

## Electricity Pricing Event Report – Wednesday 17 February 2016

**Market Outcomes:** Spot prices in Queensland were between \$2,177.44/MWh and \$2,397.94/MWh for eight trading intervals (TIs) between 1430 hrs and 2000 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 \$12,888.65/MWh for eight Dispatch Intervals (DIs) between DIs ending 1430 hrs and 1955 hrs. These high prices can be attributed to high demand and rebidding of generation capacity.

Queensland demand peaked at 8,558 MW for TI ending 1700 hrs. The maximum temperature in Brisbane was 35 °C.

Between DIs ending 1415 hrs and 1430 hrs, CS Energy and Millmerran rebid 100 MW of generation capacity from bands priced below \$7/MWh to bands priced above \$13,799.99/MWh or the Market Price Cap (MPC) of \$13,800/MWh. Origin Energy also withdrew a total of 14 MW generation capacity with the reasons '*1405P CHANGE IN AVAIL - AMBIENT CONDITIONS SL*' and '*1410P CHANGE IN AVAIL - BACKPRESSURE ISSUES SL*'.

Between DIs ending 1525 hrs and 1530 hrs, CS Energy and Millmerran rebid 100 MW of generation capacity from bands priced below \$7/MWh to bands priced above \$13,799.99/MWh or the MPC.

For DI ending 1535 hrs, Stanwell shifted 96 MW of generation capacity from bands priced below \$25/MWh to bands priced above \$12,888.65/MWh or the MPC. For DI ending 1550 hrs, the 5 minute demand also increased by 97.26 MW.

Between DIs ending 1605 hrs and 1630 hrs, Arrow Energy, CS Energy, Millmerran, Origin Energy and QGC shifted/rebid 544 MW of generation capacity from bands priced below \$36/MWh to bands priced above \$11,530.80/MWh or the MPC. CS Energy, Origin Energy and AGL also withdrew a total of 28 MW generation capacity with the reasons '*1602P COAL QUALITY-SL*', '*1557P CHANGE IN AVAIL - AMBIENT CONDITIONS SL*' and '*1605~P~020 REDUCTION IN AVAIL CAP~206 UNEXP AMBIENT TEMP EFFECTS 3MW*'.

For DI ending 1705 hrs, Stanwell and Origin Energy shifted 161 MW of generation capacity from bands priced below \$30/MWh to bands priced above \$12,888.65/MWh or the MPC.

For DI ending 1835 hrs, Alinta, CS Energy, Stanwell, Origin Energy and Millmerran shifted/rebid 209 MW of generation capacity from bands priced below \$34/MWh to bands priced at or above \$12,888.65/MWh or the MPC.

Between DIs ending 1905 hrs and 1915 hrs, Arrow Energy, CS Energy and Millmerran shifted/rebid 612 MW of generation capacity from bands priced below \$300/MWh to bands priced at or above \$12,947.50/MWh. Millmerran also withdrew a total of 20 MW generation capacity with the reason '*18:58 P: BAGHOUSE LIMIT*'.

Between DIs ending 1935 hrs and 1955 hrs, Arrow Energy, CS Energy, Origin Energy, ERM Energy, AGL and Millmerran shifted/rebid 572 MW of generation capacity from bands priced below

\$300/MWh to bands priced at or above \$12,888.68/MWh. Ergon Energy also withdrew a total of 34 MW generation capacity with the reason '17/02/2016 18:30 A: HIGHER PD PRICES'.

During the high priced intervals, the target flow on the QNI interconnector was limited up to 237 MW towards Queensland by the system normal constraint equation  $N \gg N\text{-NIL\_3\_OPENED}$  and the voltage stability constraint equations  $N^{\wedge}Q\_NIL\_A$ , and  $N^{\wedge\wedge}Q\_NIL\_B1$ .  $N \gg N\text{-NIL\_3\_OPENED}$  constraint equation 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.  $N^{\wedge}Q\_NIL\_A$  constraint equation prevents voltage collapse on the loss of Liddell-Muswellbrook 330kV line.  $N^{\wedge\wedge}Q\_NIL\_B1$  constraint equation 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 9 MW towards Queensland by the system normal constraint equation  $N^{\wedge}Q\_NIL\_A$  and the outage constraint equation  $N > N\text{-BAMB\_132\_OPEN\_A}$ .  $N > N\text{-BAMB\_132\_OPEN\_A}$  constraint equation 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 (Gladstone PS unit 1, 3, 5 and 6 and Callide B PS unit 1), or required more than one DI to synchronise (Townsville GT unit 1 and Mt Stuart PS unit 3), or FCAS profiles (Gladstone PS unit 1, 3, 5 and 6) or constrained off by thermal constraint equation  $Q > NIL\_MRTA\_A$ . 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 \$39.63/MWh in the DIs subsequent to the high priced DIs, 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 1600, 1630 and 1730 hrs were forecast in the predispatch schedules.