

Electricity Pricing Event Report – Monday 13 February 2017

Market Outcomes: The spot price in Queensland (QLD) reached \$2,296.01/MWh for Trading Interval (TI) ending 1400 hrs on 13 February 2017.

Energy prices in other regions were not affected by this event. FCAS prices in all regions were not affected by this event.

Counter price flows caused negative settlement residues of approximately \$1,000,000 to accumulate on the Queensland to New South Wales directional Interconnector (QNI) between TIs ending 0700 hrs and 1400 hrs. AEMO managed negative settlement residues from 0810 hrs to 1500 hrs (Market Notices No. 57488 and 57504).

Detailed Analysis: The 5-Minute dispatch Energy price in Queensland (QLD) reached \$13,000/MWh for Dispatch Interval (DI) ending 1340 hrs. This high price can mainly be attributed to withdrawals of generator capacity during a planned outage and high demand while interconnector support was constrained and limited lower priced generation was available in the region.

Demand in QLD was high, reaching 9,139 MW during the high priced TI. This high demand coincided with high temperatures in QLD, with a daily peak of 35.2 degrees (Archerfield Airport).

The Liddell – Musswellbrook No.83 330 kV line had a planned outage between 0523 hrs and 1338 hrs on 13 February 2017. The outage constraint sets F-N-LDMU_83 and N-LDMU_83 were invoked between 0500 hrs and 1345 hrs.

Between DIs ending 1335 hrs and 1340 hrs, demand in Queensland increased by 46 MW and the sum of the flow on the interconnectors from Queensland towards New South Wales (NSW) increased by 43 MW to reach 480 MW. At DI ending 1340 hrs, flow on the Queensland – New South Wales Interconnector (QNI) and the Terranora interconnector were limited by the constraint equations $N \gg Q_LDMU_B$ and $\#N-Q-MNSP1_I-E$, respectively. The outage thermal constraint equation $N \gg Q_LDMU_B$ avoids the overload of the Liddell – Tamworth No.84 330 kV line for loss of the largest QLD generator during the outage of the Liddell – Musswellbrook No.83 330 kV line. The $\#N-Q-MNSP1_I_E$ quick constraint equation forces Terranora imports towards NSW to be at least 80 MW, and was applied to manage oscillations due to constraint action for the outage of the Coffs Harbour – Koolkhan No.96H 132 kV line (Market Notices No. 57496 and 57505). The Coffs Harbour – Koolkhan No.96H 132 kV line had a planned outage between 0705 hrs on 10 January 2017 and 0948 hrs on 8 April 2017.

At 1256 hrs Mt Stuart GT unit 3 tripped, losing 110 MW of generation capacity from band priced at the Market Floor Price (MFP) of $-\$1,000/\text{MWh}$. For DI ending 1340 hrs, Darling Downs PS withdrew 15 MW of generation capacity from band priced at $-\$1.03/\text{MWh}$ with the reason “1333P CHANGE IN AVAIL - AMBIENT CONDITIONS SL”.

Lower priced generation was available but was constrained off by the system normal constraint equation $Q > \text{NIL_MRTA_B}$ (Oakey PS unit 1 & 2), was trapped by FCAS profiles (Stanwell unit 4), or was limited by ramp rates (Milmerran PS units 1 & 2). The $Q > \text{NIL_MRTA_B}$ thermal constraint equation limits the generation from Oakey PS based on the rating of the Middle Ridge – Tangkam No.732 110 kV line.

The 5-minute price reduced to $\$180.09/\text{MWh}$ for DI ending 1345 hrs when demand in the QLD region reduced by 69 MW and the sum of the target flow on the interconnectors towards NSW decreased by 105 MW due to the completion of the Liddell – Musswellbrook No.83 330 kV line

planned outage. Additionally, a total of 119 MW of generation capacity was rebid from bands priced at \$198.50/MWh and above to the MFP.

The high 30-minute spot price for Queensland was not forecast in pre-dispatch schedules as it was due to withdrawals of generation capacity during a planned outage.