

Electricity Pricing Event Report – Thursday 19 February 2016

Market Outcomes: Spot prices in Queensland were between \$1,794.65/MWh and \$2,227.36/MWh for 6 trading intervals (TIs) between 1400 hrs and 1900 hrs.

Queensland FCAS prices as well as energy and FCAS prices in other regions were not affected.

Counter price flows caused negative settlement residues of approximately \$468,000 to accumulate on the Queensland to New South Wales directional interconnector between TIs ending 1400 hrs and 1930 hrs. AEMO managed negative residues from 1720 hrs to 1825 hrs (Market Notices 52000 and 52008).

Further information is provided below.

Detailed Analysis: 5-Minute dispatch prices in Queensland were between \$12,700.10/MWh and \$12,888.65/MWh for 6 dispatch intervals (DIs) between 1340 hrs and 1845 hrs. These high prices can be attributed to high demand and rebidding.

Queensland demand peaked at 8,430 MW for TI ending 1700 hrs. The maximum temperature in Brisbane was 33.6 °C.

Between DIs ending 1335 hrs and 1340 hrs, Stanwell and CS Energy shifted/ rebid 268 MW of generation capacity from bands priced below \$300/MWh to the Market Price Cap (MPC) of \$13,800/MWh.

Between DIs ending 1505 hrs and 1520 hrs, Stanwell and CS Energy rebid 95 MW of generation capacity from bands priced at or below \$36.01/MWh to bands priced at \$13,799.99 or the MPC.

Between DIs ending 1535 hrs, Arrow Energy, CS Energy, Stanwell and Origin Energy shifted/rebid 337 MW of generation capacity from bands priced below \$25/MWh to bands priced at or above \$12,700.10/MWh or the MPC.

Between DIs ending 1605 hrs and 1610 hrs, Arrow Energy, CS Energy, Millmerran and Origin Energy shifted/rebid 354 MW of generation capacity from bands priced below \$12/MWh to bands priced at or above \$12,700.10 or the MPC. In addition, for DI ending 1605 hrs CS Energy injected 125 MW of generation capacity with the reason '1556A PRICE IN 5MIN PD HIGHER THAN 30MIN PD-SL', but withdrew it at 1610 hrs with the reason '1601P ASHING SYSTEM PROBLEM-SL'.

For DI ending 1705 hrs, 191 MW of generation capacity was shifted by Stanwell and Origin Energy from bands priced below \$30/MWh to bands priced at or above \$12,888.60 or the MPC.

Between DIs ending 1835 hrs and 1845 hrs, Stanwell, Millmerran and Alinta Energy shifted/rebid 158 MW of generation capacity from bands priced below \$351/MWh to bands priced above \$12,888.65 or the MPC. In addition, between DIs ending 1835 hrs and 1840 hrs Alinta Energy, Arrow Energy and Origin Energy withdrew 316 MW of generation capacity with the reasons '1800~P~GAS LINEPACK MANAGEMENT~', '1830P PIPELINE PRESSURE LOWER THAN EXPECTED SL' and '1830P UNIT SHUTDOWN AND LOCKOUT SL'.

Cheaper priced generation was available but limited due to ramp rates (Mt Stuart PS unit 3) or FCAS profiles (Callide B PS unit 2) or required more than one DI to synchronise (Mt Stuart PS unit 3).

During the high priced DIs, the target flow on the QNI interconnector was limited up to 145 MW towards Queensland by the system normal constraint equation $N \gg N_NIL_3_OPENED$ and the

voltage stability constraint equation N^Q_NIL_A. The constraint equation N>>N-NIL__3_OPENED 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. The N^Q_NIL_A constraint equation prevents voltage collapse on the loss of Liddell – Muswellbrook 330kV line.

The target flow on the Terranora interconnector was limited up to 0 MW towards Queensland by the outage constraint equation, N>N-BAMB_132_OPEN_A and the system normal constraint equation N^Q_NIL_A. The constraint equation N>N-BAMB_132_OPEN_A 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.

A negative settlement residues management constraint equation was invoked for 13 DIs between DIs ending 1725 hrs and 1825 hrs. This is due to excess cheaper generation in Queensland when a large amount of generation capacity rebid from higher priced bands to lower priced bands or the MFP.

The 5-minute prices in Queensland reduced to below \$72.33/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. For DIs ending 1725 hrs and 1730 hrs, excess cheaper generation in Queensland caused 5-minute dispatch prices in Queensland to collapse to below -\$998/MWh.

The high Queensland spot prices for TIs ending 1600, 1630 and 1730 hrs were forecast in the predispatch schedules.