

Real Time Pricing Issue – 12 November 2009

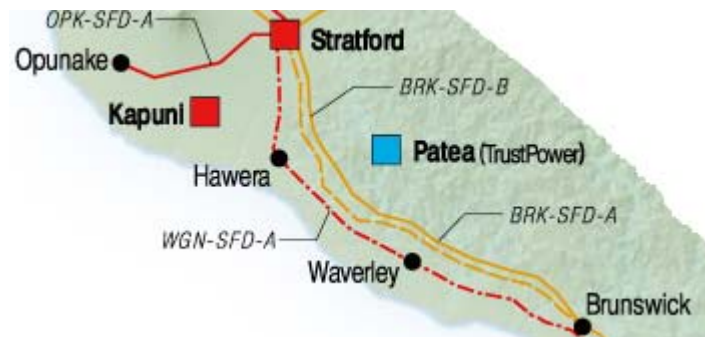
Background

From 07:00 on 12 November 2009, Real-Time Prices (5 minutes prices) were incorrectly published to the market as a result of Whareroa (WAA) load being double counted. This report explains how this occurred, the steps taken to resolve the issue and the action undertaken by the System Operator to minimise the likelihood of recurrence.

Sequence of Events

On 12 November 2009, the BRK_SFD3.1 circuit was on a planned outage from 07:00 to 15:00.

As a result, the BRK_SFD_3_HWA_ABSS_DISABLED_S_O_1Aof2_Z constraint was applied for the duration of this outage. This constraint was put in place to limit the pre-contingency flows from Stratford to Hawera (HWA_SFD1.1) and Stratford to Brunswick (BRK_SFD1.1).



From 07:00 to 09:00 the BRK_SFD_3_HWA_ABSS_DISABLED_S_O_1Aof2_Z constraint was either binding or was broken. This caused a spring washer effect to occur meaning the price at the sending end of the constraint was significantly lower than the price at the receiving end.

On 12 November 2009 the System Operator was notified by a market participant querying the validity of Real Time Pricing data published on COMIT. The System Operator immediately began investigating the issue.

A Customer Advice Notice (CAN) was issued at 09:10 to advise market participants that a problem existed and that the System Operator was investigating the problem.

By 09:20 the System Operator had identified the cause of the real-time pricing problem and immediately remedied the situation.

At 09:22 and 09:34 the System Operator issued two follow-up CANs to advise market participants that the situation has been resolved and that a report providing a full explanation would be available within one week.

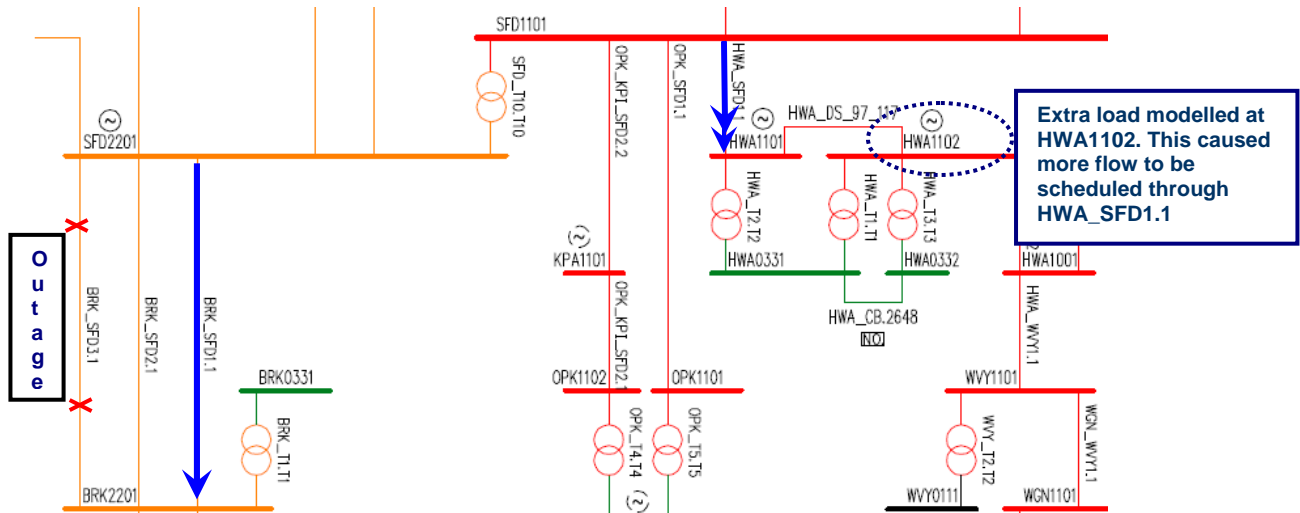
Real-time prices were correctly published to the market on COMIT from 09:25 onwards.

Cause of Issue

The System Operator's investigation has revealed that the load value used as an input to Real Time Prices for the HWA1102 node had been incorrectly mapped to a gross load value. This is explained below.

At Hawera (HWA1102), the Whareroa generation (WAA) is dispatched to a figure after taking into account the embedded WAA load. Mapping HWA1102 node to a gross load value meant that the WAA load was counted twice.

The double counting of the WAA load caused more flow to be scheduled through Stratford to Hawera (HWA_SFD1.1) to supply this extra load as illustrated in the figure below.



The incorrect modelling of the additional WAA RTP load occurred during the set up of the new Market System. However the atypical pricing results had not previously arisen as it requires a number of factors and system conditions to exist at the same time.

In this instance, the use of the incorrect load figure combined with the outage of BRK_SFD 3.1, low wind generation and an outage of the HVDC bi-pole all contributed to further amplifying the value of the BRK_SFD_3_HWA_ABSS_DISABLED_S_O_1Aof2_Z constraint.

Other Schedules

The Real-Time Dispatch schedule (RTD) and Schedule of Dispatch Prices and Quantities (SDPQ) were not affected in any way with their outputs being correct.

Real Time Dispatch data was correct as the System Operator had previously modified the way HWA1102 load distribution factors were generated. Schedule of Dispatch Prices and Quantity (SDPQ) were correct as it uses a different source of load distribution factors based on MV90 data.

Conclusion

On 12 November 2009, Real Time Prices were incorrect from 07:00 – 09:20. The System Operator resolved the particular cause at that time.

Since this event occurred the System Operator has undertaken further investigation to identify where net generation and embedded loads exist to identify any further potential problems of the same nature. This has identified a number of other nodes which have subsequently been remapped to prevent a similar problem arising in the future.