

Electricity Pricing Event Report – Wednesday 08 June 2016

Market Outcomes: Queensland had high Frequency Control Ancillary Service (FCAS) prices for 5 trading intervals (TIs) between TIs ending 0930 hrs and 1200 hrs. The Queensland Delayed Lower and Lower Regulation FCAS prices were between \$15.18/MWh and \$115.47/MWh, between TIs ending 0930 hrs and 1030 hrs. The Queensland Slow Lower FCAS prices ranged between \$23.65/MWh and \$45.57/MWh for the high priced TIs, between TIs ending 1000 hrs and 1200 hrs. Queensland Fast Lower FCAS prices were \$90.62/MWh and \$57.08/MWh, for TIs ending 1130 hrs and 1200 hrs respectively.

Energy prices for Victoria, South Australia and New South Wales were elevated but did not reach the price threshold for reporting purposes. FCAS and energy prices in other NEM regions were not affected by this event.

Detailed Analysis: The 5-minute Delayed Lower and Lower Regulation FCAS prices in Queensland ranged between \$52.39/MWh and \$147.30/MWh for 7 dispatch intervals (DIs), between DIs ending 0930 hrs and 1000 hrs. The 5-minute Slow Lower and Fast Lower prices were \$177.22/MWh and \$28.99/MWh, respectively, for DI ending 1030 hrs. The 5-minute Slow Lower and Fast Lower prices ranged between \$24.88/MWh and \$201.63/MWh between DIs ending 1115 hrs and 1155 hrs. These high FCAS prices can be mainly attributed to increased FCAS requirements in Queensland, due to increased risk of electrical separation of Queensland from the NEM during a planned outage. Other contributing factors include, rebidding and withdrawal of FCAS capacity, limited availability of cheaper priced FCAS capacity and steep supply curves in the Lower FCAS markets.

Planned outage of the Muswellbrook – Tamworth no. 88 330 kV line was scheduled between 0633 hrs and 1803 hrs on 8 June 2016. This outage increased the risk of electrical separation between Queensland and New South Wales. The risk of separation created local contingency FCAS requirements for Queensland, which had to be sourced from within the region. In preparation for the outage, AEMO invoked the constraint set F-N-MUTW_88 to manage the local FCAS requirements, effective from DI ending 0635 hrs.

For all high priced DIs, a number of units that typically provide Lower FCAS in Queensland were unavailable.

For all high priced DIs, between DIs ending 0930 hrs and 1030 hrs, only 50 MW of local Queensland Contingency Lower FCAS was offered between \$29/MWh and \$1,200/MWh, resulting in steep supply curves. For a number of high priced DIs in this period, Lower Regulation was dispatched in Queensland to substitute for expensive Delayed Lower.

For DI ending 0930 hrs, Origin Energy shifted 164 MW of capacity in the New South Wales energy market from bands priced at the Market Floor Price (MFP) to bands priced at \$281.55/MWh. For the same DI, the target flow towards New South Wales on the QNI interconnector increased by 45 MW. To prevent the FCAS constraint equations F_Q++MUTW_L6, F_Q++MUTW_L60 and F_Q++MUTW_L5 from violating, the enablement of local Contingency Lower services in Queensland increased by 107 MW.

Between DIs ending 0950 hrs and 0955 hrs, Queensland and New South Wales demand decreased by 61 MW and 37 MW respectively. Resultantly, the target flow towards New South Wales on the QNI interconnector decreased by 27 MW and the enablement of local Contingency Lower services in Queensland decreased by 41 MW.

For DI ending 1030 hrs, CS Energy shifted 90 MW of Fast Lower and Slow Lower capacity and 15MW of Delayed Lower capacity from bands priced at or below \$2.78/MWh to bands priced between \$5.16/MWh and \$29.42/MWh.

For DI ending 1105 hrs, Origin Energy shifted 328 MW of capacity in the New South Wales energy market from bands priced at the Market Floor Price (MFP) to bands priced between \$199.45/MWh and \$281.55/MWh. Between DIs ending 1105 hrs and 1120 hrs, the target flow towards New South Wales on the QNI interconnector increased by 28 MW. To prevent the FCAS constraint equations $F_{Q++MUTW_L6}$, $F_{Q++MUTW_L60}$ and $F_{Q++MUTW_L5}$ from violating, the enablement of local Contingency Lower services in Queensland increased by 96 MW.

For DI ending 1115 hrs, CS Energy (Callide B unit 1) withdrew 10 MW from each of the Lower Regulation, Slow Lower and Fast Lower FCAS markets and 15 MW from the Delayed Lower FCAS market with the reason '1107P PLANT NOT FOLLOWING TARGET REBID TO MATCH LOAD-SL'.

For DIs ending 1125 hrs and 1155 hrs, CS Energy shifted 90 MW of Fast Lower, Slow Lower and Regulation Lower capacity and 15 MW of Delayed Lower capacity from bands priced at or below \$18.60/MWh to bands priced between \$29.38/MWh and \$1,240.82/MWh.

For the DIs following the high priced DIs, the Queensland FCAS prices for Fast, Slow, Delayed and Regulation Lower services reduced to at or below \$28.99/MWh, \$28.99/MWh, \$5.19/MWh and \$24.71/MWh, respectively, when Queensland demand increased by up to 49MW.

The high 30-minute Mainland FCAS prices were forecast in the latest pre-dispatch schedules.

Version Control

VER	DATE	REVISION DESCRIPTION	AUTHOR	CHECKED	RESPONSIBLE MANAGER	APPROVED
v1	14/06/2016	Original Document	Ellise Harmer	Eloise Taylor Abraham Yohannan	Laura Walsh	