

Electricity Pricing Event Report – Monday 09 May 2016

Market Outcomes: The Mainland (Queensland, New South Wales, Victoria and South Australia) had high Raise Regulation Frequency Control Ancillary Service (FCAS) prices, ranging between \$79.00/MWh and \$231.16/MWh for 9 trading intervals (TI) between TIs ending 0800 hrs and 1300 hrs. Fast Raise FCAS price in the Mainland ranged between \$61.21/MWh and \$144.23/MWh for the same intervals.

FCAS and Energy prices in Tasmania were not affected by this event. Energy prices for the Mainland were elevated but did not reach the price threshold for reporting purposes.

Detailed Analysis: The Raise Regulation FCAS prices in the Mainland were above \$100/MWh for 33 dispatch intervals (DIs) between DIs ending 0755 hrs and 1255 hrs. The Fast Raise FCAS prices in the Mainland were above \$100/MWh for 31 DIs between DIs ending 0800 hrs and 1255 hrs. These high FCAS prices can be mainly attributed to increased FCAS requirements on the Mainland, due to a reduction in wind generation in South Australia, planned generator outages, limited availability of cheaper priced FCAS capacity and steep supply curves in the Raise Regulation and Fast Raise FCAS markets. In addition, FCAS support from Tasmania was unavailable due to the outage of the Basslink interconnector from 20 December 2015.

Since early April 2016, there has been limited availability of cheaper priced Raise Regulation and Fast Raise FCAS capacity across the Mainland. Several generating units that typically provide cheaper priced Raise Regulation and Fast Raise FCAS capacity were unavailable for extended periods. These include, Bayswater PS Unit 2, Vales Point PS Unit 6, Torrens Island PS A Units 1 – 4 and Torrens Island PS B Unit 2. Additionally, on 9 May 2016, Stanwell PS Unit 1 was unavailable until 1305 hrs.

During the high priced TIs, wind generation steadily reduced across South Australia from 1055 MW, for TI ending 0800 hrs, to 505 MW, for TI ending 1300 hrs. Some wind farms in South Australia experienced high wind speeds during this period, resulting in high wind speed cut-out of wind turbines. This reduced the generation output from the wind farms and contributed to an increase in the accumulated time error in the mainland.

The accumulated time error in the Mainland was below -1.5 sec for 97 minutes between 0951 hrs and 1238 hrs. To manage the time error, the amount of Raise Regulation services enabled in the Mainland increased from 180 MW for DI ending 0950 hrs to 244 MW (maximum) for DI ending 1055 hrs.

Between DIs ending 0705 hrs and 0735 hrs, 240 MW of Fast Raise (Wivenhoe PS No.2 Pump) and 60 MW of Raise Regulation (Stanwell PS Units 2 and 3) FCAS capacity was withdrawn by CS Energy and Stanwell respectively. The reasons submitted were '1501P FCAS ENABLEMENT UPDATE-SL' (CS Energy) and '0724P MANAGE PORTFOLIO SPS1 TRIP SL' (Stanwell). For DI ending 0835 hrs, IPM Australia withdrew a total of 135 MW of Loy Yang B PS Unit 2 generation capacity from the Raise Regulation and Fast Raise FCAS markets with the reason '0822P UPDATE AVAIL: UNIT GOING OOS - TUBE LEAK'. For the same DI, 300 MW of Loy Yang B PS Unit 2 generation capacity was also withdrawn from the Energy market with the same reason.

A number of units providing cheaper priced FCAS in the Mainland were dispatched close to their maximum capacity in the energy market, which effectively reduced their Fast Raise and Raise Regulation FCAS availability. For the high priced DIs, 5-minute energy prices were elevated to between \$124.90/MWh and \$480.20/MWh across the Mainland regions.

Between DIs ending 0850 hrs and 0855 hrs, Mainland demand increased by 109 MW. Thus, additional generation capacity was dispatched in the energy market, further reducing the availability in the Fast Raise and Raise regulation markets for that period.

The Mainland FCAS prices for Raise Regulation and Fast Raise Services reduced to \$22.47/MWh and \$16.91/MWh, respectively, for DI ending 1300 hrs, when the time error in the Mainland had recovered, 320 MW of generation capacity was rebid in the energy market from bands priced at or above \$299.99/MWh to bands priced at or below \$0/MWh and availability of Fast Raise and Raise Regulation capacity increased.

The high 30-minute Mainland FCAS prices for all affected TIs (except TIs ending 0800 hrs and 1300 hrs) were forecast in the pre-dispatch schedules.

Version Control

| VER | DATE | REVISION DESCRIPTION | AUTHOR | CHECKED | RESPONSIBLE MANAGER | APPROVED |
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| v1 | 17/05/16 | Original Document | Eloise Taylor | Abraham Yohannan Ellise Harmer | Yvonne Tan | |