Electricity Pricing Event Report – Tuesday 25 October 2016 (TI ending 0000 on 26 October 2016)

Market Outcomes: South Australia spot price reached $4,708.99/MWh for trading interval (TI) ending 0000 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 $13,998.99/MWh in South Australia for dispatch intervals (DIs) ending 2335 hrs and 2340 hrs. This high price can be mainly attributed to a spike in South Australian demand due to hot water load management, low and constrained wind, limited interconnector support and unavailability of lower priced generation.

Between DIs ending 2330 hrs and 2335 hrs, South Australian demand increased by 244 MW to reach 1,466 MW. This increase in demand was as a result of a spike in hot water load. This demand decreased slightly to 1,457 MW at DI ending 2340 hrs.

The target flow towards South Australia on the Heywood interconnector increased from 416 MW for DI ending 2330 hrs to 449 MW for DI ending 2335 hrs. This increased flow violated the upper transfer limit of 429.12 MW set by the constraint equation V_S_NIL_ROCOF. This is a Rate of Change of Frequency (RoCoF) constraint that limits the flow on the Heywood interconnector from VIC to SA to prevent the RoCoF exceeding 3Hz/sec in SA following the loss of the Heywood interconnector.

The target flow towards South Australia on the Murraylink interconnector increased from 62 MW for DI ending 2330 hrs to 144 MW for DI ending 2335 hrs and was limited by the constraint equation VSML_ROC_80. This constraint equation limits the rate of change of flow towards South Australia across the Murraylink interconnector to 80 MW per 5 minutes.

Wind generation in South Australia was low for these DIs at approximately 216 MW and 206 MW for DI ending 2335 hrs and 2340 hrs, respectively.

At DI ending 2335 hrs, the voltage stability constraint equation V^S_NIL_SA_RECLASS violated when additional generation was sourced from The Bluff and Hallet 2 Wind Farms (21 MW). This constraint equation limits generation in SA to prevent the flow on the Heywood interconnector exceeding 600 MW following reduction in MW output from multiple generating units in SA.

At DI ending 2335 hrs cheaper priced generation was available but either required more than one DI to synchronise (Snuggery and Dry Creek GT 3), or was limited by its ramp rates (Hallet GT).

The flow on the Heywood Interconnector towards South Australia at DI ending 2340 hrs was limited to 440 MW by the V_S_NIL_ROCOF upper limit of 440.40 MW. Flow on Murraylink towards South Australia at the end of this DI increased to the upper limit of 196 MW set by the voltage stability constraint equation V^SML_NSWRB_2. This equation avoids voltage collapse for the loss of Darlington Point to Buronga 220kV line.

At DI ending 2340 hrs, 39 MW of wind generation from The Bluff and Hallet 1 and 2 Wind Farms was constrained off by V^S_NIL_SA_RECLASS.

For DI ending 2340 hrs ENGIE and Orgin rebid 209 MW of capacity from prices above $13,300.20/MWh to the Market Floor Price (MFP) of -$1,000/MWh. From these units only 40 MW was dispatched, with the rest being limited by ramp rates and requiring more than one DI to synchronise.

Lower priced generation was available (Snuggery) but was limited by ramp rates.

The 5-minute price reduced to $76.67/MWh for DI ending 2345 hrs, when AGL rebid 15 MW of generation capacity from bands priced at $13,998.99/MWh to bands priced at the MFP, demand decreased by 32 MW and additional lower priced generation became available.

The high 30-minute spot price for South Australia was forecast in the pre-dispatch schedule.