

Electricity Pricing Event Report – Monday 30 January 2017

Market Outcomes: Spot prices in Queensland (QLD) were \$2,377.63/MWh and \$2,423.63/MWh for trading intervals (TIs) ending 0700 hrs and 1700 hrs respectively on 30 January 2017. Spot price in New South Wales (NSW) was \$2,346.05/MWh for TI ending 1700 hrs. Spot price in Tasmania (TAS) was -\$168.30/MWh for TI ending 1700 hrs.

Energy prices in other regions were not affected by this event. FCAS prices in all regions were not affected by this event.

Detailed Analysis: The 5-Minute dispatch Energy price in QLD was \$13,800/MWh for dispatch interval (DI) ending 0650 hrs. This high price can be attributed to rebidding of generation capacity during the morning peak demand period and limited interconnector flow.

Between DI ending 0645 hrs and 0650 hrs, Queensland demand increased by 113 MW.

Between DIs ending 0635 hrs and 0640 hrs, CS Energy and InterGen either shifted or rebid 510 MW of generation capacity from bands priced at below \$100/MWh to the Market Price Cap (MPC) of \$14,000/MWh. Lower priced generation was available from Braemar GT unit 7 but required more than one DI to synchronise.

For DI ending 0650 hrs, the target flow on the QNI interconnector towards Queensland was limited to 207 MW by the system normal constraint equation $N^{Q_NIL_B1}$. This constraint equation avoids voltage collapse on the loss of Kogan Creek PS. The target flow on the Terranora interconnector towards Queensland was limited to 6 MW by the outage constraint equation $N_X_MBTE2_A$. This outage constraint manages the outage of two Directlink cables. Directlink DC1 had an unplanned outage between 0325 hrs on 17 January 2017 and 1249 hrs on 15 February 2017. Directlink DC3 had a planned outage scheduled between 0700 hrs on 23 January 2017 and 1354 hrs on 08 February 2017.

The 5-minute price reduced to \$99.93/MWh for DI ending 0655 hrs, when 605 MW of generation capacity was rebid from higher price bands to bands priced at the Market Floor Price (MFP) of -\$1,000/MWh and demand in the region reduced by 173 MW.

The 5-Minute dispatch Energy prices in QLD and NSW were \$13,440.69/MWh and \$13,036.93/MWh respectively for DI ending 1650 hrs. This high price can be attributed to rebidding of generation capacity in NSW.

In NSW, between 1635 hrs and 1650 hrs, Snowy Hydro rebid 649 MW of generation capacity from bands priced at below \$300/MWh to bands priced above \$13,997/MWh. The reason given were *"16:26:00 A NSW 5MIN PD PRICE \$2,415.47 HIGHER THAN 30MIN PD 16:35@16:02 (\$2,813.68)"* and *"16:40:05 A NSW 5MIN ACTUAL PRICE \$2,603.92 LOWER THAN 5MIN PD 16:45@16:36 (\$288.00)"*. In QLD, lower priced generation was available but required more than one DI to synchronise (Braemar GT unit 5).

For DI ending 1650 hrs, target flow on the VIC1-NSW1 interconnector towards NSW was limited to 645 MW by the thermal constraint equation $V_{>>V_NIL_2A_R}$. This constraint equation prevents the overload of South Morang F2 500/330 kV transformer under system normal conditions.

The 5-minute price in QLD and NSW reduced to \$59.73/MWh and \$55.95/MWh respectively for DI ending 1655 hrs when generation capacity in both regions was rebid to the lower priced bands and demand reduced in NSW.

The 5-minute prices in SA, TAS and VIC all collapsed to below -\$960/MWh for DI ending 1700 hrs when around 3,767 MW of generation capacity in all NEM regions except TAS continued to rebid to bands priced below \$0/MWh. Target flow on the VIC1-NSW1 interconnector towards NSW was limited to 676 MW by the thermal constraint equation $N_{VIC1-NSW1} > N_{VIC1-NSW1_B_15M}$. This constraint equation prevents the overload of Upper Tumut – Canberra No.01 330 kV line on the trip of Lower Tumut – Canberra No.07 330 kV line.

For DI ending 1705 hrs, the 5-minute prices in SA, TAS and VIC increased to \$28.34/MWh, - \$74.72/MWh and \$23.49/MWh, respectively, when generation capacity in the three regions rebid from the MFP to higher priced bands and target flow on the VIC1-NSW1 interconnector towards NSW increased to 1,021 MW.

The high 30-minute spot prices for QLD were forecast in some of the pre-dispatch schedules. The high 30-minute spot price for NSW and negative 30-minute spot price for TAS were not forecast in the pre-dispatch schedules as it was a result of rebidding within the trading interval.