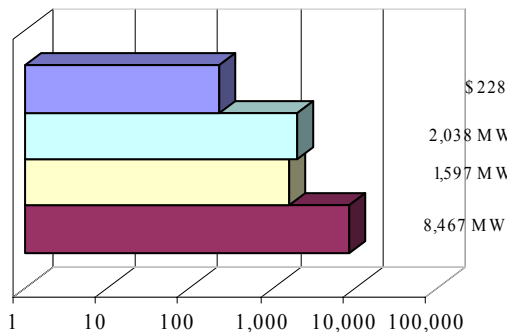
■ Max Demand □ Net Import
 □ Net Import limit ■ Spot Price

Figure 12: New South Wales



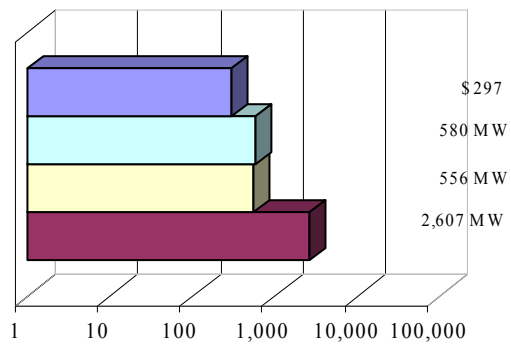
■ Max Demand □ Net Import
 □ Net Import limit ■ Spot Price

Figure 13: Victoria



■ Max Demand □ Net Import
 □ Net Import limit ■ Spot Price

Figure 14: South Australia



■ Max Demand □ Net Import
 □ Net Import limit ■ Spot Price

In Tasmania, demand reached a maximum of 1 227MW at 9am on Monday morning. The spot price at that time was \$34/MWh.

Price variations

There were 150 trading intervals where actual prices significantly varied from forecasts made 4 and 12 hours ahead of dispatch. Figures 15 to 19 show the difference in actual and forecast price versus the difference in actual and forecast demand. The figures highlight the correlation 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 15: Queensland

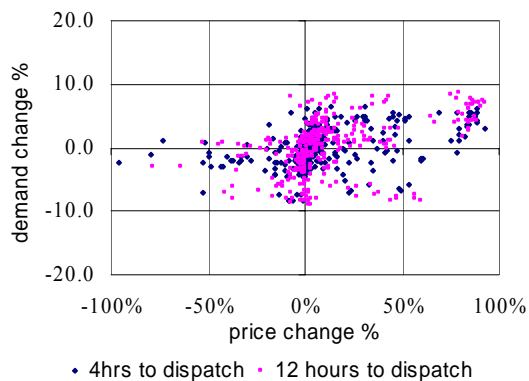


Figure 16: New South Wales

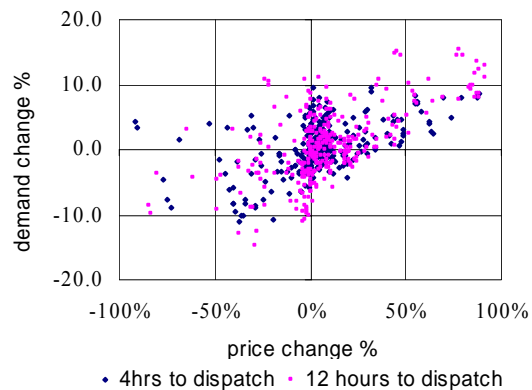


Figure 17: Victoria

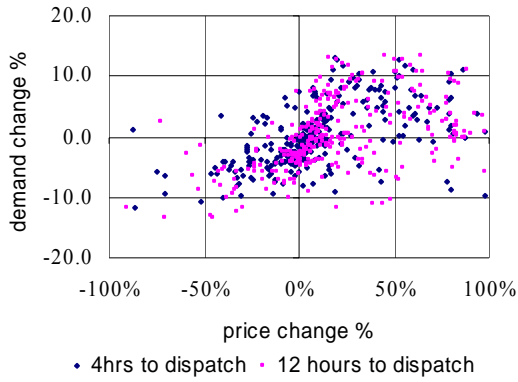


Figure 18: South Australia

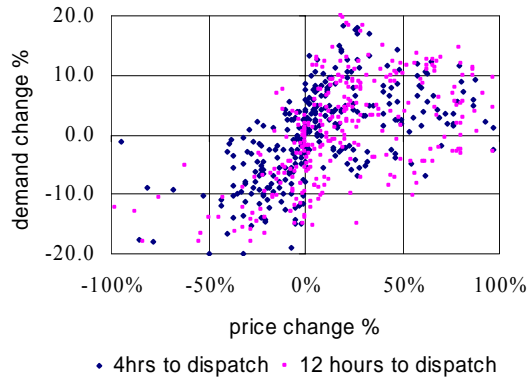


Figure 19: Tasmania

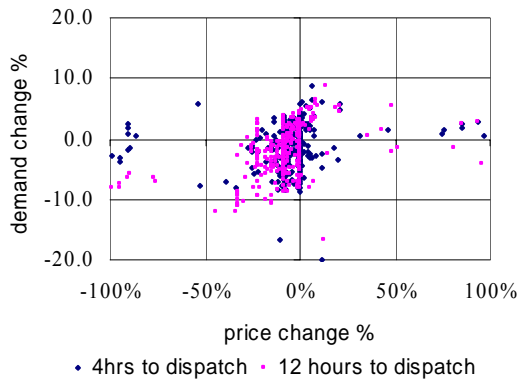
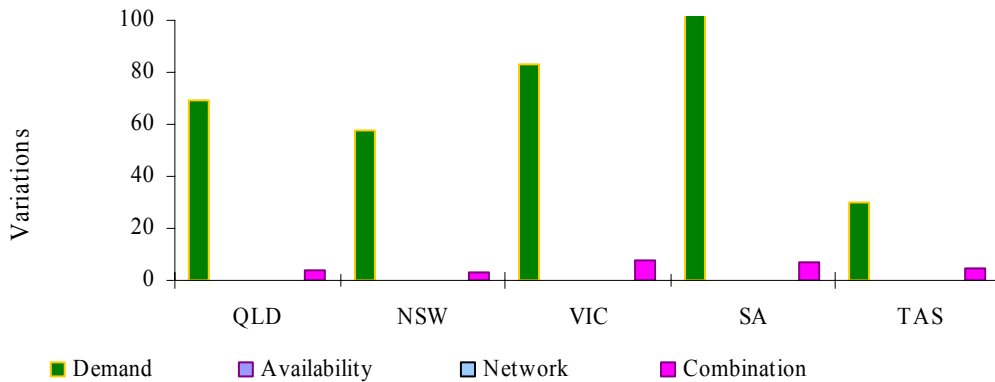


Figure 20 summarises the number and most probable reason for variations between forecast and actual prices.

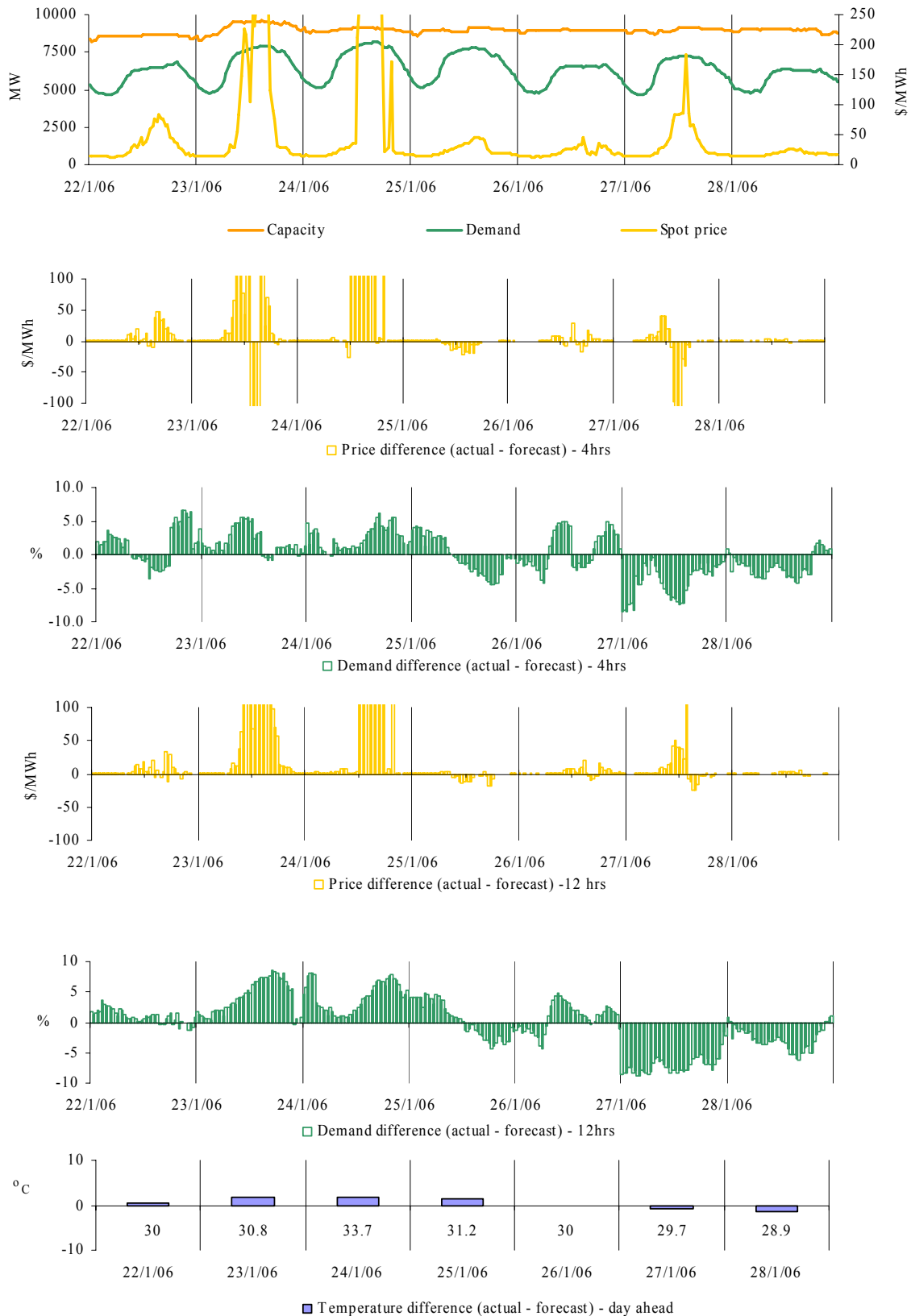
Figure 20: reasons for variations between forecast and actual prices



Price and demand

Figures 21 - 50 set out details of spot prices and demand on a regional basis. They include the actual spot price, actual demand outcomes and variation from forecasts made 4 and 12 hours ahead of dispatch on a daily basis. The differences between the maximum temperature and the temperature forecast at around 6.00 pm the day before are also included. Figures 51 - 55 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.

Figures 21-26: Queensland actual spot price, demand and forecast differences



There were 25 occasions in Queensland where the spot price was greater than three times the weekly average price of \$51/MWh. These occurred on Monday, Tuesday and Friday.

Monday, 23 January

11:00 am	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	225.73	25.20	24.90
Demand (MW)	7554	7141	7223
Available capacity (MW)	9456	9530	9582
11:30 am	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	216.71	26.87	25.92
Demand (MW)	7621	7247	7257
Available capacity (MW)	9531	9530	9582
12:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	160.26	83.38	29.48
Demand (MW)	7697	7286	7296
Available capacity (MW)	9514	9530	9582
1:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	251.91	18.67	38.05
Demand (MW)	7770	7537	7283
Available capacity (MW)	9487	9550	9552
1:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	231.89	124.75	38.46
Demand (MW)	7818	7565	7299
Available capacity (MW)	9490	9540	9552
2:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	284.11	3207.77	38.76
Demand (MW)	7826	7567	7308
Available capacity (MW)	9489	9540	9552
2:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	504.52	7535.53	38.29
Demand (MW)	7886	7895	7325
Available capacity (MW)	9530	9530	9552
3:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	295.38	4424.29	38.17
Demand (MW)	7873	7914	7296
Available capacity (MW)	9575	9530	9552
3:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	352.01	524.66	38.09
Demand (MW)	7860	7929	7298
Available capacity (MW)	9528	9580	9552
4:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	484.22	253.50	38.10
Demand (MW)	7876	7911	7299
Available capacity (MW)	9519	9562	9552

4:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	235.06	50.59	28.92
Demand (MW)	7858	7920	7294
Available capacity (MW)	9480	9538	9552

Conditions at the time saw demand forecasts, prepared prior to 10am, around 400MW lower than actual. A revision to the demand forecast at around this time, saw forecast demand close to actual for the rest of the day. Following this revision, and a rebid by New South Wales generator Macquarie Generation at 9.15am, prices were forecast above \$5000/MWh between 2pm and 4.30pm, peaking at \$8000/MWh at 3.30pm. Actual prices were significantly less, reaching a maximum of \$505/MWh at 2.30pm.

At 10.22am, Origin Energy shifted all 66 MW of available capacity at Roma from around \$9000/MWh to \$1/MWh. The reason given was “Estimated (n) change in PDS”.

At 11.57am, Stanwell shifted 95 MW of capacity at Stanwell units 1 and 4 from prices of less than \$20/MWh to over \$200/MWh. The rebid reason given was “manage interconnector constraint”. Just prior, the limit on flows south across QNI were reduced by around 300 MW to 550 MW. This reduction was not forecast.

At around 2.30pm Enertrade rebid as much as 70 MW of capacity at Mt Stuart from prices of more than \$1000/MWh to \$300/MWh. The reason given was “material change in market conditions::change MW distribution”.

There was no other significant rebidding.

Tuesday, 24 January

12:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	212.21	98.35	40.21
Demand (MW)	7902	7826	7759
Available capacity (MW)	9106	9096	9096
1:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	286.37	51.25	44.70
Demand (MW)	7962	7824	7758
Available capacity (MW)	9111	9096	9096
1:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	299.64	62.63	45.49
Demand (MW)	8031	7855	7793
Available capacity (MW)	9105	9076	9096
2:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	299.67	62.63	45.18
Demand (MW)	8099	7853	7793
Available capacity (MW)	9103	9076	9096

2:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	299.64	48.93	44.13
Demand (MW)	8124	7846	7789
Available capacity (MW)	9098	9081	9096
3:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	299.64	48.11	48.18
Demand (MW)	8139	7836	7782
Available capacity (MW)	9099	9071	9096
3:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	299.64	47.57	62.63
Demand (MW)	8133	7828	7777
Available capacity (MW)	9099	9106	9096
4:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	299.64	47.21	62.63
Demand (MW)	8189	7797	7750
Available capacity (MW)	9099	9106	9096
4:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	299.64	46.37	45.04
Demand (MW)	8234	7777	7731
Available capacity (MW)	9089	9106	9096
5:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	299.64	35.06	43.97
Demand (MW)	8205	7702	7658
Available capacity (MW)	9100	9087	9096
5:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	299.64	33.18	30.23
Demand (MW)	8121	7769	7552
Available capacity (MW)	9087	9075	9084
6:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	258.41	29.70	25.20
Demand (MW)	7964	7644	7438
Available capacity (MW)	9052	9044	9084
8:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	170.68	25.15	24.65
Demand (MW)	7829	7397	7232
Available capacity (MW)	9055	9059	9084

Conditions at the time saw demand reach a new record of 8234 MW¹, more than 500 MW higher than forecast 4 and 12 hours ahead. The temperature in Brisbane reached 34 degrees, 2 degrees higher than forecast the previous day.

At 12.27pm, Stanwell shifted 100 MW of capacity at Stanwell unit 1 from around \$15/MWh to over \$200/MWh. The rebid reason given as “rebid MW to other unit”. At the same time,

¹ This demand is taken from the market systems and is referred to as “initial supply”. Initial supply is a measurement of the demand at the start of a dispatch interval and is defined as the:

- sum of the scheduled generation measurements in the region; plus
- net measured interconnector flow into the region.

the available capacity of Stanwell units 2 and 3 was increased by 10 MW each. This capacity was priced at less than \$20/MWh. The rebid reason given was “Revised unit capability” and “Rebid MW to other unit”. At 1pm, a rebid across units 1 and 4 shifted 100 MW of capacity from \$200/MWh to over \$5000/MWh. The rebid reason given was “rebid MW to other unit”. At 2.17pm, effective 2.25pm this capacity was shifted to \$200/MWh. The rebid reason given was “demand return to predispach”.

At 12.19pm, Origin Energy rebid 62 MW of capacity at Roma power station from prices over \$9000/MWh to \$1/MWh. The reason given was “est (n) change in pds”.

Shortly after midday, Enertrade rebid 350MW of capacity at Gladstone from prices below \$60/MWh to \$282/MWh. The reason given was “portfolio rearrangement::change MW distribution”.

There was no other significant rebidding.

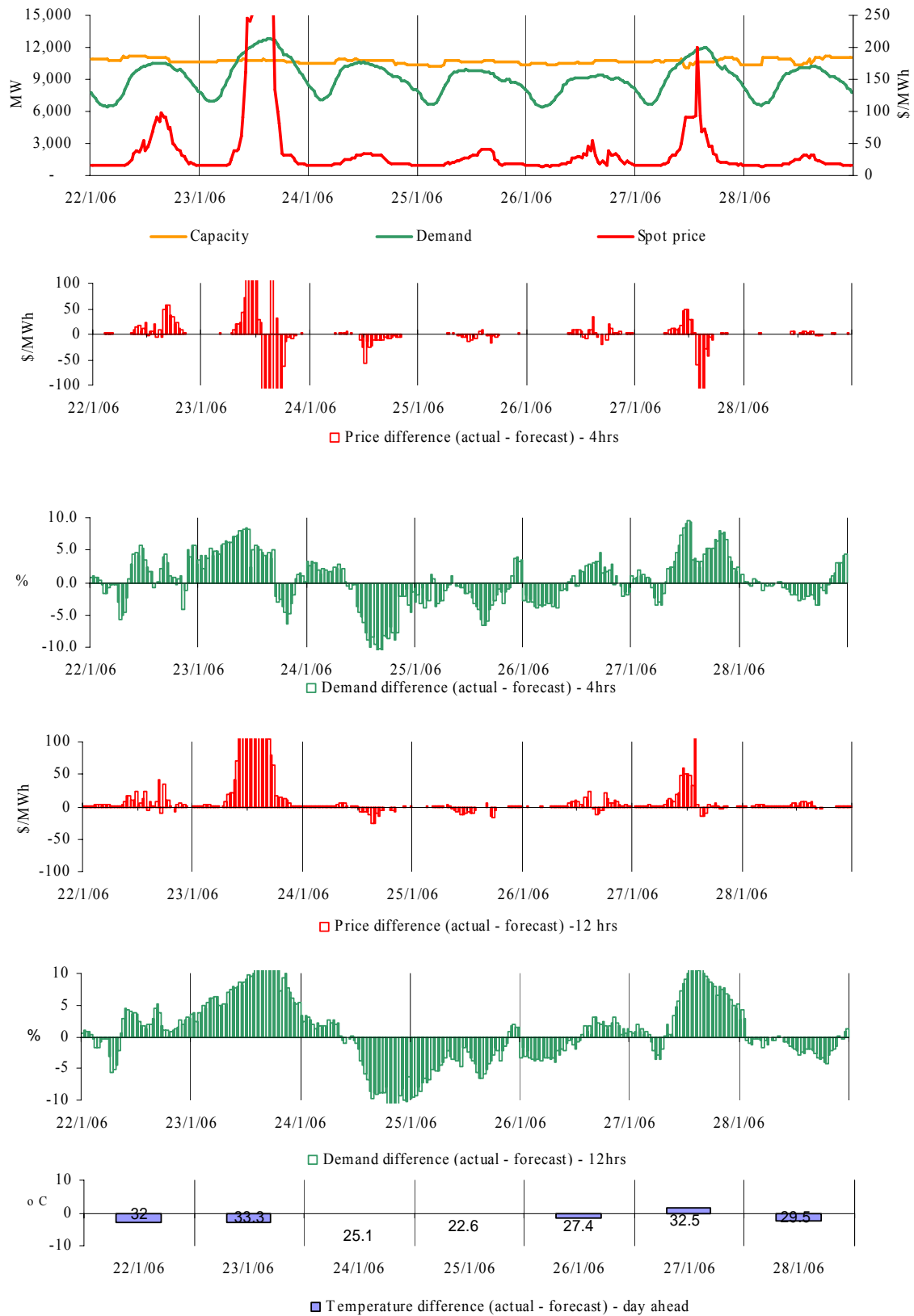
Friday, 27 January

2:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	183.71	280.58	80.38
Demand (MW)	7198	7712	7772
Available capacity (MW)	9121	8894	9059

Conditions at the time saw demand more than 500 MW lower than forecast four hours ahead. Price was lower than forecast and aligned with the rest of the mainland.

There was no significant rebidding.

Figures 27-32 New South Wales actual spot price, demand and forecast differences



There were 15 occasions in New South Wales where the spot price was greater than three times the weekly average price of \$45/MWh. These occurred on Monday and Friday.

Monday, 23 January

10:30 am	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	162.28	20.52	22.00
Demand (MW)	11 642	10 697	10 711
Available capacity (MW)	10 847	10 827	10 827
11:00 am	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	246.37	28.23	27.55
Demand (MW)	11 834	10 831	10 811
Available capacity (MW)	10 828	10 827	10 827
11:30 am	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	240.90	29.52	28.91
Demand (MW)	11 954	10 974	10 980
Available capacity (MW)	10 810	10 827	10 827
12:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	255.14	92.00	32.63
Demand (MW)	12 135	11 854	11 077
Available capacity (MW)	10 785	10 827	10 827
12:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	258.77	68.81	41.79
Demand (MW)	12 314	11 691	11 191
Available capacity (MW)	10 785	10 827	10 827
1:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	269.65	241.71	42.15
Demand (MW)	12 441	11 730	11 221
Available capacity (MW)	10 785	10 827	10 827
1:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	251.90	229.50	42.62
Demand (MW)	12 519	11 833	11 315
Available capacity (MW)	10 791	10 827	10 827
2:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	298.97	4177.41	42.63
Demand (MW)	12 594	11 959	11 342
Available capacity (MW)	10 820	10 847	10 827
2:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	529.95	7715.07	42.41
Demand (MW)	12 670	12 076	11 283
Available capacity (MW)	10 846	10 847	10 827
3:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	312.06	4564.92	42.30
Demand (MW)	12 740	12 216	11 267
Available capacity (MW)	10 838	10 847	10 827

3:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	375.52	574.70	42.19
Demand (MW)	12 781	12 259	11 226
Available capacity (MW)	10 802	10 809	10 827
4:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	516.46	269.46	42.19
Demand (MW)	12 823	12 221	11 182
Available capacity (MW)	10 800	10 785	10 827
4:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	255.85	716.62	32.49
Demand (MW)	12 744	12 267	11 000
Available capacity (MW)	10 810	10 785	10 827
5:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	134.65	104.16	30.43
Demand (MW)	12 638	12 011	10 805
Available capacity (MW)	10 803	10 785	10 827

Conditions at the time saw demand reaching a maximum of more than 12 700 MW within 200 MW of the summer record. Demand was up to 1800 MW, or 15 per cent, higher than forecast 12 hours ahead and as much as 1000 MW higher than forecast four hours ahead. The temperature in Sydney peaked at 33 degrees, 3 degrees lower than forecast the previous day.

Macquarie Generation presented, through its day-ahead offer, 695 MW of capacity at prices of more than \$4700/MWh between midday and 5pm. Of this capacity, 410 MW was presented at prices of less than \$20/MWh at other times of the day. Over a number of rebids made during the day, as much as 350 MW of capacity was shifted from prices of less than \$100/MWh to above \$5000/MWh. The rebid reasons included “Sensitivities have changes”, “NEMMCO load forecast changed” and “Snowy output increased”.

There was no other significant rebidding.

Friday, 27 January

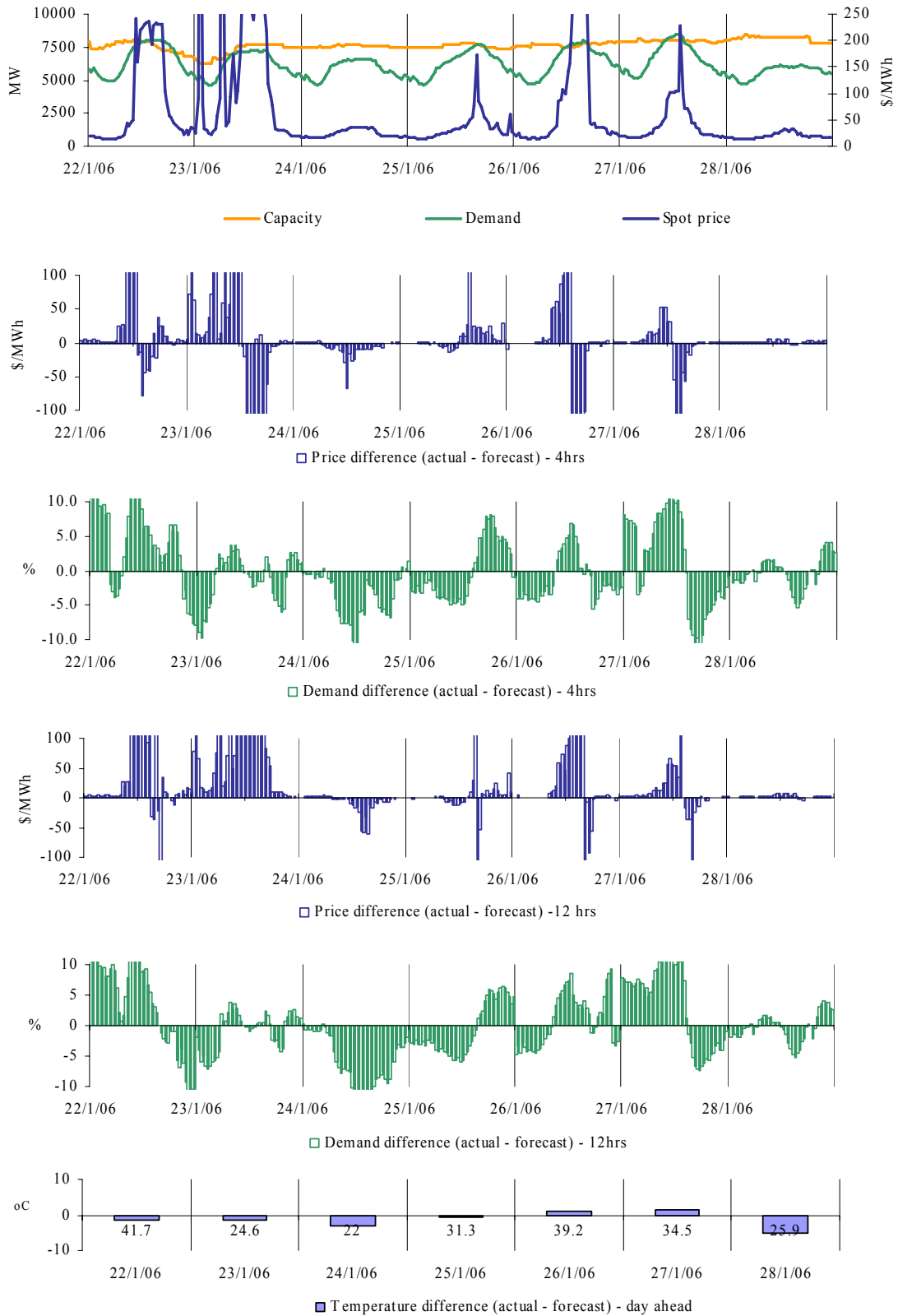
2:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	200.76	261.56	76.12
Demand (MW)	11 787	11 376	10 505
Available capacity (MW)	10 622	10 742	10 807

Conditions at the time saw demand 400 MW higher than forecast four hours ahead and nearly 1300 MW higher than forecast 12 hours ahead. The temperature peaked at 33 degrees, 2 degrees higher than forecast the day before.

At around 10am, Delta Electricity reduced the availability of Munmorah by 100 MW, of which 70 MW was priced at less than \$20/MWh. At the same time, 200 MW of capacity across Vales Point was shifted from prices of more than \$9000/MWh to below \$20/MWh. The rebid reason given was “Spot price change::Band shift”. At 11.41am, 30 MW of capacity at Vales Point was shifted from prices below \$20/MWh to above \$9000/MWh. The rebid reason given was “FF Gland::Band shift”.

There was no other significant rebidding.

Figures 33-38: Victoria actual spot price, demand and forecast differences



There were 8 occasions in Victoria where the spot price was greater than three times the weekly average price of \$117/MWh. These occurred on Monday and Thursday afternoon.

Monday, 23 January

1:30 am	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	861.93	19.56	16.14
Demand (MW)	5 223	5 738	5 530
Available capacity (MW)	6 267	6 735	7 535
6:30 am	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	846.60	21.75	18.20
Demand (MW)	5 912	5 871	5 869
Available capacity (MW)	6 636	7 082	7 793

Conditions at the time saw demand around 500 MW lower than forecast four hours ahead at 1.30am and close to forecast at 6.30am. Between 1am and 1.15am, hot water heating saw demand rapidly increased by 400 MW. This increase coincided with reductions in available capacity, and low priced capacity at LYMMCO's Loy Yang A and International Power's Loy Yang B. These reductions lasted for most of the morning.

At around 12.30am, International Power reduced the available capacity at Loy Yang B by 420 MW, all but 20 MW of this capacity was priced at less than \$10/MWh. The rebid reason given was "Changing plant conditions". This was extended at around 5.06am.

Over two rebids, at 12.51am and 1.00am, LYMMCO shifted a total of 450 MW from prices of less than zero to above \$4000/MWh. The rebid reason given for the bids was "coal conservation". Similar rebids at 5.13am and 6.00am, shifted 880 MW of capacity at Loy Yang A from prices below \$15/MWh to over \$4000/MWh. The rebid reason was "revised coal conservation requirements".

TRU Energy's Yallourn units 1 and 2 were shutdown the previous afternoon, removing around 700 MW from the market. These units remained offline on Monday, with unit 1 returning on Thursday and unit 2 on Friday. The rebid reasons given for the shutdowns were "Coal problems::no availability" and "Unit trip" respectively.

There was no other significant rebidding.

Monday, 23 January

2:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	468.75	8076.62	46.67
Demand (MW)	7 199	7 312	7 168
Available capacity (MW)	7 667	7 608	7 787

Demand and available capacity were closely aligned at this time. Prices were, however, much lower than forecast 4 hours ahead.

From 10.30am, Snowy Hydro shifted 257 MW of capacity at Valley Power from prices above \$9000/MWh to around \$100/MWh, committing four units from 1pm. The rebid reason given was "Chng PD \$VIC SNY HGHR THAN EXPTD:BND DN".

At 11.24am, Ecogen shifted 157 MW of capacity at Jeeralang B from prices of more than \$4000/MWh to less than \$60/MWh. The rebid reason given was "NPS Reliable – setting profile for JPS".

At 2.20pm, LYMMCO rebid 80 MW of capacity at Loy Yang A from prices of less than \$55/MWh to around \$4100/MWh. The reason given was “changing PD”

There was no other significant rebidding.

Thursday, 26 January

2:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	1318.31	87.00	100.40
Demand (MW)	7 741	7 440	7 445
Available capacity (MW)	7 516	7 714	7 935
2:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	606.27	272.00	131.73
Demand (MW)	7 755	7 736	7 532
Available capacity (MW)	7 553	7 694	7 935
3:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	7416.16	9274.45	250.39
Demand (MW)	7 834	7 808	7 568
Available capacity (MW)	7 612	7 607	7 935
3:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	1235.73	7251.49	272.80
Demand (MW)	7 829	7 870	7 611
Available capacity (MW)	7 681	7 526	7 935
4:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	3627.98	6799.97	1032.84
Demand (MW)	8 011	7 928	7 691
Available capacity (MW)	7 760	7 839	7 866

Conditions on Australia day saw demand in Victoria and South Australia at high levels for a public holiday and around 300 MW higher than forecast. The temperature reached 40 degrees, slightly higher than forecast in both Victoria and South Australia. At times, there was only 400 MW of available capacity priced between \$100/MWh and \$5000/MWh in Victoria.

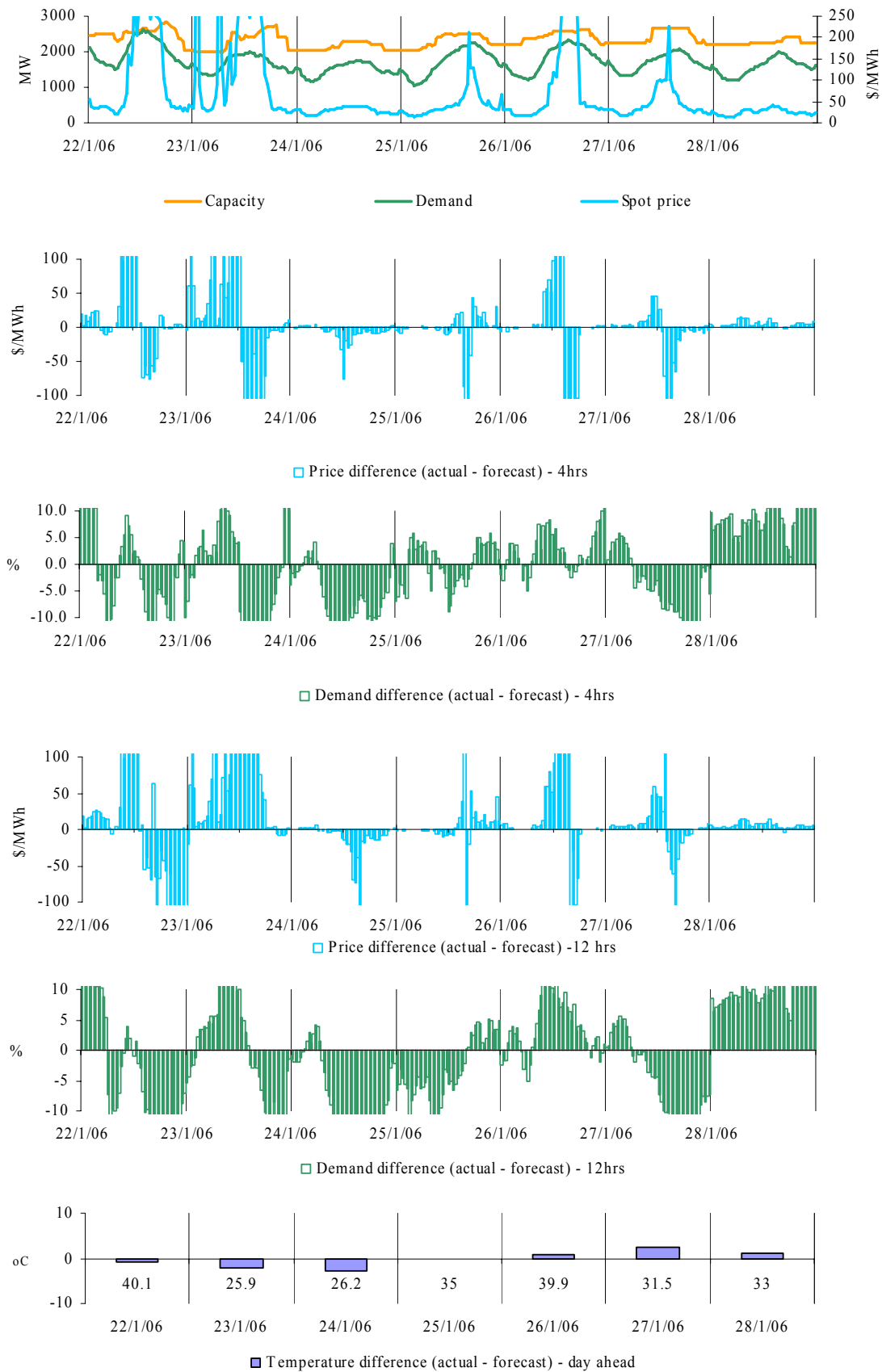
From 6am, AGL shifted 150 MW of capacity at Somerton from prices above \$9000/MWh to zero. The rebid reason given was “Predispatch: forecast price increase::Commit”.

At 10.20am, International Power shifted 230 MW of capacity at Loy Yang B from prices of less than \$100/MWh to prices above \$250/MWh. The rebid reason given was “Change in SA/VIC PD demand price”. At 1.27pm, this capacity was further shifted to prices above \$9000/MWh. The rebid reason given was “Dispatch / 5MPD prices below PD forecast”.

At around 10.30am, TRU Energy reduced the availability at Yallourn by 80 MW. All of this capacity was priced at less than \$10/MWh. The rebid reason given was “Vacuum limit:::Reduce availability”.

There was no other significant rebidding.

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



There were 8 occasions in South Australia where the spot price was greater than three times the weekly average price of \$132/MWh. These occurred on Monday and Thursday.

Monday, 23 January

1:30 am	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	870.51	30.43	30.90
Demand (MW)	1 513	1 549	1 554
Available capacity (MW)	2 015	2 050	1 731
6:30 am	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	844.50	29.60	28.30
Demand (MW)	1 494	1 475	1 427
Available capacity (MW)	2 013	2 029	2 226
2:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	464.27	9351.30	52.82
Demand (MW)	1 941	2 400	1 928
Available capacity (MW)	2 433	2 526	2 344

Conditions at the time were close to forecast and aligned with Victoria. Two TRU Energy Yallourn units and an NRG Flinders' Northern unit had been offline since the night before. This represented a reduction in available capacity of almost 1000 MW compared to the previous day. These units were not all returned to service until the following Friday.

By midday, demand was around 450 MW lower than forecast. Prices remained aligned with Victoria.

Thursday, 26 January

2:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	1355.94	91.33	115.38
Demand (MW)	2 255	2 204	2 098
Available capacity (MW)	2 592	2 596	2 536
2:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	644.81	287.22	149.00
Demand (MW)	2 288	2 220	2 106
Available capacity (MW)	2 573	2 594	2 536
3:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	7758.08	9688.35	278.79
Demand (MW)	2 326	2 277	2 107
Available capacity (MW)	2 590	2 594	2 536
3:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	1271.78	7615.30	299.00
Demand (MW)	2 272	2 286	2 112
Available capacity (MW)	2 594	2 589	2 536
4:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	3661.14	7142.91	1120.46
Demand (MW)	2 254	2 281	2 112
Available capacity (MW)	2 587	2 589	2 536

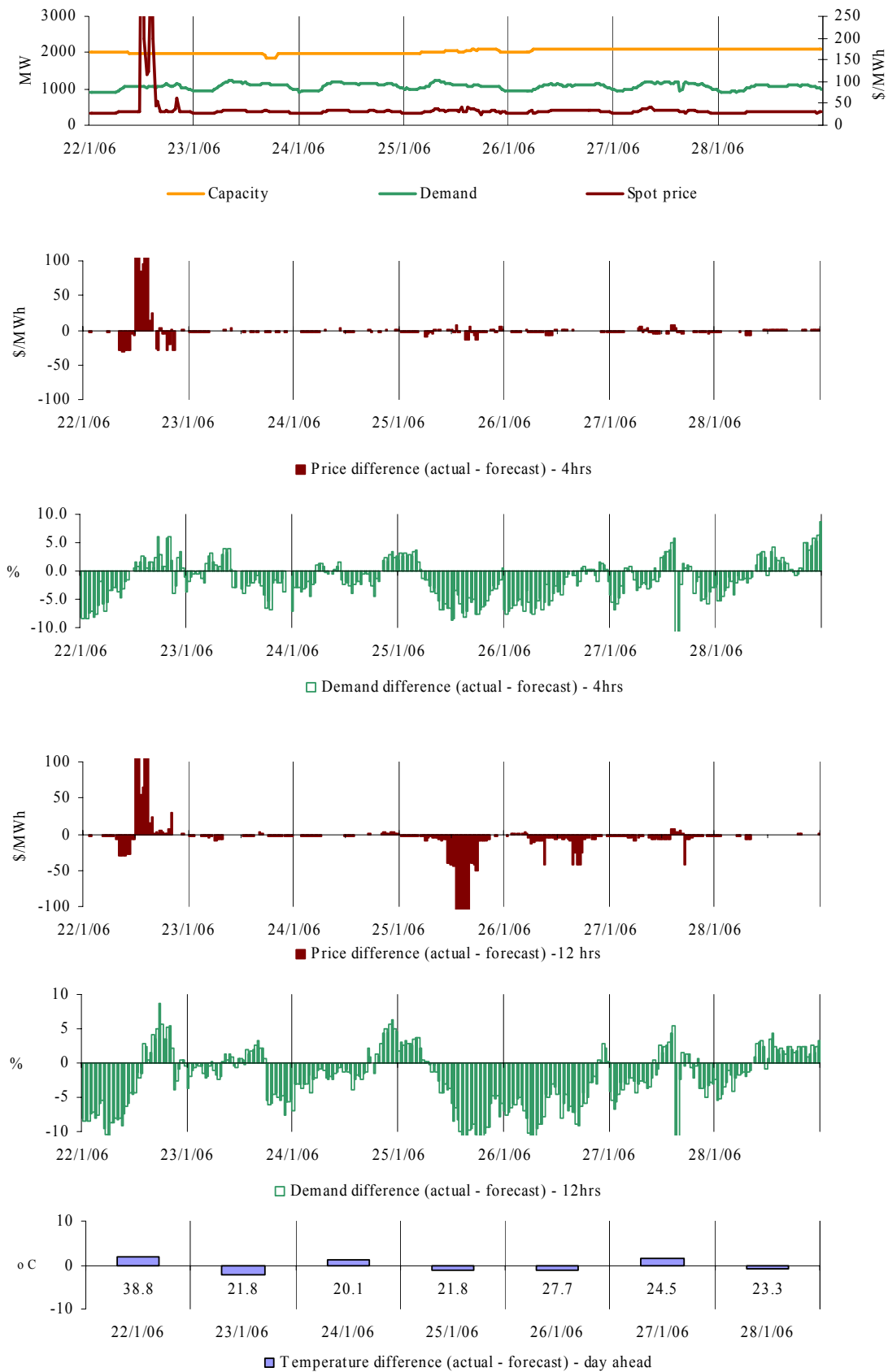
Conditions on Australia Day saw the temperature reach around 40 degrees in both South Australia and Victoria and slightly higher than forecast. Prices in South Australia were aligned with Victoria. There was no capacity offered in South Australia priced between \$150/MWh and \$5000/MWh during this period.

From 6am, AGL shifted 100 MW of capacity at Hallet from prices above \$9000/MWh to zero. The rebid reason given was “Predispatch: forecast price increase: bid generation to market to cover position”. At 10.15am a further 40 MW was shifted from prices above \$9000/MWh to \$320/MWh. The rebid reason given was “Predispatch:forecast price increase”.

At 6.44am, TRU Energy shifted 200 MW of capacity at Torrens Island from prices of more than \$300/MWh to \$55/MWh or less. The rebid reason given was “Market conditions – Gen response to PD Conditions”.

There was no significant rebidding.

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



There were 6 occasions in Tasmania where the spot price was greater than three times the weekly average price of \$37/MWh. These all occurred on Sunday.

Sunday, 22 January

12:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	910.96	29.50	37.02
Demand (MW)	1052	1046	1097
Available capacity (MW)	1953	1953	1953
1:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	198.85	29.50	37.02
Demand (MW)	1056	1038	1070
Available capacity (MW)	1953	1953	1953
1:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	115.26	29.50	60.00
Demand (MW)	1042	1033	1066
Available capacity (MW)	1953	1953	1953
2:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	124.53	29.50	60.00
Demand (MW)	1048	1031	1064
Available capacity (MW)	1953	1953	1953
2:30 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	434.70	29.50	29.50
Demand (MW)	1061	1032	1032
Available capacity (MW)	1953	1953	1953
3:00 pm	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	199.27	29.50	29.50
Demand (MW)	1058	1033	1033
Available capacity (MW)	1953	1953	1953

Conditions at the time saw demand and available capacity close to forecast. The combined effect of a network limitation and a tight supply curve for 6 second raise ancillary services resulted in around 500 MW of low priced capacity not dispatched. Prices for raise 6 second services peaked at \$10 000/MW during this period, with the 5-minute energy price peaking at \$4530/MWh.

There was no significant rebidding.

Figure 51: Queensland closing bid prices, dispatched generation and spot price

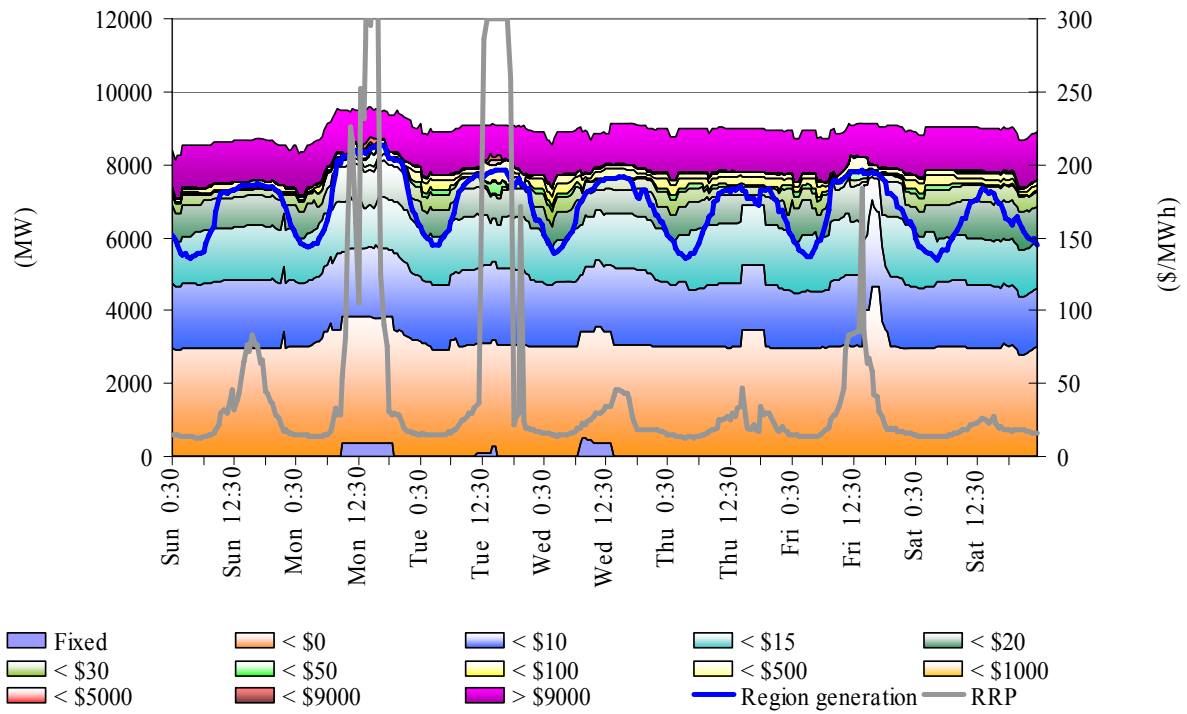


Figure 52: New South Wales closing bid prices, dispatched generation and spot price

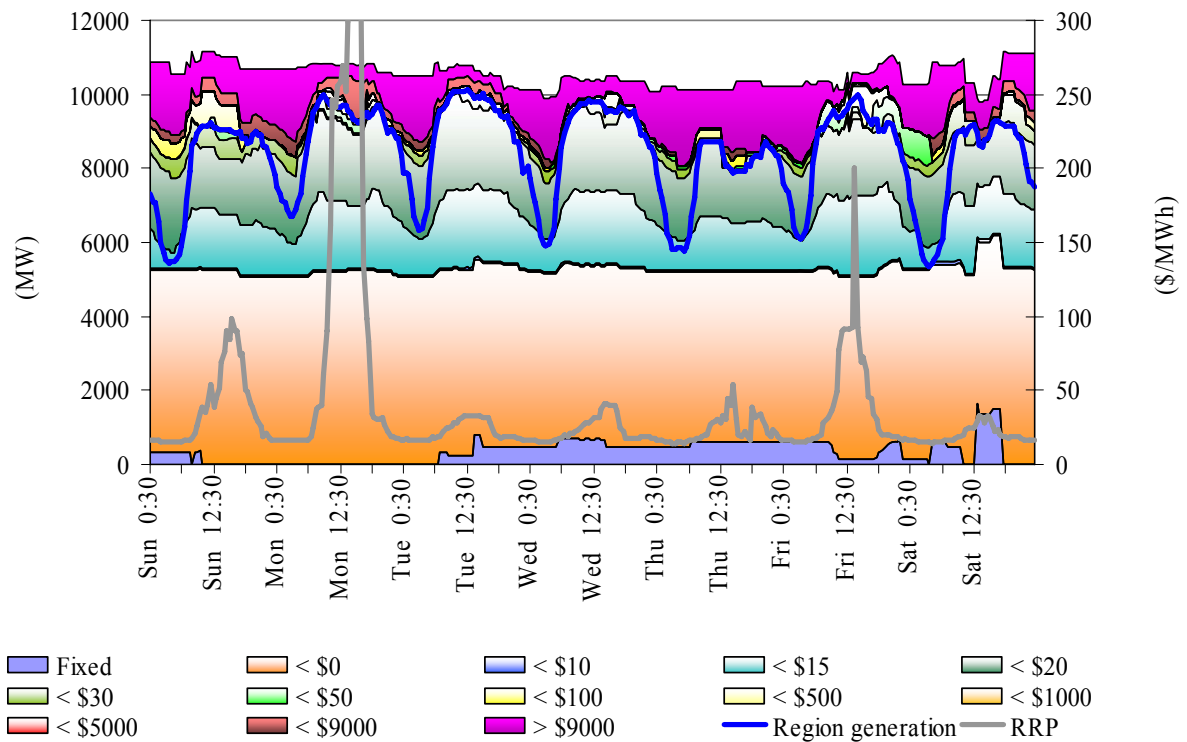


Figure 53: Victoria closing bid prices, dispatched generation and spot price

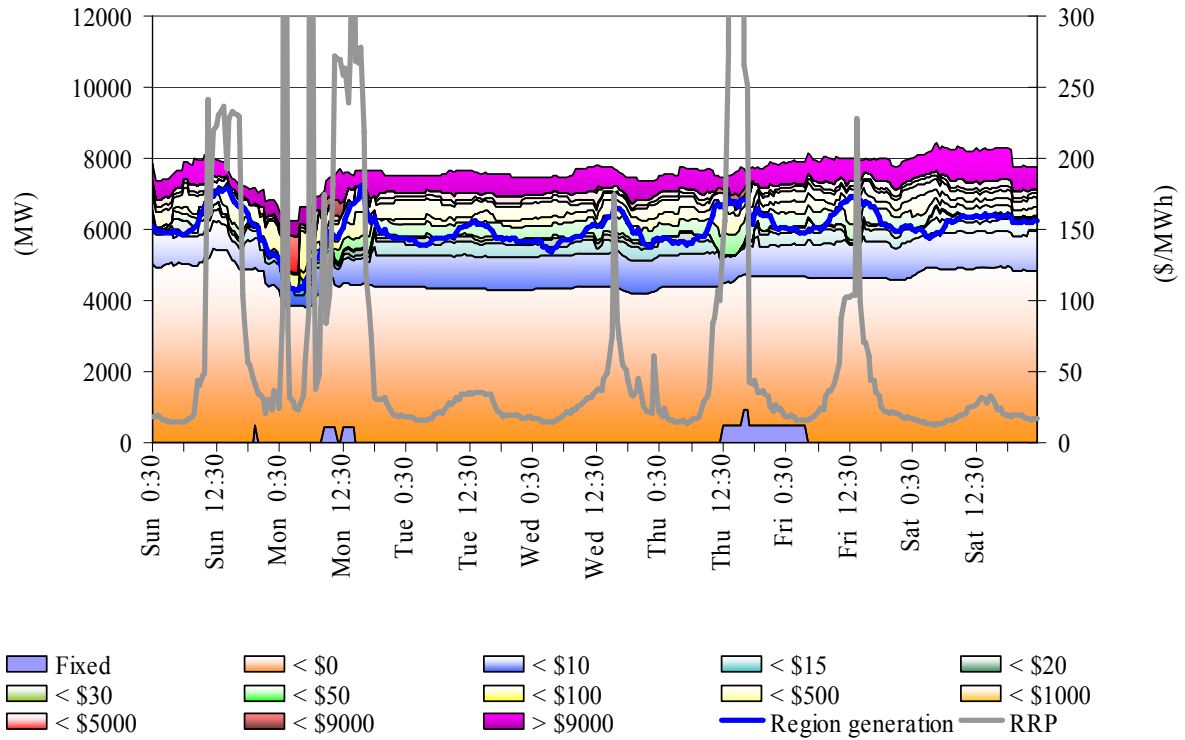


Figure 54: South Australia closing bid prices, dispatched generation and spot price

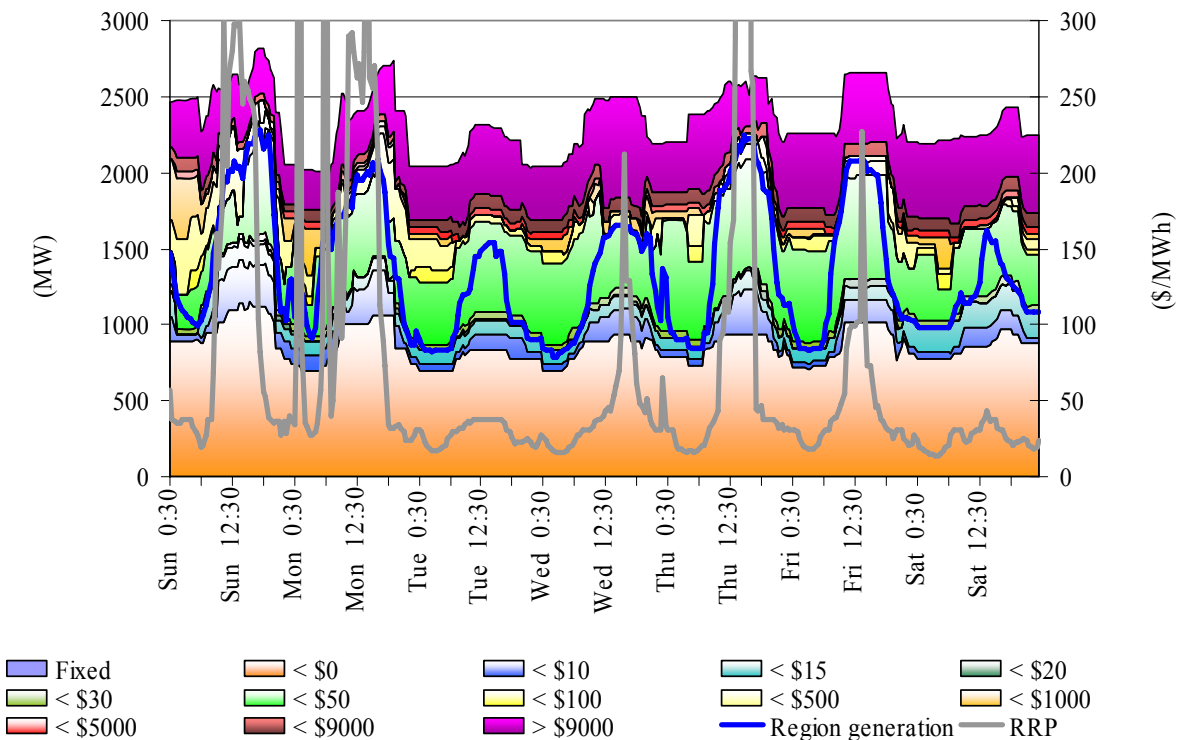
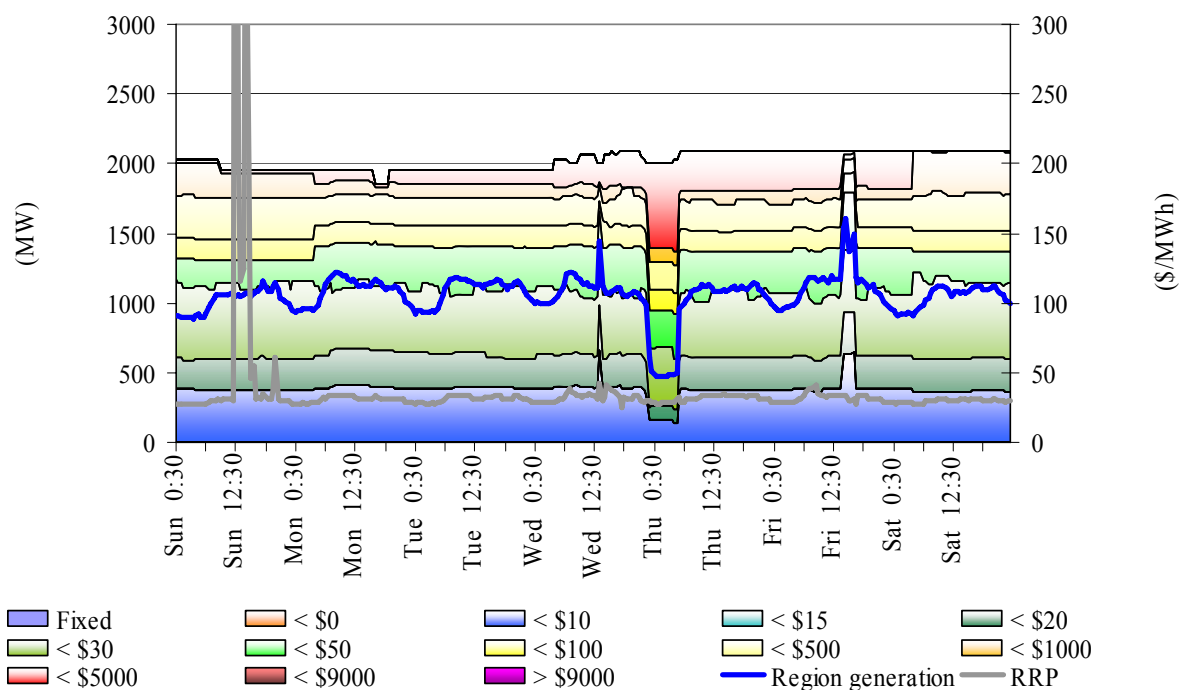


Figure 55: Tasmania closing bid prices, dispatched generation and spot price



Ancillary service market

The total cost of ancillary services on the mainland for the week was around \$240 000 or less than 0.1 per cent of the total turnover in the energy market. Figure 56 summarises the volume weighted average prices and costs for the eight frequency control ancillary services across the interconnected regions.

Figure 56: frequency control ancillary service prices and costs

	Raise 6 sec	Raise 60 sec	Raise 5 min	Raise reg	Lower 6 sec	Lower 60 sec	Lower 5 min	Lower reg
Last week	0.78	0.54	1.72	1.11	0.17	0.19	0.30	1.25
Previous week	0.44	0.31	0.87	0.69	0.17	1.40	3.25	1.47
Last quarter	1.76	0.73	1.15	1.54	0.39	2.28	5.00	1.93
Market Cost (\$1000s)	36	26	117	24	1	1	4	27
% of energy market	0.01%	0.01%	0.04%	0.01%	0.00%	0.00%	0.00%	0.01%

The total cost of ancillary services in Tasmania for the week was \$500 000 or 7.5 per cent of the total turnover in the energy market in Tasmania. High prices for the raise 6 second service on Sunday, following a network limitation and an increased requirement for the same service on Thursday morning, saw this service account for three quarters of the total cost for the week. Figure 57 summarises for Tasmania the prices and costs for the eight frequency control ancillary services.

Figure 57: 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	38.30	0.25	0.25	1.66	0.26	0.25	0.25	10.06
Previous week	7.53	0.45	0.47	0.52	0.54	0.49	0.50	0.63
Last quarter	7.89	1.05	1.05	1.58	4.43	1.06	1.06	1.97
Market Cost (\$1000s)	380	3	3	14	4	8	6	84
% of energy market	5.78%	0.04%	0.04%	0.21%	0.06%	0.12%	0.09%	1.28%

Figure 58 shows the daily breakdown of cost for each frequency control ancillary service.

Figure 58: daily frequency control ancillary service costs

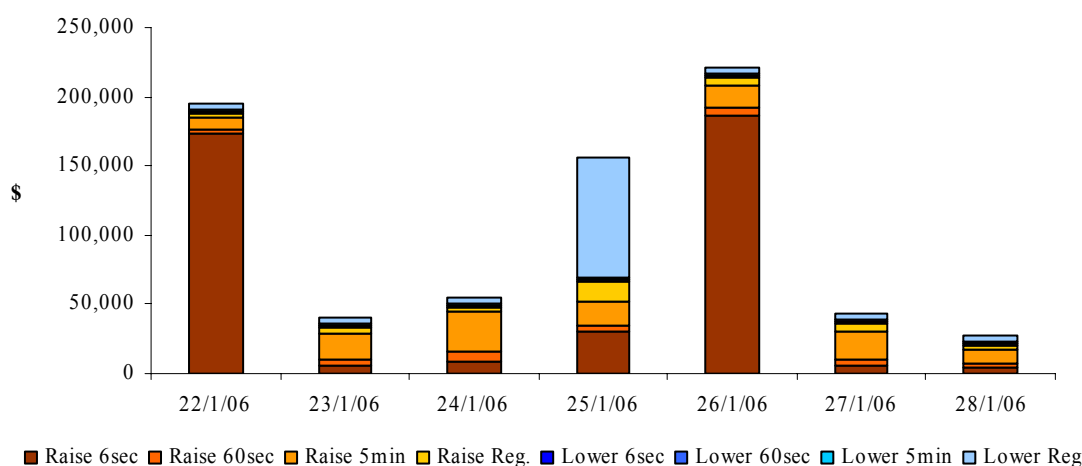
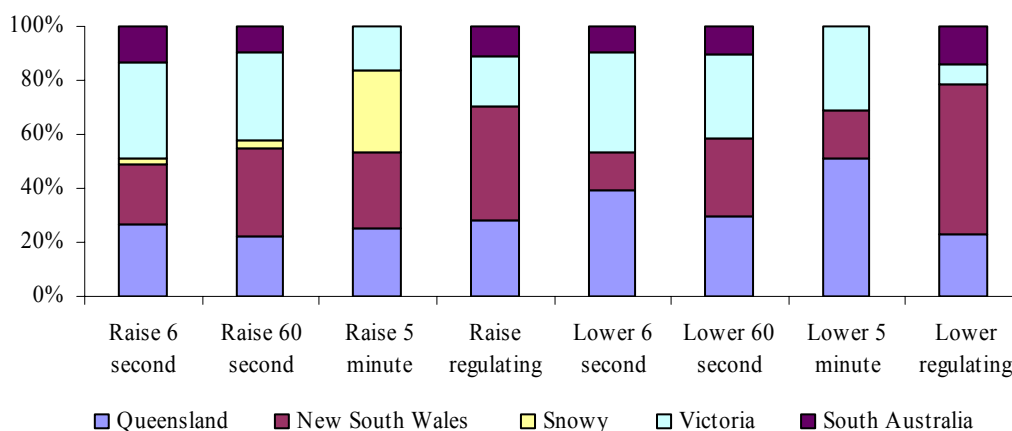


Figure 59 shows the contribution, on a percentage basis, that frequency control ancillary service providers are utilised (in each mainland region) to satisfy the total requirement for each service.

Figure 59: regional participation in ancillary services on the mainland



Figures 60 and 61 show 30-minute prices for each frequency control ancillary service throughout the week.

Figure 60: prices for raise services

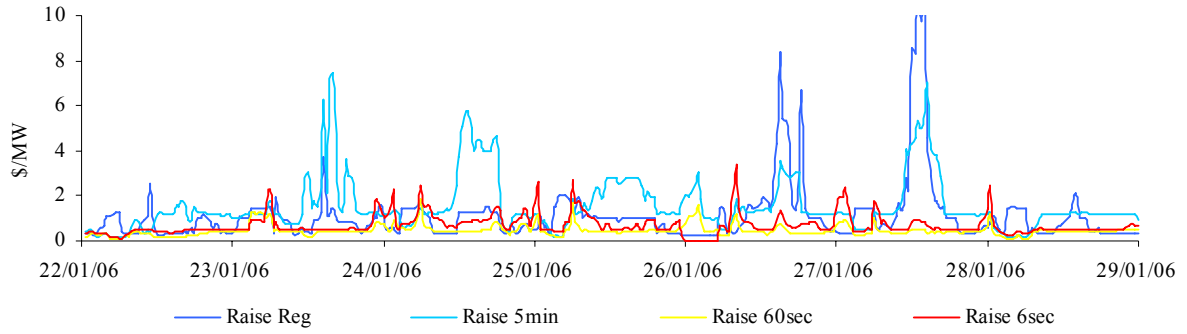


Figure 60A: prices for raise services - Tasmania

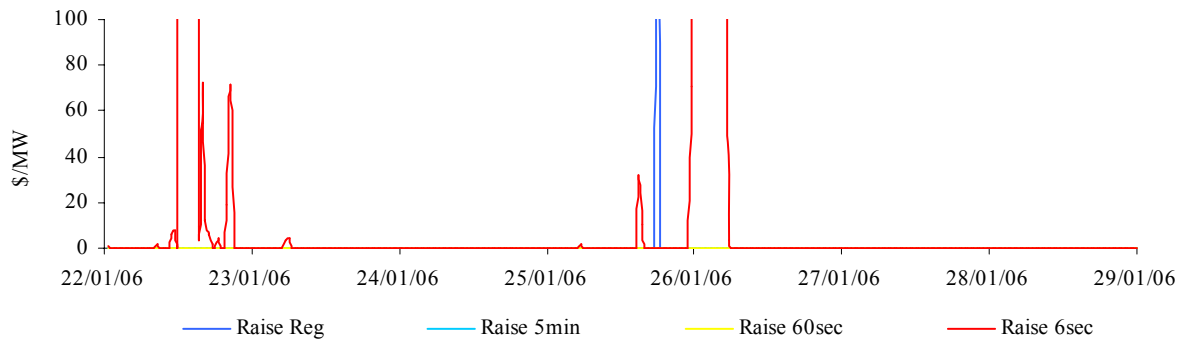


Figure 61: prices for lower services

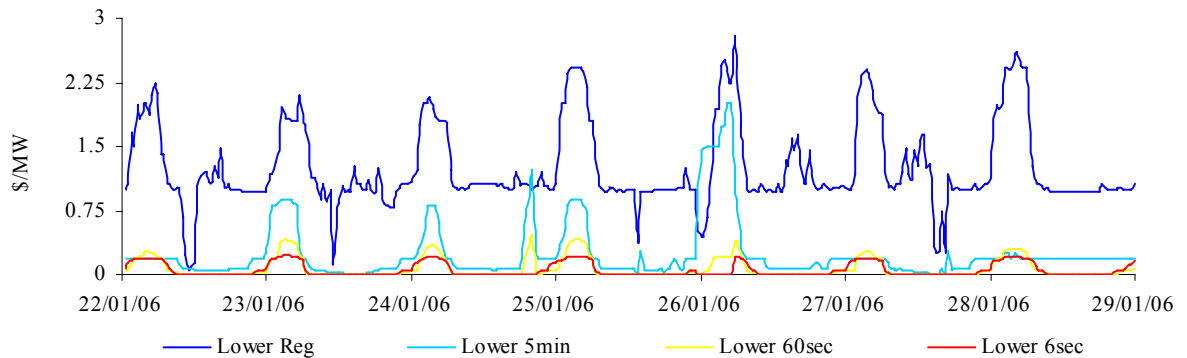
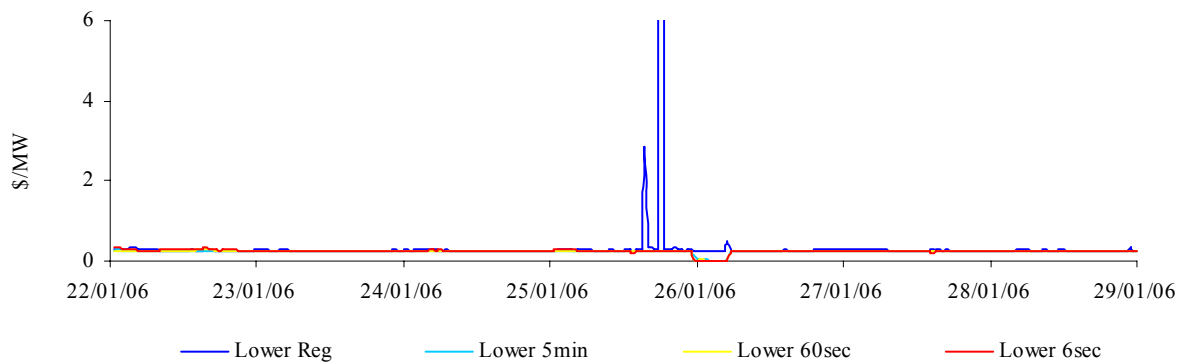


Figure 61A: prices for lower services - Tasmania



Figures 62 and 63 present for both raise and lower frequency control services the requirement, established by NEMMCO, for each service to satisfy the frequency standard.

Figure 62: raise requirements

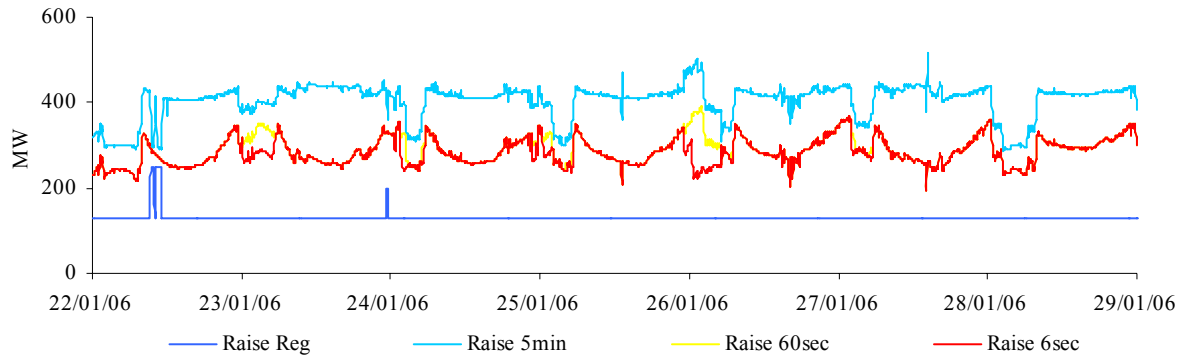


Figure 62A: raise requirements - Tasmania

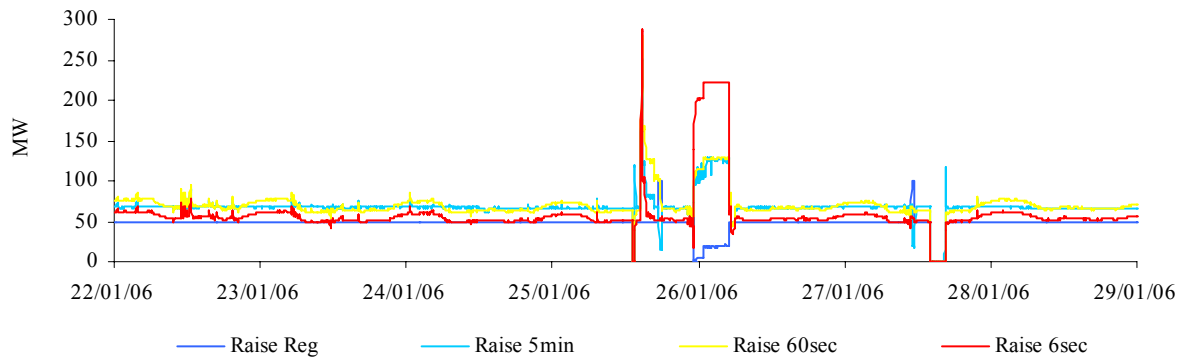


Figure 63: lower requirements

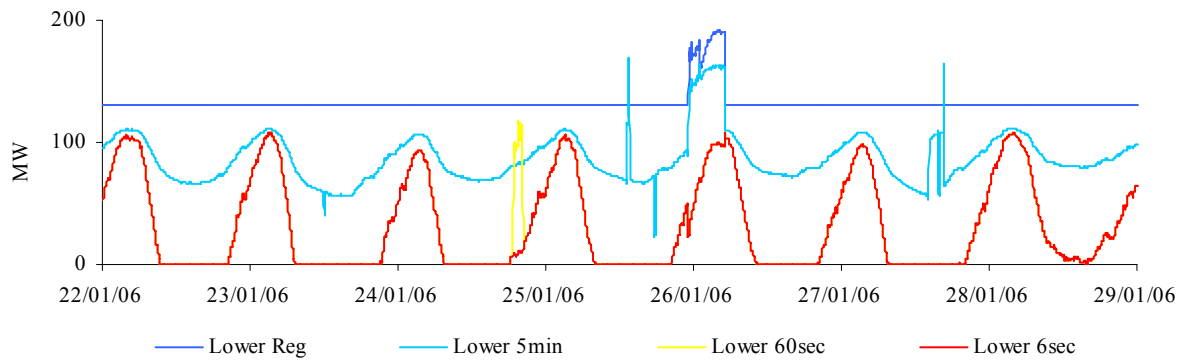


Figure 63A: lower requirements - Tasmania

