

Electricity Pricing Event Report – Tuesday 16 February 2016

Market Outcomes: Spot prices in Queensland were between \$598.03/MWh and \$4,095.99/MWh for 5 trading intervals (TIs) between 1400 hrs and 1930 hrs.

FCAS prices in all regions and Energy prices for the other NEM regions were not affected by this event.

Detailed Analysis: 5-Minute dispatch price in Queensland reached \$1,399.60/MWh or \$1,399.65/MWh for Dispatch Intervals (DIs) ending 1350, 1355, 1400, 1915 and 1920 hrs. 5-Minute dispatch price also reached \$12,888.65/MWh for DIs ending 1615, 1635 and 1715 hrs and reached \$11,530.80/MWh for DI ending 1645 hrs. The high prices can be attributed to high demand and rebidding of generation capacity.

Queensland demand peaked at 8,645 MW for TI ending 1700 hrs. The maximum temperature in Brisbane was 37.5 degrees.

Between DIs ending 1350 hrs and 1400 hrs, Stanwell, CS Energy and Millmerran rebid 241 MW of generation capacity from bands priced below \$60/MWh to bands priced above \$1399/MWh. CS Energy and ERM Power also withdrew a total of 114 MW with the reasons '*1353A MILL TRIP UNIT 4*' and '*1351P AMBIENT CONDITIONS - MATCH AVAIL TO EXPECTED UNIT OUTPUT*'.

For DI ending 1615 hrs, CS Energy rebid 160 MW of generation capacity from bands below \$300/MWh to the Market Price Cap (MPC) of \$13,800/MWh.

Between DIs ending 1635 hrs and 1645 hrs, Arrow Energy and Stanwell shifted/rebid 146 MW of generation capacity from bands priced at below \$201/MWh to bands priced above \$12,945.11/MWh or the MPC. Origin Energy withdrew 15 MW with the reasons '*1631A UNFORECAST MPC SPIKE SL*'.

Between DIs ending 1705 hrs and 1715 hrs, Arrow Energy, Stanwell, CS Energy and Millmerran shifted/rebid 792 MW of generation capacity from bands priced below \$300/MWh to bands priced above \$12,888.65/MWh or the MPC.

Between DIs ending 1910 hrs and 1920 hrs, Alinta, Stanwell, CS Energy and Millmerran shifted/rebid 165 MW of generation capacity from bands priced below \$1400/MWh to bands priced above \$12,945.11/MWh.

During the high priced intervals, the target flow on the QNI interconnector was limited up to 105 MW towards Queensland by the voltage stability constraint N^Q_NIL_A, and the system normal constraints N>>N-NIL__3_OPENED and N^^Q_NIL_B1. N^Q_NIL_A constraint prevents voltage collapse on the loss of Liddell-Muswellbrook 330kV line. N>>N-NIL__3_OPENED constraint manages the post-contingent flow on the Liddell-Muswellbrook no.83 330 kV line on trip of the Liddell-Tamworth no.84 330 kV line. N^^Q_NIL_B1 constraint prevents voltage collapse in New South Wales for tripping of the Kogan Creek PS.

The target flow on the Terranora interconnector was limited up to 0 MW by the system normal constraint equations N^Q_NIL_A, N>>N-NIL__3_OPENED, N^^Q_NIL_B1 and the outage constraint equation, N>N-BAMB_132_OPEN_A. N>N-BAMB_132_OPEN_A constraint prevents the overload of a Lismore – Dunoon 132 kV transmission line for the trip of the parallel line during the outage of the Ballina – Lennox Head 132 kV transmission line.

Cheaper priced generation was available but limited due to ramp rates (Tarong PS unit 1, 3 and 4 and Millmerran PS unit 1 and 2) or constrained off by thermal constraint equation $Q > \text{NIL_MRTA_B}$. This constraint equation limits the output of Oakey PS to prevent overloading of a Middle Ridge – Tangkam 110 kV line.

The 5-minute prices in Queensland reduced to below \$301/MWh in the DIs subsequent to the high priced intervals, when demand decreased and generation capacity was also rebid from higher price bands to lower price bands.

The high Queensland spot prices for TIs ending 1630, 1700 and 1730 hrs were forecast in the predispach schedules.