

Electricity Pricing Event Report – 05 May 2016

Market Outcomes: Spot price in Queensland reached \$2,336.52/MWh for trading interval (TI) ending 0800 hrs.

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

Detailed Analysis: The 5-minute dispatch price reached \$13,795.00/MWh for Dispatch Interval (DI) ending 0750 hrs. This high price can be attributed to a spike in demand and limited availability of cheaper priced generation.

Between DIs ending 0745 hrs and 0750 hrs, demand in Queensland increased by 108 MW to 6,580 MW.

Since DI ending 0535 hrs, the thermal constraint equation $Q > \text{NIL_BI_FB}$ was binding or violating. This constraint equation prevents overloading of feeder bushings at Boyne Island for the contingent loss of one Calliope River to Boyne Island 132 kV line, under system normal conditions. Between DIs ending 0745 hrs and 0750 hrs, flow across the Boyne Island no. 7145 and 7146 132kV lines increased by a total of 26.8 MVA. To prevent the constraint equation from violating, cheaper priced generation from Gladstone PS units 1 – 6 was constrained off further.

Other cheaper priced generation was available, but required more than one DI to synchronise (Braemar PS unit 1) or was ramp rate limited (Oakey GT unit 2, Stanwell PS units 1 and 3, Tarong PS units 2 and 3).

For DI ending 0750 hrs, the target flow towards Queensland on the QNI interconnector was limited to 412 MW towards Queensland by the $N^A Q_NIL_A$ constraint equation. This constraint equation prevents voltage collapse in New South Wales for the loss of Liddell – Muswellbrook no. 83 330kV line. The target flow towards Queensland on the Terranora interconnector was limited to 10 MW by the hard ramping constraint $\#R013963_001_RAMP_F$. This ramping constraint was invoked in preparation for a planned concurrent outage of two Directlink cables.

The 5-minute price reduced to \$27.08/MWh for DI ending 0755 hrs, when demand reduced by 340 MW and 272 MW of generation capacity was rebid from the Market Price Cap (MPC) of \$13,800/MWh to the Market Floor Price (MFP) of -\$1,000/MWh.

The high 30-minute spot price for Queensland was not forecast in the pre-dispatch schedules, as it was a result of a spike in demand, during the affected TI.

Version Control

VER	DATE	REVISION DESCRIPTION	AUTHOR	CHECKED	RESPONSIBLE MANAGER	APPROVED
v1	05/05/16	Original Document	Eloise Taylor	Abraham Yohannan	Nathan White	