

Electricity Pricing Event Report – Friday 22 July 2016 AM

Market Outcomes: Spot price in South Australia reached \$2,380.68/MWh for trading interval (TI) ending 0930 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 reached the Market Price Cap (MPC) of \$14,000/MWh in South Australia for dispatch interval (DI) ending 0920 hrs. This high price can be mainly attributed to an increase in South Australian operational demand, primarily due to the unplanned outage of a line and resulting loss of non-scheduled generation, during a planned network outage which limited Heywood interconnector flows.

Planned outage of the Tailem Bend – South East No.2 275kV line was scheduled between 1000 hrs on 16 July 2016 and 2049 hrs on 22 July 2016. This planned outage reduced the interconnector capacity on the Heywood Interconnector. Constraint set S-TBSE_1 was invoked for the duration of the outage.

At 0912 hrs, the Pt Lincoln – Sleaford 132kV line tripped due to lightning in the vicinity. As a result of this loss, Cathedral Rocks Wind Farm was disconnected from the network, causing available generation in South Australia to reduce by 30 MW. Additionally, Mt Miller Wind Farm reduced from 51 MW to 0 MW, however resumed generation 5 minutes later. Between DIs ending 0915 hrs and 0920 hrs, South Australian demand increased by 85 MW, mainly attributable to these reductions in non-scheduled generation.

Due to the increase in South Australian demand, between DIs ending 0915 hrs and 0920 hrs, the target flow towards Victoria on the Heywood interconnector reduced from 203 MW to 170 MW. The reduced target flow of 170 MW towards Victoria violated the export limit (171.97 MW towards Victoria) set by the transient stability constraint equation, V::S_SETB_TBSE_1. This constraint equation prevents transient instability across the VIC-SA cutset, for the loss of one South East – Tailem Bend 275kV line, during the outage of the parallel line. Between the same DIs, the transient stability constraint equation constrained off the output from Lake Bonney 2 and 3 wind farms by a total of 29 MW. The output from the wind farms could not be further reduced since they were limited by their ramp down rates. This caused constraint equation V::S_SETB_TBSE_1 to violate for DI ending 0920 hrs.

Between DIs ending 0915 hrs and 0920 hrs, the target flow towards South Australia on the Murraylink interconnector was limited to 220 MW by the upper transfer limit constraint equation VSML_220.

Several South Australian generating units were unavailable during the high priced DI. These included Torrens Island A units 1, 3 and 4 (360 MW total), Torrens Island B units 3 and 4 (420 MW total) and Pelican Point CCGT (510 MW).

Lower priced generation was available but required more than one DI to synchronise (Hallett GT), was limited by ramp rates (Torrens Island PS A unit 2, Torrens Island PS B units 1 and 2), or was constrained off by the transient stability constraint equation V::S_SETB_TBSE_1 (Lake Bonney 2 and 3 wind farms).

For DI ending 0925 hrs, the 5-minute price reduced to \$27.74/MWh in South Australia when 277 MW of generation capacity was rebid in South Australia from \$13,999.99/MWh or above to the Market Floor Price (MFP) of -\$1,000/MWh and demand reduced by 31 MW.

The high 30-minute spot price for South Australia was not forecast in the latest pre-dispatch schedule, as it occurred as a result of a spike in 5-minute demand in South Australia during the affected TI.