

Electricity Pricing Event Report – Tuesday 13 September 2016

Market Outcomes: South Australia Raise and Lower Regulation Frequency Control Ancillary Service (FCAS) price reached \$2,399.99/MWh and \$2,316.23/MWh, respectively, for trading interval (TI) ending 0730 hrs. Regulation FCAS prices ranged between \$151.51/MWh and \$307.05/MWh for all TIs between TIs ending 0800 hrs and 1730 hrs.

FCAS prices in the other regions and energy prices in all regions were not affected by this event.

Actual Lack of Reserve Level 2 (LOR2) condition had been declared for the South Australia region between 0830 hrs and 1715 hrs on 13 September 2016 (Market Notices 54897 and 54906). During this LOR2 period, there were sufficient capacity reserves in the South Australia region to meet electricity demand. However, in the event of a credible contingency, whereby South Australia separated from Victoria, power interruptions would have been likely, due to automatic under-frequency load shedding. This would have been triggered as a result of ramp rate limitations, associated with dispatching additional generation in a short timeframe.

Detailed Analysis: The 5-minute Regulation FCAS prices in South Australia ranged between \$299.99/MWh and \$498.70/MWh for all dispatch intervals (DIs) between DI ending 0705 hrs and 1715 hrs excluding DI ending 0710 hrs. For DI ending 0710 hrs, Raise and Lower Regulation FCAS prices reached \$12,899.99/MWh and \$12,000.00/MWh, respectively. These high prices were mainly attributed to increased Regulation FCAS requirements within South Australia during a planned outage of Moorabool – Mortlake 500kV line and limitations associated with available Regulation FCAS from Pelican Point.

The Moorabool – Mortlake 500kV line was on a planned outage between 0704 hrs and 1659 hrs on 13 September 2016. This outage increased the risk of electrical separation between South Australia and Victoria. The outage constraint sets F-V-MLMO, S-BOTH_BLKRG_C_OS and V-MLMO were invoked for between 0700 hrs and 1715 hrs on 13 September 2016. The constraint equations F-S+LREG_0035 and F-S+RREG_0035 contained within the F-V-MLMO constraint set required 35 MW of Lower and Raise Regulation FCAS capacity to be sourced from within South Australia.

Regulation FCAS in South Australia during the outage period was provided by Torrens Island B PS, Torrens Island A PS, Pelican Point PS and Osborne PS.

Following the invocation of the local Regulation FCAS requirement, at DI ending 0705 hrs, the FCAS price reached \$299.99/MWh and \$498.70/MWh for Raise and Lower Regulation services, respectively.

For DI ending 0710 hrs, Pelican Point PS output of 167.91 MW was below the unit's Regulation FCAS trapezium minimum enablement limit of 168 MW. As a result, for DI ending 0710 hrs, Pelican Point PS was stranded (unavailable) for Regulation FCAS and additional Regulation FCAS capacity had to be sourced from Torrens Island B units 1, 3 and 4 at more expensive price bands. For DI ending 0715 hrs, Pelican Point PS became available (not limited) for Regulation FCAS and the prices reduced to \$299.99/MWh and \$498.70/MWh for Raise and Lower Regulation, respectively.

Between DIs ending 0720 hrs and 1715 hrs, Regulation FCAS prices ranged between \$299.99/MWh and \$337.19/MWh. For DI ending 1720 hrs, the 5-minute Raise and Lower Regulation FCAS prices reduced to \$14.95/MWh and \$3.02/MWh, respectively, when the outage constraint set F-V-MLMO was revoked following completion of the outage.

The high Regulation FCAS prices were forecast in the latest pre-dispatch schedules, except for the high prices at TI ending 0730 hrs, which were not predictable as they were the result of stranding (unavailability) of generators within the affected TI.