

The Authority's reporting on 5 December 2013 high prices

11 February 2014

Background

The Security and Reliability Council (SRC), at its 13 December 2013 teleconference, requested the secretariat to report back to the SRC on the 5 December 2013 grid emergency. The SRC sought to understand whether this event has highlighted any concerns with the capacity and availability of thermal generation, or whether expiration of take or pay gas contracts would further impact on availability.

Overview of the event

During trading period 23 on Thursday 5 December 2013, high wholesale market prices were observed throughout most of New Zealand.

These prices followed the tripping of Contact Energy's 350MW Otahuhu C plant, resulting in a shortfall of generation & reserve offers.

The trip occurred 3 minutes prior to trading period 21 (09:56:58) resulting in an under frequency event with North Island frequency falling to 49.16Hz.

Immediately following the event, the system operator set the North Island risk adjustment factor (RAF) to zero. This decoupled the market model from the developing real-time scarcity situation, effectively reducing both energy and reserve prices in trading periods 21 and 22.

During trading period 23, the North Island RAF was set back to 1. This allowed the on-going scarcity situation to be priced accordingly, albeit after the main scarcity event had occurred. Fast interruptible load dispatched at Kawerau set the North Island fast instantaneous reserve price at \$900/MWh.

The highest cleared energy offer during trading period 23 was \$280.07 at Tuai. However, the energy price seen over much of the country exceeded \$1000/MWh.

The cause of high energy prices was a spring washer situation developing in the lower South Island. Prices reached over \$1500/MWh at the Naseby 33kV bus indicating that Naseby was getting difficult to supply at n-1 security. Factors causing this spring washer include:

- more South Island generation being dispatched following the Otahuhu C tripping
- seasonal high demand at Naseby 33kV, further exacerbated by an outage of Trustpower's Paerau and Patearoa power stations (embedded at Naseby). This combination of high demand and low embedded generation resulted in close to an all-time high off-take for Naseby. Trustpower entered the Paerau/Patearoa outage into POCP on the 6 December, one day **after** the generators were scheduled out.

Reducing offtake at Naseby from 29MW to 14MW lowers prices across the entire country to roughly \$300/MWh.

This spring washer was the result of a series of events which together led to high prices. As far as the Authority can tell there were no changes in offer behaviour aimed at exploiting the situation for profit.

The Market Performance team scales its investigative effort to the situation

This high priced event was an example of many events that the Authority's Market Performance team undertake preliminary analysis for and then decide to proceed no further. The decision to proceed with more in-depth analysis depends on a number of factors:

- whether similar events have been investigated before, which may now be the subject of review by the Market Design team, or an industry advisory group

- whether it appears that further investigation may lead to an opportunity to further the Authority's statutory objective, i.e. an improvement to competition, reliability or efficiency.

In this instance the event appeared to be a normal market response to an unplanned outage. The Authority has previously expressed its dissatisfaction with the system operator setting the RAF to zero, as this undermines scarcity pricing signals.

The SRC may wish to consider the following questions.

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| Q1. | Does the SRC agree with the Authority's conclusions? |
| Q2. | Does the SRC require any further information or recommend any further investigation? |