Electricity Pricing Event Report - Sunday 12 March 2017

Market Outcomes: The spot price in South Australia (SA) reached -$146.29/MWh for trading interval (TI) ending 2200 hrs on 12 March 2017.

The spot price in Tasmania (TAS) and Victoria (VIC) reached -$61.52/MWh and -$49.63/MWh for the same TI, respectively. Energy prices in other regions were not affected by this event. Tasmania FCAS prices were elevated, but did not reach the price threshold for reporting purposes. Other FCAS prices across all regions were not affected by this event.

Detailed Analysis: The 5-minute dispatch energy price in South Australia (SA) reached the Market Price Floor (MPF) of -$1,000/MWh, -$934.61/MWh in Tasmania (TAS) and -$461.40/MWh in Victoria (VIC) for dispatch interval (DI) ending 2150 hrs. These low prices can be attributed to a sudden trip of the Basslink interconnector, due to shutdown of the variable speed cooling fans on the thyristor-based converters. For further details regarding the Basslink interconnector trip, please refer to AEMO's System Event Report.

The power flow on the Basslink interconnector rapidly reduced from approximately 460 MW towards TAS at 21:40:30 hrs to approximately 200 MW towards TAS at 21:42:30 hrs. This decrease in flows resulted in a decrease in TAS frequency and operation of the under frequency load shed (UFLS) scheme to shed 144 MW of industrial load. When Basslink tripped at 2142 hrs, the frequency control special protection scheme (FCSPS) operated to shed a further 241 MW of industrial load. Load restoration began at 2155 hrs at a rate of 70 MW per DI, with all load restored by 2230 hrs.

At 2150 hrs, the constraint set I-BL_ZERO was invoked, restricting flow on the Basslink interconnector to zero in both directions. Accordingly, the target flow on the Basslink interconnector was 0 MW for all DIs between DIs ending 2155 hrs and DI ending 2235 hrs, when the I-BL_ZERO was revoked.

Between DIs ending 2145 hrs and 2150 hrs, target flow on the Victoria – New South Wales (NSW) interconnector from VIC to NSW reduced by 358 MW, and the sum of the target flow on the Heywood and Murraylink interconnectors from VIC to SA increased by 242 MW. For DI ending 2150 hrs, following the trip of the Basslink interconnector, the target flows on all interconnectors from VIC were limited by the system normal constraint equation V>>V_NIL_2A_R. For this DI, target flow on the VIC – NSW interconnector towards NSW was limited to 734 MW, target flow on the Heywood interconnector towards SA was limited to 354 MW, and target flow on the Murraylink interconnector towards VIC was limited to 148 MW. The V>>V_NIL_2A_R thermal constraint equation avoids the pre-contingent overload of the South Morang F2 500/330 kV transformer.

The increase in VIC interconnector exports towards SA resulted in excess cheaper priced capacity within SA. The dispatch of all generators in SA were decreased in accordance with the tie-breaking methodology, with SA wind generation reducing by a total of 250 MW. Torrens Island B was an exception to the tie-breaking, due to their provision of FCAS services at the time.

The 5-minute energy price in SA increased to $12.52/MWh for DI ending 2155 hrs when demand in the SA region increased by 40 MW and the sum of the target flows on interconnectors towards SA decreased by 99 MW.