

Electricity Pricing Event Report – Tuesday 05 July 2016

Market Outcomes: The NEM had high Raise Regulation Frequency Control Ancillary Service (FCAS) prices of \$151.52/MWh, \$239.85/MWh and \$169.77/MWh for trading intervals (TI) ending 1000 hrs, 1030 hrs and 1200 hrs, respectively.

Energy prices across all NEM regions were elevated, but did not reach the price threshold for reporting purposes.

Detailed Analysis: The Raise Regulation FCAS prices in the NEM were above \$150/MWh for 15 dispatch intervals (DIs) between DIs ending 0935 hrs and 1200 hrs. These high FCAS prices can be mainly attributed to increased FCAS requirements in the NEM, due to an increased accumulated time error in the NEM, limited availability of cheaper priced FCAS capacity and steep supply curves in the Raise Regulation markets.

Low frequency events (less than 49.85 Hz) in the NEM occurred at 0659 hrs for 22 seconds, between 0806 hrs and 0813 hrs for 100 seconds, at 0850 hrs for 8 seconds, at 0955 hrs for 8 seconds, between 1125 hrs and 1131 hrs for 174 seconds and at 1142 hrs for 4 seconds. In addition, sustained low frequency periods (between 49.99 Hz and 49.85 Hz) occurred throughout the day, contributing to an increase in the accumulated time error in the NEM.

The accumulated time error in the NEM was below -1.5 seconds for approximately 306 minutes between 0815 hrs and 1344 hrs. The minimum time error was -4.23 seconds at 1005 hrs. To manage the accumulated time error, the Raise Regulation requirement in the NEM was increased from 130 MW (default requirement) at 0815 hrs to between 175 MW and 250 MW for the high priced DIs between 0935 hrs and 1200 hrs.

For all high priced DIs, there was between 11 MW and 60MW of Raise Regulation capacity offered between \$100/MWh and \$645/MWh across all NEM regions, resulting in a steep supply curve.

A number of units providing cheaper priced FCAS across the NEM were dispatched close to their maximum capacity in the energy market, which effectively reduced their Raise Regulation FCAS availability. For the high priced TIs, 30-minute energy prices were elevated to between \$227.56/MWh and \$468.61/MWh across all NEM regions.

For DI ending 0935 hrs, CS Energy (Gladstone PS units 3 and 5) shifted 285 MW of generation capacity in the energy market from bands priced at \$262.99/MWh or above to bands priced at \$73/MWh or below. Between DIs ending 0930 and 0935 hrs, additional generation from Gladstone PS units 3 and 5 was dispatched into the energy market, effectively reducing their availability in the Raise Regulation Market from approximately 25 MW to 0 MW for both units. As a result, Raise Regulation services were procured from more expensive units in the NEM.

At 1021 hrs, Gladstone PS unit 2 tripped. Resultantly, for DI ending 1035 hrs, CS Energy withdrew 20 MW of Raise Regulation capacity from the unit with the reason '1027P TECHNICAL ISSUES-SL'.

The Raise Regulation prices in the NEM reduced to \$100.00/MWh for DI ending 1205 hrs, when the time error recovered to within +/-3 seconds and the Raise Regulation requirement in the NEM reduced.

The high 30-minute FCAS prices were not forecast in the latest pre-dispatch schedules, as the Raise Regulation requirement in the NEM was set to its default value of 130 MW for all schedules.