

**IN THE MATTER of the Electricity Act 1992
and the Electricity Amendment Act 2001**

AND

**IN THE MATTER of the Electricity
Governance Regulations 2003**

**DECISION OF THE ELECTRICITY GOVERNANCE BOARD PURSUANT TO
PART 3 OF THE ELECTRICITY GOVERNANCE REGULATIONS 2003
REGARDING AN ALLEGED UNDESIRABLE TRADING SITUATION
ON TUESDAY, 29 JUNE 2004**

DECISION DATED 16 AUGUST 2004

**IN THE MATTER of the Electricity Act 1992
and the Electricity Amendment Act 2001**

AND

**IN THE MATTER of the Electricity
Governance Regulations 2003**

**Decision of the Electricity Governance Board pursuant to
Part 3 of the Electricity Governance Regulations 2003
regarding an alleged undesirable trading situation
on Tuesday, 29 June 2004**

General Context of this Decision

1. Under Part 3 of the Electricity Governance Regulations 2003 (“the Regulations”) the Electricity Governance Board is given powers to investigate and take action in respect of undesirable trading situations (“UTSs”). This decision concerns a UTS that is alleged to have occurred on Tuesday, 29 June 2004.
2. In this decision, consistent with practice to date, the Electricity Governance Board will refer to itself as “the Commission”, an abbreviation of the name “the Electricity Commission” under which the Electricity Governance Board is currently conducting its activities.
3. This decision has been made by a committee of the Commission, comprising all of the members of the Commission (“the Committee”), to which decision making regarding UTSs has been delegated in the interests of operational efficiency. Except where expressly provided otherwise, references in this decision to the Commission include references to the Committee acting as delegate on behalf of the Commission.

Background

4. On June 29, and responding to what it regarded as a grid emergency, Transpower as System Operator manually set the requirement for reserves to be dispatched during trading period 38(18:30 to 19:00) to zero to enable demand for energy to be met. This action impacted energy prices. During the immediately prior period energy prices were

approximately \$1,000. Energy prices in trading period 38 were \$30 per megawatt hour. As no reserves were dispatched, reserve prices were effectively \$0 per megawatt hour.

5. Two market participants, Norske Skog Tasman (“Norske Skog”) and Todd Energy Limited (“Todd Energy”) alleged that these circumstances constituted a UTS under regulation 55(1) of the Regulations.
6. Norske Skog raised its concerns in emails to the Market Administrator sent at 19:33 and 21:39 on 29 June. It requested that final prices not be published for the trading periods affected, which at that time appeared to be trading periods 37 and 38 (18:00 to 19:00).
7. Todd Energy wrote to the Market Administrator on 30 June, expressing its view that reducing reserves dispatched to 0 when there was insufficient generation and reserve offers to meet expected demand was a UTS.
8. The Commission first considered this matter on 30 June. Based on information then available to it the Commission:
 - (a) declined Norske Skog’s request to order the delay of publication of final energy prices and final reserve prices for the affected trading period; and
 - (b) requested Commission staff to continue to investigate the claim and report back to the Commission.
9. Based on that further investigation, the Commission considered the matter again on 23 July 2000 and concluded that it did not consider that the issues raised by Norske Skog and Todd Energy satisfied the test for a UTS under regulation 55(1). The Commission notified market participants of its decision that day, stating that its full decision on the matter would be released in due course.
10. This is the Commission’s full decision.

The events of 29 June 2004

11. Based on its investigation of these matters, the Commission considers that the relevant events and circumstances are as set out in the following paragraphs.
12. On 29 June the Taranaki Combined Cycle Plant was not operating. Normally this plant produces a maximum output of approximately 365 MW. Between 1700 and 1800 on 29

June the HVDC was operating at 700 MW capacity, 500 MW on Pole 2 and 200 MW on Pole 1. Unexpectedly cold wet conditions in the upper North Island led to increased demand beyond that initially forecast.

13. In response to those factors:

- (a) At 13:38 on 29 June 2004, the System Operator advised participants that there were insufficient standby reserves available for certain trading periods (34 to 40 on 29 June and 36 to 39 on 30 June) and noted that the situation could be alleviated by participants revising their demand and generation offers for those trading periods.
- (b) At 16:46, the System Operator advised participants that a grid emergency level 1 situation existed and the affected period was 17:00 to 19:00 on 29 June. The notice advised that:

“In the case of insufficient response the system operator will modify the reserve provisions.

Where participant response is insufficient, the system operator will manage demand to alleviate the grid emergency.”

- (c) At the same time, all offered generation was dispatched including 156 MW of generation at Whirinaki (the Commission notes that Whirinaki was not able to meet its offered output of 156 MW and appears to have peaked at 100MW at 17:40 and then reduced to 76 MW by 18:00).
 - (d) At 18:22, the System Operator advised participants that it had set the Reserve Adjustment Factors (“RAF”) within the Reserve Management Tool (“RMT”) from 1 to 0. This meant that 0 reserves could be dispatched and in effect “suspended” the reserve market. The System Operator added: “Any Interruptible Load (IL) providers may at their discretion remain armed to support the power system for any events”. The suspension applied during trading period 38 (18:30 to 19:00). The RAF was subsequently reset to 1 at 19:00.
14. Because of co-optimisation between the way the Scheduling Pricing and Dispatch model (“SPD”) clears offers of reserves and energy, such actions impact energy prices and can reduce prices considerably. On 29 June, at the Haywards node (HAY 2201):

- (a) Dispatch prices for periods 35 – 39 indicated prices in excess of \$500/MWH.
 - (b) 5 minute prices for period 35 indicated prices of \$1,000/MWH.
 - (c) 5 minutes prices during period 36 indicated prices in excess of \$70,000/MWH (this indicated a shortfall of generation and reserves and the likelihood of an infeasible price).
 - (d) 5 minute prices during period 37 indicated prices would drop to \$34/MWH.
 - (e) 5 minute prices during period 38 indicated prices of \$33/MWH.
15. The elements of Norske Skog’s UTS claim as presented to the Commission were as follows:
- (a) By eliminating reserve requirements the System Operator destroyed nodal pricing signals that would have otherwise provided incentives for generation and reserves to be offered into the market, and for demand to be curtailed. This action, in Norske Skog’s view, therefore, threatened or potentially threatened trading and precluded or would be likely to preclude the maintenance of orderly trading (regulation 55(1)(a)).
 - (b) The System Operator’s actions unnecessarily exposed the North Island to unreasonable security risk (“n” security) when a less drastic option, essentially dispatching available reserve, was open to it.
 - (c) The financial impact on Norske Skog was high.
 - (d) Final prices should be delayed and should only be published:
 - (i) with as much reserve dispatched as possible; and
 - (ii) with reserve providers paid for their offered reserve, rather than the quantity dispatched.
 - (e) As the proposed pricing outcome was not an action explicitly provided for by the rules, the Commission had a mandate to act under regulation 55(1)(b).
16. Todd Energy’s UTS claim was similar, except that Todd Energy was affected as an energy provider only. In particular, Todd asserted to the Commission that:

- (a) Security was adversely affected, as available reserves were not dispatched, leaving the system relying on automatic underfrequency load shedding (AUFLS).
- (b) The reduction of reserve prices to \$0 in this situation reduces the incentive for participants to provide reserve.
- (c) The reduction in energy prices associated with the system operator's actions reduces incentives on generators such as Todd Energy to commit high marginal cost generation (in Todd's case, off-season dairy factory thermal co-generation plant) in response to signalled high spot prices, as operators will have less confidence their stations will be dispatched.
- (d) At the same time users may be less likely to respond to high spot prices when there is insufficient generation and reserves.
- (e) This combination of perverse incentives creates a regulation 55(1)(a) UTS.

The UTS Regime

17. In its decision of 12 May 2004 in regard to a claimed UTS at Tauranga on April 24 2004 ("the Tauranga decision"), the Commission summarised at paragraphs 33 to 36 the regulatory context for its decisions. The Commission adopts that summary for the purpose of this decision. For the purposes of this decision it is sufficient to repeat that under regulation 55(1) the Commission needs to be satisfied that the circumstances under consideration:

- (a) threaten or may threaten, trading on the wholesale market; and
- (b) would or would be likely to preclude the maintenance of orderly trading or the proper settlement of trades; and
- (c) in the reasonable opinion of the Commission, cannot satisfactorily be resolved by any other means.

Did a UTS exist?

18. The Commission carefully considered Norske Skog's and Todd Energy's claims that the circumstances in question constitute a UTS. As announced on July 23, the Commission concluded that they did not.

19. In reaching this conclusion, the Commission took account of the facts that the claims of both Norske Skog and Todd Energy, in terms of trading issues, involved:
- (a) Identification of adverse financial impacts.
 - (b) Concerns that those adverse impacts were a disincentive to them, and other market participants, to participate in the wholesale market.
 - (c) Concerns that those disincentives reduced real time security of the system.
 - (d) Claims that those disincentives constituted a UTS, as regards trading period 38 and more generally.
20. At the same time the Commission considered the following factors:
- (a) even though it was affected by the System Operator's emergency response, trading continued in an orderly fashion. There would not appear to have been any adverse effect on orderly settlement and only one trading period was involved (recognising, as the Commission did in the Tauranga decision, that such considerations are not determinative of the UTS question).
 - (b) There had been no challenge made to the System Operator's determination that a grid emergency existed.
 - (c) While acknowledging the concerns raised by Norske Skog and Todd Energy indicate less than ideal outcomes for the market and market participants (see paragraph 22 and following), that in the context of regulation 55(1)(b), more measured responses are available to address these concerns
 - (d) In particular, and in addition to general rule change provisions, the Rules include a process whereby Transpower as System Operator determines its policy (see Part C, Schedule C4) as regards achievement of its principal performance obligations. This process (Part C, section 11, rule 10) provides annual opportunities for market participants to make submissions on that policy.
21. For there to be a UTS the regulation 55 threshold has to be met. That is, trading and the process of trading (the maintenance of orderly trading, the proper settlement of trades) have to be actually or potentially threatened, and threatened in a way for which, other than by the declaration of a UTS, the Rules do not provide a satisfactory resolution. The

Commission concluded that the circumstances identified by Norske Skog and Todd Energy did not constitute such a threat.

22. As it noted in its announcement of 23 July, the Commission nevertheless recognises that the substantive issues raised by the UTS claims (concerning the operation of the reserve market, the non-dispatch of instantaneous reserves and the co-optimisation of the reserve market with the energy market) indicate less than ideal outcomes for the energy and reserve markets and for market participants. As stated, the Commission has concerns regarding the impact of these circumstances on the utilisation of reserves and on market prices.
23. The issues involved are complex, and relate to the operation of the market for reserves generally, and to the relationship between the way offers of reserves and energy are cleared and scheduled for dispatch. In summary, and to provide some context for market participants generally regarding this issue, the Commission summarises these matters in the following terms:
 - (a) The System Operator accepts offers of, and dispatches, reserves to meet the level of reserve determined as necessary by SPD and RMT.
 - (b) Reserve offers are accepted and scheduled for dispatch by SPD in priority to energy offers. This takes account of the fact that, in the case of generation reserves (as opposed to interruptible load reserves), the same generation may be offered into both the energy and reserve markets, and ensures that no generator is scheduled to dispatch more generation (whether as energy or reserve) than it has offered in total. This “priority” becomes apparent when there is insufficient generation to meet energy requirements after reserve requirements have been met. Technically, this outcome is achieved by setting the “deficit reserve” parameter in the SPD higher than the “deficit generation” parameter.
 - (c) In potential emergencies threatened by an overall energy shortage, the System Operator reduces the level of reserve that would otherwise be required to produce a feasible SPD dispatch schedule so that the generation “released” by that reduction in reserve requirement may be committed to energy supply. It does not do so incrementally. It intervenes to manually set the requirement for reserves to be dispatched to zero. Technically, it changes the RAF from 1 to 0.

- (d) When RAF is set to 0, all generation is assigned to the energy market, and if available generation is greater than demand, that spare generation, together with all available interruptible load, will not be dispatched into the reserves market and paid for. However, through free governor action, some spare generation could still be automatically available as reserve, to the extent the spare capability of the plant had not been fully dispatched for energy.
 - (e) At the same time, and as already noted, removing the need to clear and dispatch reserves may, as well as effectively setting the reserves price to 0, also reduce energy prices. Depending on the available response time, this may reduce the incentives on participants to offer into the energy and reserves markets when requested by the System Operator to do so.
24. The Committee notes that as announced on 23 July, the Commission intends to review these issues using the expertise of advisory groups. It considers the review will be a major task, given the complex technical and policy issues involved. The Committee did not consider that any of the possible solutions, discussed during its consideration of the UTS claims, had been sufficiently developed to be introduced as an immediate solution.
25. The Committee did consider, in particular, Norske Skog's proposal (for the energy market to be set as a higher priority to the reserves markets by having the System Operator adjust the values of a number of the deficit variable parameters). The Committee concluded that further investigation by the Commission is required to test this proposal.
26. As noted above, in response to a rule breach complaint by Norske Skog (reasonable and prudent system operator obligation), the actions of Transpower as System Operator in response to similar circumstances which occurred on 10 and 11 March 2004, are currently under investigation. The Committee also notes that Norske Skog has now complained that the System Operator's actions on June 29 also breached the reasonable and prudent operator obligation. An investigation has been commenced in response to that complaint also. This decision does not involve, and should not be taken as involving, any comment on those investigations. The Committee is not in a position to comment on those investigations. Those investigations may, however, inform the further review of these issues.

**The Electricity Commission
Wellington
16 August 2004
UTS Decision 2, 2004**