Electricity Pricing Event Report – Monday 27 June 2016*

Market Outcomes: South Australian spot price reached $1,252.20/MWh, $1,618.74/MWh and $1,241.39/MWh for trading intervals (TIs) ending between 0900 hrs and 1000 hrs.

Energy prices in other NEM regions were elevated, but did not reach the threshold for reporting purposes. FCAS prices in all regions were not affected by this event.

Detailed Analysis: 5-Minute dispatch price in South Australia ranged between $608.96/MWh and $1,756.38/MWh for all DIs between DIs ending 0835 hrs and 0950 hrs. These high prices can be attributed to a steep supply curve in South Australia, rebidding of generation capacity during a planned network outage.

- Planned outage of the Moorabool – Sydenham no. 1 500 kV line scheduled between 0630 hrs and 1649 hrs on 27 June 2016. Constraint sets V-MLSY_NOEMTT_R, V-SY_CB and V-SMSY were invoked for the duration of the outage.
- For the high priced TIs, South Australian demand was high, between 1,756 MW and 1,861 MW and, wind generation was low, between 167 MW and 192 MW.
- No generation capacity was offered between $0 and $119/MWh or between $591/MWh and $12,195MWh during the high priced DIs, resulting in a steep supply curve in South Australia.
- The thermal constraint equation, V>>V_MLSY_4BR started binding at DI ending 0755 hrs and bound for all high priced DIs. This constraint equation prevents the overload of the Keilor A2 or A4 500/220 kV transformer for the loss of the remaining Moorabool – Sydenham 500 kV line, during outage of the Moorabool – Sydenham no. 1 500 kV line.
- Target flow on the Heywood interconnector was limited by the constraint equation V>>V_MLSY_4BR.
    - Between DIs ending 0405 hrs and 0950 hrs, flow across the Keilor A2 and A4 500/220 kV transformers increased by 184 MVA and 182 MWA, respectively. This increased loading on the transformers contributed to the reduced flow towards South Australia on the Heywood interconnector.
    - For DIs ending between 0835 hrs and 0910 hrs, target flow towards South Australia on the Heywood interconnector reduced from 93 MW to 23 MW.
    - For DI ending 0915 hrs, the constraint equation, V>>V_MLSY_4BR, reversed the target flow on the Heywood interconnector towards Victoria.
    - For DIs ending between 0915 hrs and 0950 hrs, the same constraint equation increased the target flow on the Heywood interconnector from 18 MW to 51 MW towards Victoria.
- Target flow on the Murraylink interconnector was limited up to 206 MW towards South Australia by the constraint equations V>>V_MLSY_4BR and V^SML_NSWRB_2. The V^SML_NSWRB_2 constraint equation prevents the overload of the Buronga – Redcliffs (X5) 220 kV line during outage of the NSW Murraylink runback scheme.
- For DIs ending 0840 hrs, 0905 hrs, 0935 hrs, and 0940 hrs, AGL rebid or shifted up to 20 MW of generation capacity from bands priced at $590.06/MWh or below to bands priced at $12,195.07/MWh or above.
- Additional cheaper priced generation was available from Snuggery GT, but either required more than one DI to synchronise, or was limited by its fast start profile or ramp rates.

The 5-minute price in South Australia reduced to $409.99/MWh for DI ending 0955 hrs, when:

- South Australia demand decreased by 35MW.

- Flow across the Keilor A2 and A4 500/220 kV transformers decreased by 6 MVA and 5 MVA, respectively.
- Target flows on the Heywood Interconnector towards Victoria decreased by 34 MW.

** A summary was prepared as the maximum daily spot price was between $500/MWh and $2,000/MWh.*

Version Control

VER	DATE	REVISION DESCRIPTION	AUTHOR	CHECKED	RESPONSIBLE MANAGER	APPROVED
v1	04/07/2016	Original Document	Ellise Harmer	Eloise Taylor	Laura Walsh	