Electricity Pricing Event Report – Thursday 14 July 2016

Market Outcomes: Spot price in South Australia ranged between $534.26/MWh and $4,905.67/MWh for 13 trading intervals (TIs) between TIs ending 0900 hrs and 2100 hrs.

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

Actual Lack of Reserve Level 1 (LOR1) conditions had been declared for the South Australia region between 1745 hrs and 2030 hrs on 14 July 2016 (Market Notices 54507 and 54508).

Detailed Analysis: The 5-Minute dispatch price in South Australia ranged between $578.81/MWh and $13,998.99/MWh for 41 dispatch intervals (DIs) between DIs ending 0845 hrs and 2045 hrs. These high prices can be mainly attributed to a planned network outage limiting Heywood interconnector flows, planned generator outages and a steep supply curve in South Australia.

The Tailem Bend West 275 kV Bus (including Tailem Bend to South East No 1 275 kV line) was on a planned outage from 0811 hrs on 04 July and returned to service at 2039 hrs on 14 July. This planned outage reduced the interconnector capacity on the Heywood Interconnector. Constraint set S-TB_275KV_W_BUS was invoked for the duration of the outage.

The transient stability constraint equation V::S_TB_275KV_W_B_1, from the constraint set S-TB_275KV_W_BUS, limited the Heywood interconnector for all high priced DIs. This constraint equation prevents the transient instability across the VIC-SA cutest for the loss of the South East - Tailem Bend No. 2 275kV line, during the outage of the Tailem Bend West 275kV Bus (including Tailem Bend to South East No. 1 275kV line). The target flow on the Heywood interconnector ranged between 60 MW and 233 MW towards Victoria for DIs between 0845 hrs and 2045 hrs. For DI ending 2050 hrs, target flow on the Heywood interconnector increased to 302 MW towards South Australia when the constraint set S-TB_275KV_W_BUS was revoked.

For all high priced DIs, the target flow towards South Australia on the Murraylink interconnector was limited to between 190 MW and 220 MW by the thermal constraint equation V^SML_NSWRB_2 or the upper transfer limit constraint equation VSML_220. The V^SML_NSWRB_2 system normal constraint equation prevents voltage collapse in Victoria for loss of the Darlington Point – Buronga (X5) 220 kV line.

Torrens Island B unit 4 (210 MW) was unavailable for all high priced DIs. Pelican Point CCGT (510 MW) was unavailable prior to TI ending 1430 hrs and between TI ending 1600 hrs and 2100 hrs between 60 MW and 240 MW was available.

For all high priced DIs, up to 216 MW of generation capacity was offered between $500/MWh and $12,000/MWh, resulting in a steep supply curve.

For all high priced DIs, South Australia wind generation was low, between 134 MW and 367 MW.

For each high priced DI ending between 0855 hrs and 0945 hrs, up to 43 MW of generation capacity was shifted or rebid from bands priced at $300.99/MWh or below to bands priced at $13,299/MWh or above.

For DIs ending 0915 hrs and 0930 hrs, Origin Energy withdrew 24 MW (Quarantine PS unit 1) and 19 MW (Quarantine PS unit 2), with the reasons ‘0905P CHANGE IN AVAIL - LOW GAS PRESSURE SL’ and ‘0922P CHANGE IN AVAIL - GAS PRESSURES ISSUES REVISED SL’, respectively.

For DI ending 1005 hrs, 424 MW of generation capacity was shifted from the Market Floor Price (MFP) of -$1,000/MWh to bands priced at or above $119.99/MWh by a number of market participants.

For DI ending 2035 hrs, 200 MW of generation capacity was shifted from bands priced at or below $300.99/MWh to bands priced at $409.99/MWh or above.

Lower priced generation was available but required more than one DI to synchronise (Quarantine PS unit 4), was limited by ramp rates (Port Lincoln GT unit 3), was limited by fast start profiles (Angaston PS 1, Port Stanvac PS 1) or was constrained off by the transient stability constraint equation V::S_TB_275KV_W_B_1 (Lake Bonney WF Stage 2 and 3).

The 5-minute price in South Australia reduced to $416.03/MWh or below for the DIs subsequent to the high priced DIs, when demand reduced by up to 41 MW and up to 545 MW of generation capacity was rebid or shifted from bands priced at $119.99/MWh or above to bands priced at the Market Floor Price (MFP) of -$1,000/MWh.

The high energy prices were forecast in the latest Pre-dispatch schedules relevant to the high priced TIs.