

16 – 22 OCTOBER 2005

Spot prices for the week averaged \$16/MWh in Queensland and \$20/MWh in New South Wales and Victoria, down compared to the previous week. Network outages in Victoria and South Australia, affecting the Murraylink and Heywood interconnectors, restricted imports into South Australia for much of the week. As a result the price in South Australia averaged \$41/MWh, an increase compared to the previous week. Turnover in the energy market for the mainland was \$70 million. The Victorian network outages also led to increased requirements for ancillary services. The total cost of ancillary services for the week increased to around \$1 million or 1.5 per cent of turnover.

The average spot price in Tasmania was \$66/MWh with turnover for the week of \$12 million. The cost of ancillary services was \$122 000 or 1 per cent of turnover.

Demand forecasts produced 4 and 12 hours ahead varied from actual by more than 5 per cent in a quarter of all trading intervals across the market. These variations were most frequent in South Australia and Tasmania, occurring in more than half of trading intervals. Significant variations between forecast and actual prices occurred in 53, or 16 per cent, of trading intervals. Demand variations were the main contributor.

Energy prices

Figure 1 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 2 sets out national demand and spot prices in each region for each trading interval. Figure 3 compares the weekly price volatility index with the averages for the previous week and the same quarter last year.

Figure 1: volume weighted average spot price for energy market (\$/MWh)

| | QLD | NSW | VIC | SA | TAS |
|--------------------------------------|------|------|------|------|------|
| Last week | 16 | 20 | 20 | 41 | 66 |
| Previous week | 23 | 25 | 25 | 29 | 136 |
| Same quarter last year | 48 | 90 | 38 | 54 | - |
| Financial year to date | 22 | 28 | 29 | 34 | 98 |
| % change from previous week | ▼30% | ▼22% | ▼22% | ▲43% | ▼51% |
| % change from same quarter last year | ▼66% | ▼78% | ▼48% | ▼24% | - |
| % change from year to date | ▼34% | ▼37% | ▼12% | ▼11% | - |

Figure 2: national demand and spot prices

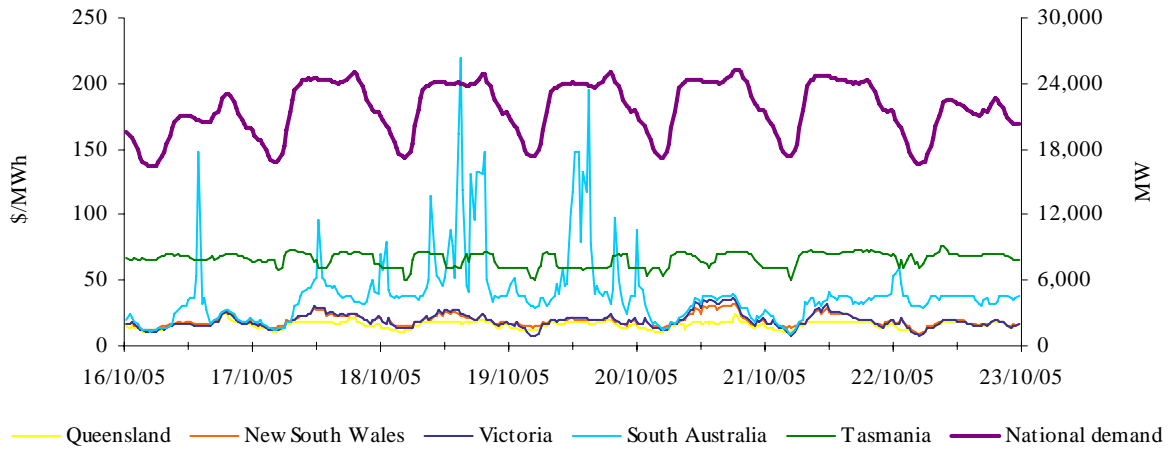


Figure 3: volatility index during peak periods

| | QLD | NSW | VIC | SA | TAS |
|------------------------|------|------|------|------|------|
| Last week | 0.17 | 0.44 | 0.52 | 1.26 | 0.17 |
| Previous week | 0.75 | 0.58 | 0.56 | 0.39 | 0.12 |
| 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

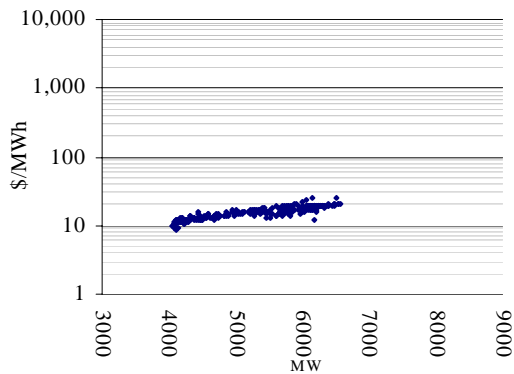


Figure 5: New South Wales

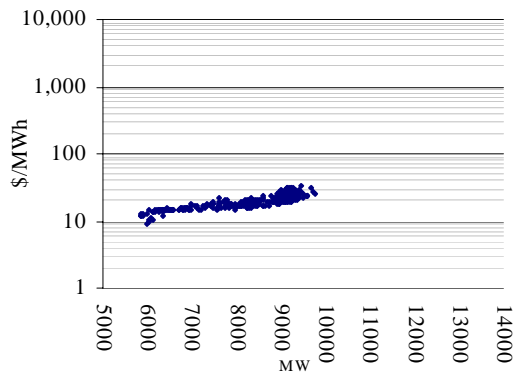


Figure 6: Victoria

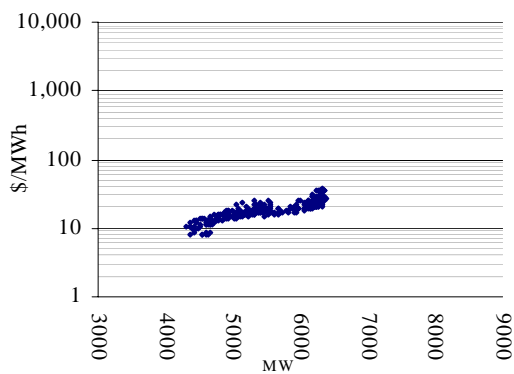


Figure 7: South Australia

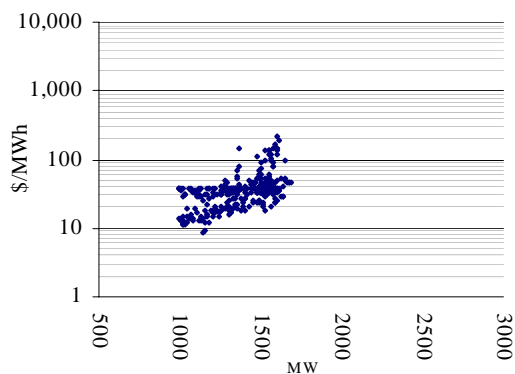
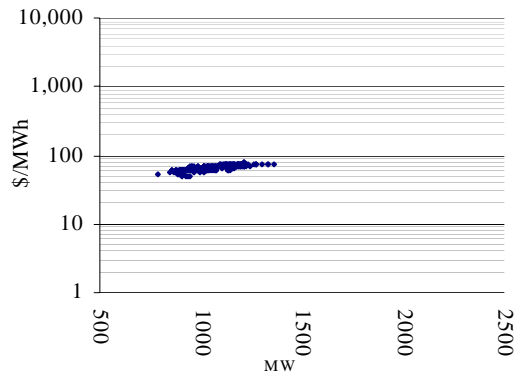


Figure 8: Tasmania



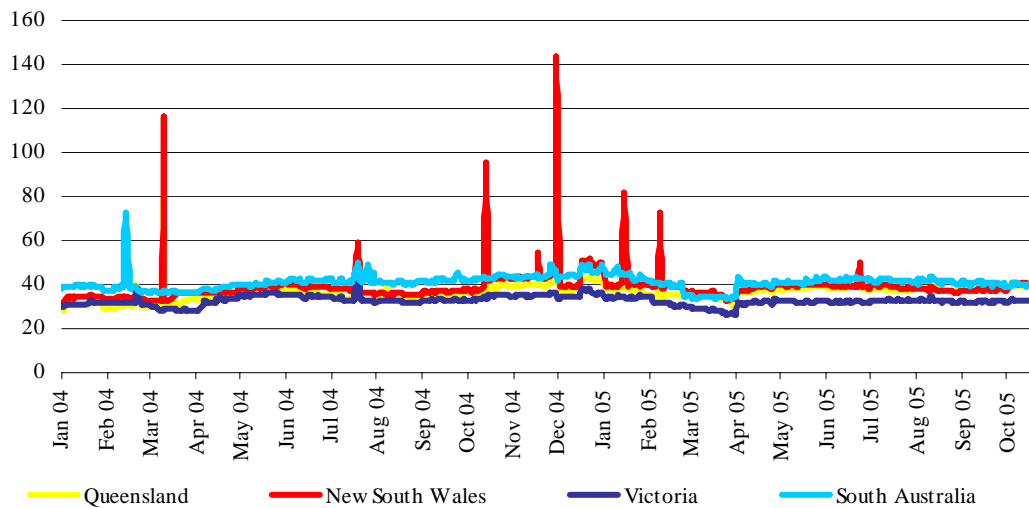
Maximum spot prices were \$25/MWh in Queensland, \$32/MWh in New South Wales, \$37/MWh in Victoria, \$219/MWh in South Australia and \$77/MWh in Tasmania.

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 | 39.50 | 39.43 | 39.46 | 39.58 | 39.50 |
| New South Wales | 40.45 | 40.35 | 40.14 | 40.18 | 40.08 |
| Victoria | 32.74 | 33.13 | 33.05 | 33.14 | 33.04 |
| South Australia | 39.65 | 41.14 | 41.45 | 40.42 | 39.94 |

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

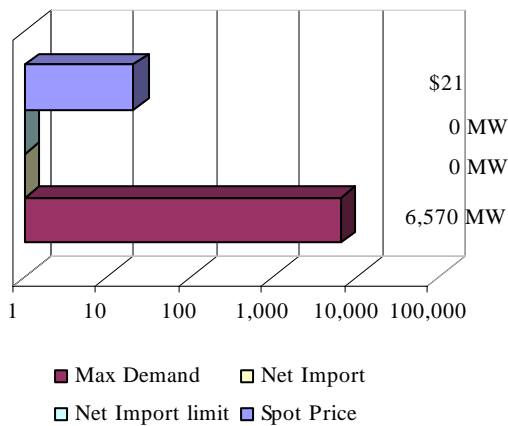


Figure 12: New South Wales

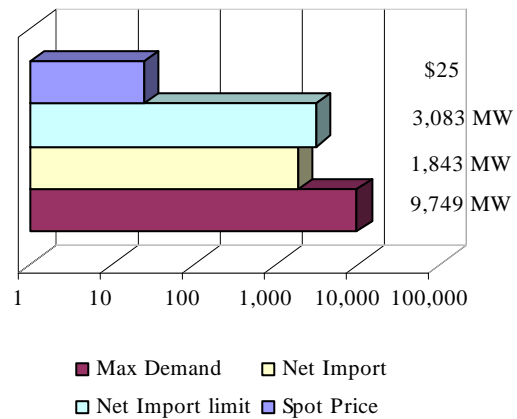


Figure 13: Victoria

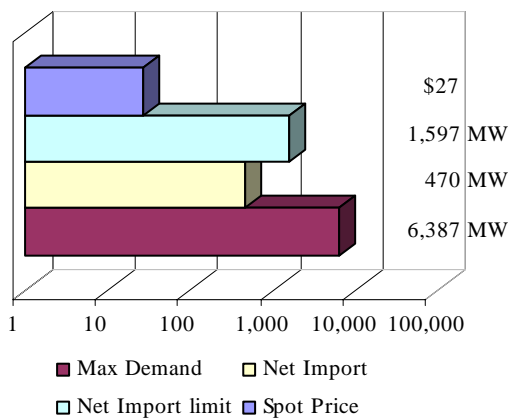
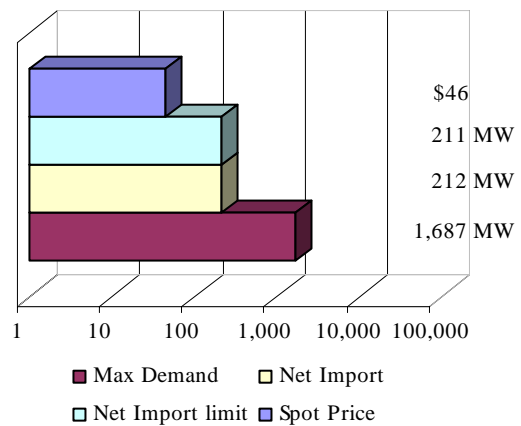


Figure 14: South Australia



In Tasmania, demand reached a maximum of 1 362MW at 7.30am on Monday. The spot price at the time was \$74/MWh.

Price variations

There were 53 trading intervals where actual prices significantly varied from forecasts made 4 and 12 hours ahead of dispatch. Figures 15 to 18 set out the correlation between the actual price and demand and those forecast. The information is presented in terms of the percentage difference from actual. Price differences beyond 200 per cent have been capped.

Figure 15: Queensland

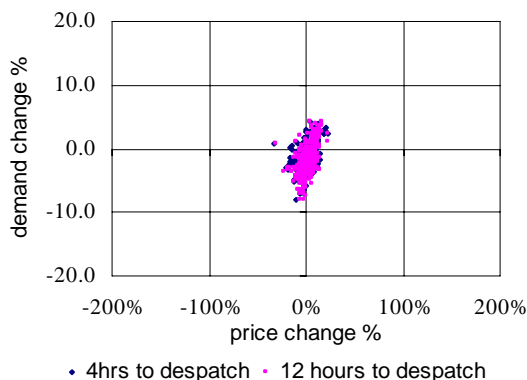


Figure 16: New South Wales

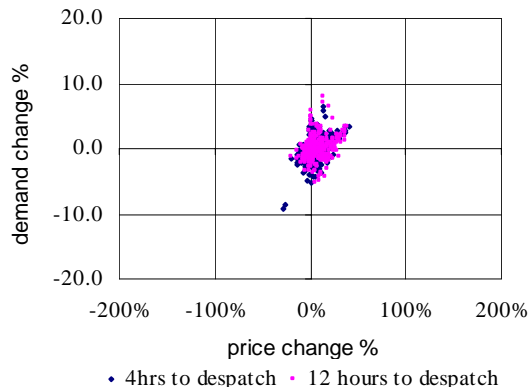


Figure 17: Victoria

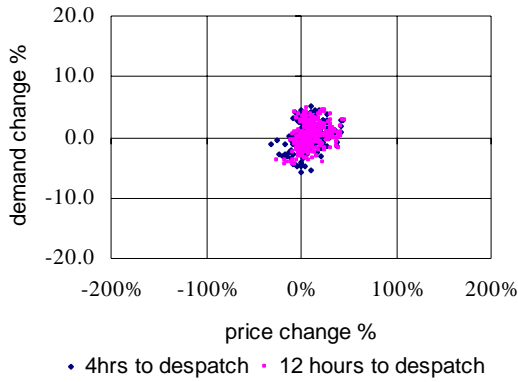


Figure 18: South Australia

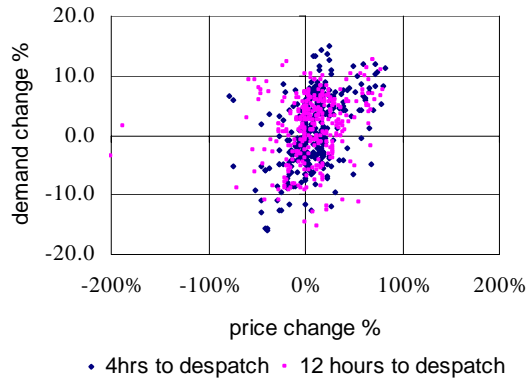


Figure 19: Tasmania

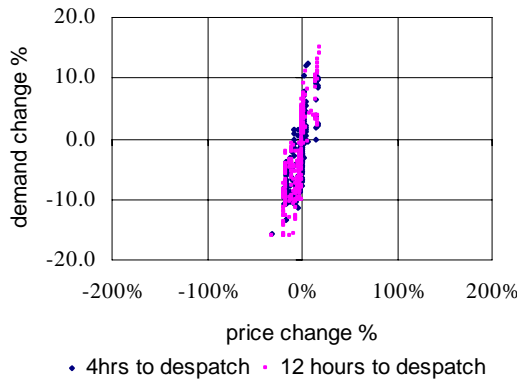
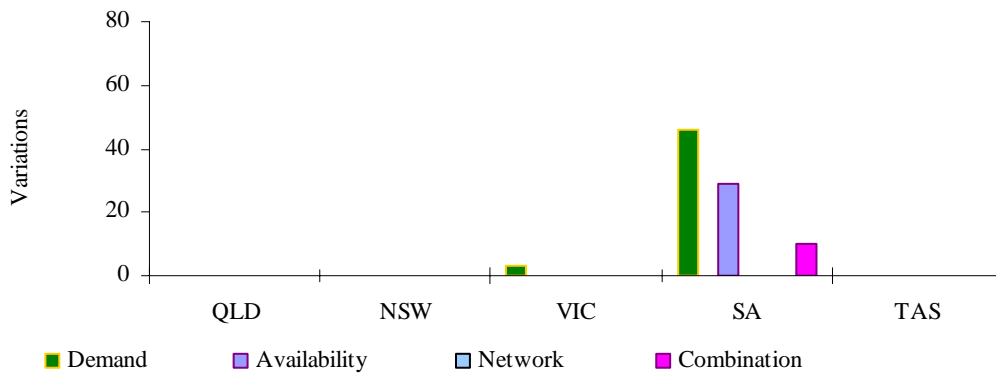


Figure 20 summarises the number and most probable reason for variations between forecast and actual prices.

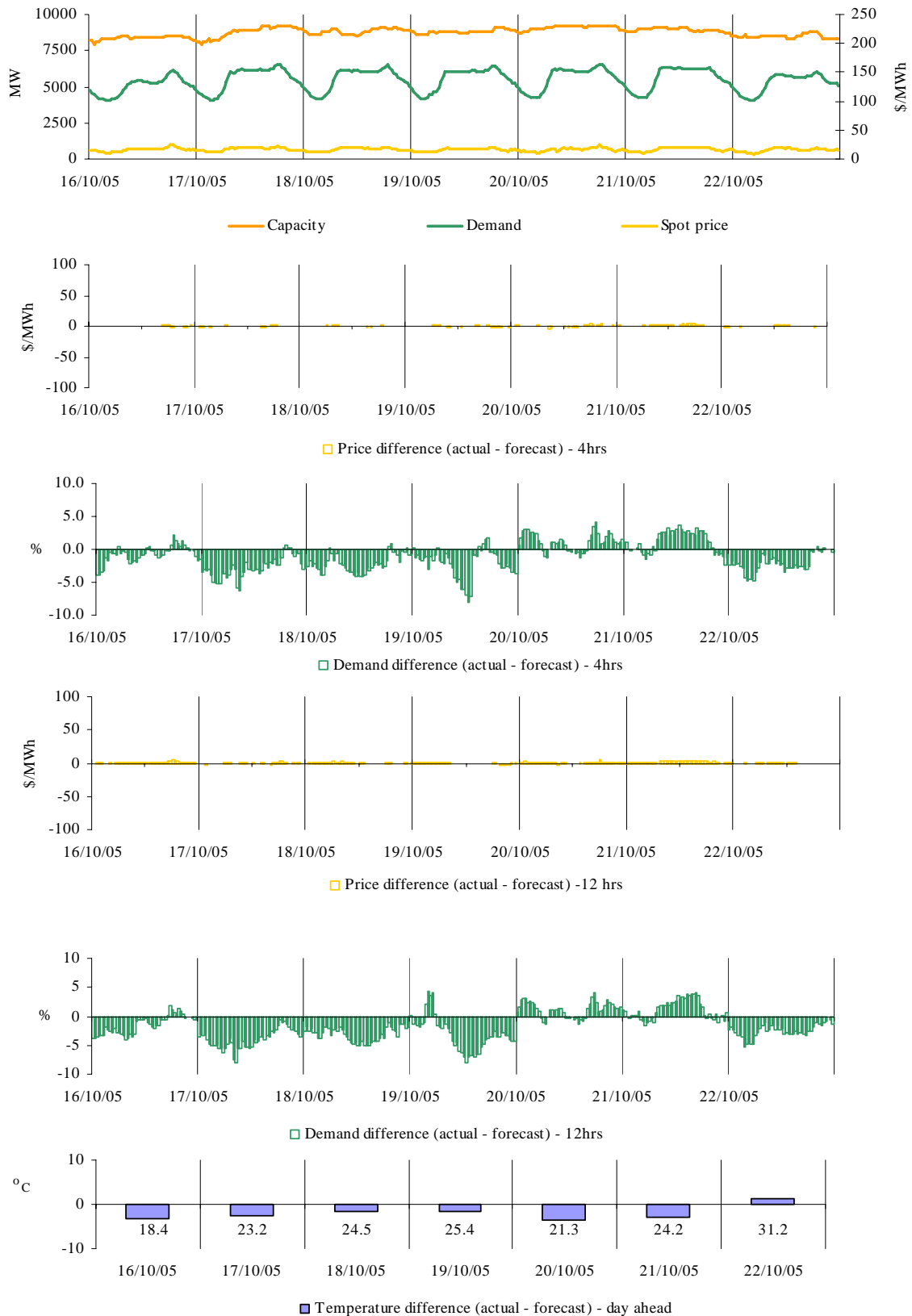
Figure 20: reasons for variations between forecast and actual prices



Price and demand

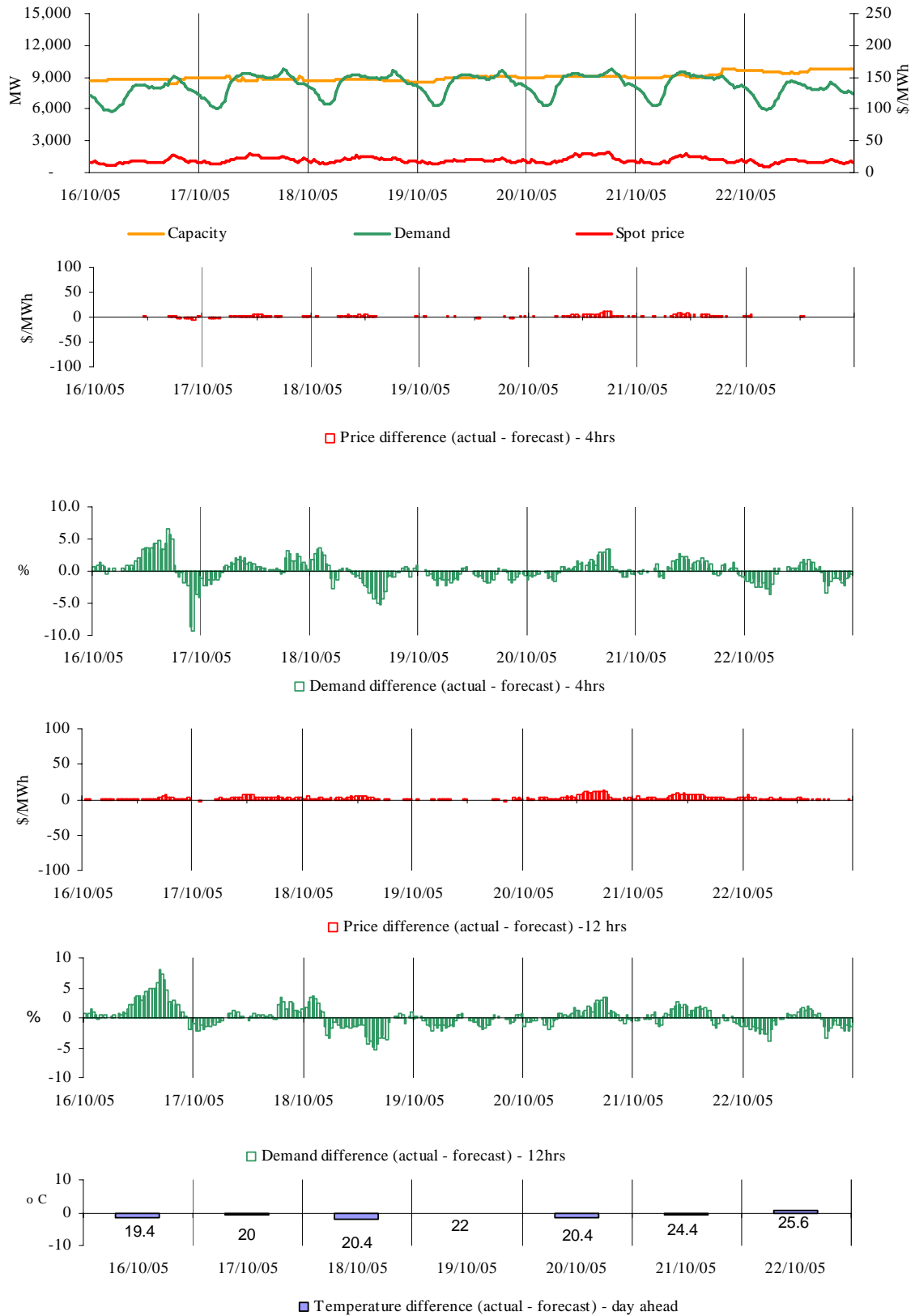
Figures 21 - 50 set out details of spot prices and demand on a regional basis. They include the actual spot price, actual demand outcomes and variation from forecasts made 4 and 12 hours ahead of dispatch on a daily basis. The differences between the maximum temperature and the temperature forecast at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



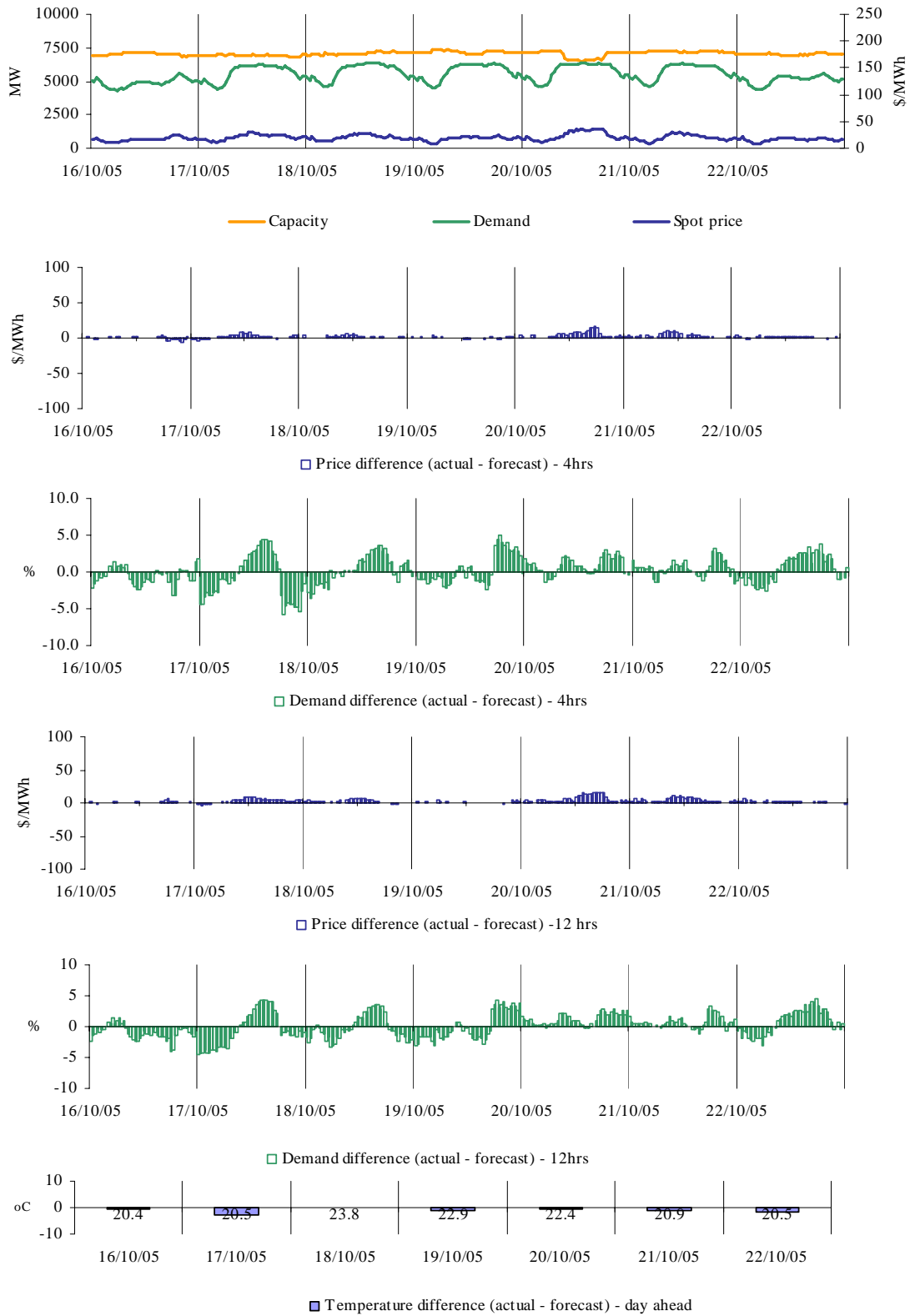
There were no occasions in Queensland where the spot price was greater than three times the weekly average price of \$16/MWh.

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



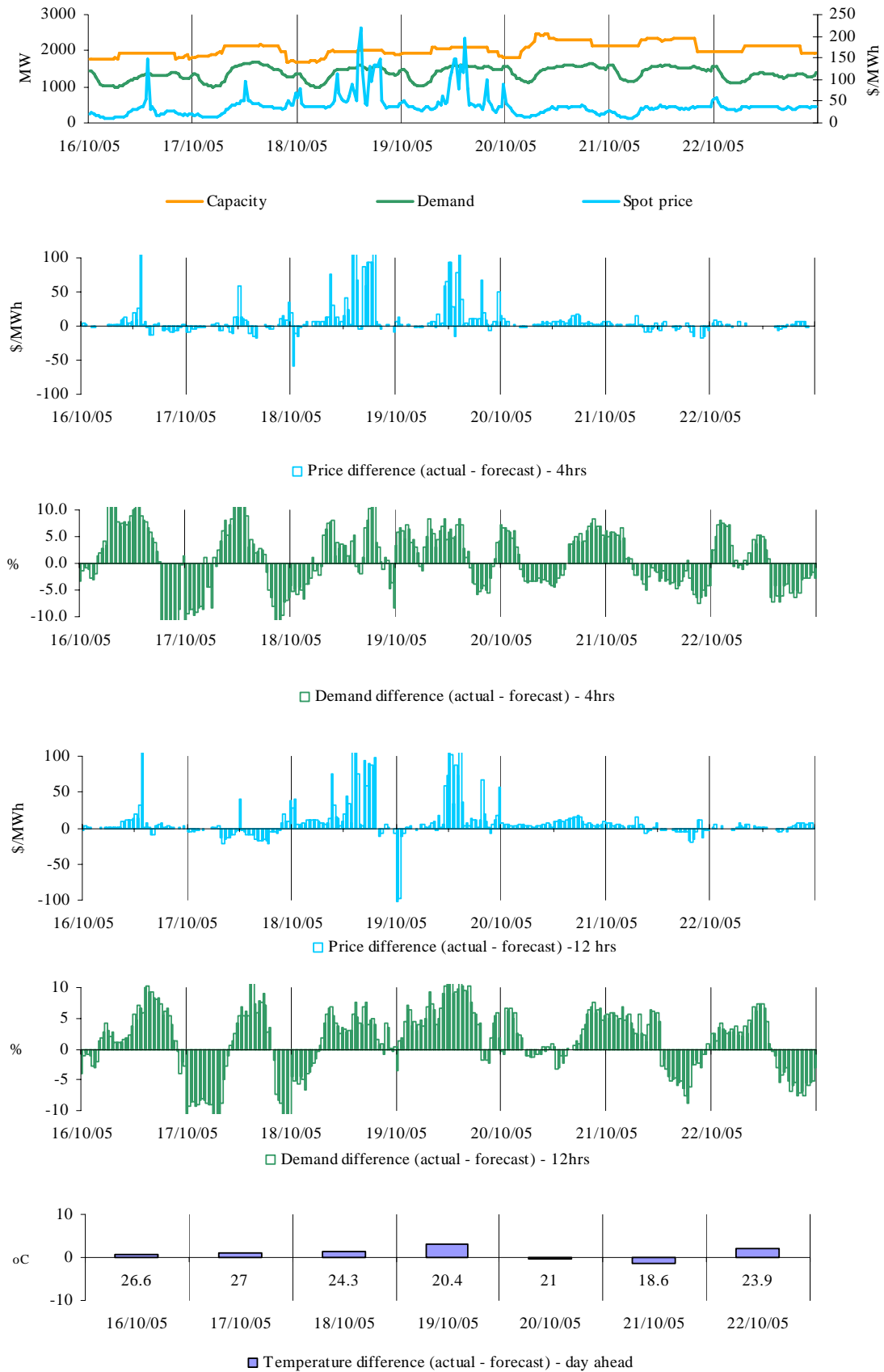
There were no occasions in New South Wales where the spot price was greater than three times the weekly average price of \$20/MWh.

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



There were no occasions in Victoria where the spot price was greater than three times the weekly average price of \$20/MWh.

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



There were 12 occasions in South Australia where the spot price was greater than three times the weekly average price of \$41/MWh. These occurred at 2pm on Sunday, between 2.30pm and 7.30pm on Tuesday and between 12.30pm and 5pm on Wednesday.

Sunday, 16 October

| 2:00 pm | Actual | 4 hr forecast | 12 hr forecast |
|-------------------------|---------------|----------------------|-----------------------|
| Price (\$/MWh) | 148.00 | 27.20 | 31.00 |
| Demand (MW) | 1 360 | 1 205 | 1 270 |
| Available capacity (MW) | 1 942 | 1 946 | 2 146 |

Conditions at the time saw demand around 160MW higher than forecast four hours to dispatch. There was no capacity priced between \$40/MWh and \$148/MWh. A planned network outage in South Australia was limiting flows from Victoria to around 170MW across the Heywood interconnector between 8.30 am and 3 pm. Flows across MurrayLink were limited to zero following a short notice outage which began around midnight. MurrayLink was at zero for most of the week.

The scheduled return of TRU Energy’s Torrens Island unit B2 at 6am was cancelled at around 6am. The rebid reason given was “Plant failure – capacity change due to plant problems”. This rebid effectively removed 160MW of available capacity priced at less than \$40/MWh for this trading interval.

At 11.49am, NRG Flinders rebid 41MW of capacity at Osborne from prices of \$51/MWh to prices of \$150/MWh. The rebid reason given was “Avoid uneconomical commitment of high cost capacity”. At 1.23pm, effective at 1.30pm, International Power rebid 80MW of capacity at Pelican Point from prices of less than \$40/MWh to prices above \$148/MWh. The rebid reason given was “SA Demand tracking ahead of PD”. Origin Energy, at 2pm, rebid 46MW of capacity at Quarantine from prices of \$9,000/MWh to zero. The rebid reason given was “Est (N) change in PDS”.

There was no other significant rebidding.

Tuesday, 18 October

| | | | |
|-------------------------|---------------|----------------------|-----------------------|
| 2:30 pm | Actual | 4 hr forecast | 12 hr forecast |
| Price (\$/MWh) | 162.10 | 49.07 | 46.49 |
| Demand (MW) | 1 587 | 1 522 | 1 496 |
| Available capacity (MW) | 1 997 | 2 023 | 2 029 |
| 3:00 pm | Actual | 4 hr forecast | 12 hr forecast |
| Price (\$/MWh) | 219.37 | 48.77 | 45.16 |
| Demand (MW) | 1 606 | 1 522 | 1 485 |
| Available capacity (MW) | 2 014 | 2 017 | 2 029 |
| 5:00 pm | Actual | 4 hr forecast | 12 hr forecast |
| Price (\$/MWh) | 131.47 | 43.87 | 38.10 |
| Demand (MW) | 1 523 | 1 506 | 1 419 |
| Available capacity (MW) | 2 008 | 2 018 | 2 029 |
| 6:00 pm | Actual | 4 hr forecast | 12 hr forecast |
| Price (\$/MWh) | 132.50 | 38.10 | 43.08 |
| Demand (MW) | 1 549 | 1 422 | 1 486 |
| Available capacity (MW) | 2 008 | 2 018 | 2 029 |
| 6:30 pm | Actual | 4 hr forecast | 12 hr forecast |
| Price (\$/MWh) | 132.50 | 38.00 | 44.87 |
| Demand (MW) | 1 554 | 1 393 | 1 481 |
| Available capacity (MW) | 2 009 | 2 019 | 2 029 |
| 7:00 pm | Actual | 4 hr forecast | 12 hr forecast |
| Price (\$/MWh) | 131.84 | 38.00 | 47.10 |
| Demand (MW) | 1 556 | 1 373 | 1 478 |
| Available capacity (MW) | 2 009 | 2 019 | 2 029 |
| 7:30 pm | Actual | 4 hr forecast | 12 hr forecast |
| Price (\$/MWh) | 148.17 | 38.10 | 51.01 |
| Demand (MW) | 1 577 | 1 407 | 1 515 |
| Available capacity (MW) | 2 022 | 2 019 | 2 029 |

Conditions at the time saw demand as much as 180MW higher than forecast four hours to dispatch. A short notice outage in Victoria limited flows into South Australia across the Heywood interconnector to less than 250MW. Flows along MurrayLink continued to be limited to zero following an outage which began around midnight on Sunday.

NRG Flinders shutdown Northern unit 1 at short notice on Monday night, the rebid reason given was “Boiler problem”. The 265MW unit remained offline until Thursday morning.

Throughout the day, International Power rebid 40MW of capacity at Pelican Point between prices of \$31/MWh to \$96/MWh on a number of occasions. The rebids were effective for no more than three trading intervals at a time. From 5.32pm, this capacity was priced at \$148/MWh. The rebid reasons given included “Change in SA dispatch prices”, “SA demand tracking ahead of forecast” and “SA 5MPD demand varying from PD”.

At 2.51pm, TRU Energy rebid, 30MW of capacity at Torrens Island from prices of \$149/MWh to prices above \$9,000/MWh. The rebid reason given was “Price/Volume trade-off (PD forecast inaccurate)”. The rebid was effective until 3.30pm.

At 3.08pm, AGL rebid 40MW of capacity at Hallet from prices above \$9,000/MWh to zero and committing a unit. The rebid reason given was “Predispatch: forecast price increase::increa”. This rebid was effective between 3.15pm and 4.30pm.

There was no other significant rebidding.

Wednesday, 19 October

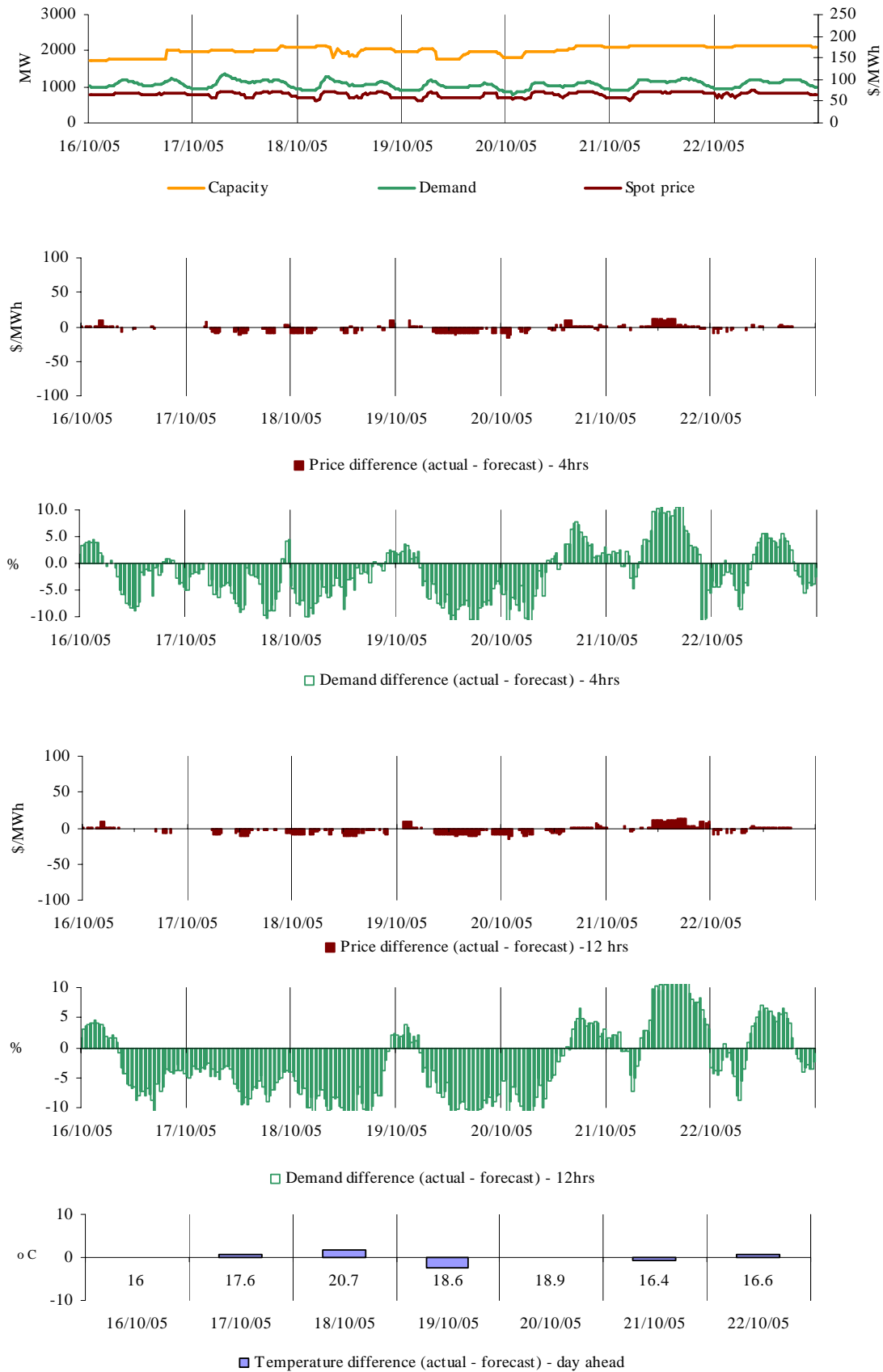
| | | | |
|-------------------------|---------------|----------------------|-----------------------|
| 12:30 pm | Actual | 4 hr forecast | 12 hr forecast |
| Price (\$/MWh) | 148.17 | 55.00 | 45.02 |
| Demand (MW) | 1 605 | 1 511 | 1 403 |
| Available capacity (MW) | 2 086 | 2 089 | 2 089 |
| 1:00 pm | Actual | 4 hr forecast | 12 hr forecast |
| Price (\$/MWh) | 148.00 | 55.00 | 45.14 |
| Demand (MW) | 1 608 | 1 507 | 1 405 |
| Available capacity (MW) | 2 086 | 2 089 | 2 089 |
| 2:00 pm | Actual | 4 hr forecast | 12 hr forecast |
| Price (\$/MWh) | 132.50 | 148.00 | 44.35 |
| Demand (MW) | 1,597 | 1,517 | 1,448 |
| Available capacity (MW) | 2,085 | 2,086 | 2,089 |
| 3:00 pm | Actual | 4 hr forecast | 12 hr forecast |
| Price (\$/MWh) | 195.67 | 38.84 | 40.95 |
| Demand (MW) | 1614 | 1479 | 1437 |
| Available capacity (MW) | 2081 | 2086 | 2089 |

Conditions at the time saw demand around 100MW higher than forecasts. NRG Flinders Northern unit 1 remained offline, with continuing outages on MurrayLink and the Heywood interconnector limiting imports from Victoria to less than 250MW. There was no capacity priced between \$50/MWh and \$150/MWh during this period.

At 2.55pm, TRU Energy rebid 60MW of capacity at Torrens Island from prices of \$150/MWh to \$300/MWh. The rebid reason given was “Material in change in Mkt conditions (Predispatch error)”. This rebid was effective until 3.30pm.

There was no other significant rebidding.

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



There were no occasions in Tasmania where the spot price was greater than three times the weekly average price of \$66/MWh.

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

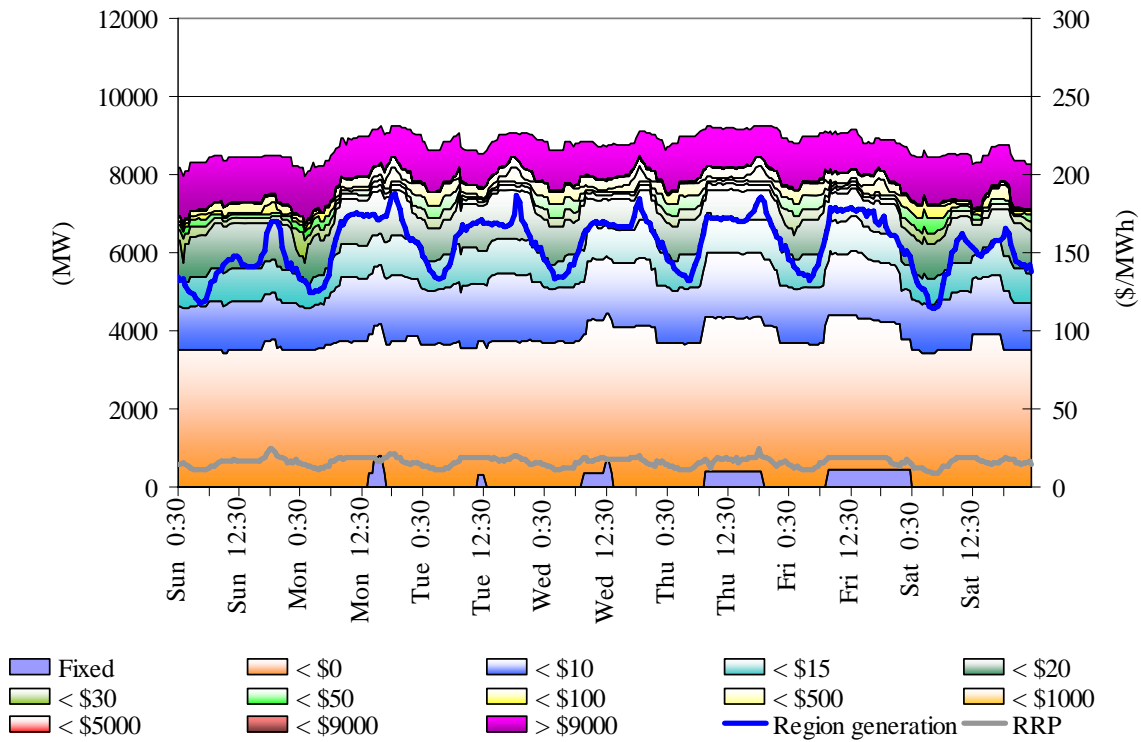


Figure 52: New South Wales closing bid prices, dispatched generation and spot price

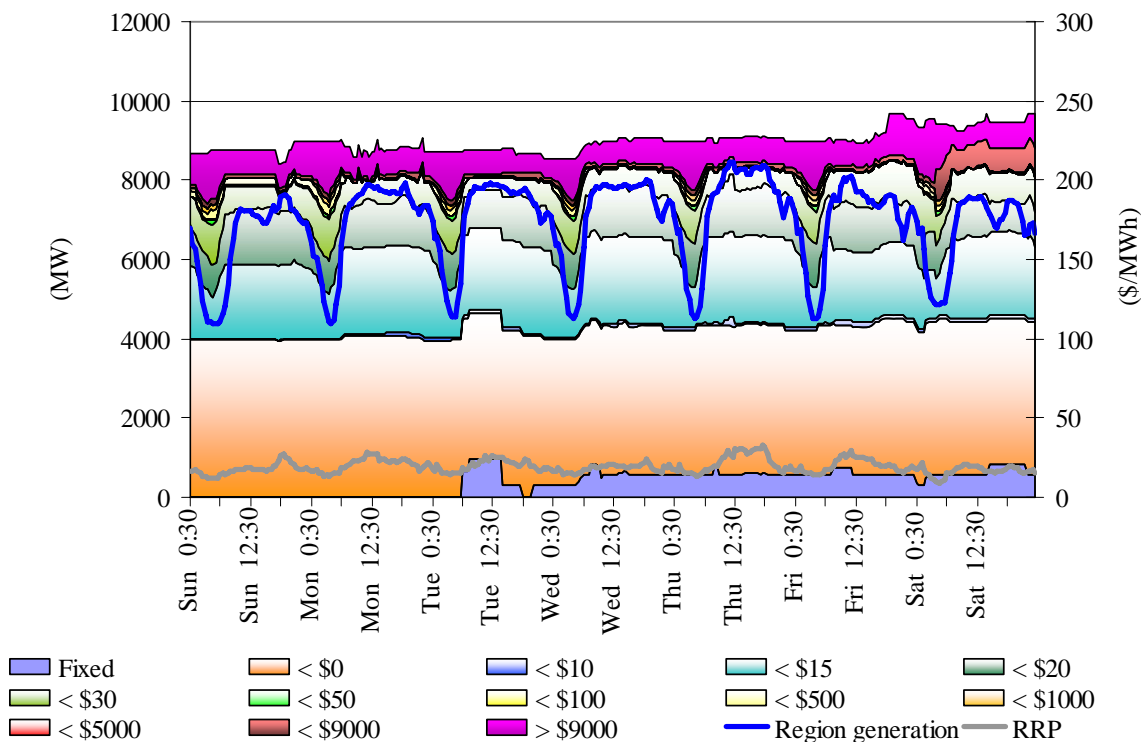


Figure 53: Victoria closing bid prices, dispatched generation and spot price

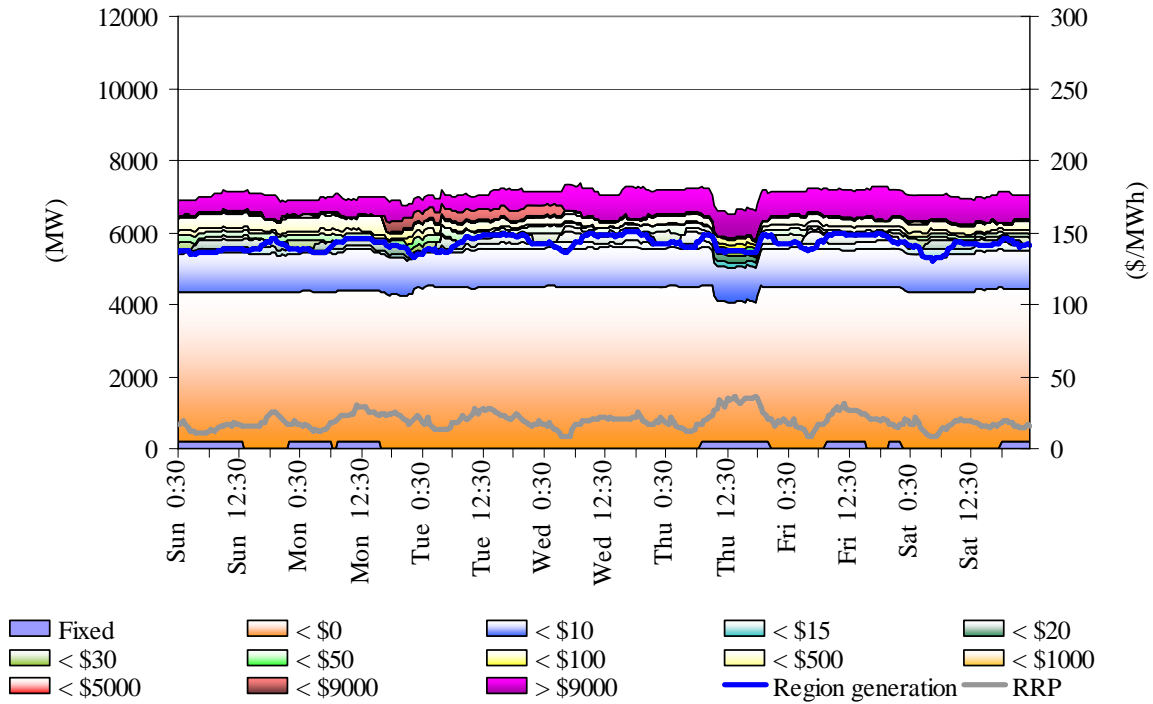


Figure 54: South Australia closing bid prices, dispatched generation and spot price

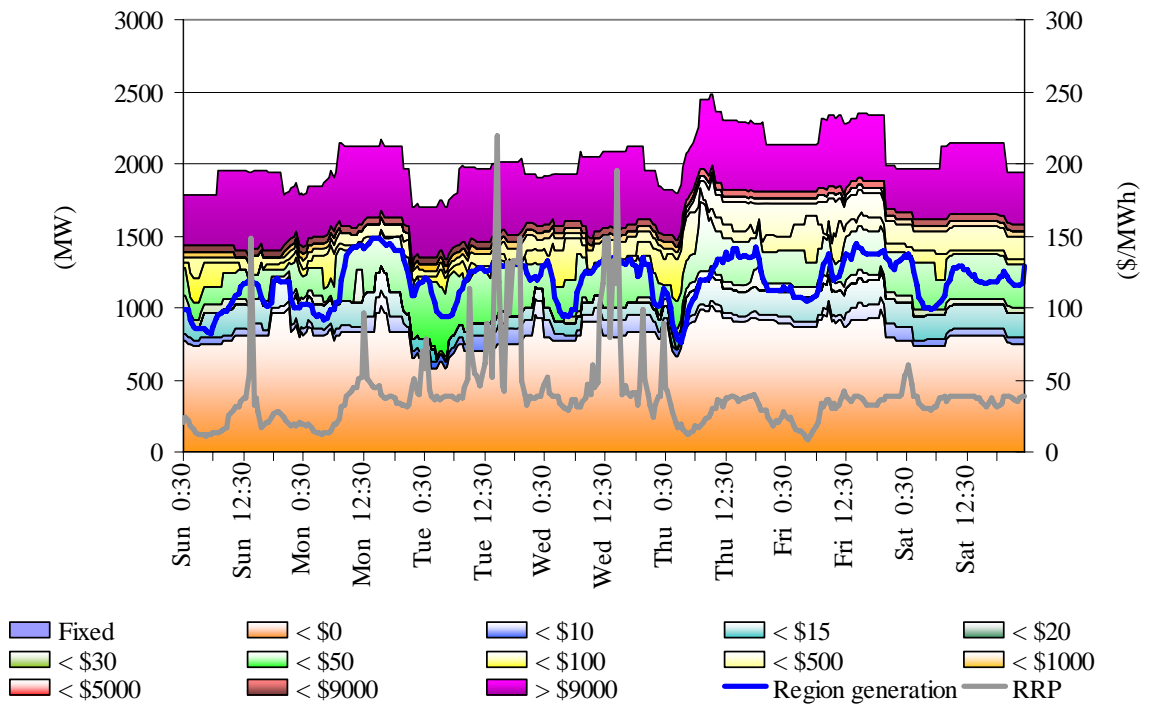
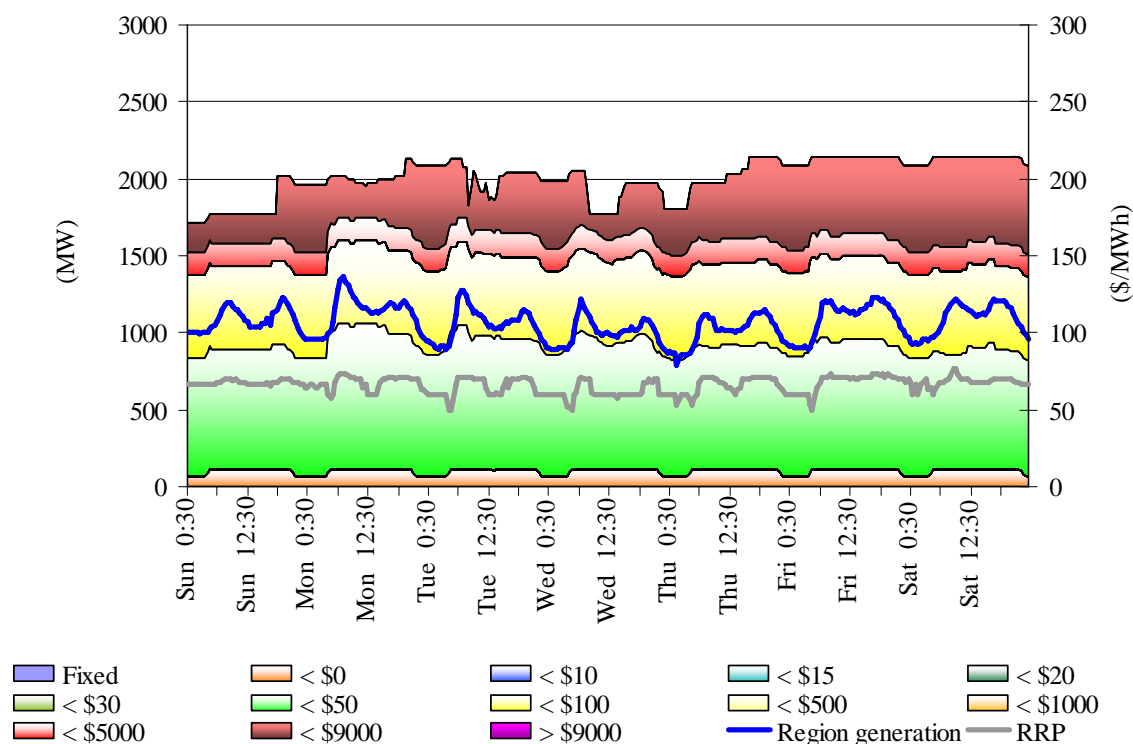


Figure 55: Tasmania closing bid prices, dispatched generation and spot price



Ancillary service market

The total cost of ancillary services on the mainland for the week was about \$1 million or 1.5 per cent of the total turnover in the energy market. A short notice outage in Victoria on Monday led increased requirements for lower 5 minute and lower 60 second services. South Australia was excluded from providing these services. The network element was returned to service on Wednesday. On Friday a further outage in Victoria, which lasted until Sunday, led to similar increases in ancillary services requirements. Prices for lower 5 minute reached \$68/MW at times. 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 (\$) | 1.01 | 0.47 | 0.93 | 1.62 | 0.80 | 4.71 | 11.05 | 1.78 |
| Previous week(\$) | 2.37 | 1.03 | 1.18 | 1.98 | 0.24 | 0.35 | 1.57 | 1.90 |
| Last Quarter(\$) | 1.62 | 0.91 | 1.00 | 1.36 | 0.20 | 0.64 | 2.29 | 1.56 |
| Market Cost (\$1000s) | 55 | 25 | 64 | 35 | 19 | 239 | 583 | 39 |
| % of energy market | 0.08% | 0.04% | 0.09% | 0.05% | 0.03% | 0.34% | 0.83% | 0.06% |

The total cost of ancillary services in Tasmania for the week was \$122 000 or 1 per cent of the total turnover in the energy market in Tasmania. Figure 57 summarises the volume weighted average prices and costs for the eight frequency control ancillary services across the interconnected regions.

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 (\$) | 1.18 | 1.05 | 1.05 | 1.06 | 1.17 | 1.05 | 1.05 | 1.06 |
| Previous week(\$) | 61.43 | 1.05 | 1.05 | 7.82 | 2.21 | 1.07 | 1.06 | 11.50 |
| Last Quarter(\$) | 19.40 | 1.05 | 1.14 | 2.25 | 6.25 | 1.06 | 1.06 | 1.26 |
| Market Cost (\$1000s) | 11 | 10 | 10 | 9 | 15 | 32 | 26 | 9 |
| % of energy market | 0.10 | 0.09 | 0.08 | 0.08 | 0.13 | 0.27 | 0.22 | 0.08 |

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

Figure 58: daily frequency control ancillary service costs

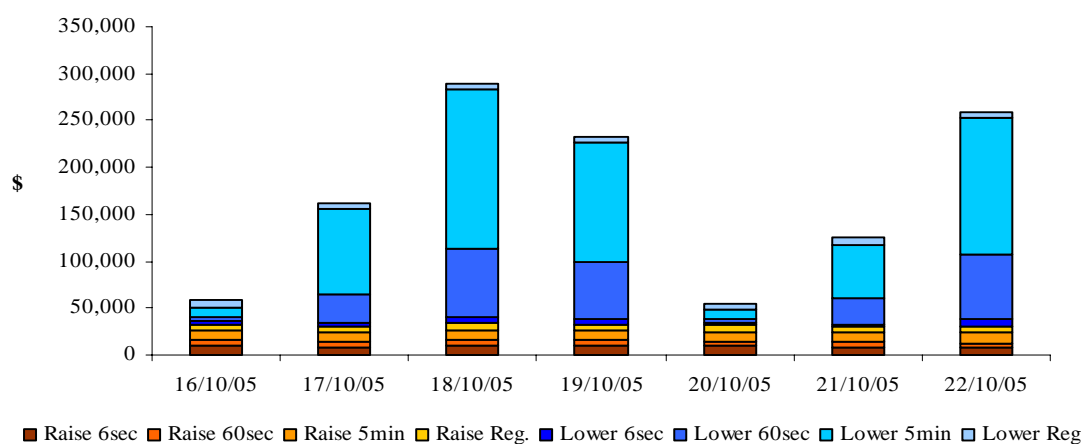
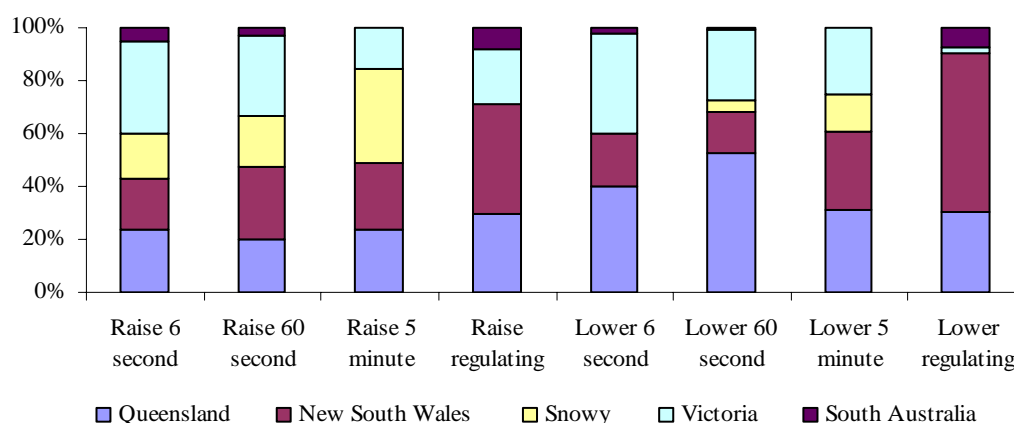


Figure 59 shows the regional weekly participation in each of the ancillary service markets on the mainland.

Figure 59: regional participation in ancillary services on the mainland



Figures 60 and 61 show 30-minute prices for each of the ancillary services.

Figure 60: prices for raise services

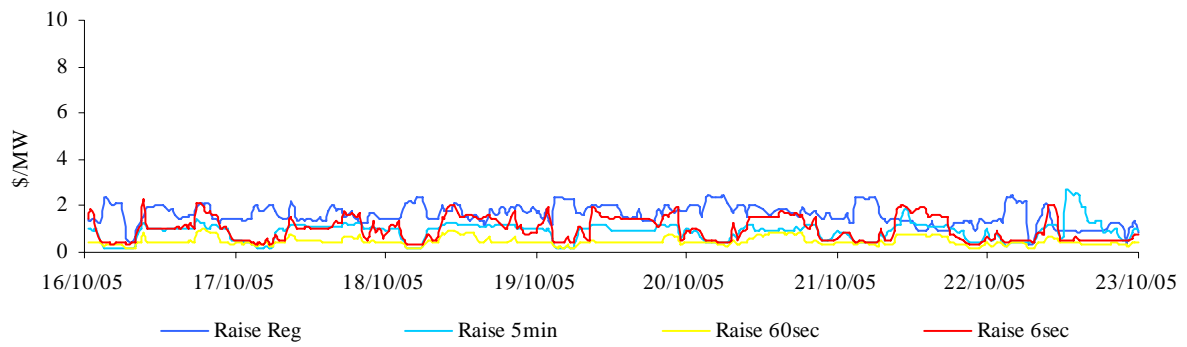


Figure 60A: prices for raise services - Tasmania

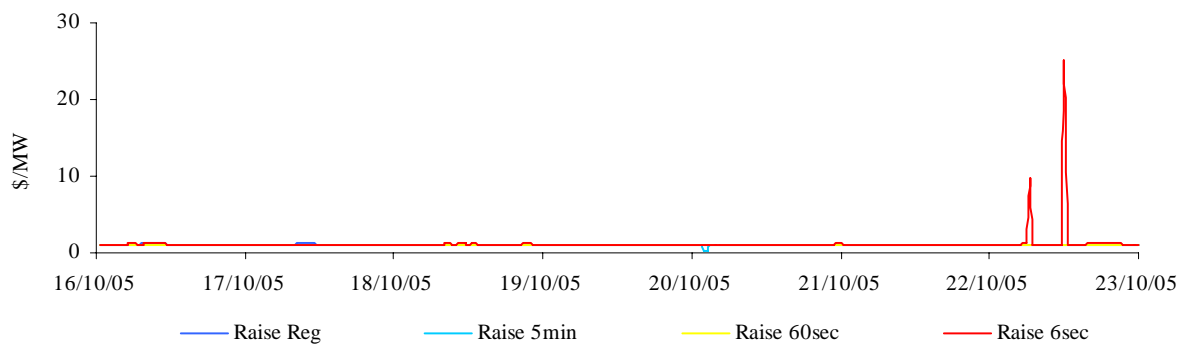


Figure 61: prices for lower services

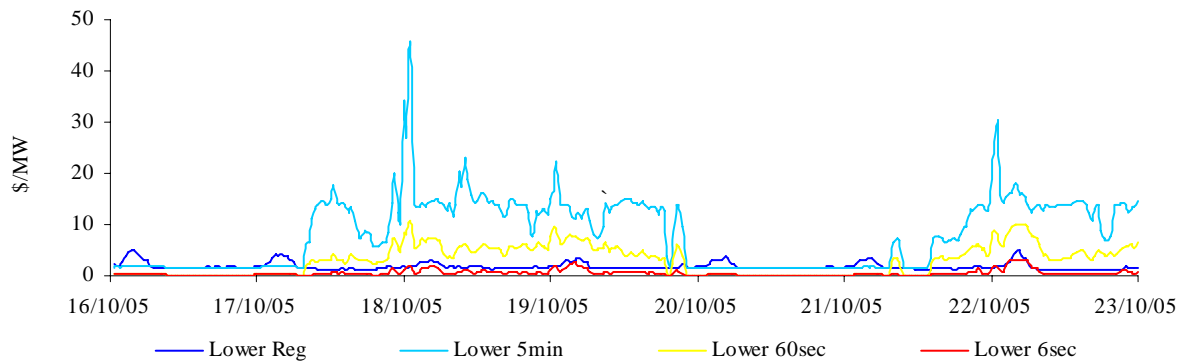
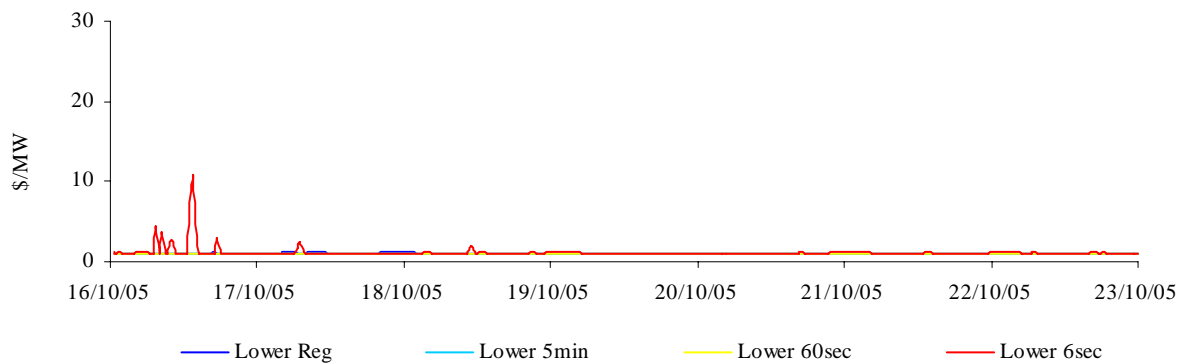


Figure 61A: prices for lower services - Tasmania



Figures 62 and 63 present for both raise and lower services the requirement for each service over the week.

Figure 62: raise requirements

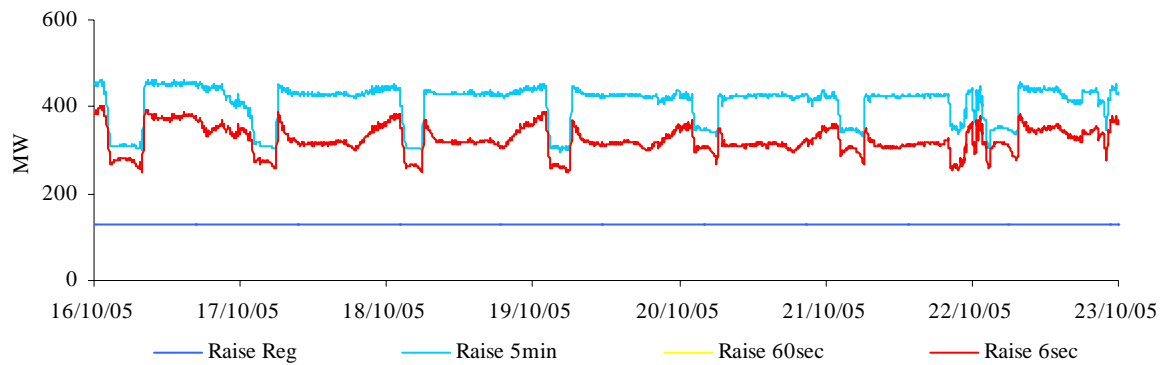


Figure 62A: raise requirements - Tasmania

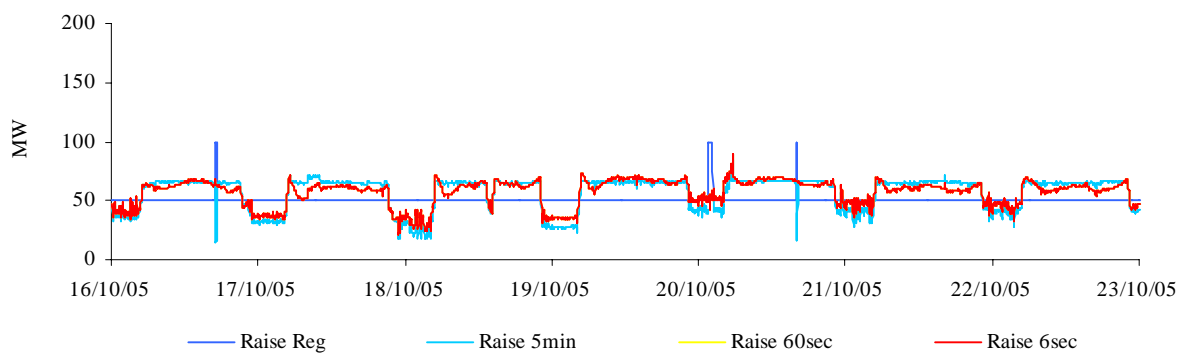


Figure 63: lower requirements

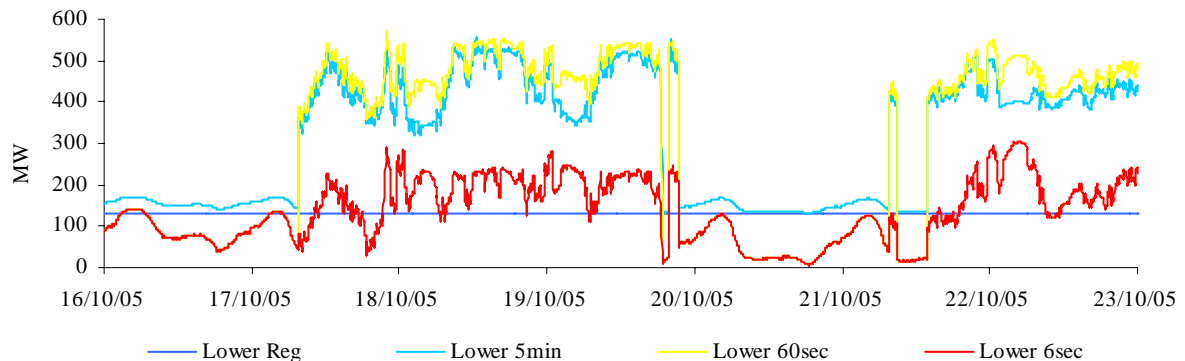


Figure 63A: lower requirements - Tasmania

