

Electricity Pricing Event Report – Tuesday 17 May 2016

Market Outcomes: South Australian spot price reached \$1,126.17/MWh, \$2,062.18/MWh, \$1,949.43/MWh and \$1,860.31/MWh for trading intervals (TI) ending 0830 hrs, 1830 hrs, 1930 hrs and 0000 hrs, respectively.

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

Detailed Analysis: 5-Minute dispatch price in South Australia reached \$6,480.90/MWh for dispatch interval (DI) ending 0810 hrs and reached \$10,758.59/MWh for all three DIs ending 1830 hrs, 1915 hrs and 2335 hrs. These high prices can be attributed to a steep supply curve and low wind generation during a period of limited interconnector support.

Planned outage of the Cherry Gardens – Tailem Bend 275kV lines was scheduled between 0838 hrs on 17 May 2016 and 1630 hrs on 20 May 2016. Various ramping constraints were invoked between DIs ending 0800 hrs and 0900 hrs to prepare for the outage. The ramping constraints violated for DI ending 0810 hrs.

Between DIs ending 0800 hrs to 0810 hrs, the soft ramping constraint #R014008_006_RAMP_V forced the target flow across the Heywood interconnector to reverse from 191MW towards South Australia to 12 MW towards Victoria. The target flow on the Murraylink interconnector was limited to 220 MW towards South Australia by the upper transfer limit constraint equation, VSML_220. For the same DI, cheaper priced generation was available but was limited due to ramp rates (Torrens Island A units 1, 2 and 4, Torrens Island B units 3 and 4) or fast start profiles (Dry Creek unit 3).

During the high priced TIs, between 1830 hrs and 0000 hrs, wind generation in South Australia was low, between 63 MW and 65 MW. For all DIs between 1830hrs and 0000hrs, the target flow on the Heywood interconnector was limited up to 19 MW towards South Australia by the thermal constraint equation $S_{>>X_TB-EBUS+CGTB_3}$. This constraint equation prevents the overload of the Tailem Bend – Mobiong no.1 132kV line for the loss of the South East – Tailem Bend no.2 275kV line, during the outage of the Cherry Gardens – Tailem Bend 275kV line, Tailem Bend 275kV East Bus and Tailem Bend circuit breakers no.6535 and 6536

For DI ending 1915 hrs, Snowy Hydro rebid 63 MW of generation capacity from the \$0/MWh to \$13,745/MWh.

For DIs ending 1830 hrs and 1915 hrs, target flow on the Heywood interconnector was limited up to 48 MW, towards South Australia by the thermal constraint equation $S_{>>X_TB-EBUS+CGTB_3}$. For the same DIs, cheaper priced generation was available, but was limited due to ramp rates (Dry Creek CGT unit 3).

Between DIs ending 2330 hrs and 2335 hrs, South Australian demand increased by 183MW to 1,530MW, due to hot water load management. For the high priced DI ending 2335 hrs, target flow on the Heywood interconnector was limited to 19 MW towards South Australia by the thermal constraint equation $S_{>>X_TB-EBUS+CGTB_3}$.

The 5-minute price in South Australia reduced to at or below \$296.58/MWh for the DIs subsequent to the high priced DIs, when up to 680 MW of generation capacity was rebid from bands priced at or above \$64.98/MWh to bands priced at or below -\$991.08/MWh.

The high 30-minute spot prices for South Australia were not forecast in the latest pre-dispatch schedules, as it was a result of rebidding within the affected TI (TI ending 1930 hrs), implementation of pre-ramping constraints in the dispatch run (TI ending 0830 hrs) and the different formulation of constraints between pre-dispatch and dispatch (TIs ending 0830 hrs, 1830 hrs and 1930 hrs).

Version Control

VE R	DATE	REVISION DESCRIPTION	AUTHOR	CHECKED	RESPONSIBLE MANAGER	APPROVED
v1	23/05/2016	Original Document	Ellise Harmer	Eloise Taylor Abraham Yohannan	Yvonne Tan	