

Electricity Pricing Event Report – Monday, 10 October 2016*

Market Outcomes: Spot price in Tasmania reached \$618.67/MWh for trading interval (TI) ending 1000 hrs.

Energy and FCAS prices in other regions were not affected by this event. Raise FCAS prices in Tasmania was elevated, but remained below the reporting threshold.

Detailed Analysis: The 5-Minute dispatch price in Tasmania reached \$2,732.96/MWh for dispatch interval (DI) ending 1000 hrs. This high price can be mainly attributed to the following:

- In response to lightning storms in the area, the loss of both the Farrell – Sheffield No. 1 and No. 2 220 kV lines was declared a credible contingency between 0905 hrs and 1000 hrs. The Reclassification constraint sets F-T-FASH_N-2, F-T-FASH_N-2_HM_C and T-NIL_WCP_CLOSE were invoked between DI ending 0910 hrs and 1005 hrs to manage the potential simultaneous loss of the transmission lines.
- Between DIs ending 0955 hrs and 1000 hrs, Musselroe windfarm (WF) availability decreased by approximately 74 MW, from 160 MW to 86 MW.
- The target flow on Basslink was forced towards Victoria by the constraint equations F_T++FASH_N-2_TG_R6, F_T++FASH_N-2_TG_R5, F_T++NIL_WF_TG_R5 and F_T++RREG_0050. The F_T++FASH_N-2_TG_R6 constraint equation specifies the Tasmanian Raise 6 second requirement when the loss of both Farrell – Sheffield 275 kV lines is declared as credible, while Basslink is able to transfer FCAS. The F_T++RREG_0050 constraint equation sets the minimum Raise Regulation requirement in Tasmania to 50 MW, when Basslink is unable to transfer FCAS.
- The reduction in wind generation together with Basslink exporting towards Victoria resulted in a tight supply situation in Tasmania. As a result the target flow towards Victoria on Basslink reduced by 69 MW to 81 MW between DI ending 0955 hrs and 1000 hrs, which violated the lower limit of 105.11 MW set by the constraint equation F_T++FASH_N-2_TG_R6.
- For DI ending 1000 hrs, the violating constraint reduced generation from a number of Tasmanian generating units (Bastyan and Reece 2) by approximately 83 MW. Additional generation was sourced from Gordon PS and Tungatinah PS (95 MW).
- Further lower priced generation was available from Gordon PS, but was constrained by the equation T>T_TUMBNN1_110_1. This constraint prevents the overload on the Meadowbank Tee 2 - New Norfolk 110 kV line for the trip of the Tungatinah - New Norfolk No.3 110 kV line during the outage of the Tungatinah - Meadowbank - New Norfolk No.1 110kV line.
- Lower priced generation was also available from Mackintosh, however was limited by the constraint equation T_FASH_MAXGEN_1. This equation specifies the upper limit on the total generation from Mackintosh, Reece 1 and Tribute PS when both Farrell to Sheffield 220 kV lines are declared a credible contingency.
- The decreased target flow towards Victoria on the Basslink interconnector resulted in increased Contingency FCAS Raise requirements in Tasmania. Prices for Fast Raise and Raise Regulation FCAS were elevated to \$2,028.82/MWh and \$734.16/MWh for DI ending 1000 hrs, however remained below the reporting threshold.

The 5-minute dispatch price reduced to \$195.66/MWh for DI ending 1005 hrs, when:

- Gordon PS rebid an additional 34 MW of Fast Raise FCAS, 125 MW of Slow Raise FCAS, 116 MW of Delayed Raise FCAS and 116 MW of Raise Regulation FCAS capacity.

- The F_T++FASH_N-2_TG_R6 constraint was no longer violating and the F_T++RREG_0050 was no longer binding.
- Flow towards Victoria on the Basslink interconnector increased to 128 MW.
- Lower priced generation from Bastyan and Reece 2 was no longer constrained off.

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

Version Control

VE R	DATE	REVISION DESCRIPTION	AUTHOR	CHECKED	RESPONSIBLE MANAGER	APPROVED
v1	15/12/16	Original Document	Manisha Senadeera	Jennie Lu	Laura Walsh	