

Electricity Pricing Event Report – Monday 30 May 2016

Market Outcomes: The Mainland (Queensland, New South Wales, Victoria and South Australia) had high Delayed Raise and Raise Regulation Frequency Control Ancillary Service (FCAS) prices, ranging between \$86.75/MWh and \$146.46/MWh, between trading intervals (TIs) ending 1730 hrs and 1830 hrs. The Fast Raise FCAS price in the Mainland ranged between \$29.49/MWh and \$34.20/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 5-minute Delayed Raise and Raise Regulation FCAS prices in the Mainland ranged between \$61.13/MWh and \$267.63/MWh between dispatch intervals (DIs) ending 1705 hrs and 1830 hrs. The 5-minute Fast Raise FCAS prices in the Mainland ranged between \$17.72/MWh and \$38.00/MWh for the same DIs. These high FCAS prices can be mainly attributed to increased Regulation FCAS requirements on the Mainland due to an increasing time error. Other contributing factors include, rebidding of generation capacity from the Delayed Raise and Fast Raise FCAS markets, limited availability of cheaper priced FCAS capacity and steep supply curves in the 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 Delayed Raise FCAS capacity across the Mainland. Several generating units that typically provide cheaper priced Raise Regulation and Delayed Raise FCAS capacity were unavailable for extended periods. These include, Bayswater PS Unit 2, Vales Point PS Unit 6 and Torrens Island PS B Unit 2.

Wind generation decreased in South Australia steadily throughout the day, from 958 MW at TI ending 1100 hrs to 590 MW at 1700 hrs. As wind generation decreased and NEM demand increased in the afternoon, the accumulated time error in the Mainland fell below -1.5 sec between DIs ending 1620 hrs and 1755 hrs. To manage the time error, the amount of Raise Regulation services enabled in the Mainland were elevated above the base requirement of 130 MW between DIs ending 1620 hrs and 1800 hrs. Raise Regulation requirements reached a maximum of 220 MW at DI ending 1740 hrs. The additional Raise Regulation had to be sourced from more expensive units.

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 Raise FCAS availability.

During the peak afternoon demand, between DIs ending 1705 hrs and 1830 hrs, Mainland total demand increased by 1,557 MW. Thus, additional generation capacity was dispatched in the energy market, further reducing the availability in the Raise FCAS markets for that period.

Between DIs ending 1710 hrs and 1830 hrs, 5-minute energy prices were elevated to between \$126.93/MWh and \$313.79/MWh across the Mainland regions. These energy prices impacted the FCAS prices as the Raise FCAS availability was adjusted against the energy dispatch. In addition, between DIs ending 1750 hrs and 1830 hrs, Raise Regulation was dispatched to substitute for expensive Delayed Raise.

For DI ending 1705 hrs, Energy Australia and CS Energy shifted up to 80 MW of Raise FCAS capacity from bands priced at or below \$15.38/MWh to bands priced at or above \$102.52/MWh.

The Mainland FCAS prices for Delayed Raise, Raise Regulation and Fast Raise Services reduced to \$30.80/MWh, \$30.80/MWh and \$25.80/MWh for DI ending 1850 hrs, when Mainland demand decreased by 75 MW and Raise FCAS availability increased.

The high 30-minute Mainland FCAS price was forecast in the latest pre-dispatch schedules.

Version Control

VER	DATE	REVISION DESCRIPTION	AUTHOR	CHECKED	RESPONSIBLE MANAGER	APPROVED
v1	15/06/16	Original Document	Jennie Lu	Eloise Taylor Abraham Yohannan	Laura Walsh	