Market analysis

AUSTRALIAN ENERGY REGULATOR

18 - 24 DECEMBER 2005

Generally warmer temperatures led to increases in demand in New South Wales and South Australia. Demand in Queensland, although down on the previous week remained high. Spot prices averaged $22/MWh in Victoria, $24/MWh in Queensland, $29/MWh in New South Wales and $31/MWh in South Australia.

In Tasmania the price averaged $39/MWh, the lowest since joining the national market. This was despite a single five-minute price spike of $8 000/MWh on Thursday morning.

Turnover in the energy market for the mainland was $100 million. The total cost of ancillary services for the week was around $190 000, or 0.2 per cent of turnover. Turnover in Tasmania for the week was $7 million with the cost of ancillary services totaling $260 000 or 4 per cent of turnover.

Significant variations between actual prices and those forecast 4 and 12 hours ahead occurred in 70, or 21 per cent of all trading intervals. Demand forecasts produced 4 and 12 hours ahead varied from actual by more than 5 per cent in more than a third of all trading intervals across the market. These variations were most frequent in South Australia occurring in around two thirds 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

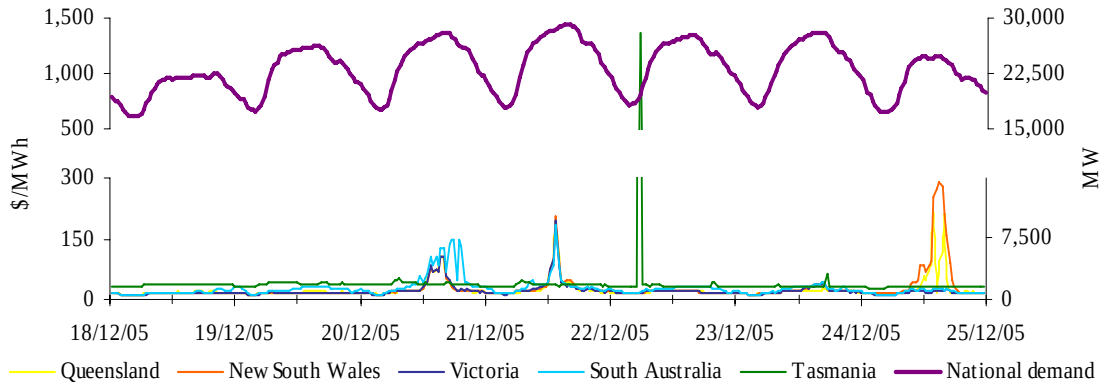


Figure 2: volume weighted average spot price for energy market ($/MWh)

	QLD	NSW	VIC	SA	TAS
Last week	24	29	22	31	39
Previous week	21	20	19	45	49
Same quarter last year	48	90	38	54	-
Financial year to date	30	48	29	36	86
% change from previous week	▲13%	▲50%	▲16%	▼30%	▼20%
% change from same quarter last year	▼49%	▼68%	▼42%	▼42%	-
% change from year to date	▼21%	▼21%	▼14%	▼21%	-

Figure 3: volatility index during peak periods

	QLD	NSW	VIC	SA	TAS
Last week	0.87	1.08	0.99	0.80	0.23
Previous week	0.60	0.52	0.56	0.80	0.25
Same quarter last year	1.13	1.23	0.96	0.77	-

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

Figure 4: Queensland

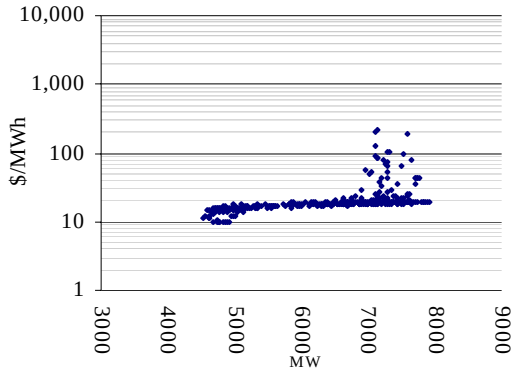


Figure 5: New South Wales

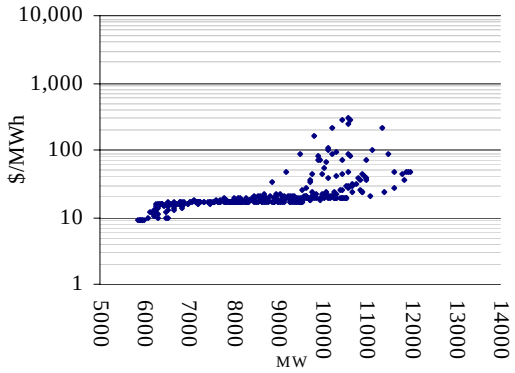


Figure 6: Victoria

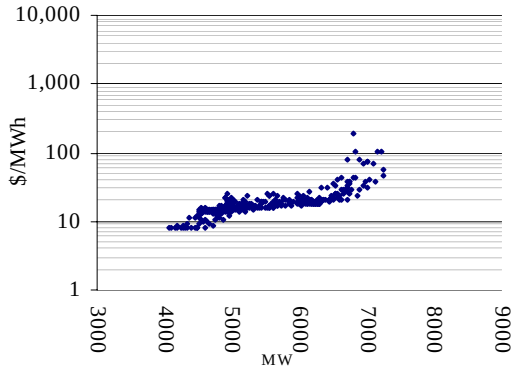


Figure 7: South Australia

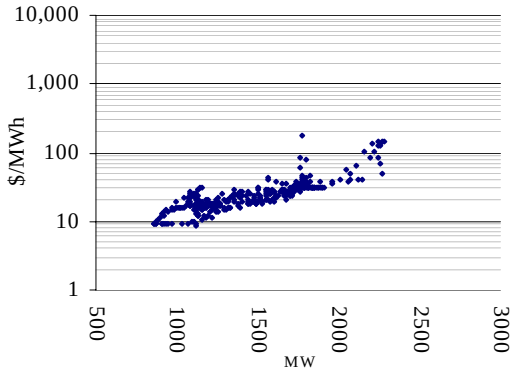
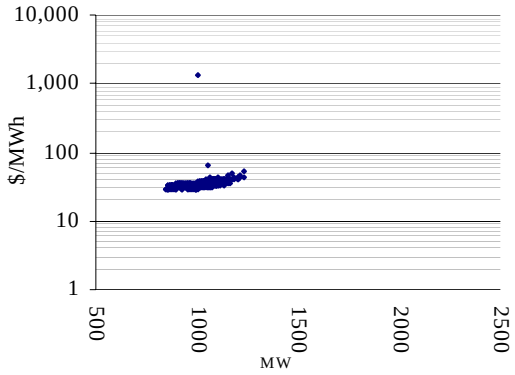


Figure 8: Tasmania



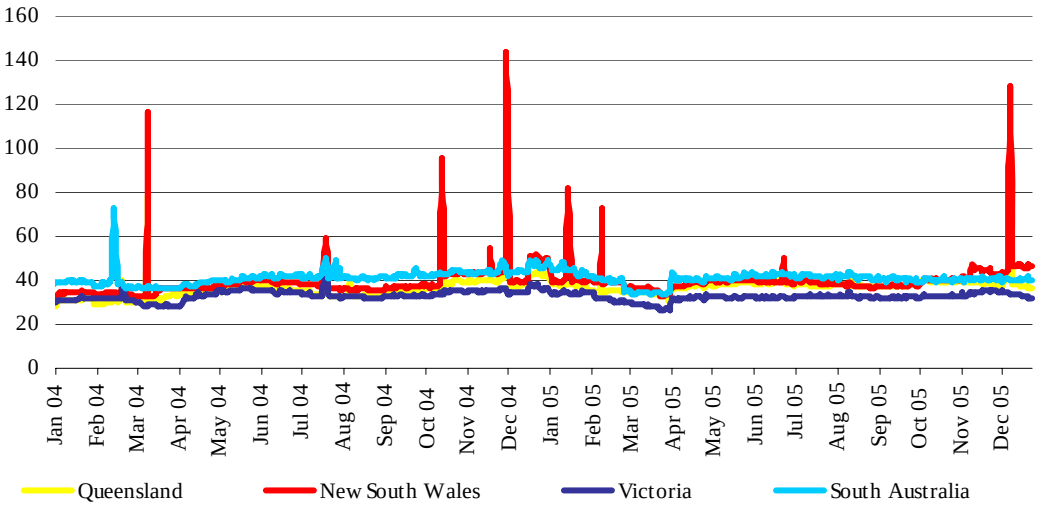
The maximum spot price for the week was $218/MWh in Queensland and $291/MWh in New South Wales on Saturday, and $192/MWh in Victoria and $182/MWh in South Australia on Wednesday. In Tasmania, the highest price for the week was recorded at 5.30am on Thursday reaching $1 363/MWh.

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	36.87	36.59	37.01	36.73	36.70
New South Wales	45.61	46.32	47.47	46.23	46.41
Victoria	32.79	32.43	32.12	31.75	32.24
South Australia	40.98	41.99	40.33	40.06	39.87

Figure 10: d-cyphaTrade WEPI



Reserve

There were no low reserve conditions forecast for the week. A number of directions occurred during the week to manage local network issues in northern New South Wales and around the Gold Coast. The directions occurred on Sunday, Wednesday, Thursday, Friday and Saturday. 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

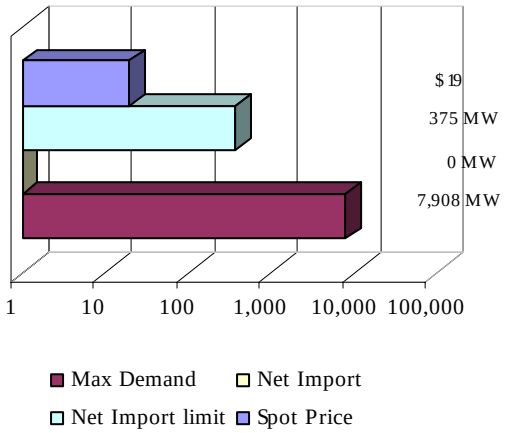


Figure 12: New South Wales

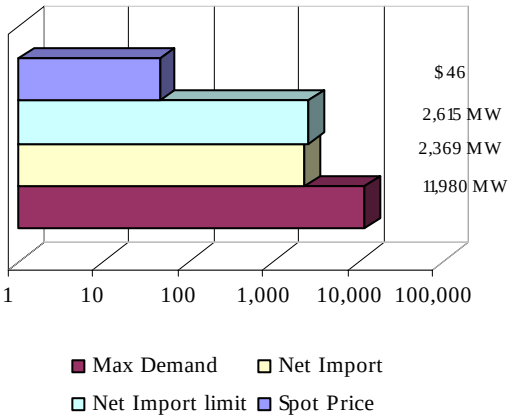


Figure 13: Victoria

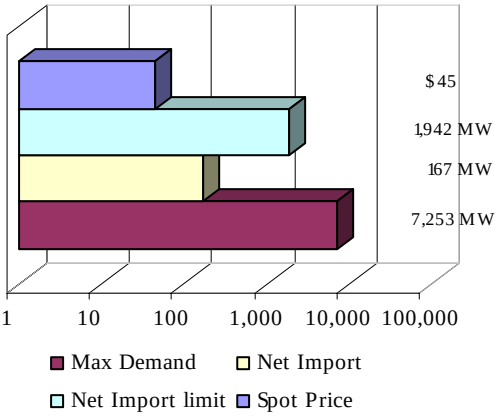
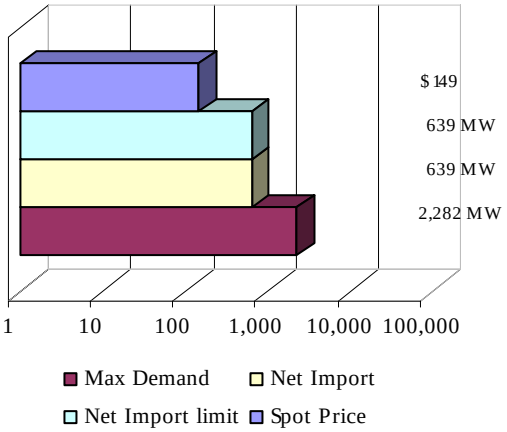


Figure 14: South Australia



In Tasmania, demand reached a maximum of 1 236MW at 7.30am on Tuesday, 20 December. The spot price at the time was $52/MWh.

Price variations

There were 70 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

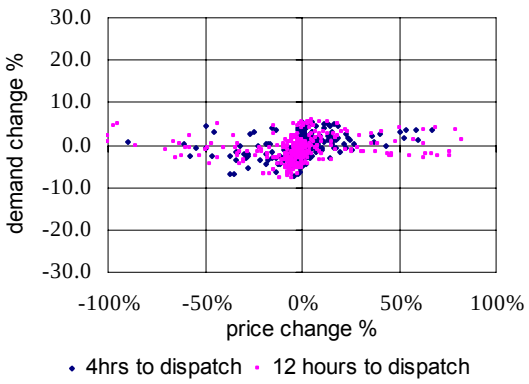


Figure 16: New South Wales

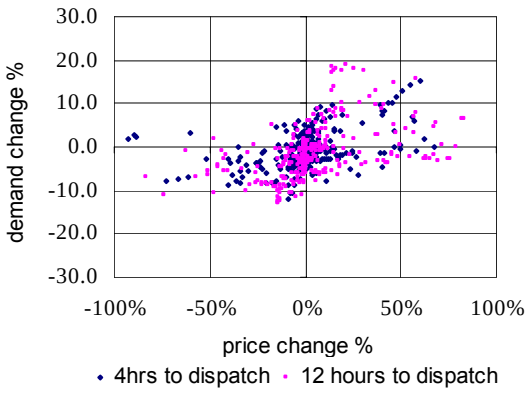


Figure 17: Victoria

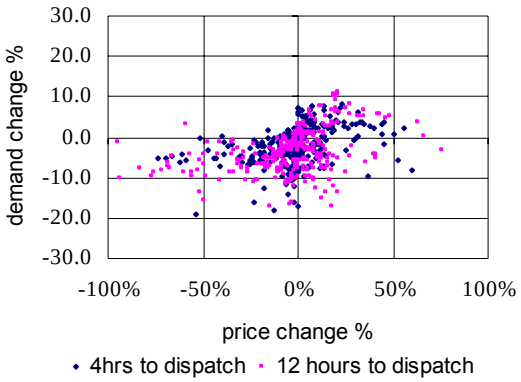


Figure 18: South Australia

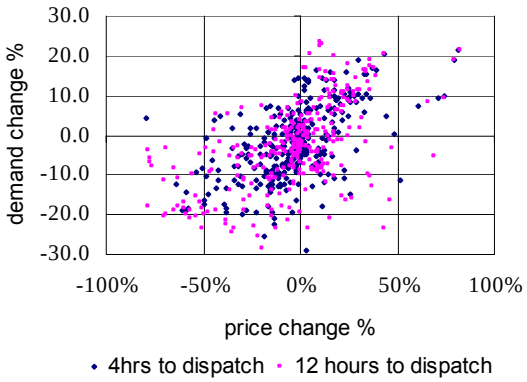


Figure 19: Tasmania

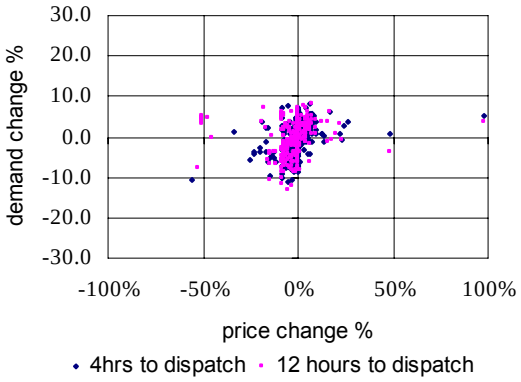
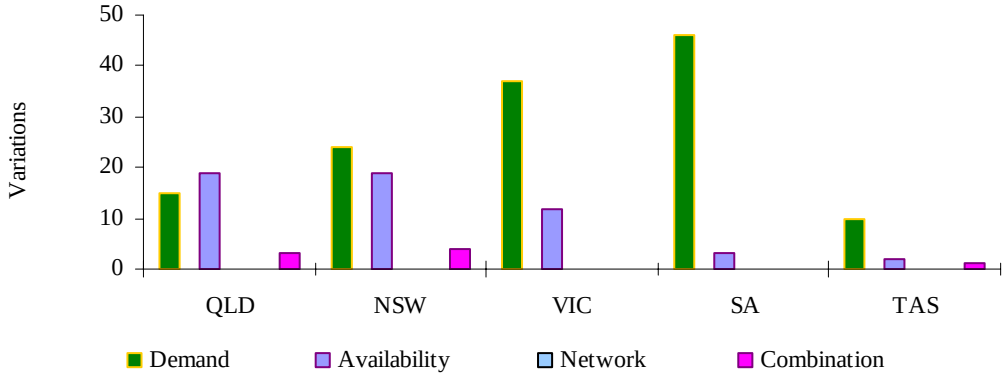


Figure 20 summarises the number and most probable reason for variations between forecast and actual prices.

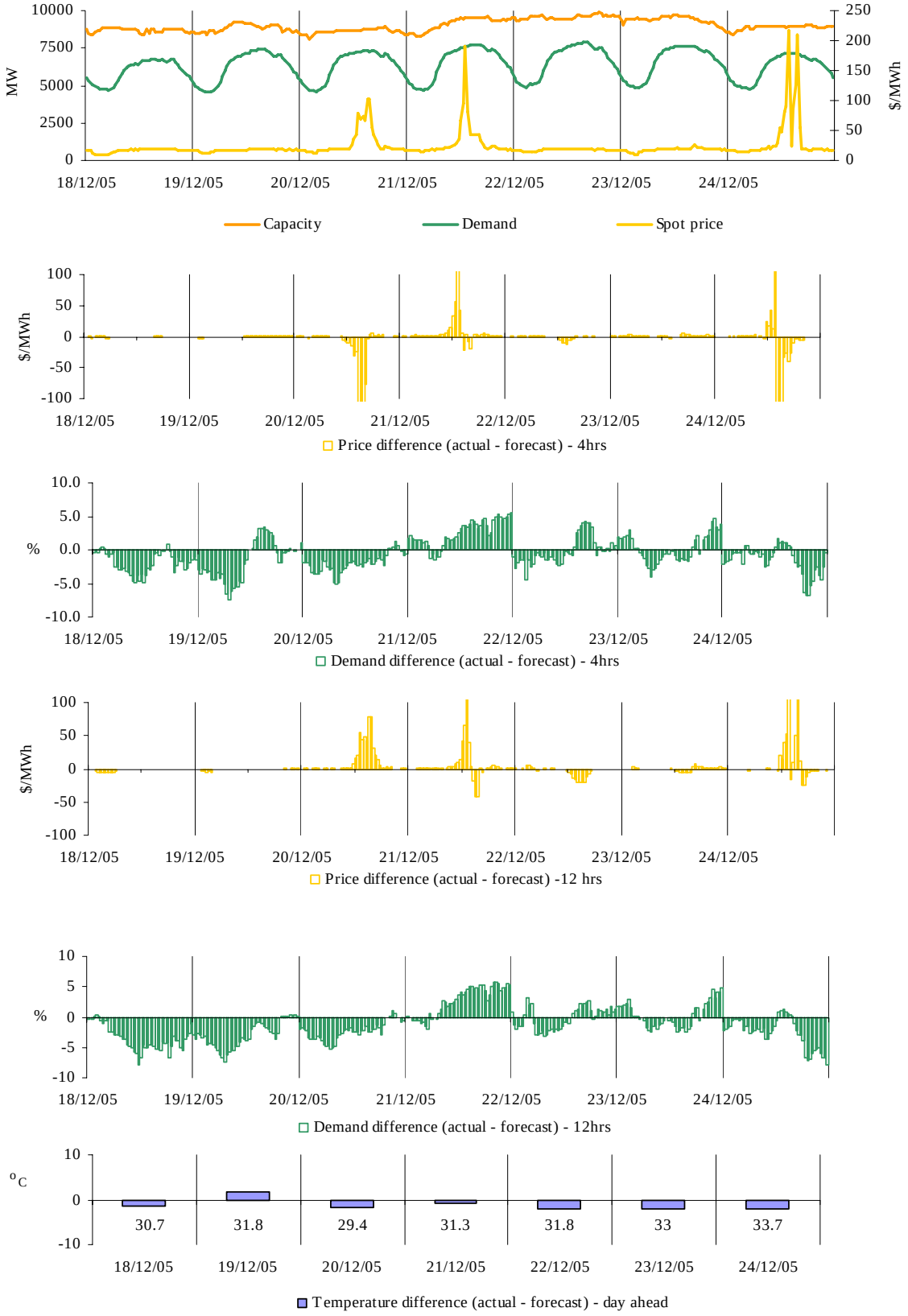
Figure 20: reasons for variations between forecast and actual prices



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 13 occasions in Queensland where the spot price was greater than three times the weekly average price of $24/MWh. These occurred between 1.30pm and 4pm on Tuesday, between 1pm and 2pm on Wednesday and between 1pm and 4pm on Saturday.

Tuesday, 20 December

1:30 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	78.55	93.12	23.25
Demand (MW)	7 242	7 396	7 429
Available capacity (MW)	8 685	9 167	9 327
2:30 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	72.88	97.84	24.14
Demand (MW)	7 302	7 436	7 466
Available capacity (MW)	8 744	9 069	9 322
3:30 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	103.39	272.34	24.20
Demand (MW)	7 324	7 416	7 443
Available capacity (MW)	8 723	8 669	9 322
4:00 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	102.21	272.38	24.53
Demand (MW)	7 276	7 436	7 461
Available capacity (MW)	8 722	8 686	9 322

Conditions at the time saw demand around 150MW lower than forecast four hours ahead, prices were aligned across the mainland and lower than forecast. There was as much as 500MW less capacity available than expected early in the day.

Late the previous evening, Callide Power's unit 3 tripped. Although expected to return early on Tuesday, a number of rebids extended the outage, eventually returning the unit around 9.30pm in the evening. The rebid reasons given were "SCC Jammed" and "Loading up". As a result of the delays, there was 405MW less capacity available than expected at Callide C. All of this capacity was priced at less than $15/MWh.

CS Energy reduced the available capacity across its portfolio by around 200MW. At 9.12am, Callide B2 and Swanbank B2 reduced their availability by a total of 235MW. The rebid reason given was "Swan B2 and Call B2 reductions extended". All of this capacity was priced at less than $50/MWh. Over the course of the day, some of this capacity was returned.

There was no other significant rebidding.

Wednesday, 21 December

1:00 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	95.27	39.51	29.81
Demand (MW)	7 542	7 266	7 230
Available capacity (MW)	9 476	9 342	9 472
1:30 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	191.62	62.64	39.03
Demand (MW)	7 583	7 307	7 308
Available capacity (MW)	9 506	9 330	9 412
2:00 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	80.97	37.83	40.25
Demand (MW)	7 656	7 400	7 349
Available capacity (MW)	9 557	9 765	9 412

Conditions at the time saw demand almost 300MW higher than forecast four hours ahead. Prices were aligned across the mainland for the period.

Network limitations from central to south Queensland were preventing the dispatch of as much as 200MW of lower priced capacity from 10.15am. From around 11am, more than 2 000MW of capacity at Callide, Stanwell and Gladstone, priced at less than $20/MWh was shifted to prices of less than zero. The rebid reasons given included “Call_B manage constraint”, “Constraint management”, “Revised ramp rates and FCAS” and “Intra connector constraint::change MW distrib”.

There was no other significant rebidding.

Saturday, 24 December

1:00 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	82.00	38.50	41.87
Demand (MW)	7 138	7 019	7 085
Available capacity (MW)	8 908	8 986	9 068
1:30 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	91.63	79.69	38.50
Demand (MW)	7 114	7 043	7 043
Available capacity (MW)	8 903	8 986	9 068
2:00 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	217.77	88.07	38.79
Demand (MW)	7 140	7 054	7 054
Available capacity (MW)	8 930	8 986	9 068
3:00 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	86.31	261.55	77.36
Demand (MW)	7,147	7,076	7,097
Available capacity (MW)	8,987	8,986	9,005
3:30 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	127.17	241.65	77.41
Demand (MW)	7121	7068	7088
Available capacity (MW)	8979	8966	9005
4:00 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	208.57	242.69	77.45
Demand (MW)	7105	7076	7096
Available capacity (MW)	8974	8936	9005

Conditions at the time saw demand close to forecast, with prices generally aligned with New South Wales.

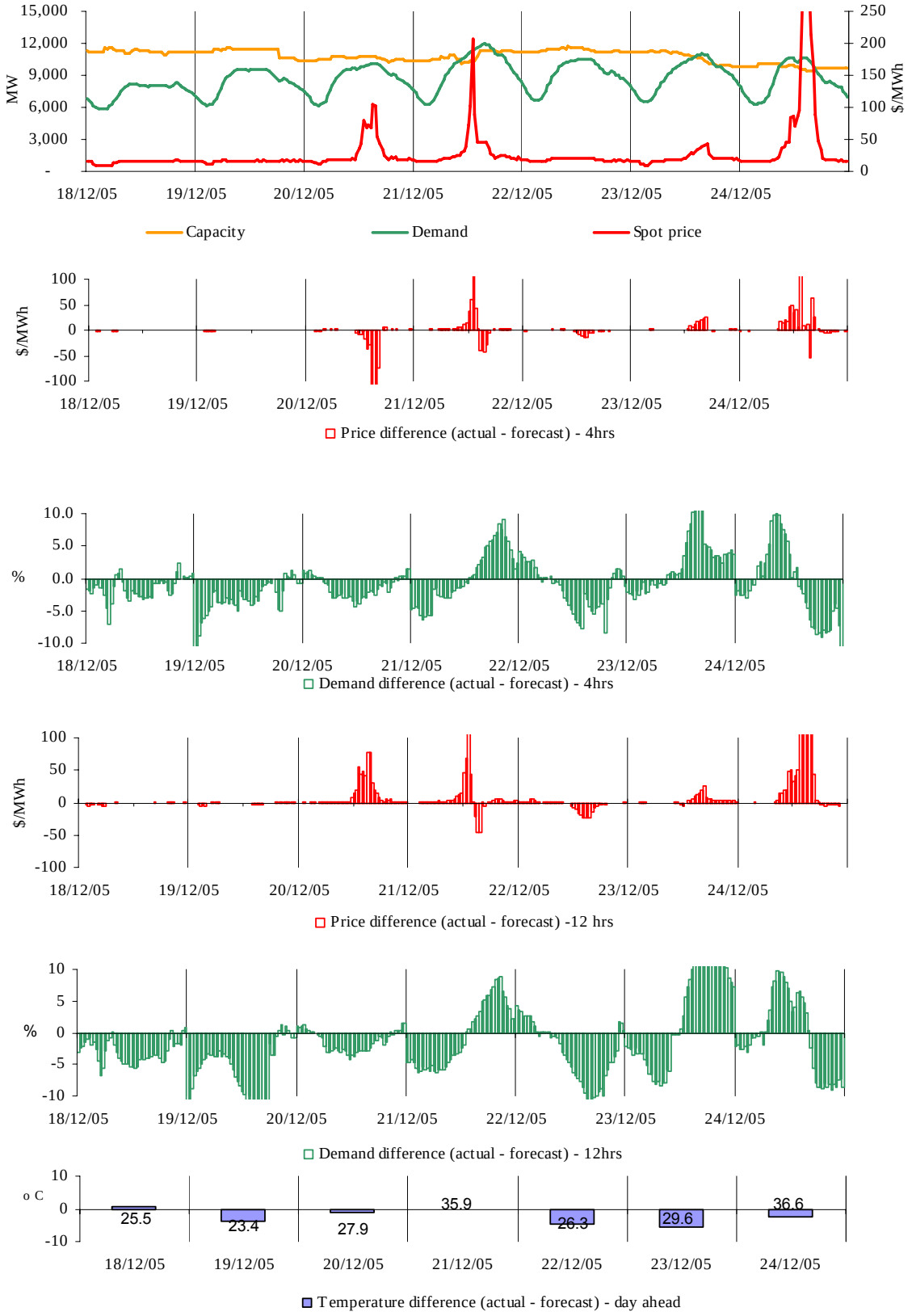
Over a series of rebids from 8am, the availability of Milmerran was reduced by as much as 175MW - all of this capacity had been priced at less than zero. The rebid reasons given were “Changed plant conditions” and “ACC back pressure limit”.

At 2.10pm, effective 2.20pm, Tarong Energy rebid 120MW of capacity across Tarong from prices of less than $20/MWh to prices of more than $3 000/MWh. The rebid reason given was “Portfolio optimisation.”

Over three rebids, at 2.25pm, 2.33pm and 2.47pm Enertrade shifted 236MW of capacity from prices of $150/MWh or less to prices around $300/MWh. The rebid reasons given were “Material change in market conditions::Changed MW distrib” and “Portfolio rearrangement::changed MW distrib”.

There was no other significant rebidding.

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



There were 11 occasions in New South Wales where the spot price was greater than three times the weekly average price of $29/MWh. These occurred at 3.30pm and 4pm on Tuesday, at 1pm and 1.30pm on Wednesday and between 1.30pm and 4.30pm on Saturday.

Tuesday, 20 December

3:30 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	103.67	266.33	25.08
Demand (MW)	10 110	10 304	10 398
Available capacity (MW)	10 747	10 865	11 067
4:00 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	103.16	266.33	25.42
Demand (MW)	10 123	10 330	10 415
Available capacity (MW)	10 717	10 865	11 067

Conditions at the time saw demand around 200MW lower than forecast. Prices were aligned across the mainland and lower than forecast four hours ahead.

At 2.18pm, the previous day, Snowy Hydro rebid 1 200MW of capacity from Murray to Tumut and Upper Tumut. This rebid swapped low priced capacity from Murray with high priced capacity at Tumut and Upper Tumut with little net affect however, across the Snowy portfolio.

At 6.32am, Macquarie Generation rebid 1 000/MW of capacity from prices of less than $20/MWh to prices of $250/MWh, $880/MWh and $4 700/MWh. The rebid reason given was “Manage Snowy CSC/CSP constraint” and “Rebid to other unit”.

Delta Electricity reduced the availability of Vales Point unit 6 at 7.37am by 200MW. The rebid reason given was “Emission limit::Capacity limit”. All of this capacity was priced at less than $20/MWh. At 8.50am, 120MW of capacity at Munmorah was shifted from prices of $42/MWh to above $9 000/MWh. The rebid reason given was “Price>Forecast::Bandshift”. At 1.45pm, Wallerawang unit 7 reduced availability by 120MW. Around 40MW of this capacity was priced at less than $20/MWh. The rebid reason given was “Dust burden limit::Capacity limit change”.

There was no other significant rebidding.

Wednesday, 21 December

1:00 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	101.70	42.80	32.58
Demand (MW)	11 118	11 206	11 345
Available capacity (MW)	10 375	11 497	11 697
1:30 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	206.14	67.34	42.28
Demand (MW)	11 336	11 318	11 321
Available capacity (MW)	10 280	11 497	11 697

Conditions at the time saw demand close to forecast with prices aligned across the mainland. There was more than 1 000MW less capacity available than was expected four hours ahead of dispatch.

Delta Electricity offered 640MW of capacity, or almost 20 per cent, at prices of greater than $9 000/MWh for this period. At other times in the day, 500MW of this capacity had been offered at less than $50/MWh. This adjustment to Delta's offer profile was set up day-ahead, through its initial offer.

At 9.18am and 9.37am, Macquarie Generation reduced the available capacity at Bayswater units 1 and 2 by a total of 520MW. The rebid reason given was "FD Fan – water in oil" and "BW4 higher priority FD fan work". Most of this capacity was priced at less than $40/MWh. At 11.49am and 12.45pm, a total of 400MW of capacity was shifted from prices of less than $20/MWh to around $250/MWh across Bayswater and Liddel stations. The rebid reason given was "Manage snowy CSC/CSP constraint" and "Fix copy/paste error in previous rebid". At 12.51pm, the availability of Bayswater unit 1 and unit 4 was reduced by a further 350MW in total - 250MW of this was priced at less than $20/MWh. The rebid reason given was "Delays in fan work".

The return of Eraring unit 3, originally scheduled to return at 6am was delayed over a number of rebids and eventually returned at 2pm - 220MW of this capacity was priced at less than zero. The rebid reason given was "Unit 3 RTS delayed".

There was no other significant rebidding.

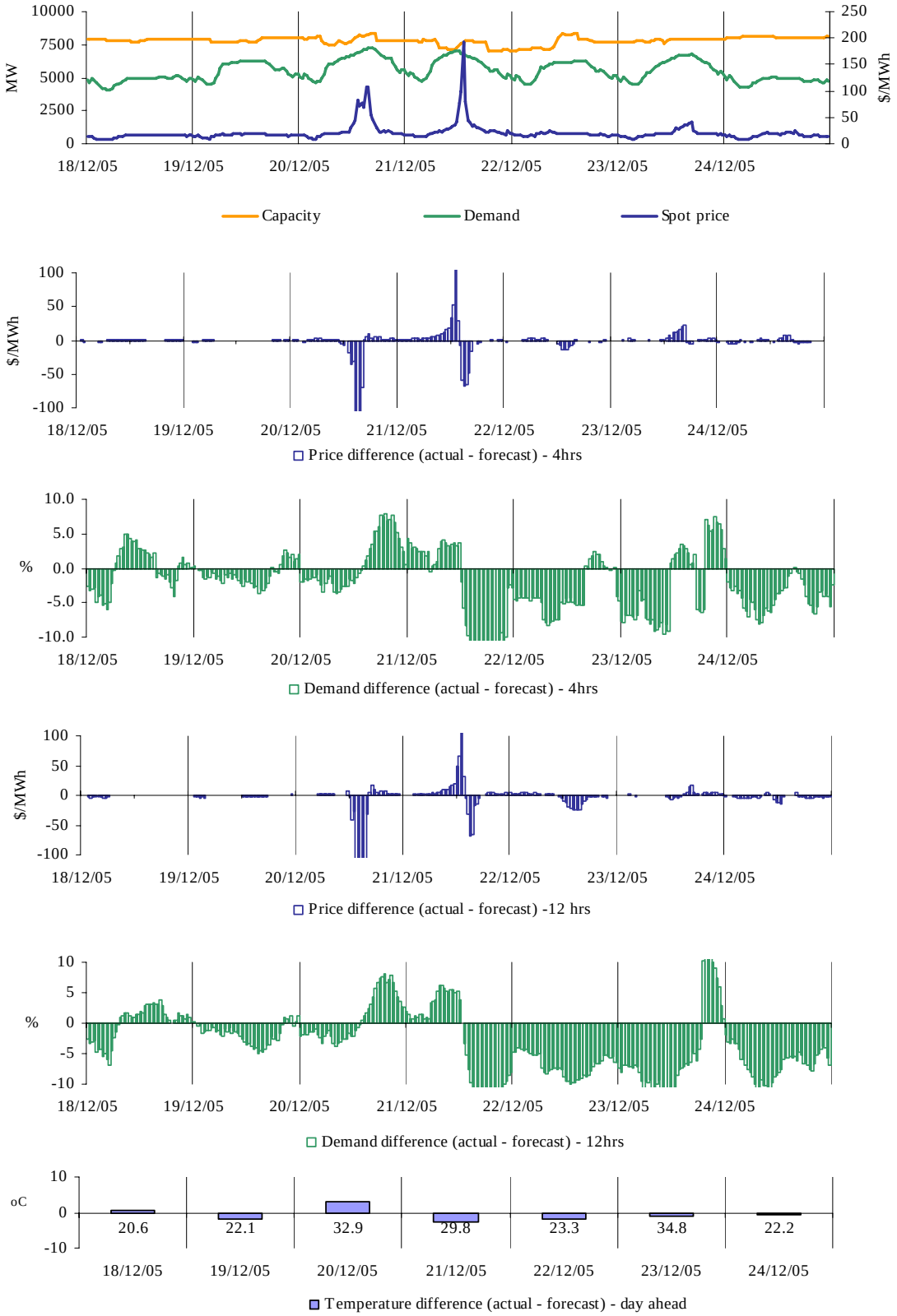
Saturday, 24 December

1:30 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	95.77	90.98	45.07
Demand (MW)	10 327	10 219	9 900
Available capacity (MW)	9 688	9 628	9 894
2:00 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	252.19	95.27	45.36
Demand (MW)	10 579	10 403	9 916
Available capacity (MW)	9 598	9 558	9 804
2:30 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	274.48	266.33	44.70
Demand (MW)	10 609	10 732	9 902
Available capacity (MW)	9 508	9 708	9 714
3:00 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	290.68	290.66	90.98
Demand (MW)	10 580	10 752	9 978
Available capacity (MW)	9 418	9 618	9 624
3:30 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	279.05	268.44	90.98
Demand (MW)	10 431	10 684	9 935
Available capacity (MW)	9 418	9 398	9 624
4:00 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	212.58	267.39	90.98
Demand (MW)	10 202	10 581	9 887
Available capacity (MW)	9 418	9 418	9 614
4:30 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	157.35	94.71	44.68
Demand (MW)	9,817	10,280	9,793
Available capacity (MW)	9,418	9,418	9,614

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

There was no significant rebidding.

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



There were 10 occasions in Victoria where the spot price was greater than three times the weekly average price of $22/MWh. These occurred between 1.30pm and 4pm on Tuesday and between 12.30pm and 2pm on Wednesday.

Tuesday, 20 December

1:30 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	81.64	100.70	109.48
Demand (MW)	6 898	6 944	6 940
Available capacity (MW)	8 094	8 422	8 152
2:00 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	70.68	106.89	237.50
Demand (MW)	6 952	6 973	6 969
Available capacity (MW)	8 243	8 422	8 152
2:30 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	75.96	106.64	249.98
Demand (MW)	7 017	6 987	6 981
Available capacity (MW)	8 173	8 357	8 152
3:00 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	70.03	265.38	264.42
Demand (MW)	7 100	7 011	7 009
Available capacity (MW)	8 186	8 352	8 152
3:30 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	105.84	265.45	264.42
Demand (MW)	7 153	7 030	7 030
Available capacity (MW)	8 256	8 352	8 152
4:00 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	106.18	265.42	253.79
Demand (MW)	7 210	7 006	7 039
Available capacity (MW)	8 253	8 287	8 152

Conditions at the time saw demand as much as 200MW higher than forecast. Prices were aligned across the mainland and lower than forecast both four and twelve hours ahead.

At 6.30am, International Power committed 510MW of capacity at Newport, with 300MW of this capacity priced at less than $40/MWh. The rebid reason given was “Adj to unit commitment due to PD conditions”.

A number of rebids over the morning reduced the available capacity across the region, largely countering the Newport commitment. From 6am, International Power reduced the availability of Hazelwood by 220MW. Most of this capacity was priced above $1 000/MWh. The rebid reasons given included “Cooling water limitation”, “Avoiding mill changes”, “Plant limit relieved”, “draft plant limit”, “Temperature limit”, “Emissions limit”, “Change in plant conditions” and “Firing plant limit”. At 12.50pm, LYMMCO reduced the availability at Loy Yang A unit 1 by 120MW. The rebid reason given was “Lake rake”. This capacity was all priced at less than $20/MWh.

A step change in the offer profile by International Power across Loy Yang B and Hazelwood in Victoria and Pelican Point in South Australia saw a total of 370MW of capacity which was priced at less than $50/MWh at other periods priced at greater than $250/MWh for this period. This step change was set up through International Power's day-ahead bid.

There was no other significant rebidding.

Wednesday, 21 December

12:30 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	75.77	41.48	27.74
Demand (MW)	7 017	7 150	6 748
Available capacity (MW)	7 418	7 460	8 078
1:00 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	100.11	47.92	34.02
Demand (MW)	6 830	7 231	6 826
Available capacity (MW)	7 533	7 568	8 078
1:30 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	192.14	76.39	45.97
Demand (MW)	6 788	7 355	7 015
Available capacity (MW)	7 686	7 698	8 078
2:00 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	80.21	50.70	47.70
Demand (MW)	6 717	7 376	7 067
Available capacity (MW)	7 751	7 713	8 078

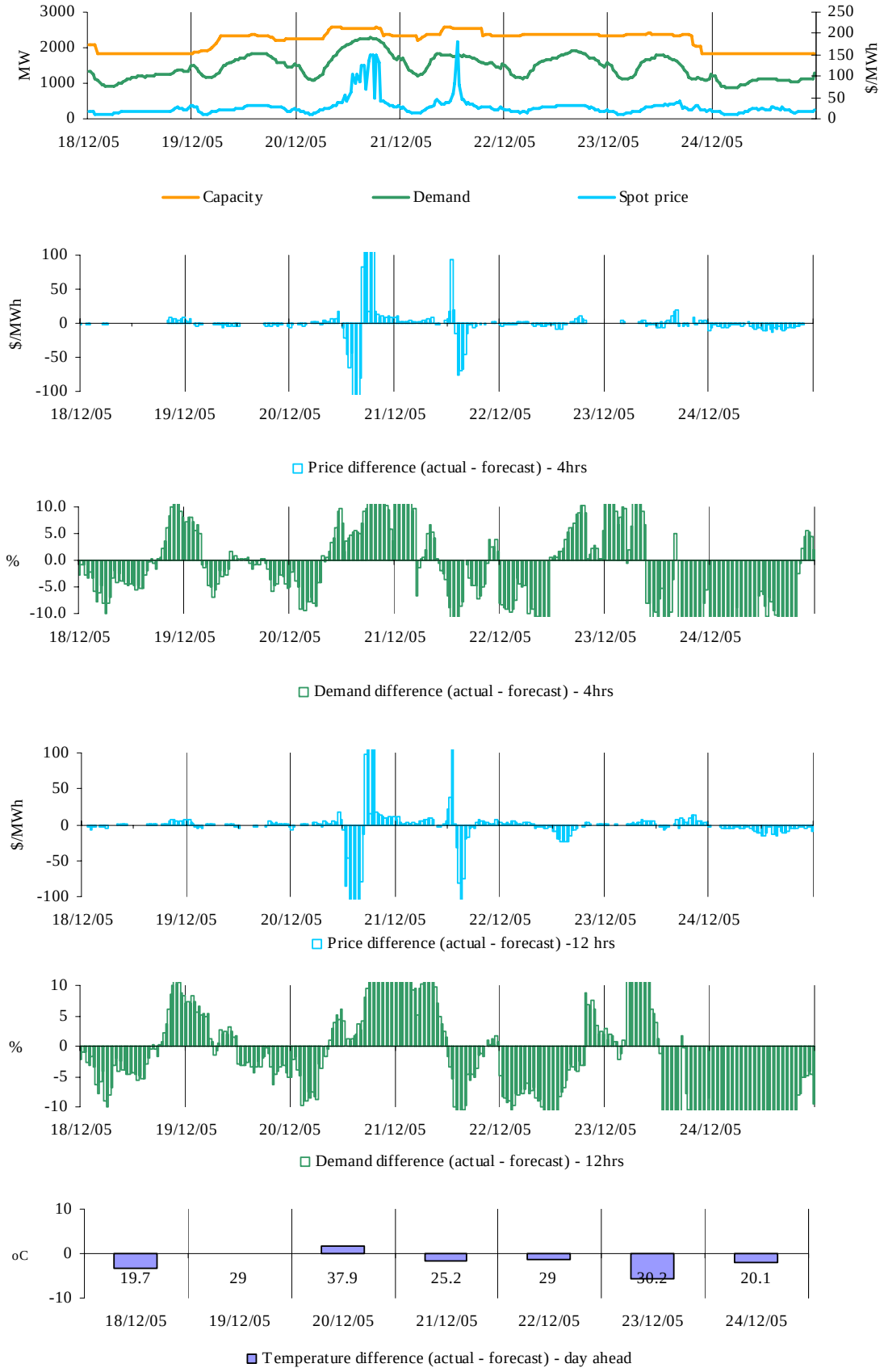
Conditions at the time saw demand as much as 650MW lower than forecast four hours ahead. Despite this, prices were higher than forecast, and aligned across the mainland.

International Power had step changes in the offer profile of Loy Yang B and Hazelwood in Victoria and Pelican Point in South Australia set up through initial offers. These step changes saw as much as 600MW of capacity priced at more than $250/MWh which at other times of the day had been priced at less than $50/MWh. A number of rebids saw reductions in availability at Hazelwood of up to 241MW. The rebid reasons given were "Change in plant conditions", "Draft plant limit", "Firing plant limit", "Fuel limitation" and "Turbine limitation".

At 7.40am, LYMMCO's Loy Yang A unit 3 tripped from 530MW. All of this capacity was priced at less than $20/MWh. The rebid reason given was "Unit trip".

There was no other significant rebidding.

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



There were 10 occasions in South Australia where the spot price was greater than three times the weekly average price of $31/MWh. These occurred between 1.30pm and 9.30pm on Tuesday and at 1.30pm on Wednesday.

Tuesday, 20 December

1:30 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	102.92	149.00	149.00
Demand (MW)	2 156	2 076	2 128
Available capacity (MW)	2 548	2 589	2 594
2:30 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	105.59	149.00	299.00
Demand (MW)	2 223	2 120	2 195
Available capacity (MW)	2 548	2 561	2 594
3:30 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	125.78	301.39	316.27
Demand (MW)	2 255	2 129	2 209
Available capacity (MW)	2 548	2 561	2 594
4:00 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	125.90	299.00	299.00
Demand (MW)	2 251	2 130	2 169
Available capacity (MW)	2 542	2 556	2 594
5:00 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	135.34	52.54	149.00
Demand (MW)	2 256	2 096	2 164
Available capacity (MW)	2 536	2 556	2 594
5:30 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	149.00	42.90	51.01
Demand (MW)	2 282	2 072	2 097
Available capacity (MW)	2 555	2 567	2 594
6:00 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	148.50	38.00	38.00
Demand (MW)	2 265	2 047	2 049
Available capacity (MW)	2 556	2 571	2 594
7:00 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	149.00	30.90	30.01
Demand (MW)	2 247	1 827	1 823
Available capacity (MW)	2 565	2 581	2 594
7:30 pm	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	133.00	24.41	23.00
Demand (MW)	2 213	1 739	1 736
Available capacity (MW)	2 553	2 581	2 594

Conditions at the time saw demand lower than forecast. Prices were aligned across the mainland until around 4.30pm and were lower than forecast. Prices above $100/MWh continued into the evening longer than expected with the high temperatures continuing and demand remaining above 2 200MW - as much as 470MW or 20 per cent higher than forecast four hours ahead.

There was no significant rebidding.

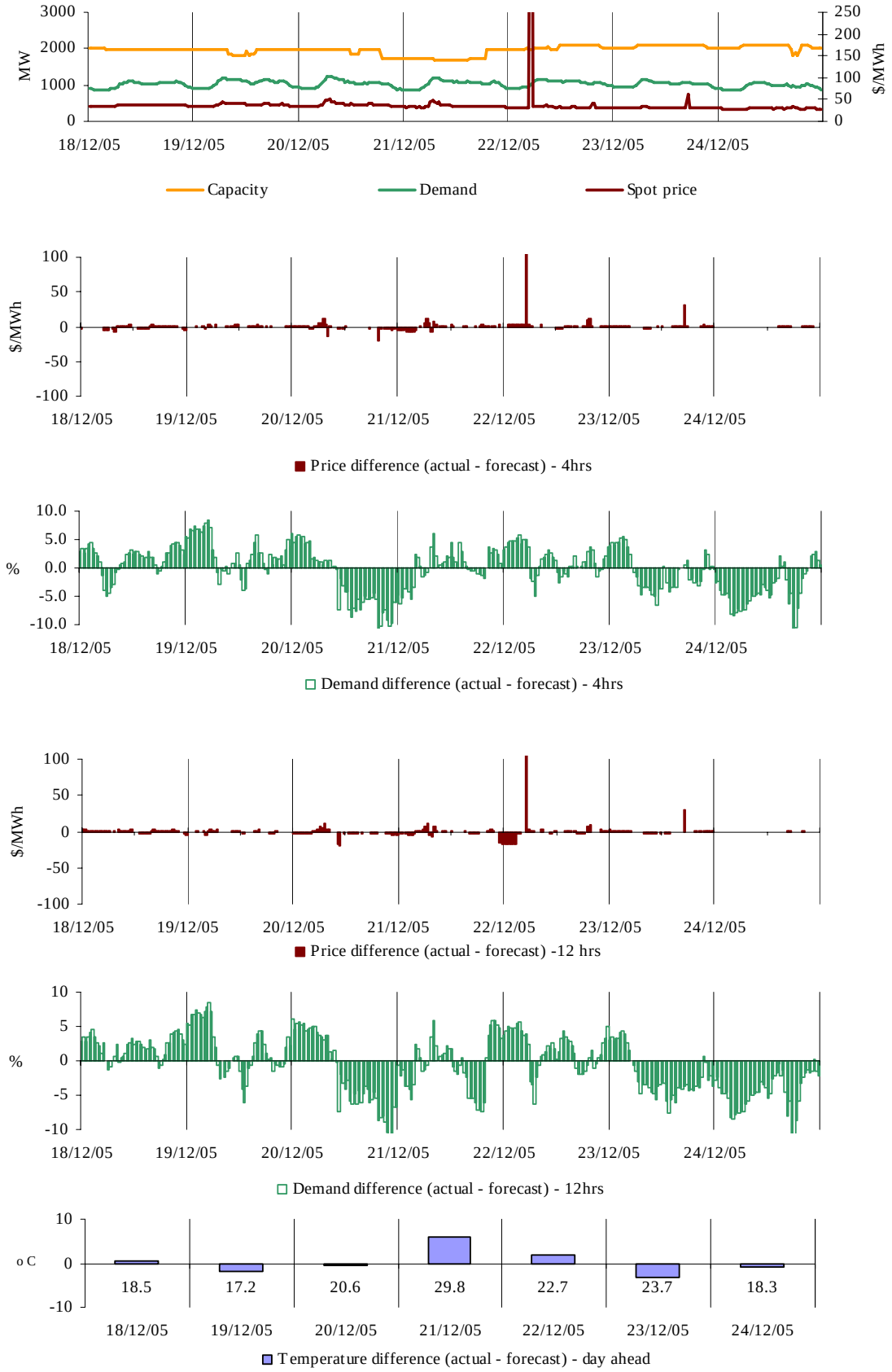
Wednesday, 21 December

1:30 pm	Actual	4 hr forecast	12 hr forecast
Price ($/MWh)	182.16	89.07	56.40
Demand (MW)	1 777	1 978	1 871
Available capacity (MW)	2 537	2 564	2 384

Conditions at the time saw demand around 200MW lower than forecast four hours ahead. At 1.15pm the capacity of the Victoria to South Australia interconnector was re-instated following the earlier than expected return of a network outage in South Australia. The outage was originally scheduled to be completed at 3.30pm. There was no notice given of this early return. Prices were aligned for most of this period with the rest of the mainland.

There was no significant rebidding.

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



There was one occasion in Tasmania where the spot price was greater than three times the weekly average price of $39/MWh. This occurred at 5.30am on Thursday.

Thursday, 22 December

5:30 am	Actual	4 hr forecast	12 hr forecast
Price ($/MWh)	1 363.05	30.00	32.50
Demand (MW)	1 009	958	970
Available capacity (MW)	1 986	2 084	2 084

Conditions at the time saw demand close to forecast. Testing on Basslink, which had commenced the previous evening, had seen imports of 300MW into Tasmania. At 5.05am the import limit was dropped by 212MW to 88MW. This step change in imports combined with limited ramp rate in Tasmania and a step change in requirements for FCAS, led to the price spiking from $30/MWh to $8 000/MWh. At 5.10am the price returned to $34/MWh.

There was no significant rebidding.

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

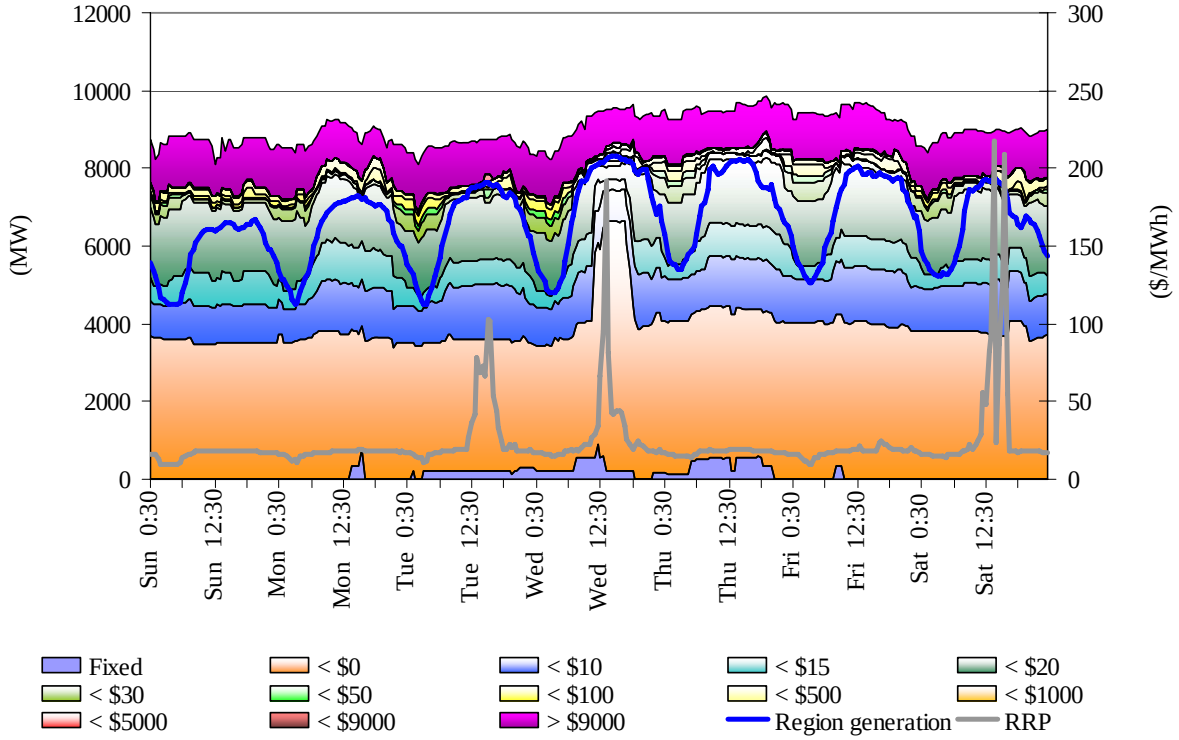


Figure 52: New South Wales closing bid prices, dispatched generation and spot price

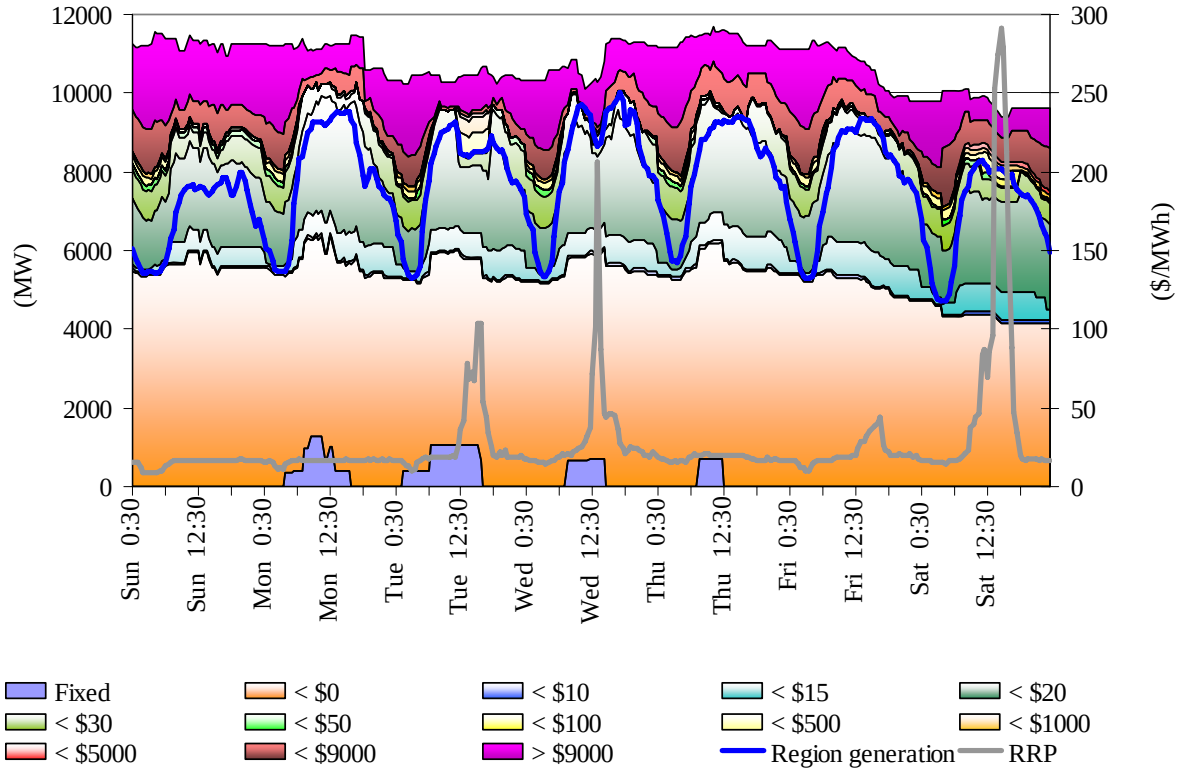


Figure 53: Victoria closing bid prices, dispatched generation and spot price

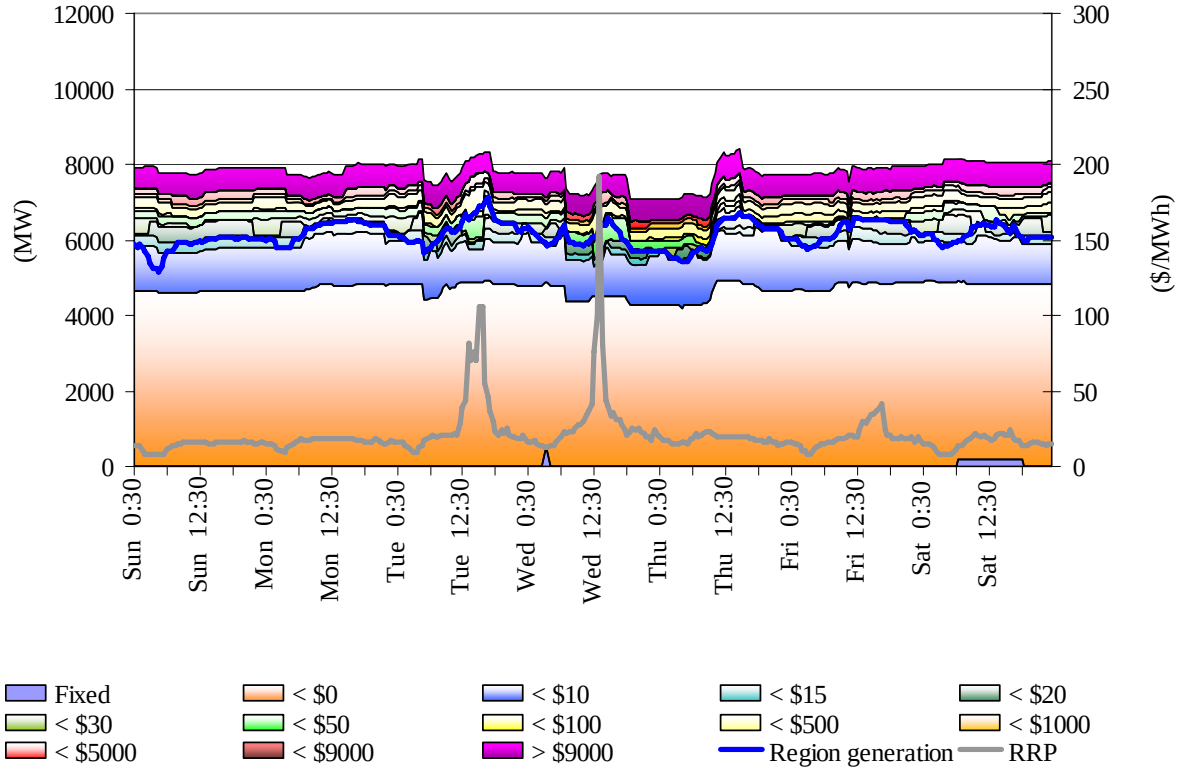


Figure 54: South Australia closing bid prices, dispatched generation and spot price

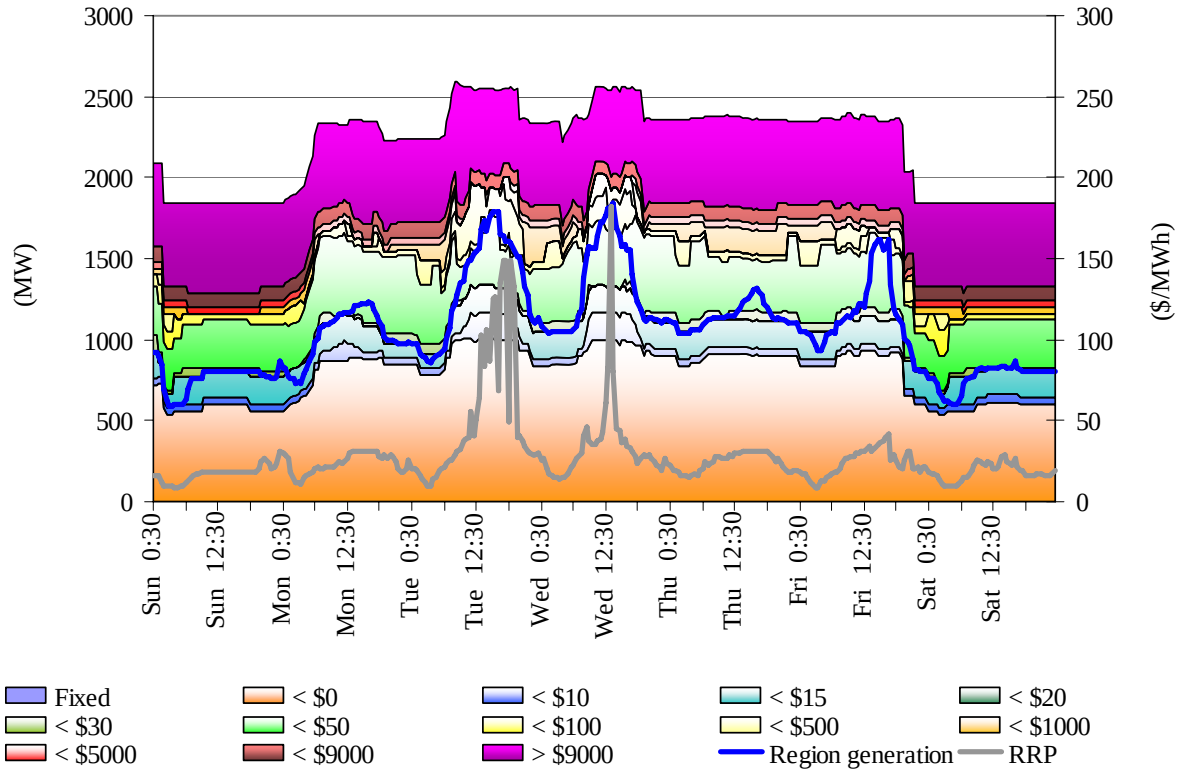
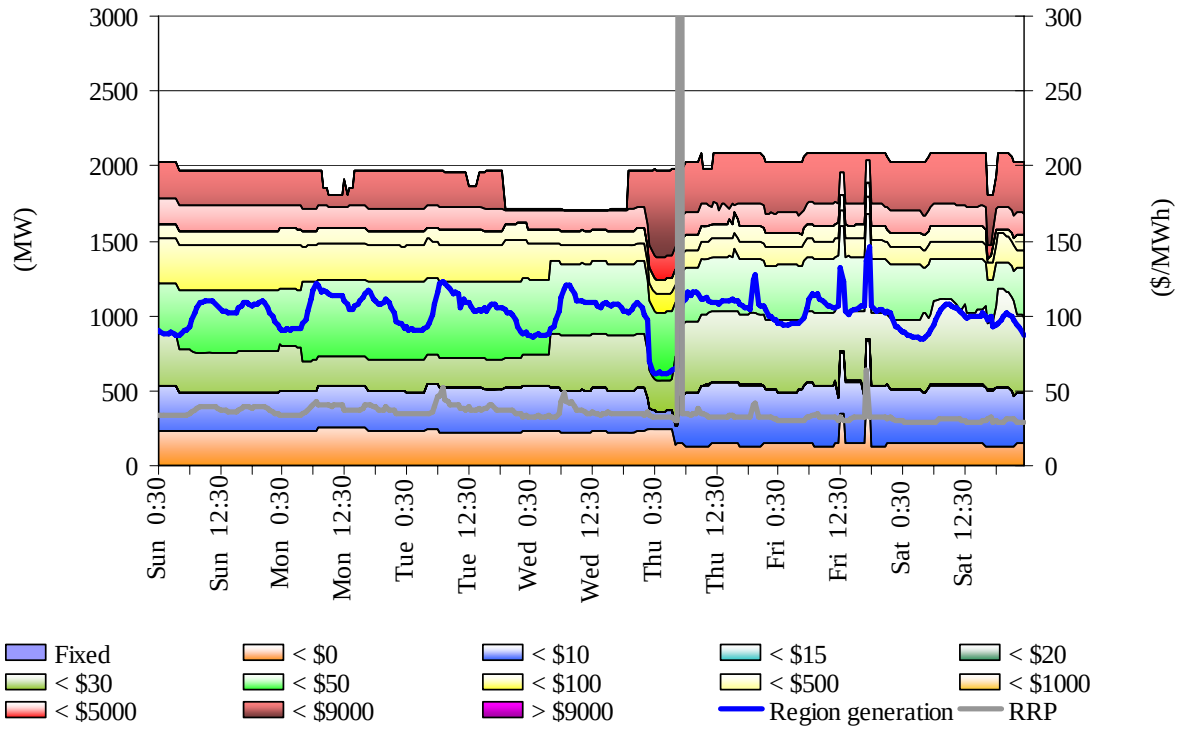


Figure 55: Tasmania closing bid prices, dispatched generation and spot price



Ancillary service market

The total cost of ancillary services on the mainland for the week was around $190 000 or around 0.2 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	0.70	0.41	1.07	0.98	0.16	0.22	0.24	1.87
Previous week	0.90	0.44	0.95	1.17	0.16	0.27	0.80	1.87
Last quarter	1.62	0.91	1.00	1.36	0.20	0.64	2.29	1.56
Market Cost ($1000s)	33	19	69	21	1	2	4	41
% of energy market	0.03%	0.02%	0.07%	0.02%	0.01%	0.01%	0.01%	0.04%

The total cost of ancillary services in Tasmania for the week was $260 000 or 4 per cent of the total turnover in the energy market in Tasmania. The majority of this cost occurred in one five minute dispatch interval at 5.05am on Thursday as a result of a $10 000/MW price for the raise 6 second service. This coincided with the completion of testing, a step change in import capability on Basslink and a step change in the ancillary service requirements. 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	15.95	1.05	1.06	1.15	3.02	1.05	1.05	1.07
Previous week	1.61	1.05	1.06	1.06	10.31	1.05	1.05	1.06
Last quarter	19.40	1.05	1.14	2.25	6.25	1.06	1.06	1.26
Market Cost ($1000s)	117	10	10	10	46	34	26	9
% of energy market	1.76%	0.15%	0.15%	0.15%	0.70%	0.51%	0.39%	0.13%

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

Figure 58: daily frequency control ancillary service costs

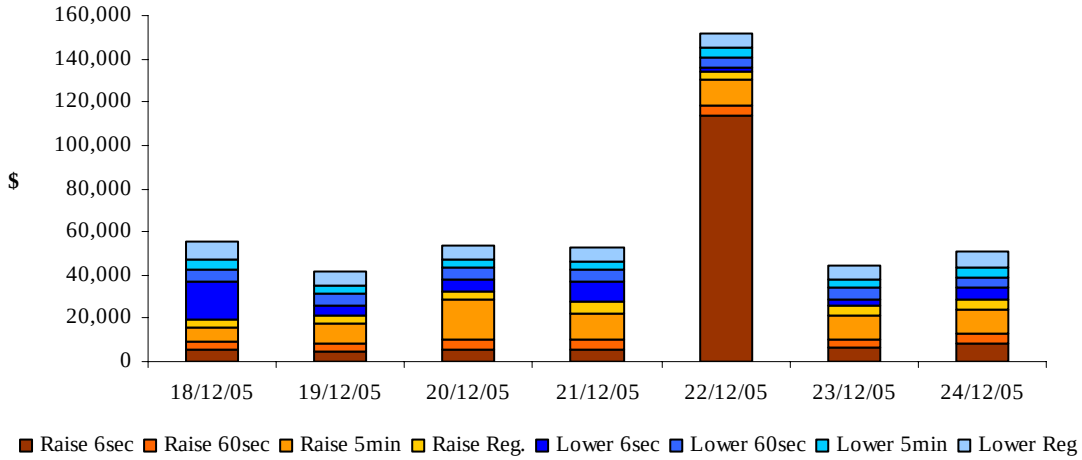
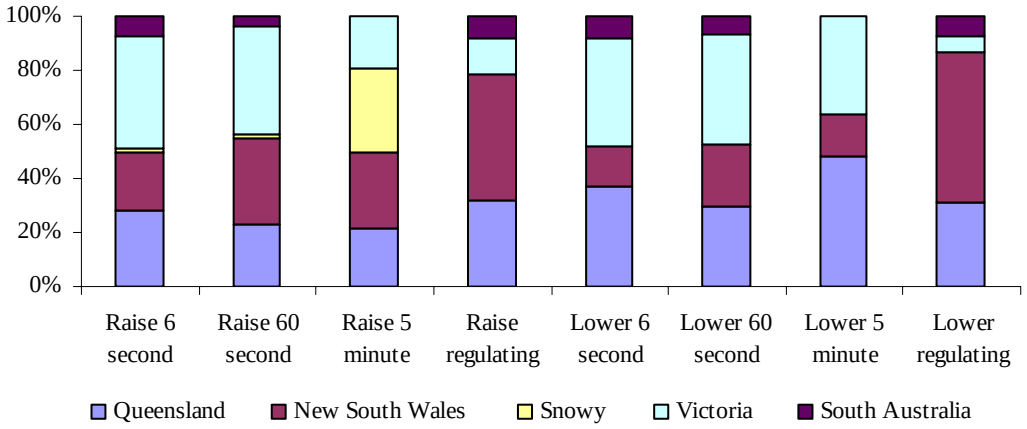


Figure 59 shows the contribution, on a percentage basis, that frequency control ancillary service providers are utilised (in each mainland region) to satisfy the total requirement for each service.

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

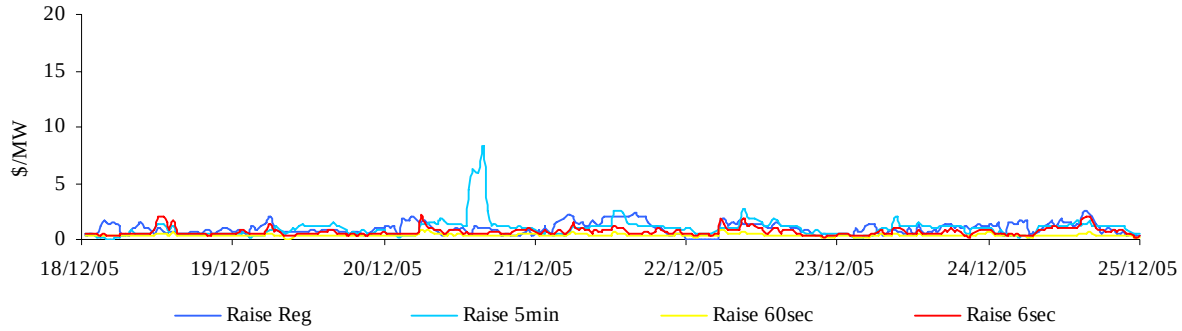


Figure 60A: prices for raise services - Tasmania

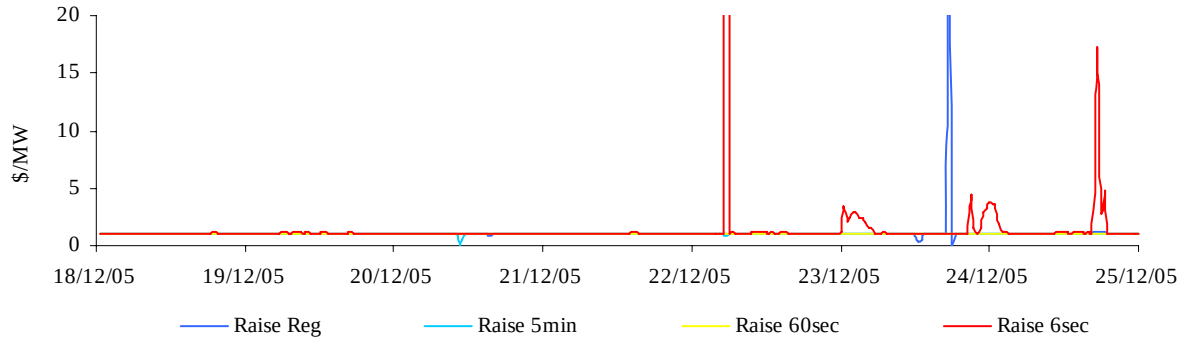


Figure 61: prices for lower services

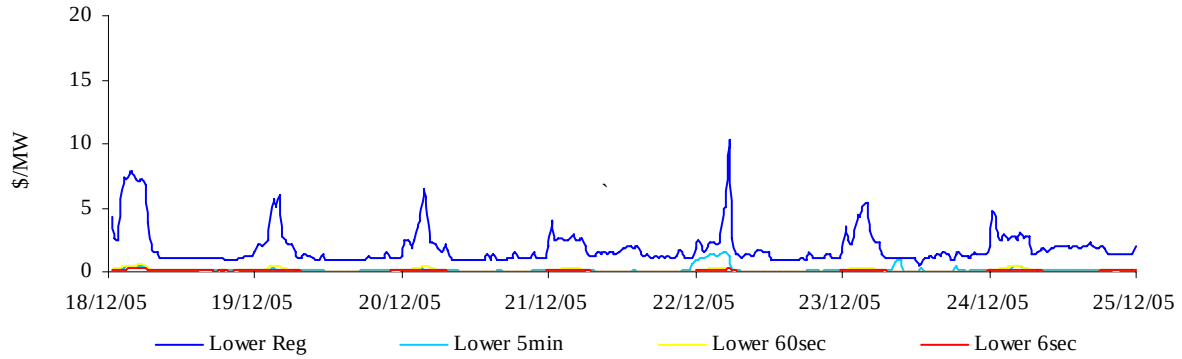
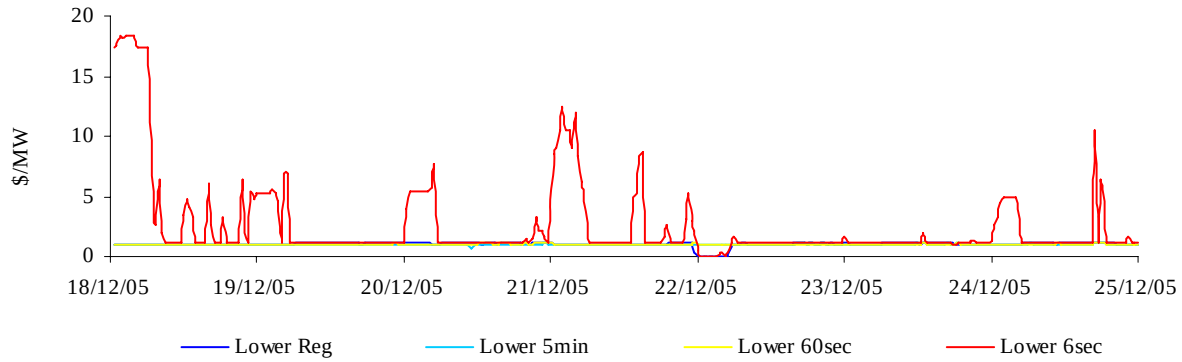


Figure 61A: prices for lower services - Tasmania



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

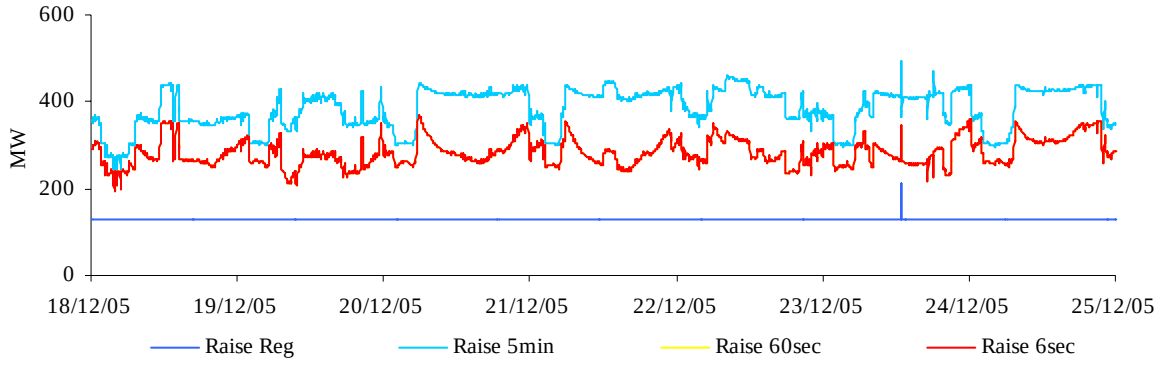


Figure 62A: raise requirements - Tasmania

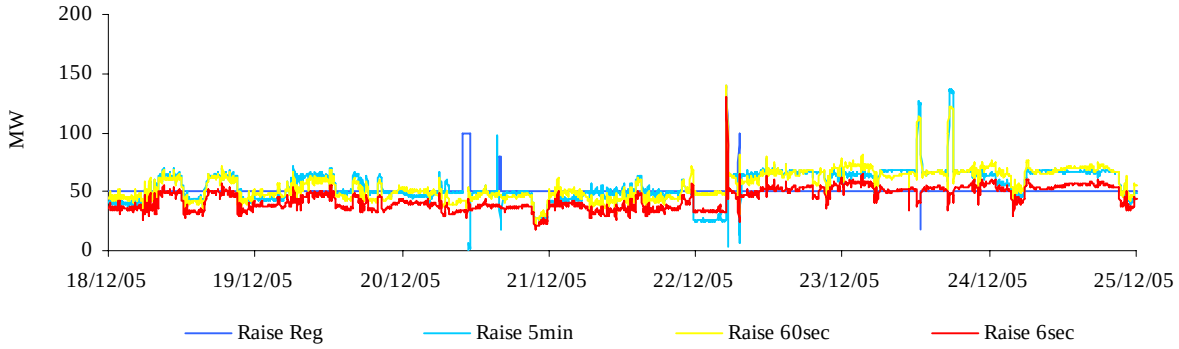


Figure 63: lower requirements

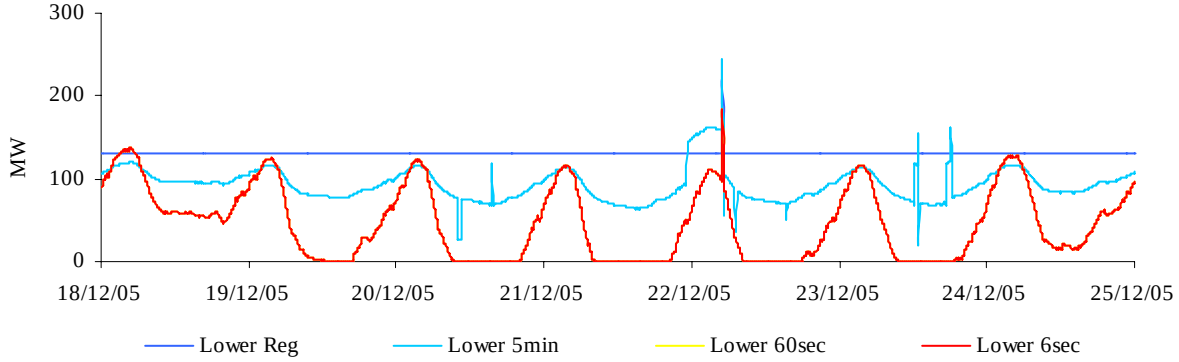
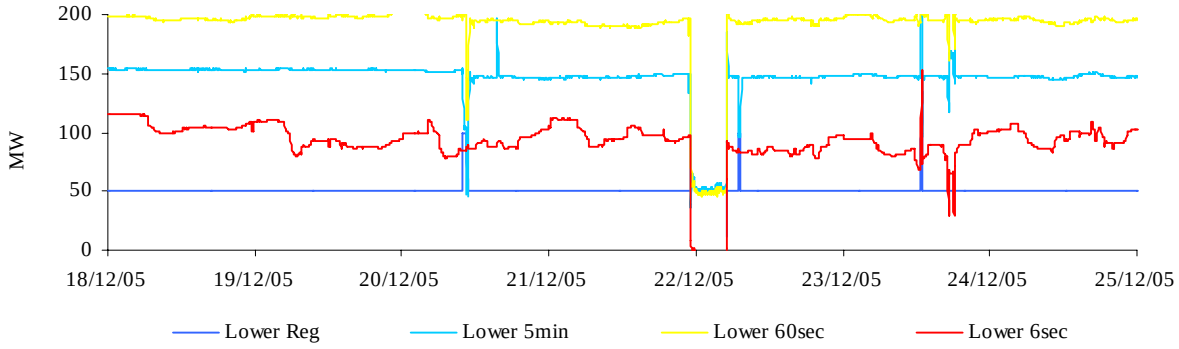


Figure 63A: lower requirements - Tasmania



Australian Energy Regulator
January 2006