DRAFT DECISION

Note: This is a draft decision issued for the purpose of advancing the UTS Committee's decision on this matter. The conclusions reached in this draft decision are preliminary and take into account all relevant information provided to the Electricity Authority to date.

Draft decision pursuant to Part 5 of the Electricity Industry Participation Code 2010 regarding an alleged undesirable trading situation on 26 March 2011.

The Committee: Brent Layton, Chair
David Bull
Susan Paterson
Roger Sowry
Elena Trout

Summary of matter: Thirty five parties have alleged that the situation on 26 March 2011 that led to interim prices in the wholesale market for electricity exceeding $19,000/MWh over several hours for Hamilton and regions north of Hamilton constitutes an undesirable trading situation (UTS).

The basis of the claims is that the situation on 26 March 2011 constitutes a contingency or event that threatens, or may threaten, trading on the wholesale market for electricity and that would, or would be likely to, preclude the maintenance of orderly trading or proper settlement of trades. The claims include that the conduct of Genesis Power Limited (Genesis) constitutes manipulative or attempted manipulative trading activity and conduct in relation to trading that is misleading or deceptive, and may be unlawful and otherwise threaten orderly trading or the proper settlement of trades.

Draft decision: The UTS Committee's preliminary view is that an undesirable trading situation developed on 26 March 2011 because:

(a) the events on that day threaten, or may threaten, trading on the wholesale market for electricity and would, or would be likely to, preclude the maintenance of orderly trading or proper settlement of trades (in particular, the events involved the undesirable trading practice of squeezing a market and resulted in an exceptional and unforeseen circumstance that threatens, or may threaten, generally accepted principles of trading and the public interest); and

(b) the event cannot satisfactorily be resolved by any other mechanism available under the Code.

The reasons for this view are:

(a) Genesis' generation offers set the market prices for Hamilton and regions north of Hamilton during trading periods 22 to 35 (inclusive) on 26 March 2011 and parties exposed to prices in the wholesale market for electricity in those regions had good reason to believe the exceptionally high offer prices at Huntly for those trading periods would not translate into market prices, until it was too late for them to take actions to avoid incurring liability to pay the prices; and

(b) the high interim prices on 26 March 2011, if they are allowed to become final prices, threaten to undermine confidence in the wholesale market for electricity, and threaten to damage the integrity and reputation of the wholesale market for electricity.

Claims not upheld: The UTS Committee's preliminary view is that Genesis' conduct is not unlawful, does not constitute manipulative or attempted manipulative trading activity, and does not amount to conduct in relation to trading that is misleading or deceptive, or likely to mislead or deceive.

The reasons for this view are:

(a) there has not been any material breach of any law;

(b) Genesis' offer strategy regarding its Tokaanu, Rangipo and Tuai power stations is consistent with managing its own risk position, and the analysis does not support the view that Genesis caused transmission constraints to bind or otherwise engaged in manipulative or attempted manipulative trading activity; and

(c) the limited ability of Genesis to forewarn participants (due to the limited situations in which Genesis has previously been in a net pivotal position in the Auckland region),[1] coupled with the fact that Genesis has made offers at $10,000/MWh over an extended period, do not support an allegation of misleading or deceptive conduct.

Proposed action: The UTS Committee proposes that interim prices for trading periods 1 to 21 and 36 to 48 on 26 March 2011 become the final prices for those trading periods. The UTS Committee proposes that final prices for trading periods 22 to 35 (inclusive) on 26 March 2011 be determined as follows:

(a) the scheduling, pricing and dispatch (SPD) market-clearing software be re-run to calculate a new set of final prices with the following revisions made to the SPD inputs:

i. all Huntly offer tranches with prices exceeding a price of X during trading periods 22 to 35 (inclusive) on 26 March 2011 be priced at X; and

[1] A generator is net pivotal when the quantity of generation required from it to prevent non-supply of some load in a region is greater than the generator's own load commitment in the region.

ii. offer prices and quantities for Tokaanu, Rangipo, Tuai, and Waikato generation be restored to the offer structure in the weekly dispatch schedule published at 09:00 hours on 25 March 2011 for trading periods 22 to 35 (inclusive) on 26 March 2011; and

iii. that X be set at a point in the range $1,500/MWh to $3,000/MWh.

(b) calculation of constrained on amounts under Part 13 of the Code for trading periods 22 to 35 (inclusive) on 26 March 2011 be curtailed so that no constrained on compensation will be paid in respect of generation plant in the North Island.

Date: 6 May 2011

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Introduction

1. Under Part 5 of the Electricity Industry Participation Code 2010 (the Code), the Electricity Authority (Authority) is responsible for investigating suspected or anticipated undesirable trading situations (UTS). If the Authority finds that a UTS is developing or has developed, it may take steps in regard to that UTS.

2. This document sets out the reasons for a preliminary view by the Authority that a UTS developed on 26 March 2011.

3. This preliminary view has been formed by the UTS Committee, being the committee of the Authority to which decision-making under Part 5 of the Code has been delegated. The membership of that Committee comprises all members of the Board of the Authority.

Background

4. For Saturday 26 March 2011, interim prices in the wholesale market for electricity exceed $19,000/megawatt hour (MWh) over several hours for Hamilton and regions north of Hamilton, and reach several thousands of dollars in other regions of the North Island over the same time period. Figure 1 shows the distribution of interim prices across the North Island for trading period 23 (11:00am – 11:30am) on 26 March 2011.

5. The Authority has received 35 UTS claims relating to the offer behaviour of Genesis Power Limited (Genesis) on 26 March 2011 during planned transmission outages and the consequential high interim prices in the wholesale market for electricity across many parts of the North Island, especially Hamilton and regions north of Hamilton.

6. The planned transmission outages involved the temporary removal from service of two 220 kilovolt (kV) circuits between Whakamaru and Otahuhu and three 110kV circuits between Arapuni and Otahuhu. Transpower first notified industry participants of the 220kV line outages on 15 December 2010 under the planned outage co-ordination process (POCP). The outages were confirmed on 16 February 2011. The split on the 110kV transmission system was notified to industry participants under the POCP on 9 March 2011, and confirmed on 9 March 2011. On 22 March 2011 the transmission outages were entered into the wholesale information and trading system (WITS),[2] where scheduling, pricing and dispatch (SPD) schedules may be viewed.

7. The transmission outages were planned for between 05:00 hours and 17:00 hours on 26 March 2011. The actual outages were between 05:00 hours and 17:30 hours on 26 March 2011.

8. The outages meant generation from the Huntly power station was required to support electricity demand for Hamilton and regions north of Hamilton.

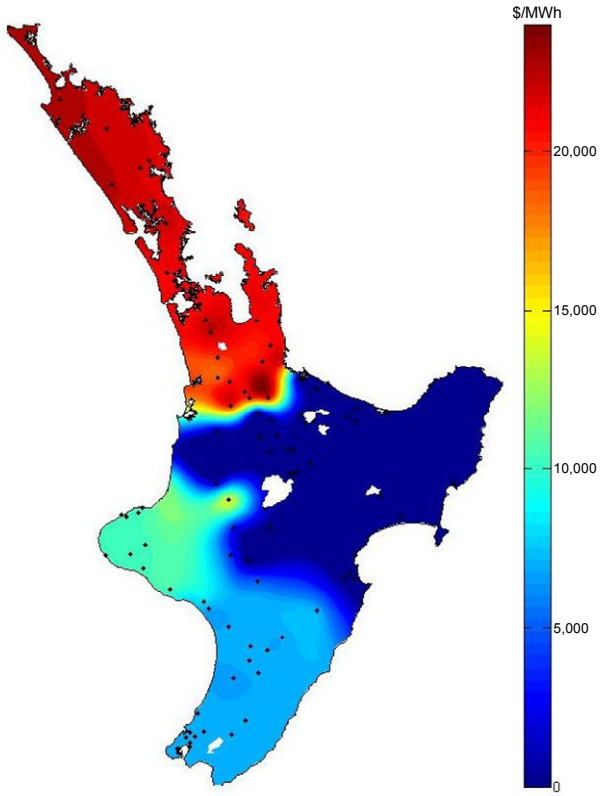
9. Interim prices at Huntly are around $19,750/MWh for all trading periods between 10:30 hours (the start of trading period 22) and 17:30 hours (the end of trading period 35). These interim prices have been determined by the offers for the Huntly power station's generating units 2, 5 and 6.

[2] WITS is the information and trading platform used by electricity industry participants to upload their bids and offers in the wholesale market for electricity. WITS also delivers pricing, scheduling and other data relating to the wholesale market for electricity. The information within WITS is available to participants who trade in the wholesale market for electricity or by special arrangement with NZX. NZX is contracted to the Authority as the Wholesale Information and Trading System Manager.

10. Interim prices in the lower North Island for the same periods are around $6,000/MWh to $8,000/MWh, indicating a constraint between the upper and lower North Island.

11. Interim prices for the South Island are around $19/MWh for the same trading periods, indicating a further constraint between the North and South islands.

Figure 1 Interim prices for trading period 23 on 26 March 2011



Source: Electricity Authority

UTS claimants

12. The parties listed below have submitted claims to the Authority that a UTS existed on 26 March 2011. The name of each party is listed as recorded on the party's UTS claim:

- ABE'S Real Bagels Ltd
- Air New Zealand
- ASB Bank Ltd
- Auckland War Memorial Museum
- Chris Brady
- Bupa Care Services
- Convex Plastics Ltd
- Cynotech Holdings Ltd, and subsidiaries

- Fletcher Building Limited (including on behalf of Golden Bay Cement)
- Goodwood Industries Limited
- (SmartPower on behalf of) Juken NZ Ltd
- Masterton District Council
- MercyAscot Hospitals
- Meridian Energy Limited
- Mighty River Power Limited
- New Zealand Steel Limited
- Nufarm NZ Ltd
- NZ Sugar
- Open Country Dairy Ltd
- PMP Print
- Powershop New Zealand Limited
- Prime Energy Limited
- Smart Power Ltd
- Southern Cross Hospitals Ltd
- Southern Spars
- Switch Utilities Limited
- Telecom (via Chorus)
- Television New Zealand Limited
- The New Zealand Refining Company Limited
- Total Utilities Management Group Ltd
- Vital Healthcare Property Trust
- Vodafone NZ Ltd
- Wallace Corporation Ltd
- Waratah Farms Ltd
- Westpac (NZ) Limited.

UTS provisions under the Code

Definition of a UTS

13. The Code defines a UTS as any contingency or event:[3]

    (a) that threatens, or may threaten, trading on the **wholesale market** for **electricity** and that would, or would be likely to, preclude the maintenance of orderly trading or proper settlement of trades; and

    (b) that, in the reasonable opinion of the **Authority**, cannot satisfactorily be resolved by any other mechanism available under the Code; and

    (c) includes, without limitation:

        i. manipulative or attempted manipulative trading activity;

        ii. conduct in relation to trading that is misleading or deceptive, or likely to mislead or deceive;

        iii. unwarranted speculation or an undesirable practice;

        iv. material breach of any law; and

        v. any exceptional or unforeseen circumstance that is at variance with, or that threatens or may threaten, generally accepted principles of trading or the public interest.

Interpretation of the definition of a UTS

14. The UTS Committee has considered the UTS claims in accordance with the following interpretation of the definition of a UTS.

15. A contingency or event must meet the criteria set out in paragraphs (a) and (b) of the definition above before it can be categorised as a UTS. That is, it must, or may, threaten trading on the wholesale market for electricity *and* preclude the maintenance of orderly trading or settlement, *and* it must not be able to be resolved by any other mechanism available under the Code. A UTS may exist in the absence of a breach of the Code.

16. Read together with clause 5.5 of the Code, which refers to the restoration of normal market operations after a UTS has occurred, a UTS must be a contingency or event outside of the normal operation of the wholesale market for electricity.

17. Under paragraph (b) of the definition, the contingency or event must not be able to be satisfactorily resolved by any other mechanism under the Code for the contingency or event to constitute a UTS. In the current case, this is interpreted to mean that the event on 26 March 2011 must not be able to be resolved by any other mechanism in the Code.

[3] The bolded terms in the definition of UTS are defined in the Code or the Electricity Industry Act 2010. In particular, **wholesale market** means the wholesale market for **electricity**, and **electricity** means electrical energy measured in kilowatt-hours (kWh).

18. While paragraph (c) above suggests the types of situations in which a UTS may be considered to have occurred, it is not necessary that the contingency or event falls into one of the categories listed in paragraph (c).

19. Equally, a situation of the type listed in paragraph (c) will not automatically meet the requirements of the definition of a UTS. It is possible that such a situation could fall short of the thresholds in paragraphs (a) and (b) of the definition, and therefore not constitute a UTS.

20. To be considered as "threatening" trading, an event must be such that participants' confidence in the wholesale market for electricity is significantly affected, or that daily trading is affected by withdrawal (or likely withdrawal) of participants, or similar.

21. A proper interpretation of what is a UTS is not assisted by reference to the steps that may be taken under clause 5.2(2) of the Code. The fact that a step may be available in regard to a UTS does not affect the interpretation of the provision that defines the situation in which the step is available.

Actions that can be undertaken by the Authority to correct a UTS

22. Clause 5.2 of the Code provides for the Authority to take certain actions to correct a UTS, including:

    (a) suspending, or limiting or curtailing, an activity on the wholesale market, either generally or for a specified period (clause 5(2)(a));

    (b) directing that any trades be closed out or settled at a specified price (clause 5(2)(c)); and

    (c) directing a participant to act in a manner that will, in the Authority's opinion, correct or assist in overcoming the UTS (clause 5(2)(d)). However, the Authority may only give directions that are not inconsistent with the Code, the Electricity Industry Act 2010 (the Act), or any other law.

23. Part 5 of the Code also sets out procedural requirements with which the Authority must comply in dealing with a UTS, including an obligation to consult with the system operator if the actions of the Authority may have an effect on system security (clause 5.3), and provision for consultation with affected participants on any actions the Authority intends to take (clause 5.4).

24. The Authority must attempt to correct every UTS and, consistent with its statutory objective under section 15 of the Act, restore the normal operation of the wholesale market for electricity as soon as possible (clause 5.5).

Statutory objective of the Authority

25. While the Code sets out the legal framework within which the Authority's consideration of a UTS must occur, the Authority's interpretation of its statutory objective provides an economic context.

26. The Authority's statutory objective is set out in section 15 of the Act as follows:

> *The objective of the Authority is to promote competition in, reliable supply by, and the efficient operation of, the electricity industry for the long-term benefit of consumers.*

27. The Authority interprets its statutory objective as requiring it to exercise its functions set out in section 16 of the Act in ways that, *for the long-term benefit of electricity consumers*:

    (a) facilitate or encourage increased competition in the markets for electricity and electricity-related services, taking into account long-term opportunities and incentives for efficient entry, exit, investment and innovation in those markets (limb 1);

    (b) encourage industry participants to efficiently develop and operate the electricity system to manage security and reliability in ways that minimise total costs whilst being robust to adverse events (limb 2); and

    (c) increase the efficiency of the electricity industry, taking into account the transaction costs of market arrangements and the administration and compliance costs of regulation, and taking into account Commerce Act implications for the non-competitive parts of the electricity industry,[4] particularly in regard to preserving efficient incentives for investment and innovation (limb 3).

28. The UTS Committee has given consideration to the Authority's statutory objective. In particular, the UTS Committee has considered the economic rationale for UTS provisions generally, and considered how the UTS provisions in the Code relate to the three limbs of its statutory objective.

Economic rationale for the UTS provisions

29. The economic rationale for UTS provisions is to achieve operationally efficient and competitive markets. In voluntary marketplaces, market providers strive to attract buyers and sellers by adopting rules that promote operationally efficient trading and rules aimed at giving buyers and sellers confidence in the market.

30. In particular, market providers adopt rules aimed at giving buyers confidence that suppliers' goods and services are what they say they are, contract terms are transparent and prices are competitively determined. Likewise market providers adopt rules aimed at giving sellers confidence that buyers are genuine and will meet their payment terms. Undesirable practices by a few buyers and sellers harm other market users, and they also harm the market provider by deterring some parties from using the market.

31. UTS provisions are adopted by market providers because they cannot foresee all future eventualities and hence cater for these in the market's rules. Also, some practices are particularly difficult to specify in the rules, and so are better covered by generic UTS-type rules.

32. As market providers have strong incentives to enforce UTS provisions to further the efficient operation of the market and build confidence in it, UTS provisions often give broad discretion to market providers to deal with practices that threaten trading on the market in some manner, such as practices that disrupt orderly trading or the proper settlement of trades. Having the ability in certain circumstances to constrain the commercial decisions or actions of market participants is common to most organised markets.

[4] This refers to those parts of the electricity industry that are regulated under Part 4 of the Commerce Act.

Connection with the Authority's statutory objective

33. As noted above, the overarching test contained in the Code's UTS provisions is that a UTS is "any contingency or event that threatens, or may threaten, trading on the wholesale market for electricity and that would, or would be likely to, preclude the maintenance of orderly trading or proper settlement of trades". Based on the general economic rationale for UTS provisions given above, the UTS provisions in the Code are consistent with facilitating and encouraging competition (limb 1 of the Authority's statutory objective) and increasing the efficiency of the electricity industry (limb 3).

Allegations

34. This section sets out a summary of the allegations made in the UTS claims submitted to the Authority.

35. The basis of the claims is that the situation on 26 March 2011 constitutes a contingency or event that threatens, or may threaten, trading on the wholesale market for electricity and that would, or would be likely to, preclude the maintenance of orderly trading or proper settlement of trades.

36. The allegations have been categorised below under headings based on the definition of a UTS in the Code. The allegations have been categorised to aid the UTS Committee's consideration of the claims, and are not categorised under such headings in most claims. The table attached at Appendix C sets out the claims made by each party in more detail.

37. A number of claims refer to the spot market. The UTS Committee understands that such references are references to the wholesale market for electricity, as described in the Code.

Unlawful conduct

38. Powershop claims that it is plausible that Genesis' behaviour may contravene section 36 (or other sections) of the Commerce Act 1986.

39. Section 36 of the Commerce Act prohibits a person with a substantial degree of market power from taking advantage of that power for the purpose of restricting the entry of a person into a market, preventing or deterring a person from engaging in competitive conduct in a market, or eliminating a person from a market. The Commerce Act is administered and enforced by the Commerce Commission.

Manipulative or attempted manipulative trading activity

40. Approximately half of the claims received by the Authority include manipulative or attempted manipulative trading activity in the list of reasons for claiming a UTS (Mighty River Power, Powershop, Goodwood Industries, ASB Bank, Wallace Corporation, Southern Spars, Bupa Care Services, Juken, Smart Power, Vodafone, Westpac, Telecom, New Zealand Steel, New Zealand Refining Company, Air New Zealand, Vital Healthcare Property Trust and Television New Zealand).

41. The claims of manipulative or attempted manipulative trading activity are based on the allegation that Genesis used, or took advantage of, the opportunity (planned maintenance of transmission lines) to adjust its offers for Huntly power station units to between $19,000/MWh and $20,000/MWh.

42. It is also alleged that Genesis' behaviour was premeditated in that the pricing outcomes that eventuated would have been obvious at the time offers were made (Meridian Energy), and that Genesis deliberately changed the offer prices for the anticipated duration of the transmission outages (Meridian Energy and Powershop). Television New Zealand alleges that it "appears to be a generator premeditated situation for commercial gain, basically exploiting a market situation beyond fair practice". Total Utilities Management Group and MercyAscot Hospitals similarly claim that "it would seem that action was taken in a manipulative/premeditated way to exploit a commercial opportunity presented by a serious projected shortfall in upper North Island energy generation".

43. Further, Powershop claims that Genesis manipulated its offers to take advantage of its transitory market power and price at levels approximating the value of lost load when there was sufficient capacity available to meet supply. Powershop claims that significant amounts of capacity (up to 300MW) were available for dispatch on 26 March 2011 at prices in excess of $19,500/MWh, and that this highlights that there was never a physical supply issue. New Zealand Steel similarly claims that, to its knowledge, there was no good reason for the “extreme” offer prices (for example, no physical supply issues and nothing new in Genesis' cost base), and nothing that could justify such an “abuse of transitory market power”.

44. Mighty River Power alleges that Genesis appears to have deliberately caused a transmission constraint between Whakamaru and Otahuhu to bind in two ways: increasing generation at Genesis’ Tokaanu plant, which exacerbated the problem (i.e. increasing the chance that the constraint would bind), while also reducing the dispatched generation at Genesis’ E3P unit at Huntly.

Conduct in relation to trading that is misleading or deceptive, or likely to mislead or deceive

45. Powershop alleges that it was misleading for Genesis to offer prices that reflected a risk to supply when sufficient capacity was available and no extraordinary security risk was apparent, and that such price signals were not warranted to signal that any new investment might be required. Vital Healthcare Property Trust also includes misleading or deceptive conduct in its list of reasons for claiming a UTS.

Other conduct that threatens orderly trading

46. Approximately half of the claims allege unwarranted speculation or an undesirable practice, and any exceptional circumstance that is at variance with, or that threatens or may threaten, generally accepted principles of trading (Mighty River Power, Powershop, Goodwood Industries, ASB Bank, Wallace Corporation, Southern Spars, Bupa Care Services, Juken, Smart Power, Vodafone, Westpac, Telecom, New Zealand Steel, New Zealand Refining Company, Air New Zealand, Vital Healthcare Property Trust and Television New Zealand).

47. Mighty River Power claims that Genesis' conduct was carried out in order to take advantage of the transmission constraint to the material disadvantage of other market participants, which is an undesirable practice that will affect many market participants. A number of claims similarly state that the market events on 26 March 2011 advantaged a generator at the disadvantage of other market participants and consumers of electricity at spot market prices (Juken, Smart Power,

Vodafone, Westpac, Telecom, Wallace Corporation, ASB Bank, Southern Spars, Bupa Care Services, Goodwood Industries, and Air New Zealand).

48. Vital Healthcare Property Trust claims that the market events on 26 March 2011 significantly advantaged an electricity generator, which used the event to "unfairly levy at an extortionate rate the ACLF[5] portion of the electricity costs" on consumers of electricity. Cynotech Holdings also claims that it is "grossly unfair" for generators and retailers to pass on the full cost of the auction price to consumers, and Total Utilities Management Group and MercyAscot Hospitals claim that customers exposed to spot energy rates and ACLF were "penalised unfairly". Television New Zealand claims that it "is not acceptable for New Zealand's businesses to be exposed as occurred in the event".

49. Powershop claims that Genesis modified offers to take advantage of transient market power. Powershop claims that this is highly undesirable, for example because it may become more widespread, resulting in a lessening of retail competition, tight geographic oligopolies centred around generation assets, higher wholesale price volatility and risk, and higher retail prices to all consumers. Powershop further claims that the interim prices observed on 26 March 2011 do not reflect any real risk of shortage, nor a need for new investment, and serve no economic purpose and would not exist in a competitive market (or one where regulation restrains transient market power). Fletcher Building also claims that Genesis' behaviour is a "clear abuse of market power".

50. It is claimed that the level of interim prices could not have been predicted and is outside any reasonable forecast, which meant that businesses were not in a position to mitigate the costs (Juken, Smart Power, Vodafone, Westpac, and Telecom). Fletcher Building, Cynotech Holdings, Total Utilities Management Group, MercyAscot Hospitals and Television New Zealand also express concern about the lack of ability to ameliorate the situation because of the lack of warning, and Nufarm claims that the level of interim prices does not fit with regular and expected market variability/volatility. New Zealand Steel, Air New Zealand and New Zealand Refining Company similarly make claims regarding an unreasonable and/or unprecedented level of pricing. Meridian Energy claims that the offer prices and potential exposures of retailers are of an order of magnitude greater than experienced at other similar periods of transmission constraint.

51. If the interim prices for 26 March 2011 become final prices, Meridian Energy claims that this may be at variance with generally accepted standards of trading (including self-restraint) and the public interest.

52. It is claimed that the event (and the possibility of the event recurring) will:

    (a) have a significant financial impact on participants and end consumers/consumers of spot electricity (see Appendix C for more detail) and significantly, seriously or negatively impact business (Powershop, Switch Utilities, Auckland War Memorial Museum, NZ Sugar, Southern Cross Hospitals, Prime Energy, PMP Print, Open Country Dairy, ABE'S Real Bagels, Convex Plastics, Cynotech Holdings, Fletcher Building, New Zealand Steel, and Waratah Farms);

[5] An ACLF (alternating current load factor) charge is a demand charge, which is related to the maximum demand for electricity that a consumer places on a transmission or distribution system during the consumer's peak electricity usage.

(b) mean that retailers who are not fully hedged may be forced to consider urgently selling off parts of their customer books (Meridian Energy);

(c) mean that "participants may need to make significant changes to their net market positions which could result in over-investment in generation plant beyond optimum levels, increasing residential tariffs and leading to a significant loss of confidence in the electricity market in general" (Mighty River Power);

(d) lead to unreasonably high energy prices (Switch Utilities, Auckland War Memorial Museum, Southern Cross Hospitals, Prime Energy, PMP Print, Air New Zealand);

(e) make it more difficult for emerging retailers to enter the market (Switch Utilities);

(f) give rise to solvency issues for participants, small retailers or customers facing spot prices, and therefore may put market settlement at risk (Meridian Energy and Mighty River Power). It is also claimed that it may threaten the "ongoing viability of smaller generators/retailers" (Total Utilities Management Group and MercyAscot Hospitals), mean that businesses could be "driven out of the market" (Prime Energy), make businesses "unable to cover costs" (Nufarm), and “threaten the long-term financial viability" of businesses (New Zealand Steel). In response to a request for information from the Authority (rather than as part of a claim), [ ] advised the Authority that [ ] solvency is threatened in part due to the size of the expected market settlement as a result of the event. In addition, [ ] advised that it may fail to raise further required investment funds if a UTS is not found to have occurred, resulting in failure of the business or exit of the business from the retail market for electricity;

(g) affect confidence in the electricity market generally, particularly in the spot and hedge markets, and undermine the viability of the wholesale market for electricity.

In particular, a number of claims note that the type of event that occurred on 26 March 2011 leads them to question future levels of spot exposure and hedging, creates an environment that deters consumers from assisting the market by taking spot exposure, and undermines confidence in using spot market purchases as part of managing energy costs (Juken, Smart Power, Vodafone, Westpac, and Telecom). Those claims also note that it is likely that such pricing will have flow-on effects to the hedge market and ultimately the fixed price market. Mighty River Power, New Zealand Steel, Vodafone, Air New Zealand, Convex Plastics, Cynotech Holdings and Television New Zealand also make claims regarding the impact that such events have, such as undermining the integrity or viability of, and confidence in, electricity markets (particularly the wholesale, spot and hedge markets). For example, New Zealand Steel claims that Genesis' behaviour is at odds with a well-functioning competitive electricity market, and will undermine the viability of the market.

Meridian Energy claims that it would be undesirable for the market to be "anything goes" (if it is to retain the confidence of electricity users). Similarly, Powershop claims that confidence in the electricity industry and the credibility of the Authority will be undermined if abuse of market power is seen to be tolerated, and that orderly trading will be threatened if participants have no option other than to trade with counterparties that have the ability to exercise market power without restraint.

Total Utilities Management Group and MercyAscot Hospitals claim that Genesis' behaviour "is not a good 'look' for the industry as a whole", and that the event is damaging to the New Zealand economy.

Masterton District Council claims that Councillors and ratepayers are extremely frustrated by a market that can cause such "huge and unrealistic price variations"; and

(h) set a new benchmark or precedent, with other participants considering following suit whenever the opportunity arises, which may threaten orderly trading, proper settlement and the viability of the market for the reasons set out in the paragraphs above (Meridian Energy, Mighty River Power, and New Zealand Refining Company).

53. Further, it is alleged that Genesis' conduct amounts to an "opportunistic abuse of market power", which is not in the public interest (Powershop), and that such "monopoly pricing" indicates a failure of the market (Juken).

54. Chris Brady claims that "Genesis 'ripped off' the system" and that Genesis' behaviour "is based on management greed".

Event cannot satisfactorily be resolved by any other mechanism under the Code

55. All parties claim that the event cannot satisfactorily be resolved by a mechanism under the Code other than the UTS provisions in Part 5.

Counter-arguments from Genesis

56. The Authority invited Genesis, on 11 April 2011, to provide counter-arguments to the allegations made by UTS claimants and to bring to the attention of the Authority any other matters that Genesis considered relevant to the UTS Committee's deliberations. The Authority requested Genesis' response by midday on 12 April 2011.

57. Genesis responded as follows:

(a) in regard to the matters contained in the Authority's request, "[i]n the short time available to prepare [Genesis'] response, it [wa]s not reasonably possible to provide fully informed views on those matters";

(b) that "decisions on previous UTS claims clearly and consistently show that high spot market offers or prices, even for a relatively sustained period, are not in themselves sufficient to demonstrate the existence of a UTS";

(c) "there is nothing in the UTS claims to evidence that the events of 26 March 2011 have led to the development of a UTS". An event that threatens trading on the wholesale market for electricity, and that would, or would be likely to, preclude the maintenance of orderly trading or proper settlement of trades, "is a high threshold, and none of the current [UTS] claims to the Authority provide evidence that it has been met";

(d) the "real issue [is] that some industry participants do not appear to have taken appropriate steps to shield themselves from what was a well foreshadowed event";

(e) Genesis "took into account many factors when formulating its offers, including the costs of retaining units 1 to 4 at the Huntly power station. Ultimately, however, the offers were made in response to [Genesis'] view of market conditions at the time, which is always the case when [Genesis] offers electricity into the market"; and

(f) if the Authority has particular concerns about Genesis' conduct or believes that any of the allegations made, if accurate, could establish a UTS, Genesis wishes to be notified so that it "can respond in an informed and considered manner before any final decisions are made by the Authority".

Action sought by UTS claimants

58. The UTS claims received by the Authority request that the Authority:

(a) formally investigate the circumstances and events leading to the dispatch and provisional prices for 26 March 2011 (Meridian Energy, Mighty River Power, Powershop, New Zealand Steel, New Zealand Refining Company, Switch Utilities, Auckland War Memorial Museum, NZ Sugar, Southern Cross Hospitals, Prime Energy, PMP Print, Open Country Dairy, ABE'S Real Bagels, Cynotech Holdings, Vital Healthcare Property Trust, Total Utilities Management Group, MercyAscot Hospitals, and Television New Zealand). Meridian Energy requested that the investigation be completed within 5 working days;

(b) delay or suspend the determination and publication of final prices for 26 March 2011 until the investigation is complete (Meridian Energy, Mighty River Power, Powershop, New Zealand Steel, and New Zealand Refining Company);

(c) defer adjustments to participants' prudential cover until the investigation is complete (Powershop);

(d) review prices for 26 March 2011 and adjust those prices to reflect a competitive and orderly market (Powershop, Switch Utilities, Auckland War Memorial Museum, NZ Sugar, Southern Cross Hospitals, Prime Energy, PMP Print, Open Country Dairy, ABE'S Real Bagels, Fletcher Building, Masterton District Council, Vital Healthcare Property Trust, Waratah Farms, Total Utilities Management Group, and MercyAscot Hospitals);

(e) direct that interim prices do not stand as final prices, and direct that trades during the relevant period be settled at specified final prices (Mighty River Power, Juken, Smart Power, Vodafone, Westpac, Telecom, Wallace Corporation, ASB Bank, Southern Spars, Bupa Care Services, Goodwood Industries, Air New Zealand, New Zealand Steel, and Television New Zealand);

(f) set a clear direction to participants in terms of market behaviour and practice, to reduce the incentives for such behaviour going forward (Mighty River Power). Similarly, Westpac requests that a direction be given to all participants to act in a manner that will correct or assist in overcoming the undesirable trading position for future planned maintenance events. Air New Zealand requests that the Authority should consider giving directions to participants as to appropriate pricing behaviour during future similar situations, and Powershop

recommends that the Authority make its expectations clear about mimicking competitive outcomes during future periods when participants have transient market power;

(g) consider appropriate measures to prevent recurrence of similar incidents in the future, such as making rule/Code changes to ensure that such incidents cannot recur (Powershop, New Zealand Refining Company, New Zealand Steel, Masterton District Council, Vital Healthcare Property Trust, and Television New Zealand). Total Utilities Management Group and MercyAscot Hospitals request that the Code be amended to improve co-operation between Transpower and energy generator/retailers, and to get all applicable parties to work together in such situations in the national interest. Total Utilities Management Group also states that it would be prudent to improve industry communications in future with both independent generators and major electricity users who can reduce their usage at short notice;

(h) consider placing a cap on generators to restrict any "grossly inflated" or "unreasonable spikes" to the spot market and prevent anyone "taking advantage" of planned outages or breakdowns (Southern Cross Hospitals and Vital Healthcare Property Trust);

(i) ensure that the pricing of electricity is in line with that range generated by free market trading (Nufarm);

(j) annul the case, ensure other retail companies do not have to pay Genesis, and punish Genesis and management concerned (Chris Brady);

(k) find remedies to ensure that end users are not taken advantage of in the future and there is some recompense to end users for financial losses in March 2011 (Convex Plastics); and

(l) make a determination that generators must price all electricity generated on 26 March 2011 at $0/MWh (as a penalty for not managing the situation better), and that retailers must price all electricity consumed/used on 26 March 2011 at $0/unit, including the daily supply charge (as a penalty for not being sufficiently aligned to generators to be aware of the impending situation so that they could advise consumers in a timely fashion, or for not advising their customers of the impending situation). It is also requested that the same should be done in respect of 2 April 2011 should a UTS also exist on that day (Cynotech Holdings).

59. The UTS Committee notes that some of the requested actions above may also be relevant to the Authority as part of its broader functions under the Act.

Process

60. The UTS Committee has followed the process set out in the Authority's 'Guidelines for Participants on Undesirable Trading Situations', which are available on the Authority's website.

61. The Authority received the first UTS claims on 28 March 2011.

62. On that date, the Chair of the Authority (under delegation from the Board) delayed the publication of final prices for 26 March 2011. The pricing manager notified industry participants of this delay.

63. A preliminary report on the UTS claims was considered by the UTS Committee on 31 March 2011. The UTS Committee requested that Authority staff obtain additional information from industry

participants and UTS claimants that were not industry participants, and agreed to reconvene once the Authority had received and analysed the information.

64. On 1 April 2011, the Authority issued information requests under section 46(2)(a) of the Act to the parties listed in Appendix D, with a response to those requests sought by 5 April 2011. Most responses were received by the required deadline.

65. On 4 April 2011, the Authority issued further information requests, the recipients of which are also listed in Appendix D. These parties were also requested to provide their responses within 2 business days.

66. Recognising that some parties may have had difficulty providing the required information in the timeframe given, the option of an interview with Authority staff was offered. Simply Energy, Switch Utilities and Todd Energy took up this offer.

67. The Authority then analysed the UTS claims and the information received. As part of this analysis, the Authority requested further information from Genesis on 11 April 2011, to which Genesis replied on 12 April 2011 (see paragraph 57 above).

68. The UTS Committee met on 14 April 2011 to consider the analysis undertaken to date. At this meeting the UTS Committee formed a preliminary view on whether a UTS developed on 26 March 2011.

69. The UTS Committee then met again on 20 April 2011 and on 28 April 2011 to confirm its preliminary view and review its draft decision. The Authority requested further information from Contact Energy and Mighty River Power on 28 April 2011 and both replied on 29 April 2011.

70. The UTS Committee then met on 5 May 2011 to finalise its draft decision prior to consulting on it.

Findings

71. This section sets out the UTS Committee's findings in regard to the allegations made in the UTS claims submitted to the Authority.

72. To aid the UTS Committee's consideration of whether the events of 26 March 2011 constitute a UTS, the UTS Committee has grouped the UTS claims under the following categories:

    (a) unlawful conduct;

    (b) manipulative or attempted manipulative trading activity;

    (c) conduct in relation to trading that is misleading or deceptive, or likely to mislead or deceive; and

    (d) other conduct that threatens orderly trading.

73. The Authority has also prepared a chronological description of key events leading up to, and during, the alleged UTS as an input into the UTS Committee's factual findings (refer appendices A and B). A summary of key events is provided below.

Summary of key events

Friday 25 March 2011

(a) at 09:51 hours Genesis moved 320MW of offered generation for the Huntly power station from a low-priced offer band (<$100/MWh) to a circa $19,000/MWh offer band, and at the same time increased the quantity of low-priced offers for the Tokaanu power station. The aggregate of offers for each island were provided as forecast aggregate supply in WITS. The forecast aggregate supply figures are calculated from the offers provided to WITS. The offer prices are first divided by their marginal location factors, rounded to the nearest dollar, sorted, and a cumulative sum formed. The forecast supply figures are aggregated for each of the North Island and South Island (referenced to Haywards and Benmore, respectively), trading date and trading period, and recalculated every 2 hours from 01:45 hours onwards. This process means market participants would not have been able to see the change in offers at Huntly and Tokaanu. However, market participants would have been able to see the increased amount in the $19,000/MWh offer band for trading periods 11 to 41 on 26 March 2011;

(b) at 12:58 hours Contact Energy withdrew 425MW of offered energy at Stratford (being 320MW at the Taranaki Combined Cycle (TCC) power station and 105MW of peaking generation);

(c) at 14:00 hours the security dispatch schedule (SDS) showed circa $20,000/MWh forecast prices for Hamilton and regions north of Hamilton. The SDS at 14:30 hours also showed circa $20,000/MWh forecast prices for Hamilton and regions north of Hamilton;

(d) at 15:12 hours, in response to seeing the circa $20,000/MWh forecast prices in the SDS, Mighty River Power offered an additional 125MW at the Southdown power station at $0.01/MWh;

(e) at approximately 15:50 hours Mighty River Power sought hedge cover from Genesis for the daytime period of 26 March 2011;

(f) at 16:00 hours Genesis offered two 50MW tranches of hedge cover to Mighty River Power at $350/MWh and $750/MWh;

(g) at 16:00 hours the SDS showed circa $160/MWh forecast prices for Hamilton and regions north of Hamilton;

(h) shortly after 16:45 hours Mighty River Power declined the 100MW of hedge cover offered by Genesis;

Saturday 26 March 2011

(i) at 09:40 hours the schedule of dispatch prices and quantities (SDPQ) showed an energy price at Otahuhu of approximately $1,800/MWh for trading period 22 (commencing 10:30 hours);

(j) at 10:10 hours the SDPQ showed an energy price at Otahuhu of approximately $20,000/MWh for trading period 22 (commencing 10:30 hours), $6,000/MWh for trading

period 23 (commencing 11:00 hours) and $400/MWh for trading period 24 (commencing 11:30 hours);

(k) at 10:40 hours the system operator reduced the Whakamaru-Otahuhu transmission constraint limit from 404MW to 390MW;

(l) at 10:53 hours Mighty River Power started moving offered Waikato generation from a low-priced offer band to a $100/MWh-$5,000/MWh offer band. 561MW was moved from a less than $500/MWh offer band to a $500/MWh-$5,000/MWh offer band;

(m) at 11:10 hours the system operator reduced the Whakamaru-Otahuhu transmission constraint limit from 390MW to 380MW;

(n) at 12:52 hours Mighty River Power moved 550MW of offered energy for its Waikato generation to its highest priced offer band (>$18,000/MWh). Thirty seconds afterwards Genesis reduced by 30MW the low-priced energy offer at the Huntly power station and increased by 20MW the low-priced energy offer at the Tokaanu power station;

(o) between 13:00 hours and 14:00 hours Meridian Energy contacted Genesis requesting hedge cover at Huntly. Genesis replied indicating no hedge cover was available;

(p) at 14:59 hours the transmission outages were extended to 20:00 hours;

(q) at 15:37 hours Meridian Energy contacted Genesis requesting reconsideration of hedge cover;

(r) at 16:43 hours Genesis offered 30MW of hedge cover at Huntly from 19:00 hours to 20:00 hours at $10,000/MWh. Meridian Energy declined the offer;

(s) at 17:28 hours the end time for the transmission outages was changed to 17:30 hours;

(t) at 17:30 hours the transmission outages ended.

Unlawful conduct

74. Powershop alleges it is plausible that Genesis' behaviour may contravene section 36 (or other sections) of the Commerce Act 1986.

75. As noted in the 'Allegations' section above, section 36 of the Commerce Act prohibits a person with a substantial degree of market power from taking advantage of that power for a proscribed purpose. The Commerce Act is administered and enforced by the Commerce Commission.

76. A breach of section 36 is not directly relevant to a UTS, except that such a breach could be a material breach of a law that could constitute a UTS if it gave rise to an event that is covered by paragraphs (a) and (b) of the definition of a UTS in the Code.

77. The UTS Committee does not consider that there has been a material breach of any law.

Manipulative or attempted manipulative trading activity

78. Approximately half of the UTS claims allege that Genesis engaged in manipulative or attempted manipulative trading activity. These claims fall into two categories: claims that Genesis deliberately caused a transmission constraint to bind by increasing generation at the Tokaanu plant while also reducing the dispatched generation at Genesis' E3P unit at Huntly; and claims that Genesis manipulated its Huntly offer prices to take advantage of its transitory market power.

Factual findings

79. The various forecast schedules produced by the system operator prior to dispatch are non-binding indicators to industry participants regarding forthcoming market conditions. An indication of (half hour) prices in a given trading period is provided a week ahead of real time by the weekly dispatch schedule (WDS). As real time approaches, the quality of information in the forecast schedules converges to the real-time conditions. This is due to participant offer strategies stabilising, forecast loads becoming more accurate, and network status (topology and constraints) becoming more certain. However, forecasts just ahead of real time remain imperfect predictors of actual prices in real time.

80. During Friday 25 March 2011 and into Saturday 26 March 2011 the forecast upper North Island load used in the SDS and the SDPQ underestimated the actual upper North Island load by, on average, approximately 125MW. Therefore, actual load conditions were more constraining than forecast.

81. The reduction in the transmission constraint limit relatively close to real time exacerbated this forecasting issue. However, it is noted that the transmission constraint began binding in trading period 22 (commencing 10:30 hours), before the constraint limit of 404MW was reduced, first to 390MW and then to 380MW.

Analysis – Did Genesis act so as to bind the transmission constraint?

82. It is alleged that Genesis deliberately acted in such a way as to manipulate extreme price separation between Whakamaru and Otahuhu. It is further alleged that Genesis engineered such an outcome, to its own benefit, by simultaneously reducing offer prices south of Whakamaru (i.e. at the Tokaanu, Rangipo and Tuai power stations), while increasing offer prices north of Whakamaru (i.e. at the Huntly power station).

83. At 12:58pm on 25 March 2011 Contact Energy withdrew approximately 425MW capacity offered at Stratford. Had Contact Energy's offers remained in place, a simulation using vSPD, the Authority's version of the SPD market-clearing software indicates that North Island prices on 26 March 2011 would have been unexceptional, as sufficient transmission capacity existed between Stratford and Huntly to remove the need for dispatch of Huntly at exceptionally high prices. [6]

84. Alternatively, had the demand forecasts been more accurate, the exceptionally high prices would have been more apparent to parties exposed to wholesale electricity spot prices and, based on their decisions for the following Saturday (2 April 2011), they are likely to have made different hedging decisions, curtailed their demand and/or increased generation from embedded generators.

[6] The 'Vectorised Scheduling, Pricing and Dispatch' (vSPD) model is the Authority's replica of SPD, the clearing engine for the wholesale market for electricity.

Hence, errors in the demand forecasts may have had a material impact on the actions of participants and resulting market prices.

85. All of this illustrates that the binding of the constraint depended on the actions of several participants, with those actions possibly not directed at the constraint at all.

86. The structure of the offers from the Huntly, Tokaanu, Rangipo and Tuai power stations changed in trading period 22 on 26 March 2011 as follows (see Figures 2 to 9):

    (a) Huntly offer prices increased at the same time as Tokaanu energy offer prices reduced;

    (b) in addition to Tokaanu offer prices reducing, Rangipo capacity offered at $0.01/MWh increased from 40MW to 60MW in trading period 19, thus also increasing the availability of low cost generation south of Whakamaru; and

    (c) the price of some Tuai generation also reduced from trading period 18 to trading period 43.

87. The claim that Genesis deliberately caused a transmission constraint to bind has been investigated by the Authority in two parts:

    (a) first, examining whether Genesis' actions were material to the binding of the transmission constraint; and

    (b) second, whether Genesis' offer behaviour was consistent with an alternative explanation (for example, that it was managing its exposure south of the constraint).

88. Some parties have speculated or alleged that Genesis' actions may have increased the likelihood of a binding transmission constraint into Hamilton and regions north of Hamilton.

89. The materiality of offer behaviour to the binding of the transmission constraint was investigated using the Authority's vSPD software.

90. The intention was to investigate the impact on the transmission constraint caused by the changes to offers at Tokaanu, Rangipo and Tuai. This was done by setting Tokaanu's offer prices to the levels they were at prior to their reduction (i.e. as at trading period 10) and keeping the Rangipo offers at their trading period 18 levels. The reduced offer prices at Tuai were set back to the offer prices at trading period 17 (i.e. before the reduction in Tuai's offer price). All of these changes are referred to as the "simulated" Tokaanu, Rangipo and Tuai offers. The final pricing case for all trading periods on 26 March 2011 was re-run with these revised offers, to determine the impact.

91. The Authority found that the upper North Island constraint bound under the simulated offers scenario. There were still sufficient offers south of the constraint at a lower offer price than Huntly to cause the constraint to bind and therefore interim prices to separate across the constraint. Those offers included some Waikato river chain generation, some geothermal generation, and Whirinaki power station.

92. Under the simulated offers there is, however, less financial impact on net generators (and greater impact for net loads) south of the transmission constraint, due to the reduced availability of low-priced offers. This is illustrated by increased nodal prices at Whakamaru and Haywards (for example, see Figure 10 and Figure 11).

93. Therefore, it appears unlikely that the constraint would have been alleviated if Genesis had not reduced its offer prices at Tokaanu, Rangipo and Tuai, as Huntly would still have been the marginal generator for Hamilton and regions north of Hamilton. Although the impact on Waikato generation is likely to have been less, there was still likely to have been large price separation between the Waikato region and Auckland (Otahuhu). See Figure 12 for prices at Otahuhu.

94. Genesis' offer strategy in regard to generation at Tokaanu, Rangipo and Tuai is consistent with reducing its exposure to a net load position in the lower North Island. If all of Genesis' energy offers are combined and compared against Genesis' national load, it can be seen that Genesis offered just enough generation at a lower price to cover its load position on 26 March 2011 (see Figure 13).

95. While increasing the amount of low-priced generation offered from Tokaanu might worsen the constraint between Otahuhu (OTA2201) and Whakamaru (WKM2201), Genesis' changes to its offers in relation to Tokaanu are consistent with a rational operator managing its net position. In this case, the increase in offered quantity at Tokaanu compensates for the reduction at Huntly, to ensure that Genesis covered its aggregate load.

96. If Genesis reduced the Huntly low-priced energy offer by 150MW (as it did) without increasing the low-priced energy offer by the same amount at Tokaanu, Genesis would have been exposed to the possibility of being short 150MW. In other words, if the constraint between Otahuhu and Whakamaru was removed or relaxed, and the North Island interim price was high but below Genesis' next offer price, Genesis would have been short by 150MW.

97. In summary, Genesis' offer strategy for its Tokaanu, Rangipo and Tuai power stations is consistent with managing its own risk position. This analysis does not support the view that Genesis caused transmission constraints to bind and therefore lead to interim prices separating between Whakamaru and Otahuhu. Mighty River Power was also changing its offers for its Waikato generation in order to manage its risks. The actions of Genesis and Mighty River Power were having opposite effects, which is not surprising given the relative risks each faced.

Analysis – Is taking advantage of market power to achieve high prices manipulative activity?

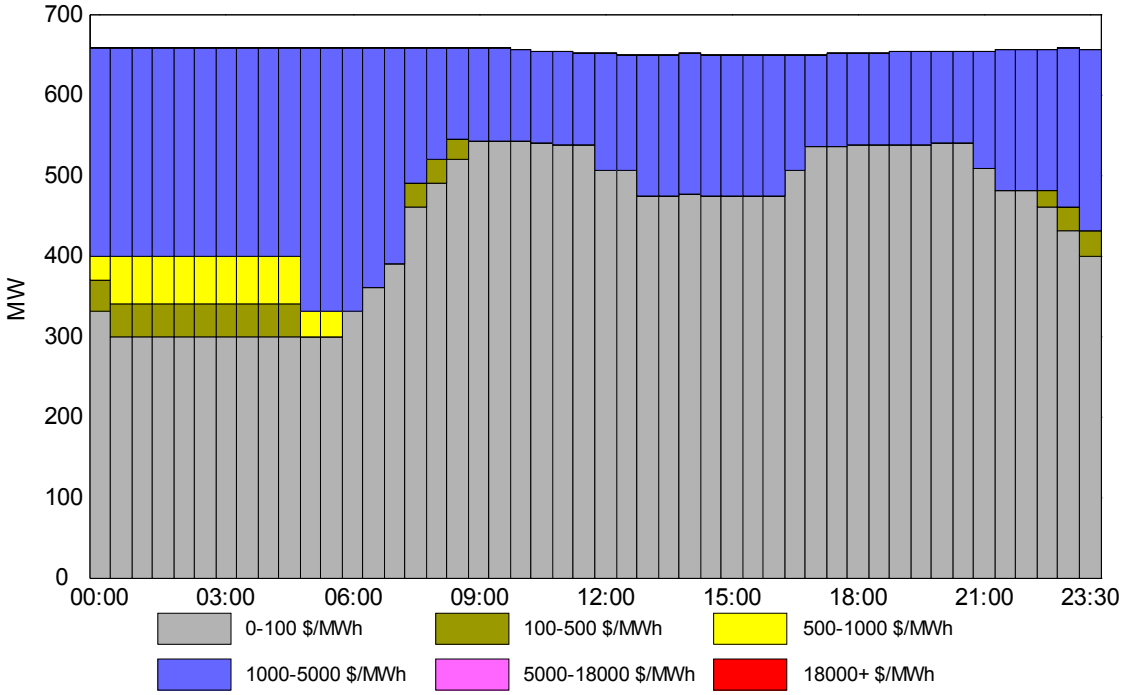
98. Some claims allege that Genesis manipulated its Huntly offer prices to take advantage of transitory market power. These allegations are not directed at the issue of whether Genesis caused the grid constraint to occur (which is discussed above), but just that Genesis' decisions to offer its Huntly units at exceptionally high prices for the period of the grid outage was manipulative or attempted manipulative trading activity.

99. The UTS Committee notes there is no price cap on offers made in the wholesale market for electricity, and in its view offering generation at high prices is not *per se* evidence of manipulative or attempted manipulative trading activity. Moreover, Genesis submitted its $20,000/MWh offers to the market the day before the grid constraint occurred, rather than just before gate closure.

Conclusion

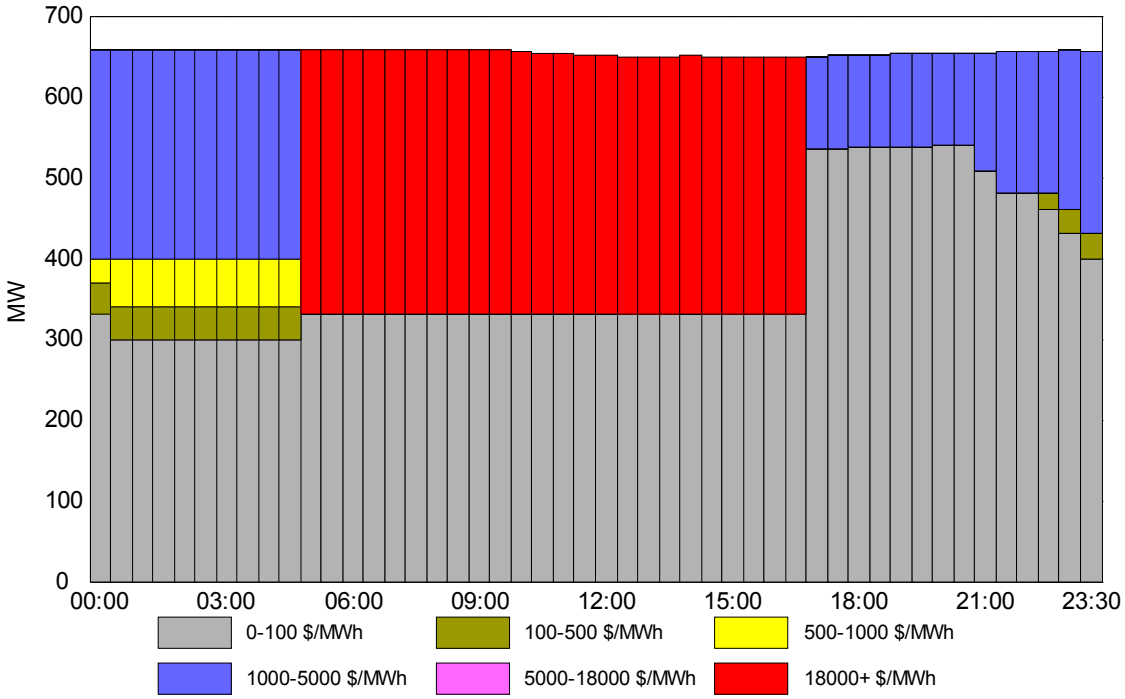
100. The UTS Committee's preliminary view is that the facts do not support the claim that Genesis engaged in manipulative or attempted manipulative trading activity.

Figure 2 Huntly offers for 26 March 2011 valid at 09:51 hours, Friday 25 March 2011



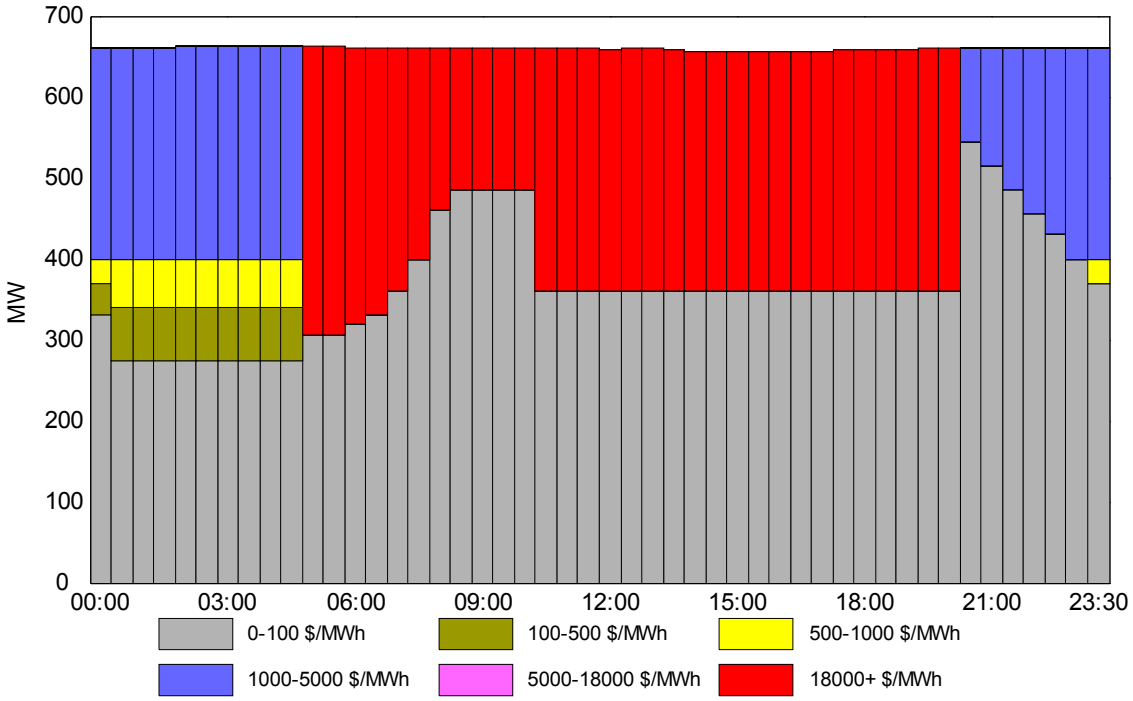
Source: Electricity Authority

Figure 3 Huntly offers for 26 March 2011 valid at 09:52 hours, Friday 25 March 2011



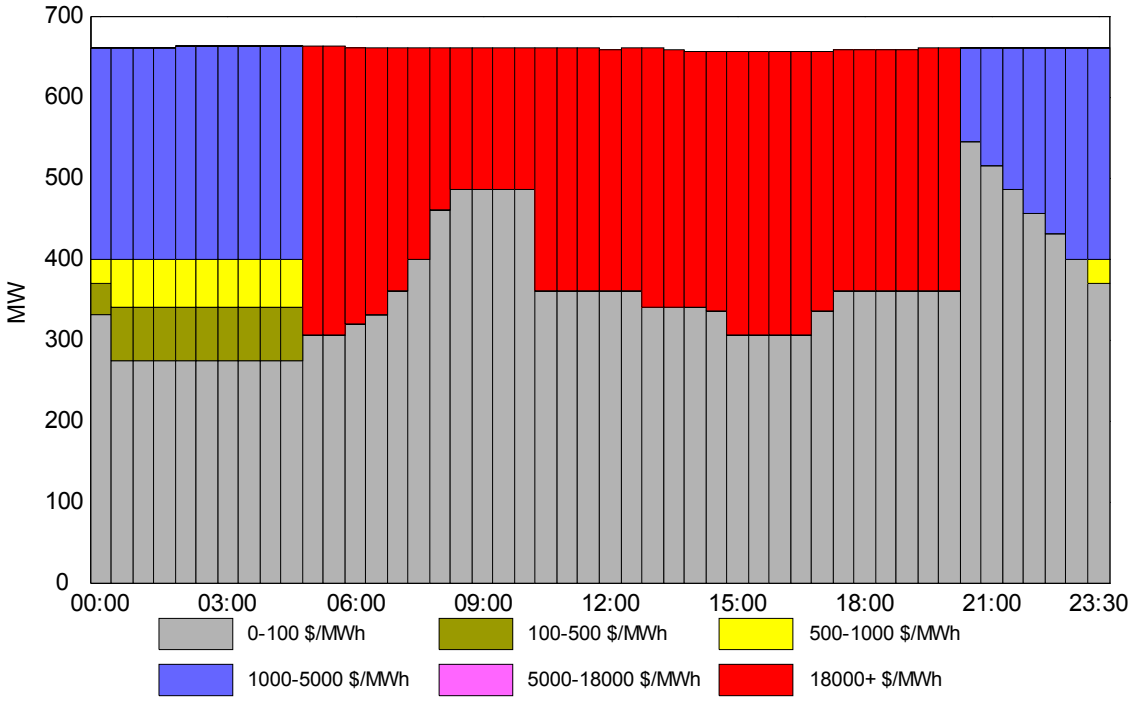
Source: Electricity Authority

Figure 4 Huntly offers for 26 March 2011 valid at 06:21 hours, Saturday 26 March 2011



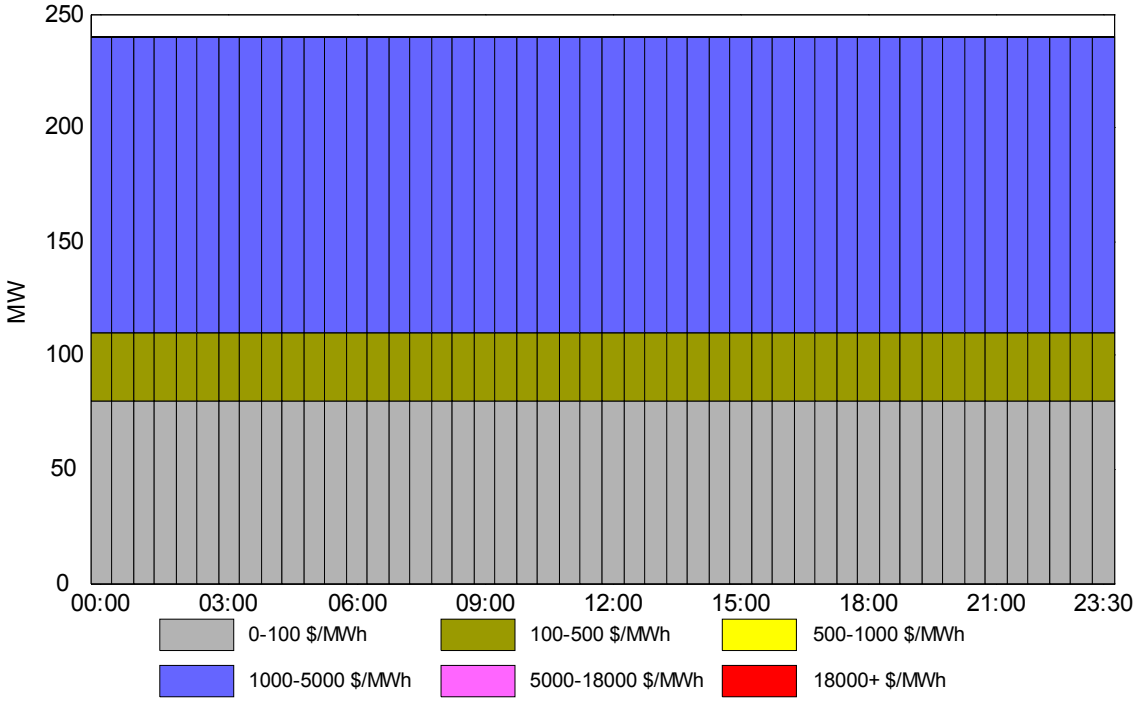
Source: Electricity Authority

Figure 5 Huntly offers for 26 March 2011 valid at 12:41 hours, Saturday 26 March 2011



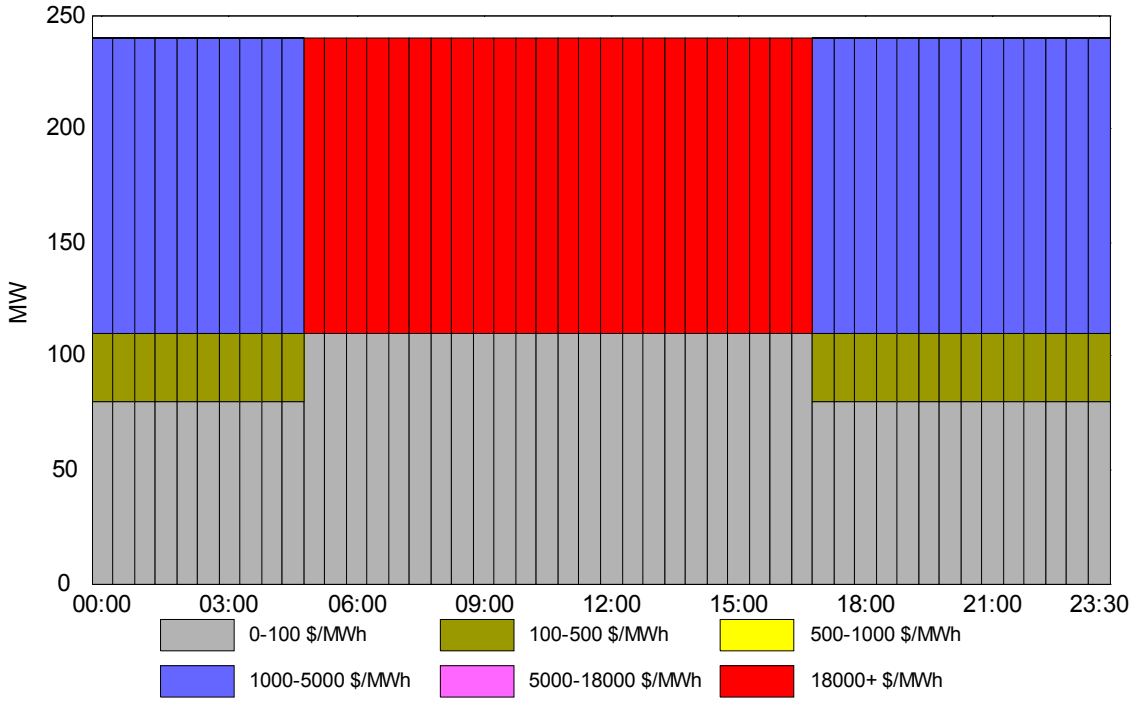
Source: Electricity Authority

Figure 6 Tokaanu offers for 26 March 2011 valid at 09:51 hours, Friday 25 March 2011



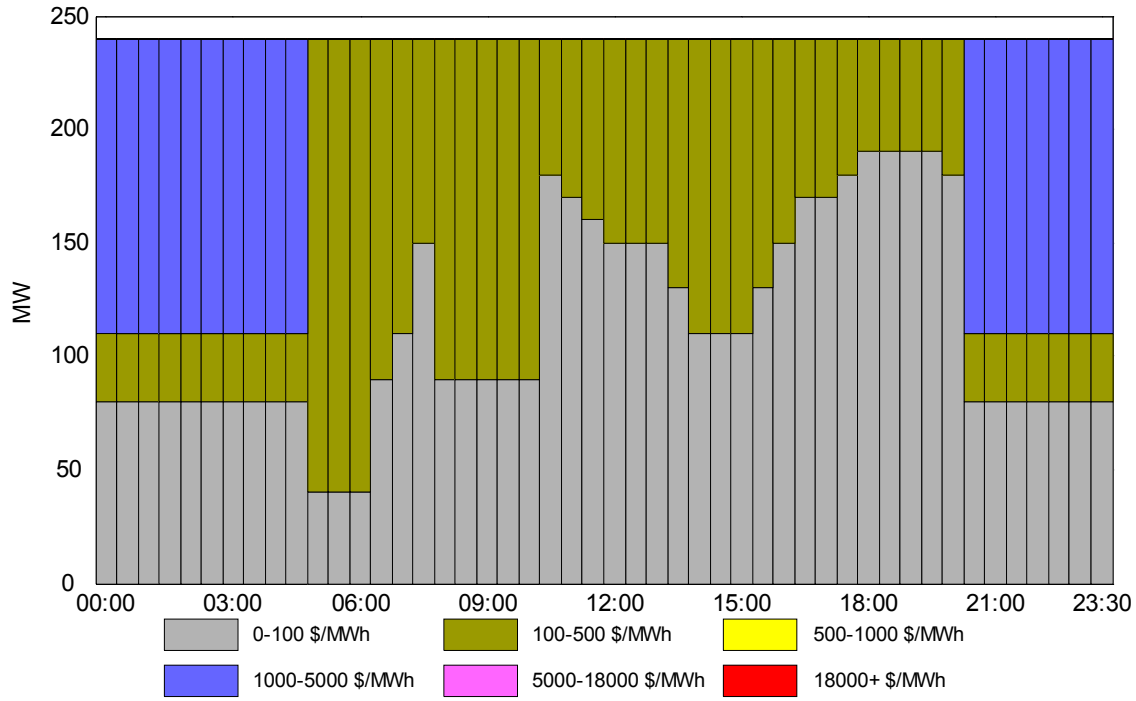
Source: Electricity Authority

Figure 7 Tokaanu offers for 26 March 2011 valid at 09:52 hours, Friday 25 March 2011



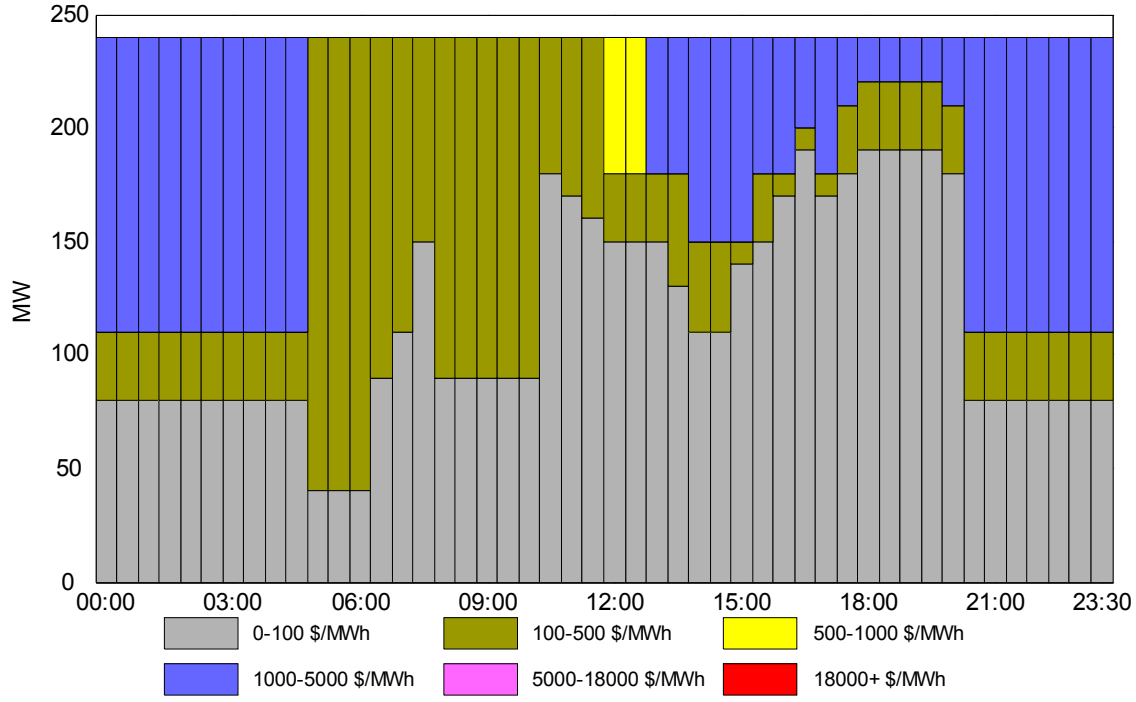
Source: Electricity Authority

Figure 8 Tokaanu offers for 26 March 2011 valid at 06:21 hours, Saturday 26 March 2011



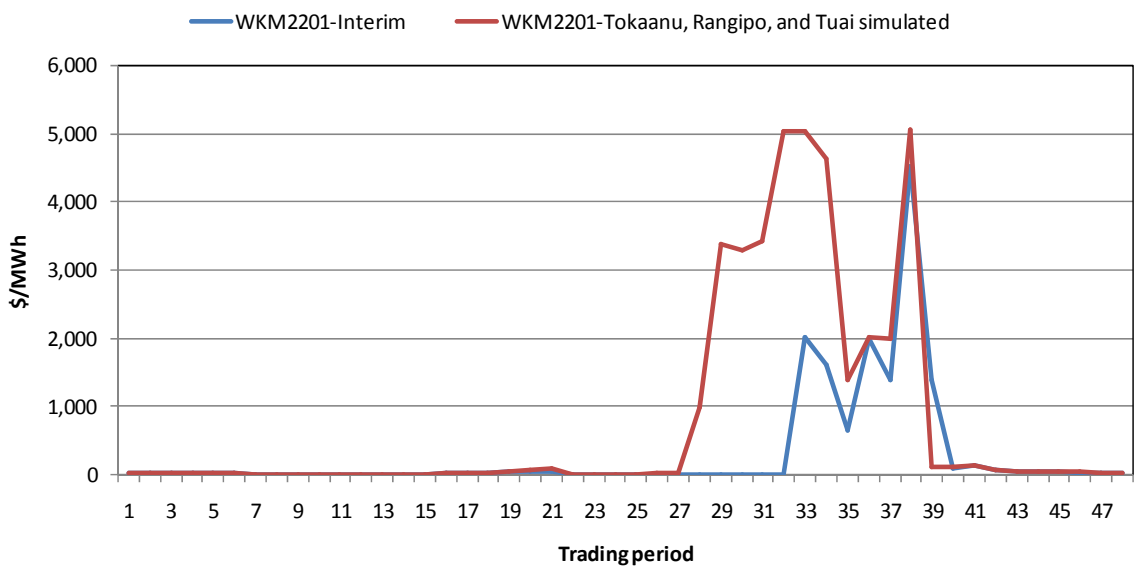
Source: Electricity Authority

Figure 9 Tokaanu offers for 26 March 2011 valid at 12:42 hours, Saturday 26 March 2011



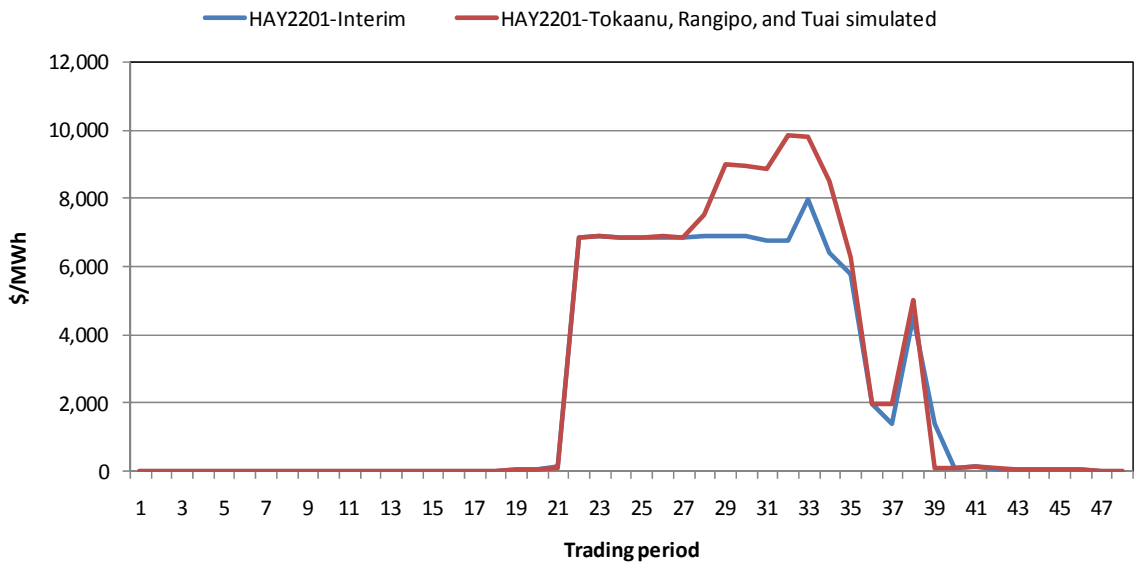
Source: Electricity Authority

Figure 10 Interim and simulated prices for Whakamaru for 26 March 2011



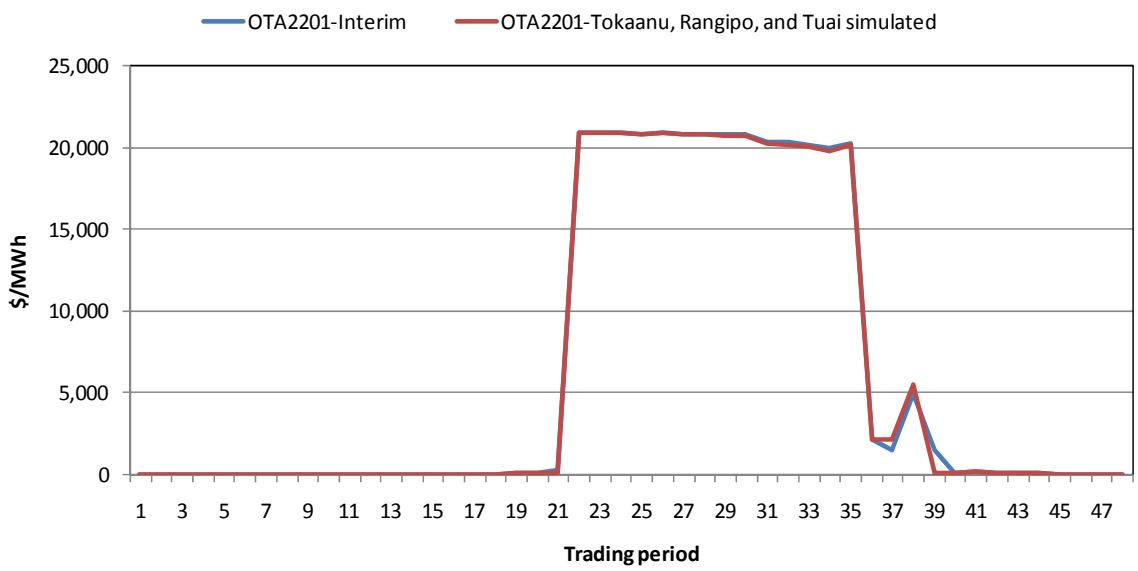
Source: Electricity Authority

Figure 11 Interim and simulated prices Haywards for 26 March 2011



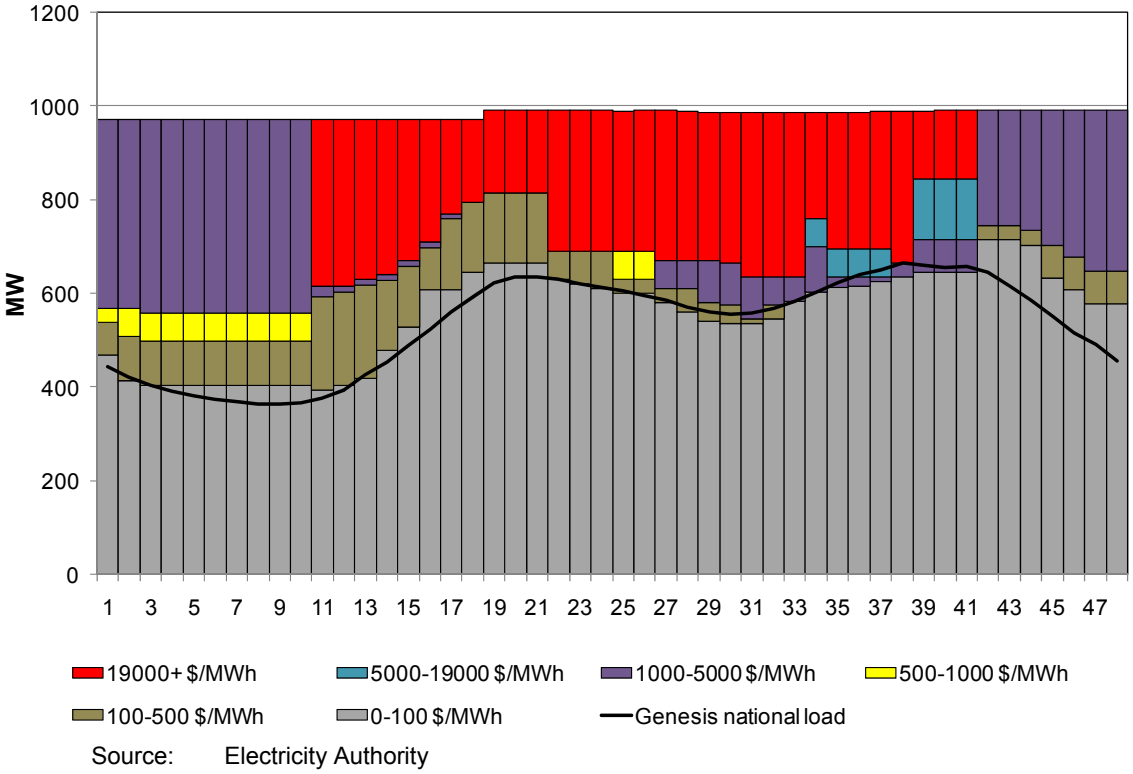
Source: Electricity Authority

Figure 12 Interim and simulated prices for Otahuhu for 26 March 2011



Source: Electricity Authority

Figure 13 Genesis' total energy offer stacks and load on 26 March 2011



Source: Electricity Authority

Conduct in relation to trading that is misleading or deceptive, or likely to mislead or deceive

101. Powershop and Vital Healthcare Property Trust allege that Genesis's behaviour in relation to trading was misleading or deceptive, or was likely to mislead or deceive.

Factual findings

102. The UTS Committee's investigation has found that forecast prices failed to *consistently* predict actual prices, due to demand forecast errors. The actions of Mighty River Power and revisions to the constraint limit by the system operator also obscured the outlook.

103. In particular, if the SDS issued at 16:00 hours on 25 March 2011 is rerun for trading period 22 (commencing 10:30 hours) on 26 March 2011 using *actual* upper North Island load, it indicates the approximately $19,000/MWh Huntly offers would have been dispatched even with Mighty River Power offering the additional capacity at its Southdown generation plant. This would have indicated to Mighty River Power and others on 25 March 2011 that high interim prices on 26 March 2011 were likely.

104. The error in the SDS load forecast is sufficient to explain how forecast prices for 26 March 2011 were relatively low while subsequent interim prices were very high.

Analysis

105. The national offer stack forecast for trading period 22 (commencing 10:30 hours) on 26 March 2011 showed offers of around $19,000/MWh had been placed in the stack. This forecast was visible to participants in the wholesale market for electricity in several SDSs on 25 March 2011. Although participants would not have known the offers of around $19,000/MWh were for Huntly, it is reasonable to believe they would have come to that conclusion relatively quickly had forecast prices been approximately $19,000/MWh.

106. Once they were placed in the offer stack Genesis did not alter its approximately $19,000/MWh offers in any material way ahead of the events of 26 March 2011. There is no indication that Genesis sought to mislead or deceive other industry participants.

107. Although there were indications of the risk of high spot prices on 26 March 2011, it may be considered unsurprising that counterparties to Genesis concluded that high spot prices would not arise. There are very few prior events with Genesis in a net pivotal position for other market participants to infer Genesis' intentions for 26 March 2011 (see Box 1 for a brief explanation of net pivotal). Prior to 26 March 2011 there appear to have been only five trading periods in which Genesis might have been net pivotal in the Auckland region. It is doubtful whether Genesis or any other participant could have predicted those events and consequently there is no prior history and little ability for Genesis to have signalled its intentions in those situations.

Box 1: Explanation of net pivotal

Box 1: Explanation of net pivotal

A generator is net pivotal when the quantity of generation required from it to prevent non-supply of some load in a region is greater than the generator's own load commitment in the region. Under these circumstances, it is profitable for a net pivotal generator to increase its offer prices as the additional revenue it earns will exceed its additional costs (from purchasing electricity from the wholesale market and meeting hedge contract commitments).

Generators are net pivotal in only rare circumstances, but pivotal situations, where the generator's load commitment is greater than its non-discretionary generation, are relatively common. A pivotal generator has no incentive to offer higher prices, as it would end up purchasing more electricity at the higher prices than it generated. For example, in the South Island, Meridian Energy is usually pivotal, but has only been net pivotal approximately 2.0% of the time since 1 January 2007, and this percentage will decrease significantly following the commissioning of Pole 3 of the high voltage direct current (HVDC) link between the North and South Islands.

An analysis of the net pivotal status of Genesis in the Auckland region from 2007 to 2011 has identified only five half hour trading periods when it might have been net pivotal (apart from 26 March 2011). This analysis was conducted by solving every trading period over the above time period with all offers of Genesis' Huntly generation plant above $100/MWh[7] increased to $20,000/MWh.

108. An analysis of Genesis' high-priced offers using publicly available data would have identified many thousands of offers by Genesis of generation plant at $10,000/MWh since March 2010, and this could be construed as a fair warning of what might occur under a net pivotal situation, although between 1 January 2007 and 1 October 2010 there was only one trading period, outside of 26 March 2011, when Genesis' offers exceeded $15,000/MWh.

109. On the other hand, prior to 26 March 2011, participants had only five trading periods over the last four years to observe Genesis' trading strategy when it could be confident of being in a net pivotal position. Consequently, there was a limited ability for the high interim price situation to have been forewarned to participants in the wholesale market for electricity.

110. This limited ability of Genesis to forewarn participants, coupled with the fact that Genesis has made offers at $10,000/MWh over an extended period, do not support an allegation of misleading or deceptive conduct.

Conclusion

111. The UTS Committee does not consider that Genesis engaged in conduct in relation to trading that is misleading or deceptive, or likely to mislead or deceive.

[7] The cut-off at $100/MWh is a proxy for estimating Genesis' net position, with low priced offers taken to be tracking Genesis' net position.

Other conduct that threatens orderly trading

112. Approximately half of the claims allege unwarranted speculation or an undesirable practice, and any exceptional circumstance that is at variance with, or that threatens or may threaten, generally accepted principles of trading.

Factual findings

113. There has been no price cap in the wholesale market for electricity since it was established in 1996. Table 1 lists the 20 highest half hour prices in the wholesale market for electricity over the period 1 May 2004 to 25 March 2011. To provide a point of comparison, Table 2 lists the 20 highest half hour prices in the wholesale market for electricity for 26 March 2011.

Table 1 Highest priced trading periods since January 2004

Trading period	Maximum price, $/MWh	Spring washer	Constraint name
21/08/2004 10:30	12,971	Yes	Arapuni-Hangatiki
25/03/2006 22:30	7,012	Yes	Islington-Kikiwa
25/03/2006 23:00	7,153	Yes	Islington-Kikiwa
19/06/2006 17:30	13,063	No	Maraetai-Whakamaru
13/02/2009 11:30	7,540	Yes	Tarukenga-Lichfield
27/04/2009 18:00	8,138	Yes	Redclyffe-Fernhill
27/04/2009 18:30	8,140	Yes	Redclyffe- Fernhill
19/05/2009 07:30	6,264	Yes	Tokaanu-Bunnythorpe
21/05/2009 07:30	5,480	No	HVDC
04/05/2010 17:30	5,434	No	Redclyffe transformer 3
04/05/2010 18:00	5,434	No	Redclyffe transformer 3
04/05/2010 18:30	5,434	No	Redclyffe transformer 3
04/07/2010 17:30	6,059	No	HVDC
04/07/2010 18:00	6,059	No	HVDC
06/09/2010 17:30	6,297	No	HVDC
03/11/2010 08:00	6,606	No	HVDC
21/02/2011 16:00	6,181	Yes	LFD-Kinleith
22/02/2011 16:00	6,200	Yes	LFD-Kinleith
22/02/2011 16:30	6,202	Yes	LFD-Kinleith
17/03/2011 08:00	5,540	No	HVDC

Source: Electricity Authority

Note: A high spring washer price is the most common mechanism by which a price higher than the offer price of the most expensive dispatched generation on the national transmission grid can occur. High spring washer prices occur at nodes where the SPD model has to replace multiple units of low-priced generation with high-priced generation so that an additional unit of generation can be delivered to those nodes whilst meeting the grid constraints built into SPD.

Table 2 Highest priced trading periods on 26 March 2011

Trading period	Maximum price, $/MWh	Spring washer	Constraint name
26/06/2011 10:00	367	Yes	Whakamaru-Otahuhu
26/06/2011 10:30	23,047	Yes	Whakamaru-Otahuhu; Arapuni - Kinleith
26/06/2011 11:00	22,828	Yes	Whakamaru-Otahuhu; Arapuni-Kinleith
26/06/2011 11:30	22,793	Yes	Whakamaru-Otahuhu; Arapuni-Kinleith
26/06/2011 12:00	22,651	Yes	Whakamaru-Otahuhu; Arapuni-Kinleith
26/06/2011 12:30	22,674	Yes	Whakamaru-Otahuhu; Arapuni-Kinleith
26/06/2011 13:00	22,634	Yes	Whakamaru-Otahuhu; Arapuni-Kinleith
26/06/2011 13:30	22,596	Yes	Whakamaru-Otahuhu
26/06/2011 14:00	22,610	Yes	Whakamaru-Otahuhu
26/06/2011 14:30	22,607	Yes	Whakamaru-Otahuhu
26/06/2011 15:00	22,092	Yes	Whakamaru-Otahuhu
26/06/2011 15:30	22,092	Yes	Whakamaru-Otahuhu
26/06/2011 16:00	21,888	Yes	Whakamaru-Otahuhu
26/06/2011 16:30	21,687	Yes	Whakamaru-Otahuhu
26/06/2011 17:00	22,280	Yes	Whakamaru-Otahuhu
26/06/2011 17:30	2,373	No	HVDC
26/06/2011 18:00	1,650	No	HVDC
26/06/2011 18:30	5,374	No	HVDC
26/06/2011 19:00	1,652	No	HVDC
26/06/2011 20:00	179	No	HVDC

Source: Electricity Authority

114. Genesis advised the Authority that Genesis set its offers for 26 March 2011 in response to its view of market conditions at the time. The Authority's investigation has found that Genesis' offers on 26 March 2011 were in accordance with its internal procedures, which state:[ ]

115. The Authority also obtained information from participants regarding relevant hedge cover offered to participants by Genesis for 26 March 2011.

116. Mighty River Power advised the Authority that, on 25 March 2011, Genesis offered two 50MW blocks of hedge cover to Mighty River Power for 26 March 2011, at $350/MWh and $750/MWh respectively.

117. Meridian Energy advised the Authority that Genesis offered it hedge cover at $10,000/MWh. Inspection of communications between Genesis and Meridian Energy shows that this was for hedge cover requested on 26 March 2011, in the midst of the high interim price event (at 15:37

hours). Meridian Energy requested retrospective hedge cover over the full day. Genesis refused to offer retrospective cover but offered a hedge of 30MW at $10,000/MWh, at 16:43 hours, for the period 19:00 hours to 20:00 hours (this offer occurred when the transmission outages were scheduled to continue until 20:00 hours).

Analysis

118. Wholesale electricity prices in New Zealand are uncapped so that they fluctuate to reflect underlying supply and demand conditions, such as when spring washer events occur (as per some of the prices in Tables 1 and 2 above). High prices also occur in other jurisdictions, even when they have explicit price or offer caps. For example, prices of $A12,500/MWh (the level of the market price cap) are not uncommon in the Australian National Electricity Market. Although high electricity prices in New Zealand are possible and occur from time to time, it is clear from Table 1 that the interim prices between trading periods 22 to 35 on 26 March 2011 are an exceptional circumstance.

119. That interim prices are exceptionally high for a period in 26 March 2011 does not mean they constitute a UTS *per se.* The questions to be considered are whether they arose from an unwarranted speculation, or an undesirable practice or trading situation, or are at variance with, or that threatens or may threaten, generally accepted principles of trading or the public interest. More specifically, it is desirable to consider:

- whether Genesis was in a position to determine prices in a significant portion of the wholesale market for electricity on 26 March 2011;
- whether parties exposed to those prices had time to seek supply from other sources or curtail their demand; and, as a result,
- whether those prices would be likely to undermine the wholesale market for electricity to such an extent that they satisfy the requirements of the definition of a UTS.

120. The first two bullet points above constitute what is called ‘a squeeze’. Corners and squeezes have long been considered undesirable practices in commodity and futures markets and, when they give rise to exceptional prices, they are usually considered to be a threat to orderly trading, the generally accepted principles of trading and the public interest. The notion of ‘corners and squeezes’ was discussed in a submission by Mr Kieran Murray on behalf of Mighty River Power. Box 2 explains these terms to assist readers with their meaning in the context of the UTS Committee’s investigation.

Box 2: Explanation of corners and squeezes

The terms ‘corner’ and ‘squeeze’ originate in commodity futures markets in which final settlement involves physical delivery of the commodity.

A corner in a futures market occurs when one party holds or controls a very large proportion of both the long (bought) futures contracts and the physical stock able to be tendered on to the market in fulfilment of short (sold) futures contracts. As the delivery date approaches, the parties holding sold futures have to either buy back the futures, or buy physical stock from the same party, or default on their contracts and incur the adverse consequences of doing so. The holder of the bought futures and physical stock can effectively “name its price” to sell futures and/or physical stock up to the point where its counterparties would prefer to default rather than pay the asking price.

A squeeze in a futures market is similar to a corner except the party applying the squeeze has control over a very large proportion of the long (bought) futures contracts and the parties that are short in futures contracts are unaware of this until it is too late for them to organise sufficient physical stocks to deliver and fully settle all open positions. As with a corner, the holder of the bought futures can effectively “name its price” to sell futures contracts, up to the point where its counterparties would prefer to default rather than pay the asking price.

Analysis – was Genesis in a position to determine prices?

121. The UTS Committee’s analysis of the situation for trading periods 22 to 35 on 26 March 2011 shows that the planned transmission outages, combined with Contact Energy's withdrawal of 425MW from Stratford on the previous day, created market conditions in which Huntly power station was net pivotal and therefore in a position to determine prices for electricity generated north of the Whakamaru-Otahuhu transmission constraint.

122. In a letter dated 28 April 2011, the Authority asked Contact Energy why it withdrew 425MW of energy offered at Stratford. Contact Energy's written response on 29 April 2011 states that:

- "The expectation at the time was that prices were likely to be low for 26 March and that it would not be economic to run the Taranaki Combined Cycle power station"; and
- "The Stratford peakers were being run for commissioning, under the control of the generation development project team. The peaker offer was changed as the result of a new commissioning plan provided to Contact Energy's trading team (received around 10:58am on 25 March) by the generation development team."

123. The Authority also asked whether Contact Energy was aware the withdrawal of 425MW of energy offered at Stratford was a necessary factor creating the high prices on 26 March 2011, and whether it was aware that another generator had priced up energy into the $19,000/MWh offer band on 26 March 2011. Contact Energy's response to both questions was "No".

124. Regardless of these considerations, Genesis’ Huntly plant was in a net pivotal position, and its Huntly offers determined wholesale prices in the North Island.

Analysis – did parties have time to seek alternative supply or curtail their demand?

125. As also noted earlier in this document, the exceptionally high-priced offers from Genesis for the Huntly power station were provided in the forecast schedules approximately 24 hours before the exceptionally high prices occurred on 26 March 2011. In addition, the SDSs issued at 14:00 hours and 14:30 hours on 25 March 2011 picked up the binding transmission constraint in the upper North Island and produced forecast prices of around $20,000/MWh for Hamilton and regions north of Hamilton. This led Mighty River Power to offer into the market an additional 125MW at the Southdown power station at $0.01/MWh and to enquire after hedges from Genesis.

126. The UTS Committee notes that Genesis knew it was net pivotal, by virtue of the dispatch instructions it received from the system operator. Unlike other participants, Genesis knew the exact amount by which its high price offers were being dispatched and therefore the degree to which it was pivotal. The only uncertainty for Genesis would have been its exact net position; however, it is likely that it has tools to accurately estimate this.

127. That the additional generation offered at the Southdown power station on 25 March 2011 for 26 March 2011 was instrumental in reducing forecast prices for Hamilton and regions north of Hamilton to approximately $160/MWh may have indicated to Mighty River Power that it was able to manage the Whakamaru-Otahuhu transmission constraint. Evidence of this is Mighty River Power's decision to decline the 100MW of hedges available from Genesis for 26 March 2011.

128. Other industry participants were either sufficiently confident that high interim prices would not result from the planned transmission outages on 26 March 2011, or were unaware of the possibility. Contact Energy, for example, did not reverse its decision to take the TCC power station out of the market even after receiving the SDSs issued at 14:00 and 14:30 hours. Consequently, industry participants with customers exposed to spot prices did not warn those customers of the price risk on 26 March 2011.

129. The UTS Committee concludes that the inaccurate price forecasts prevented consistent price signals occurring for 26 March 2011, as evidenced by the fact that even highly experienced traders in the market appeared confident that exceptionally high prices would not occur. The UTS Committee also concludes that most time-of-use (TOU) electricity consumers, who are exposed to wholesale electricity prices under commercial arrangements with their retailers, were not forewarned of the possibility of exceptionally high prices for 26 March 2011 and did not have time to organise for alternative supply or curtail their demand to avoid the high prices. Genesis was therefore able to squeeze the market with exceptionally high prices on 26 March 2011.

Analysis - did other parties participate in the squeeze

130. The application of a squeeze to the wholesale market for electricity need not be a certain matter. In creating the pre-conditions for a squeeze a generator may have a low expectation of succeeding, as there is uncertainty about the level of demand on the day and uncertainty about the extent to which other participants will respond.

131. As noted earlier, the squeeze arising from Genesis' offer behaviour on 26 March 2011 would not have resulted in exceptional prices if Contact Energy had offered capacity at Stratford. A more accurate demand forecast, or scenario analysis with alternative demand forecasts, may have been

sufficient to encourage Contact Energy to offer its TCC power station into the market. It may also have been sufficient to achieve substantial demand-side response (demand reductions and increases in embedded generation) and increases in hedge cover, as occurred on the following Saturday (2 April 2011) when the same transmission outage recurred.

132. The UTS Committee also notes that Mighty River Power's offer behaviour is consistent with an attempt to apply a squeeze affecting the rest of the North Island by increasing its Waikato generation offer prices. However, in a letter to the Authority on 29 April 2011 Mighty River Power stated:

- "Mighty River Power had circa [ ]MW of gross short position north of the transmission constraint, and the binding constraint was preventing Mighty River Power being able to compete in the market north of the constraint. For clarity, these offer modifications were a reactive response to the price separation and would not have been undertaken had the transmission constraint not bound in combination with the offering strategy of Genesis Energy."

- "For clarity we were not seeking to leverage the high prices generated north of the constraint to other parts of New Zealand where, on the whole, we are net short. The core purpose was to lift prices in the region of a large proportion of our generation to reduce the price separation across the constraint to the north, and potentially also produce a dynamic response in the market."

133. The UTS Committee notes that Mighty River Power's explanation is a logical reaction to the high prices brought about by Genesis' high offer prices for its Huntly units. As Genesis reduced its offer prices at Tokaanu, Rangipo and Tuai to manage its overall position, Mighty River Power needed to increase its offer prices in the Waikato to manage its overall position.

Analysis – does the squeeze on 26 March 2011 satisfy the definition of a UTS?

134. The next step is to consider whether the exceptional and unforeseen interim prices on 26 March 2011, if allowed to become final prices, threaten trading on the wholesale market for electricity and are likely to preclude the maintenance of orderly trading or the proper settlement of trades.

135. The high interim prices on 26 March 2011 are not the result of some underlying supply-demand imbalance, e.g. inadequate capacity or fuel, and they appear to bear no resemblance to any underlying or avoidable cost. It is in the public interest to have an electricity market in which all participants can be confident prices are competitively determined. If participants observe that prices are greatly divorced from supply-demand conditions and are excessively higher than underlying costs, they will lose confidence in the integrity of the market arrangements and the incentive structures surrounding the wholesale market for electricity may be greatly damaged.

136. For example, a lack of confidence in the wholesale market for electricity could result in highly inefficient investment signals – consumers in the upper North Island might install emergency generation to be used at times of exceptionally high prices. It would be highly inefficient, and contrary to the public interest, if this were to occur in the presence of existing generation that could otherwise be operated profitably.

137. Moreover, it is entirely likely that generators may continue to cause exceptionally high prices in the wholesale market for electricity, when they have a net pivotal position. Mighty River Power, for example, sought to increase prices in the lower North Island on 26 March 2011 in reaction to the prices achieved by Genesis. Ongoing exceptional pricing levels will deter demand-side parties from becoming participants in the wholesale market for electricity or deter them from being exposed to wholesale electricity prices. As a result of the events of 26 March 2011, these parties are more likely to opt for fixed price/variable volume (FPVV) contracts with retailers, substantially reducing the potential level of demand-side management available to the market.

138. UTS claims in regard to 26 March 2011 and responses to the Authority's information requests in regard to 26 March 2011, indicate that buyer confidence in the wholesale market for electricity appears to have been seriously undermined through the combination of exceptionally high prices and buyers' lack of awareness of these prices until after the events had occurred.

139. A particular issue for consumers is that, if they had been aware of the high prices either in advance or in real time, they would have in many instances reduced demand, as occurred on 2 April 2011 at the mere prospect of a repeat price outcome. The evidence is that the interim prices of 26 March 2011 greatly exceeded the marginal value of consumption for many TOU consumers, imposing substantial harm on them.

140. Finally, the indications are that, if the high prices of 26 March 2011 are allowed to stand, the reputation of the wholesale market for electricity may be damaged to the point where trading on the market may be threatened and the adverse financial impact on some parties may preclude the maintenance of orderly trading or the proper settlement of trades. As buyers cannot switch to an alternative wholesale market for electricity there is a strong prospect they will seek external interventions that could threaten the existence of current wholesale market arrangements.

141. In regard to precluding the proper settlement of trades, the Authority's investigation has identified that, if the situation is not corrected, it is likely to threaten the proper settlement of trades at some point.

Conclusion

142. The UTS Committee's preliminary view is that an exceptional and unforeseen circumstance occurred during trading periods 22 to 35 (inclusive) on 26 March 2011. With the combination of the transmission outage, an incorrect demand forecast, and Contact Energy removing capacity at Stratford, Genesis' application of a squeeze on the wholesale market for electricity resulted in prices at exceptional levels in Hamilton and regions north of Hamilton. However, counterparties trading in those regions had good reason to believe, until it was too late for them to take actions to avoid incurring liability to pay the prices, the exceptionally high offer prices at Huntly would not translate into market prices.

143. A key contributing factor to the situation was the under-forecast of demand, which meant the exceptional prices were not forecast except briefly, thereby reducing the information available to participants and demand-side parties in the preceding 24 hours, and reducing the time for any response.

144. The UTS Committee's preliminary view is that the exceptionally high interim prices on 26 March 2011 are the result of a squeeze, which is an undesirable trading practice. Moreover, if they are allowed to become final prices, they threaten to undermine confidence in the wholesale market for electricity, and threaten to damage the integrity and reputation of the wholesale market for electricity. The UTS Committee's preliminary view is that the events of 26 March 2011 may threaten trading on the wholesale market for electricity and would be likely to preclude the maintenance of orderly trading and the proper settlement of trades at some stage in the future.

Event cannot satisfactorily be resolved by any other mechanism under the Code

145. The UTS Committee's preliminary view is that there are no other mechanisms under the Code to resolve the event.

Draft decision

146. The UTS Committee's preliminary view is that a UTS developed on 26 March 2011 because:

(a) the events on that day threaten, or may threaten, trading on the wholesale market for electricity and would, or would be likely to, preclude the maintenance of orderly trading or proper settlement of trades (in particular, the events involved the undesirable trading practice of squeezing a market and resulted in exceptional and unforeseen circumstance that threatens, or may threaten, generally accepted principles of trading and the public interest); and

(b) the event cannot satisfactorily be resolved by any other mechanism available under the Code.

147. The reasons for this preliminary view may be summarised as follows:

(a) Genesis' generation offers set the market prices for Hamilton and regions north of Hamilton during trading periods 22 to 35 (inclusive) on 26 March 2011 and parties exposed to prices in the wholesale market for electricity in those regions had good reason to believe the exceptionally high offer prices at Huntly for those trading periods would not translate into market prices, until it was too late for them to take actions to avoid incurring liability to pay the prices; and

(b) the high interim prices on 26 March 2011, if they are allowed to become final prices, threaten to undermine confidence in the wholesale market for electricity, and threaten to damage the integrity and reputation of the wholesale market for electricity.

Remedial action

Proposed action

148. The UTS Committee proposes that interim prices for trading periods 1 to 21 and 36 to 48 on 26 March 2011 become the final prices for those trading periods. The UTS Committee proposes that final prices for trading periods 22 to 35 (inclusive) on 26 March 2011 be determined as follows:

(a) the SPD market-clearing software be re-run to calculate a new set of final prices with the following revisions made to the SPD inputs:

i. all Huntly offer tranches with prices exceeding a price of X during trading periods 22 to 35 (inclusive) on 26 March 2011 be priced at X;

ii. offer prices and quantities for Tokaanu, Rangipo, Tuai, and Waikato generation be restored to the offer structure in the WDS published at 09:00 hours on 25 March 2011 for trading periods 22 to 35 (inclusive) on 26 March 2011; and

iii. that X be set at a point in the range $1,500/MWh to $3,000/MWh; and

(b) calculation of constrained on amounts under Part 13 of the Code for trading periods 22 to 35 (inclusive) on 26 March 2011 be curtailed, so that no constrained on compensation will be paid in respect of generation plant in the North Island.

Background

149. The relevant powers of the Authority following the finding that a UTS has occurred are specified in Part 5 of the Code. In particular, clause 5.2 provides:

5.2 Actions Authority may take to correct undesirable trading situation

(1) If the **Authority** finds that an **undesirable trading situation** is developing or has developed, it may take any of the steps listed in subclause (2) in relation to the **wholesale market** that the **Authority** considers are necessary to correct the **undesirable trading situation**.

(2) The steps that the **Authority** may take include any 1 or more of the following:

(a) suspending, or limiting or curtailing, an activity on the **wholesale market**, either generally or for a specified period:

(b) deferring completion of trades for a specified period:

(c) directing that any trades be closed out or settled at a specified price:

(d) giving directions to a participant to act in a manner (not inconsistent with this Code, the Act, or any other law) that will, in the Authority's opinion, correct or assist in overcoming the undesirable trading situation.

150. The Authority's remedy for the UTS is restricted to an intervention in the wholesale market for electricity, with the purpose of the intervention by the Authority being to correct the UTS. The intervention is not a vehicle to address any other matter.

151. The preliminary view of the UTS Committee is that a UTS occurred as a result of a squeeze in the wholesale market for electricity. The remedy to be applied by the Authority should, therefore, be designed to correct those circumstances.

152. The design of the remedy ought therefore to be directed at restoring prices in the wholesale market for electricity to the level they would have been had buyers been aware that Genesis would be net pivotal on 26 March 2011 and those buyers had had the opportunity to arrange an alternative source of supply or to curtail demand.

Analysis

153. With adequate forewarning of a generator attaining net pivotal status due to the planned transmission outage, buyers would have negotiated hedge cover with generators, arranged alternative supply, or reduced consumption. Negotiation with existing generators could then have occurred in an environment where competitive pressures on generators were present rather than where, as was the case on 26 March 2011, a single generator was able to name its price.

154. If a negotiation took place sufficiently in advance of the transmission outage, buyers can effectively threaten the net pivotal generator with the entry of new peaking plant into the constrained regions. Thus purchasers would have the option to either:

(a) negotiate with the net pivotal generator;

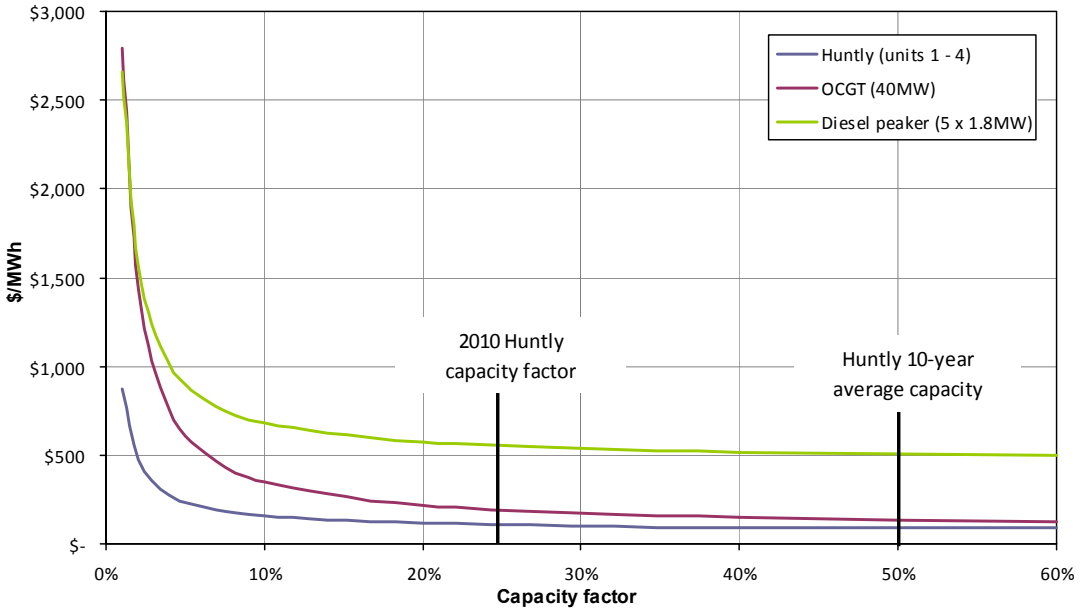
(b) arrange to reduce demand; or

(c) arrange new generation.

155. Under such a scenario, the long run marginal cost (LRMC) of new entrant peaking generation would then provide a competitive discipline on the wholesale market for electricity price discovery process in the constrained region.[8] Faced with this competitive pressure, the net pivotal generator would have to agree to provide hedge cover at a price no greater than the cost of new entrant generation. The net pivotal generator's effective LRMC would logically be lower than the new entrant peaking generation.

156. Figure 14 illustrates LRMC as a function of expected running hours per year for the Huntly units 1-4, an open cycle gas turbine (OCGT) generator (such as Huntly unit 6), and diesel-fired peaking generators (such as those being built by TrustPower at the Marsden Oil Refinery).

Figure 14 Comparison of long run marginal cost as a function of capacity factor



Source: Electricity Authority

[8] Demand response is considered to be a higher-cost alternative than new entrant peaking generation.

157. Under a scenario where buyers had only two hedging options – negotiate with incumbent generators (Genesis and possibly Contact Energy) or with new peaking generation entrants – the incumbents should have been able to undercut the new entrants and enter into hedge contracts with buyers at a contract price no greater than the new entrants' LRMC.

158. With hedge contracts covering its output, a rational commercial strategy for Huntly plant would be to offer at short run marginal cost (SRMC) because, in a market where the behaviour of other participants influences price in an unpredictable manner, such a strategy minimises the expected cost to serve the retail and hedge commitments. For example, the risk that plant generates when the spot price is less than SRMC is removed.

159. However, a net pivotal generator's strategy of offering at SRMC would cause wholesale electricity prices to tend towards SRMC, i.e. the net pivotal generator is, by definition, able to determine prices in at least one region. This in turn would undermine the net pivotal generator's ability to demand from purchasers a price for hedge cover in the future that is above SRMC. In such a case, purchasers would perceive the wholesale market for electricity to be a better (lower cost) option.

160. A time-consistent and stable equilibrium outcome is for the net pivotal generator to offer into the wholesale market for electricity at or near the price of its hedge contracts, i.e. at or near the LRMC of the next best economic alternative. Purchasers would thus be incentivised to seek hedge cover in the future and wholesale electricity prices would tend towards the LRMC of the economic alternative to the net pivotal generator.

161. The events of 26 March 2011 indicate that as gate closure drew near, the demand forecasts were sufficiently accurate for Genesis to be able to structure offers to ensure its plant was marginal in the constrained region. Genesis was therefore able to determine the price in accordance with the strategy outlined above if it so desired.

162. It could be argued that over shorter timeframes more likely to represent the available window within which to threaten the net pivotal generator with an economic alternative, only a demand response alternative could be considered. In effect, insufficient time would be available to procure a generation alternative.

163. Under this alternative logic, a higher priced hedge contract would be negotiated (as contracted demand response is more expensive than generation), and this would likewise be observed as the price in the wholesale market for electricity while the generator was pivotal, thereby inducing future hedge contracting.

164. A variety of demand response schemes were trialled by Transpower in the upper South Island in 2007 and 2008 as part of the early development of a 'grid support contract' (GSC) product. Industrial and commercial load-shedding and standby generation was offered by consumers or aggregrators in a number of blocks. In 2008, the price the blocks were offered at ranged between $4,000/MWh and $11,000/MWh for actual use, with an additional availability cost ranging from $6,500/MW to $13,000/MW per month. The availability of the demand response differed between blocks, ranging from one to two hours per day in the least expensive block to periods of up to two days in the more expensive blocks.

165. Although available information from the upper South Island GSCs would support a demand-side response price of approximately $4,000/MWh for voluntary planned demand reduction, the Authority is contemplating $3,000/MWh as the price floor to apply during rolling outage load shedding, reflecting the lower cost that pre-notified power cuts might be expected to impose on consumers. The higher-priced GSCs from the upper South Island trials may reflect the value of transmission investment deferment driving up the price of GSCs.

Conclusion

166. The UTS Committee considers that the cost of an economic alternative that may have placed competitive pressure on the negotiation of hedge cover for a planned transmission outage, should lie between the LRMC of a new entrant peaking generator as a lower bound, and $3,000/MWh demand response cost as the upper bound, being the assessed impact to consumers of planned load shedding.

167. A suitable remedy to the exceptional and unforeseen circumstances experienced in the wholesale market for electricity is to calculate a new set of nodal prices for the entire North Island by re-running the SPD market-clearing software, with Huntly plant offered at the LRMC of an appropriate economic alternative.

168. The advantage of using SPD in this way is that the resulting prices will account for transmission losses, and when the wholesale market for electricity is settled on those prices, sufficient revenue will be collected from purchasers to pay suppliers.

Derivation of remedial prices

169. Constructing the SPD case to calculate remedial final prices requires the following modifications to be made to the interim pricing case for trading periods 22 to 35 (inclusive) on 26 March 2011:

    (a) Huntly offers above an estimated alternative LRMC are reduced to that alternative LRMC; and

    (b) Tokaanu, Rangipo, Tuai, and Waikato generation offers are restored to the offer structure for 26 March 2011, as represented in the WDS at 09:00 hours on 25 March 2011. This restores offers to reflect the management of positions prior to the squeeze being applied.

Estimating the LRMC of an alternative to Huntly

170. The estimate of the LRMC of alternative generation hinges upon the assumed capacity factor of the alternative generation plant. However, it is noted that estimating the future capacity factor for an infrequently used peaking plant is difficult, and bound to rest on debateable assumptions.

171. The frequency of dispatch of a peaking plant depends on hydrology, wind generation, and actions of other parties, including new investment. New peaking plant could be one of several currently available generation technologies:

    (a) diesel-fired OCGTs;

    (b) diesel-fired reciprocating engines;

(c) gas-fired reciprocating engines; or

(d) gas-fired OCGTs.

172. The utilisation of any new entrant peaking plant could vary from just a few hours per year to, perhaps, as much as several hundred hours per year. An investor's expectation of utilisation would influence the technology selected. The trade-off to be made is essentially one of thermal efficiency (and therefore operating costs) versus the up-front capital cost. In other words, the higher the expected utilisation of a plant, the more inclined the investor would be to select a plant with a higher capital cost and a lower operating cost.

173. Table 3 lists a number of different LRMC results that highlight the sensitivity of LRMC to the assumed capacity factor of generation alternatives. Assumptions underpinning the LRMC estimates for existing and new entrant plant are detailed at: http://www.ea.govt.nz/our-work/consultations/uts/26Mar11.

Table 3 Estimate of long run marginal cost for alternative generation types, $/MWh

Capacity factor	Diesel-fired reciprocating engine (5 x 1.8MW)	Gas-fired OCGT (40MW)	Huntly units 1-4
60%	497.84	125.02	88.89
40%	516.18	147.61	95.55
20%	571.20	215.37	115.52
10%	681.22	350.89	155.48
7%	775.53	467.05	189.73
4%	1,011.31	757.45	275.34
2%	1,561.44	1,435.06	475.11
1%	2,661.72	2,790.28	874.66

Source: Electricity Authority

174. New Zealand examples of peaking plant investments include:

(a) P40, the 48MW OCGT at Huntly;

(b) Whirinaki, 3 x 52MW diesel-fired OCGTs;

(c) Contact Energy's recent 2 x 100MW high-efficiency OCGTs at Stratford;

(d) Todd Energy's 3 x 3MW gas-fired reciprocating engines in Taranaki; and

(e) TrustPower's yet to be commissioned 5 x 1.8MW diesel-fired reciprocating engines at Marsden Point.

175. The UTS Committee's preliminary view is that it is reasonable to adopt the technology being used by TrustPower as the basis for the plant costs in determining draft remedial final prices because it is a recent example of an observed investment. At a capacity factor of 2%, or about 175 hours per year, the LRMC of this technology does not necessarily represent a standalone peaking option because, in an energy-only market such as New Zealand, it is reasonable to assume that the

owners of the generation plant would use it to make money in the energy market at times of high prices. In other words, a pure standalone peaking generation option might run for as few as 5-10 hours per year.

176. The UTS Committee's preliminary view is that remedial prices should be determined with the LRMC for a modelled alternative to hedge cover falling in the range $1,500/MWh to $3,000/MWh.

177. The North Island price surface for draft remedial prices using a modelled LRMC of $1,500/MWh is illustrated in Figure 15. The North Island price surface for draft remedial prices using a modelled LRMC of $3,000/MWh is illustrated in Figure 16.

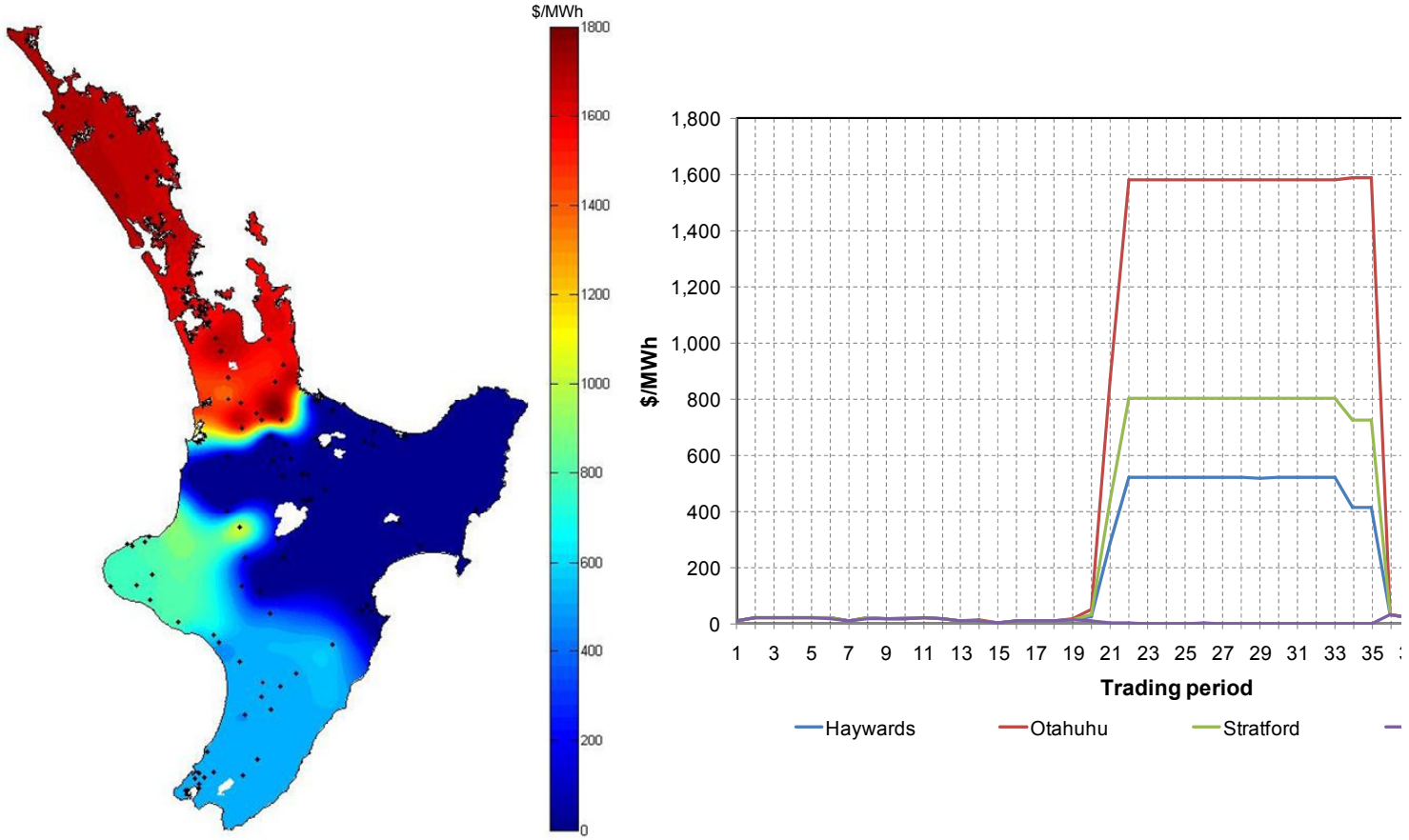
Conclusion

178. The UTS Committee's preliminary view is that a LRMC-based determination of draft final prices is the most reasonable correction to apply to the wholesale market for electricity when a squeeze has occurred. This is because it reflects an outcome that more accurately represents the outcome of negotiations between a willing buyer and a willing seller, when the seller is a (potential) net pivotal generator.

179. Preference has been given to a solution that mimics an outcome whereby purchasers are able to negotiate directly with the net pivotal generator because negotiations with a generator located further from the constrained region may yield an uncertain or higher priced outcome in the constrained region.

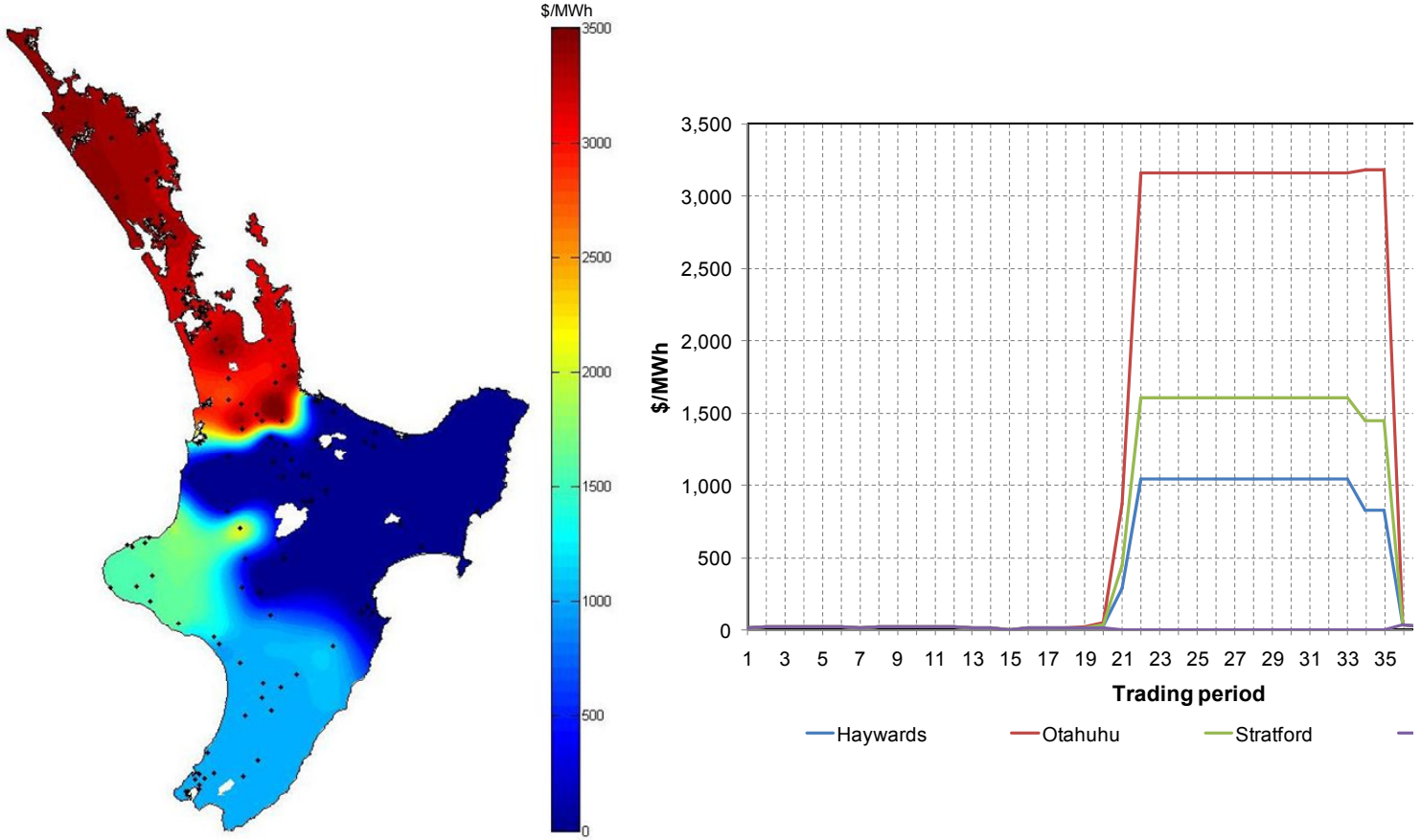
180. Draft final prices for every node and affected trading period, consistent with Huntly offers at $1,500/MWh and $3,000/MWh, as described in paragraph 169, are provided in a spreadsheet available at: http://www.ea.govt.nz/our-work/consultations/uts/26Mar11.

Figure 15 North Island prices with Huntly offered at LRMC of $1,500/MWh and Central North Island hydro simulated



Source: Electricity Authority

Figure 16 North Island prices with Huntly offered at LRMC of $3,000/MWh and Central North Island hydro simulated



Source: Electricity Authority

Appendix A: Chronology of events

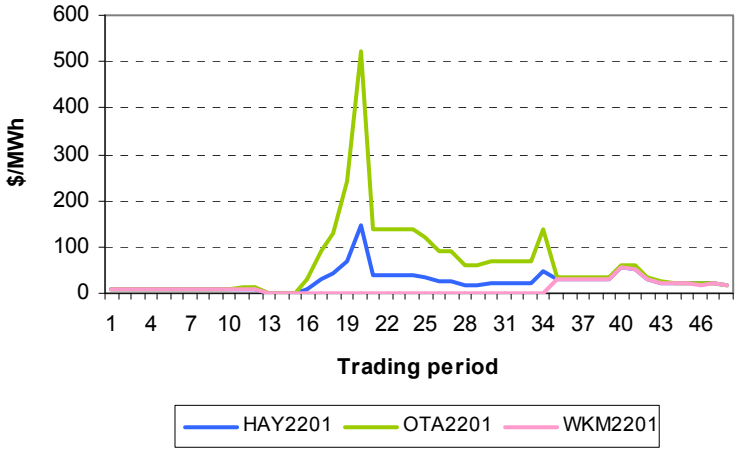
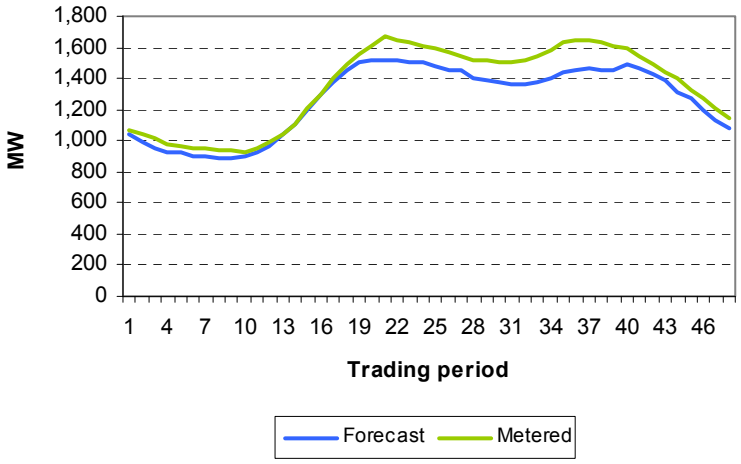
Time	Key Events
2009	Transpower announced the schedule of Whakamaru C line work to the electricity industry. Many workshops and teleconferences had been undertaken to discuss this issue.
15 Dec 2010 13:19	Outages of 220kV transmission lines between Otahuhu and Whakamaru (HAM_HAT_2, HAT_WKM_2, HAT_WKM_1, HAT_OHW_2) were uploaded into the POCP.
16 Feb 2011 13:22	Outages of 220kV transmission lines between Otahuhu and Whakamaru were confirmed in the POCP.
09 Mar 2011 16:21	The split on the 110kV system (ARI_BOB_1, ARI_HAM_1, ARI_HAM_2) was uploaded and confirmed in the POCP.
22 Mar 2011 9:56	These transmission outages were entered into the WITS, where SPD schedules may be viewed. Outages were planned from 05:00 to 17:00.
23 Mar 2011	The first sign of constraint applied for this combination of outages was shown in the WDS in the WITS, on NZX's website.
25 Mar 2011 (Before 10:00)	The constraint binding was shown in the WDS.
25 Mar 2011 09:51	Genesis moved 320MW from a low-priced (<$100/MWh) offer band to a $19,000/MWh offer band and at the same time increased the quantity of low-priced offers at Tokaanu.
25 Mar 2011 10:03	The SDS ran and showed a binding Whakamaru-Otahuhu constraint. The energy price at Otahuhu was around $200/MWh for trading period 19 (09:30).
25 Mar 2011 12:03	The SDS ran and showed the constraint binding. The energy price at Otahuhu was around $500/MWh for trading periods 18 and 19 (09:00 and 09:30).
25 Mar 2011 12:58	Contact Energy withdrew 425MW of offered energy at Stratford (being 320MW at Taranaki Combined Cycle and 105MW of peaking generation). The removal of this generation was instrumental in the Whakamaru-Otahuhu constraint binding.
25 Mar 2011 14:03	The SDS ran and showed the Whakamaru-Otahuhu constraint binding. The forecast energy price at Otahuhu was around $20,000/MWh for nine trading periods (trading periods 19 to 28).
25 Mar 2011 15:12	Mighty River Power offered an additional 125 MW at its Southdown power station.

Time	Key Events
25 Mar 2011 15:50	Mighty River Power sought hedge cover from Genesis by phone for the daytime period of 26 March 2011 (50MW and 100MW at Huntly).
25 Mar 2011 16:00	Genesis offered hedge prices of 50MW at $350/MWh and a second 50MW at $750/MWh. Mighty River Power was given until 17:00 to accept.
25 Mar 2011 16:03	The SDS ran and showed the Whakamaru-Otahuhu constraint binding, with the energy price at Otahuhu being around $160/MWh. This pricing level stayed the same, or lower, until the next day.
25 Mar 2011 shortly after 16:45	Mighty River Power (Fuel Portfolio Manager) contacted Genesis by phone and declined the hedge cover offered by Genesis.
26 Mar 2011 09:40	The gate closed for trading periods 21 (10:00) to 24 (11:30) The SDPQ ran for trading periods 20 (09:30) to 27 (13:00) and showed the constraint binding. The energy price at Otahuhu was around $1,800/MWh for trading period 22 (10:30).
26 Mar 2011 10:03	The gate closed for trading periods 22 (10:30) to 25 (12:00) The SDS ran for trading periods 21 (10:00) to 48 (23:30) and showed the constraint binding. The energy price at Otahuhu was around $1,800/MWh for trading period 22 (10:30).
26 Mar 2011 10:10	The gate closed for trading periods 22 (10:30) to 25 (12:00) The SDPQ ran for trading periods 21 (10:00) to 28 (13:30) and showed the Whakamaru-Otahuhu constraint binding. The SDPQ's forecast energy price at Otahuhu was around $20,000/MWh for trading period 22 (10:30), $6,000/MWh for trading period 23 (11:00) and $400/MWh for trading period 24 (11:30).
26 Mar 2011 10:40	The gate closed for trading periods 23 (11:00) to 26 (12:30) The SDPQ ran for trading periods 22 (10:30) to 29 (14:00) and showed the Whakamaru-Otahuhu constraint binding. The SPDQ's forecast energy price at Otahuhu was around $20,000/MWh for trading periods 22 (10:30) to 28 (13:30). The system operator reduced the Whakamaru-Otahuhu constraint limit from 404MW to 390MW for the duration of the SPDQ (to 14:00). This was done due to reduced offload times to manage the contingencies as indicated by the system operator's real-time contingency analysis. (For trading period 23 (11:00) to trading period 36 (17:30) on 26 March 2011, the SDSs prior to 11:00 on 26 March 2011 and the SDPQs prior to 10:40 on 26 March 2011 had a constraint limit of 404MW for the branch group constraint HAM_WKM_1_&_OHW_WKM_1_M_O_1. However, this limit was changed to 390MW by 10:40 and to 380MW by 11:00 on 26 March 2011 for trading period 23 (11:00) to trading period 36 (17:30), making the constraint more restrictive closer to real time.)

Time	Key Events
26 Mar 2011 10:53	Mighty River Power started reducing its energy offers at a low-priced band and offered more energy at a higher-priced band ($100-$5,000/MWh) in order to release the Whakamaru-Otahuhu constraint.
26 Mar 2011 11:10	The gate closed for trading periods 24 (11:30) to 27 (13:00) The SDPQ ran for trading periods 23 (11:00) to 30 (14:30) and showed the Whakamaru-Otahuhu constraint binding. The SDPQ's forecast energy price at Otahuhu was around $20,000/MWh for trading periods 23 (11:00) to 28 (13:30). The system operator reduced the Whakamaru-Otahuhu constraint limit from 390MW to 380MW for the duration of the SDPQ (to 14:30).
26 Mar 2011 11:40	The gate closed for trading periods 25 (12:00) to 28 (13:30) The SDPQ ran for trading periods 24 (11:30) to 31 (15:00) and showed the Whakamaru-Otahuhu constraint binding. The SPDQ's forecast energy price at Otahuhu was around $20,000/MWh for trading periods 24 (11:30) to 29 (14:00).
26 Mar 2011 12:03	The gate closed for trading periods 26 (12:30) to 29 (14:00) The SDS ran for trading periods 25 (12:00) to 48 (23:30) and showed the Whakamaru-Otahuhu constraint binding. The SPDQ's forecast energy price at Otahuhu was around $20,000/MWh for trading periods 25 (12:00) to 29 (14:00) and trading period 34 (16:30)
26 Mar 2011 12:10	The gate closed for trading periods 26 (12:30) to 29 (14:00) The SDPQ ran for trading periods 25 (12:00) to 32 (15:30) and showed the Whakamaru-Otahuhu constraint binding. The SPDQ's forecast energy price at Otahuhu was around $20,000/MWh for trading periods 25 (12:00) to 29 (14:00).
26 Mar 2011 12:52	Mighty River Power moved 550MW of energy offer to highest price band (>$18,000/MWh) in order to lessen the effect of the constraint. Thirty seconds later Genesis reduced by 30MW the low-priced energy offer at Huntly and increased by 20MW the low-priced energy offer at Tokaanu.
26 Mar 2011 13:00 to 14:00	Meridian Energy contacted Genesis requesting hedge cover at Huntly. Genesis replied indicating no hedge cover was available.
26 Mar 2011 13:10	The gate closed for trading periods 28 (13:30) to 31 (15:00) The SDPQ ran for trading periods 27 (13:00) to 34 (16:30) and showed the Whakamaru-Otahuhu constraint binding. The SPDQ's forecast energy price at Otahuhu was around $20,000/MWh for trading periods 27 (13:00) to 34 (16:30).
26 Mar 2011 13:40	The gate closed for trading periods 29 (14:00) to 32 (15:30) The SDPQ ran for trading periods 28 (13:30) to 35 (17:00) and showed the

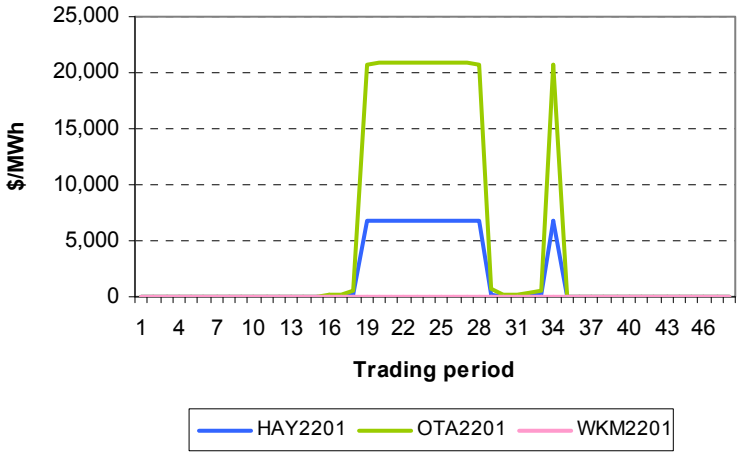
Time	Key Events
	Whakamaru-Otahuhu constraint binding. The SPDQ's forecast energy price at Otahuhu was around $20,000/MWh for trading periods 28 (13:30) to 34 (16:30).
26 Mar 2011 14:03	The gate closed for trading periods 30 (14:30) to 33 (16:00) The SDS ran for trading periods 29 (14:00) to 48 (23:30) and showed the Whakamaru-Otahuhu constraint binding. The SPDQ's forecast energy price at Otahuhu was around $20,000/MWh for trading periods 29 (12:00) to 34 (16:30).
26 Mar 2011 14:10	The gate closed for trading periods 30 (14:30) to 33 (16:00) The SDPQ ran for trading periods 29 (14:00) to 36 (17:30) and showed the Whakamaru-Otahuhu constraint binding. The SPDQ's forecast energy price at Otahuhu was around $20,000/MWh for trading periods 29 (14:00) to 34 (16:30).
26 Mar 2011 14:40	The gate closed for trading periods 31 (15:00) to 34 (16:30) The SDPQ ran for trading periods 30 (14:30) to 37 (18:00) and showed the Whakamaru-Otahuhu constraint binding. The SPDQ's forecast energy price at Otahuhu was around $20,000/MWh for trading periods 30 (14:30) to 33 (16:00).
26 Mar 2011 14:59	The transmission outages were extended to 20:00 hours.
26 Mar 2011 15:10	The gate closed for trading periods 32 (15:30) to 35 (17:00) The SDPQ ran for trading periods 31 (15:00) to 38 (18:30) and showed the Whakamaru-Otahuhu constraint binding. The SPDQ's forecast energy price at Otahuhu was around $20,000/MWh for trading periods 31 (15:00) to 37 (18:00).
26 Mar 2011 15:37	Meridian Energy contacted Genesis requesting reconsideration of hedge cover.
26 Mar 2011 16:43	Genesis offered 30MW of hedge cover at Huntly from 19:00 to 20:00 at $10,000/MWh. Meridian Energy declined the offer.
26 Mar 2011 17:28	The end time for the transmission outages was changed to 17:30 hours.
26 Mar 2011 17:30	The transmission outages finished.
Interim prices released	The upper North Island price was around $20,000/MWh for trading periods 22 (10:30) to 35 (17:00) inclusive.

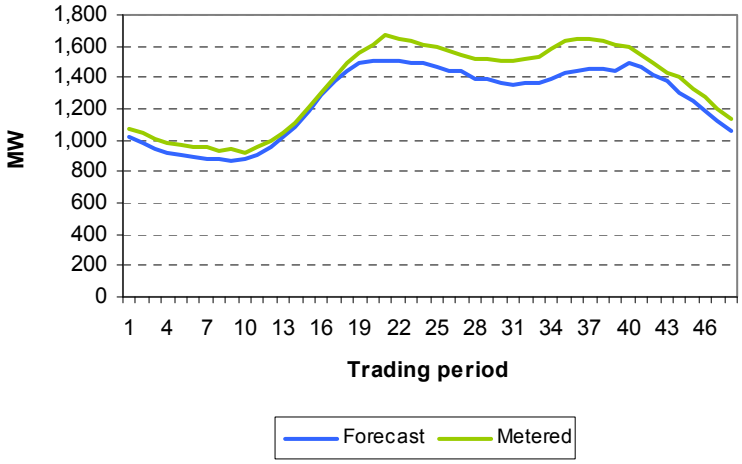
Appendix B: Graphical chronology of key events

Time (Schedule)	Market prices ($/MWh) and North Island load (MW) for 26 March 2011
25 March 2011 12:00 (SDS): • Genesis' high-priced offers at Huntly (>$19,000/MWh) and low-priced offers at Tokaanu were already submitted. • Relevant upper North Island transmission constraint was included in the SDS with a limit of 404MW. • Forecast nodal prices for 26 March 2011 indicated some price separation between central North Island and upper North Island. • Load forecast for 26 March 2011 was low compared to actual metered amounts used for interim prices.	 

25 March 2011 14:00 (SDS):

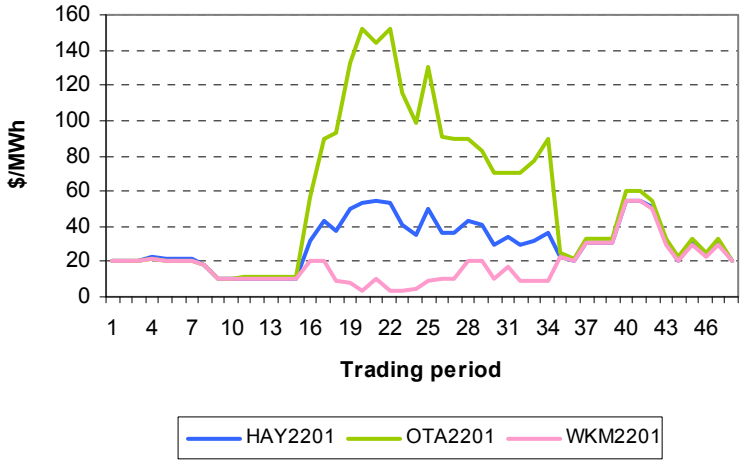
- At 12:58 hours on 25 March 2011 Contact Energy withdrew 425MW of offered energy at Stratford.
- Genesis' high-priced offers were therefore needed to manage the upper North Island transmission constraint.
- Forecast nodal prices for 26 March 2011 indicated large price separation between central North Island and upper North Island (the forecast energy price at Otahuhu was around $20,000/MWh for trading periods 19 – 28 on 26 March 2011).
- Load forecast was lower than actual metered amounts for 26 March 2011.

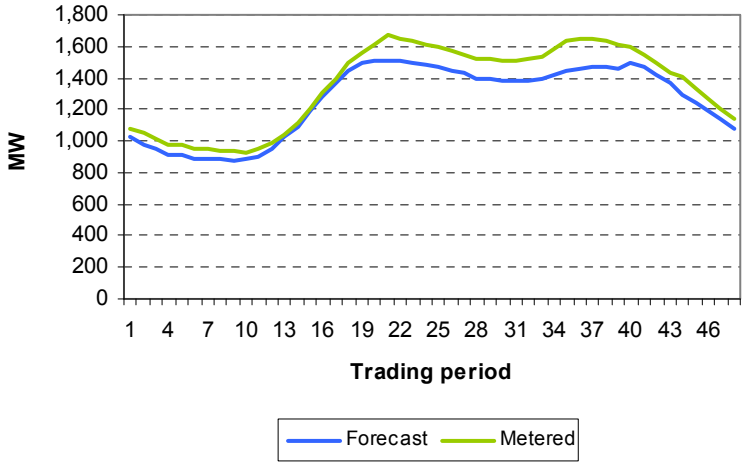




25 March 2011 16:00 (SDS):

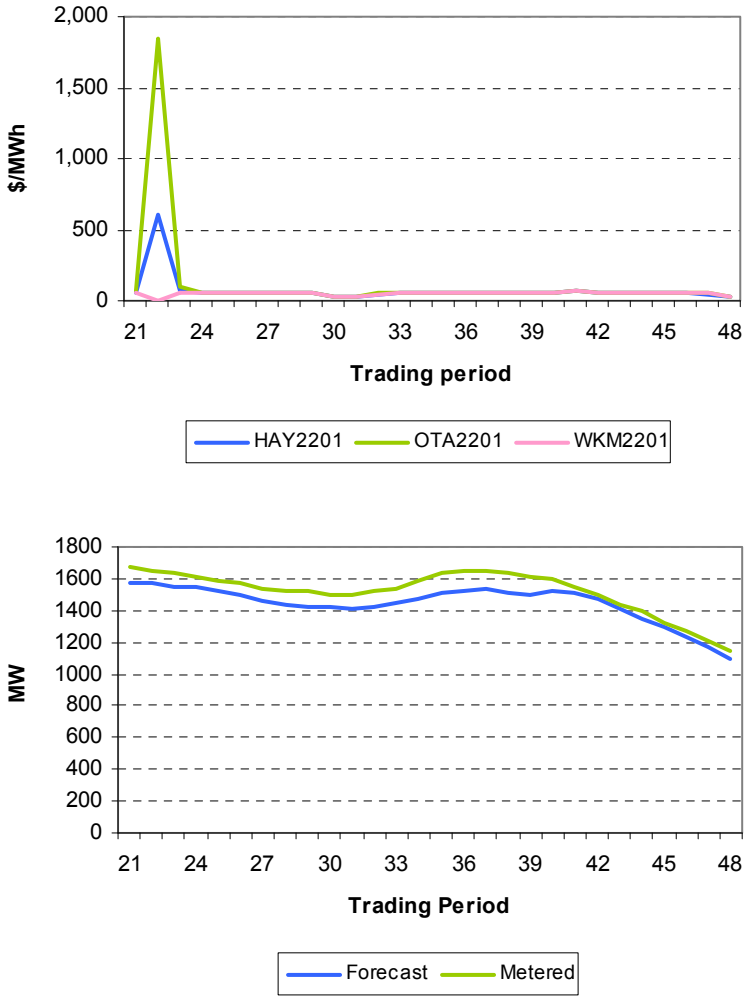
- At 15:12 hours on 25 March 2011 Mighty River Power offered an additional 125 MW at its Southdown power station.
- Genesis' high-priced offers were no longer needed to manage the upper North Island transmission constraint.
- Forecast nodal prices for 26 March 2011 indicated some price separation between the central North Island and the upper North Island but much lower than the previous SDS.
- Load forecast was lower than actual metered amounts for 26 March 2011.





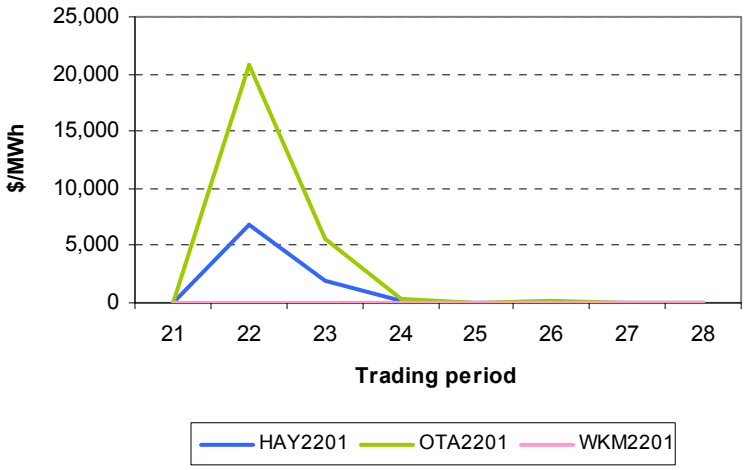
26 March 2011 10:00 (SDS):

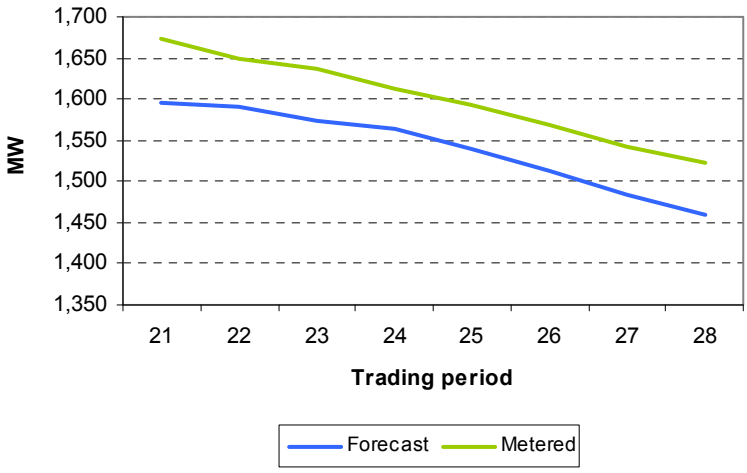
- The SDS indicated no $20,000/MWh price spikes in the upper North Island.
- Genesis' high-priced offers were not needed to manage the upper North Island transmission constraint.
- Forecast nodal prices for 26 March 2011 indicated some price separation between central North Island and upper North Island.
- Load forecast was lower than actual metered amounts for 26 March 2011.



26 March 2011 10:10 (SDPQ):

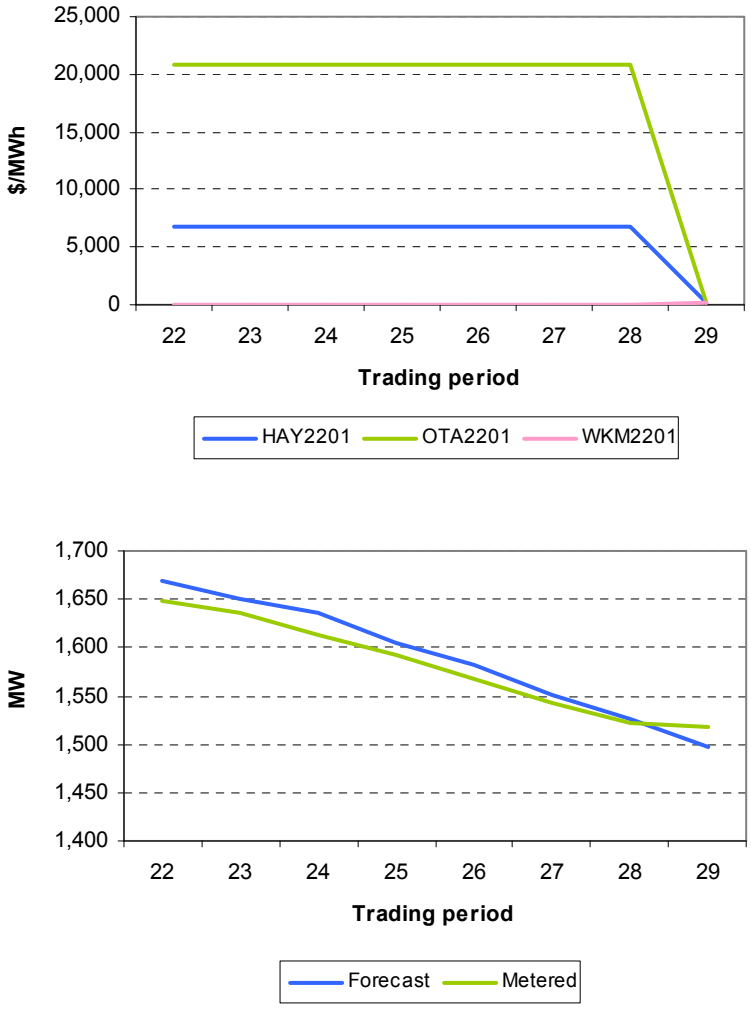
- SDPQ forecasted $20,000/MWh prices in the upper North Island for trading period 22 (10:30) due to the binding transmission constraint.
- Genesis' high priced offers were now needed to manage the upper North Island transmission constraint.
- $20,000/MWh upper North Island price spike was forecast for one trading period.
- Due to two-hour rule, re-offering was not permitted.
- Load forecast was lower than actual metered amounts for 26 March 2011.





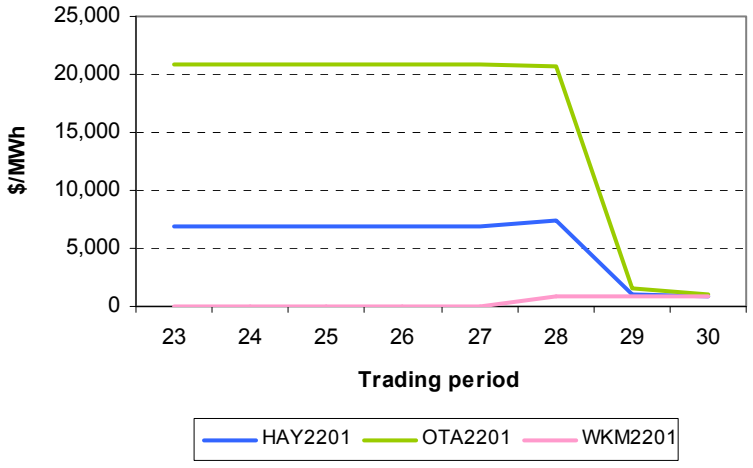
26 March 2011 10:40 (SDPQ):

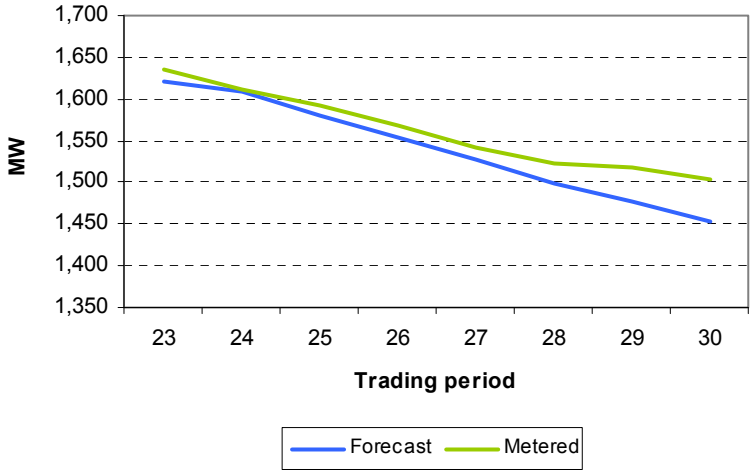
- Genesis' high-priced offers were needed to manage the upper North Island transmission constraint for extended periods.
- $20,000/MWh prices were now forecast in the upper North Island until trading period 29 (14:00).
- Load forecast was relatively close to actual metered amounts for 26 March 2011.



26 March 2011 11:10 (SDPQ):

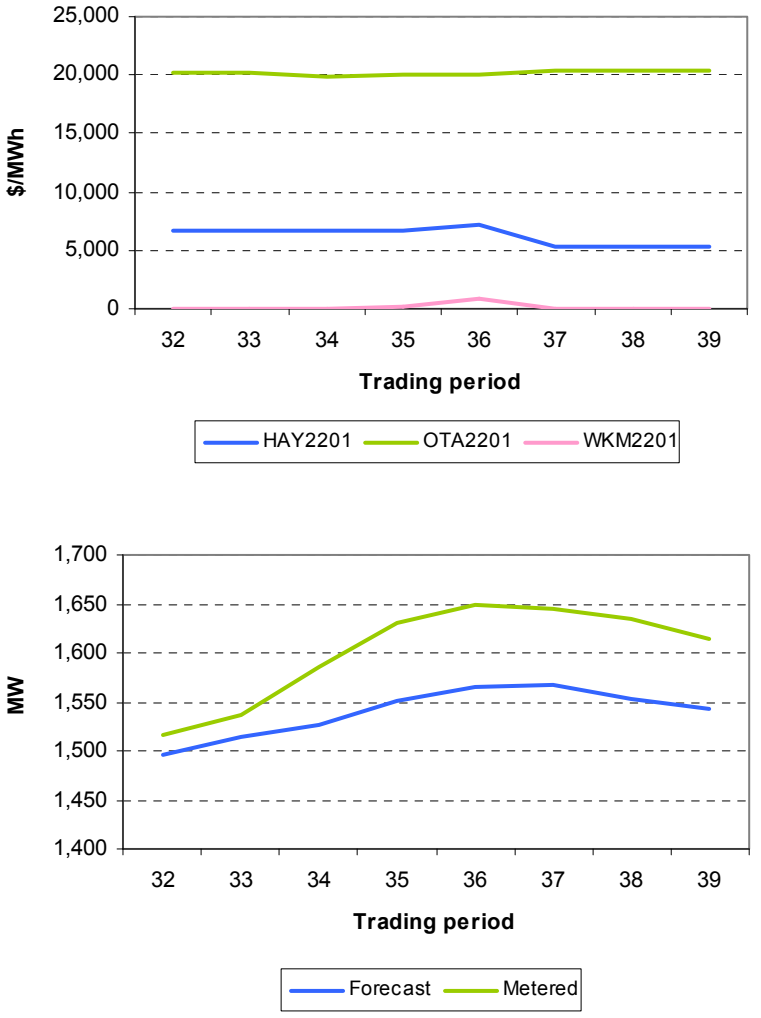
- Genesis' high-priced offers were needed to manage the upper North Island transmission constraint.
- $20,000/MWh prices were forecast in the upper North Island until trading period 29 (14:00).
- Load forecast was relatively close to actual metered amounts for 26 March 2011.





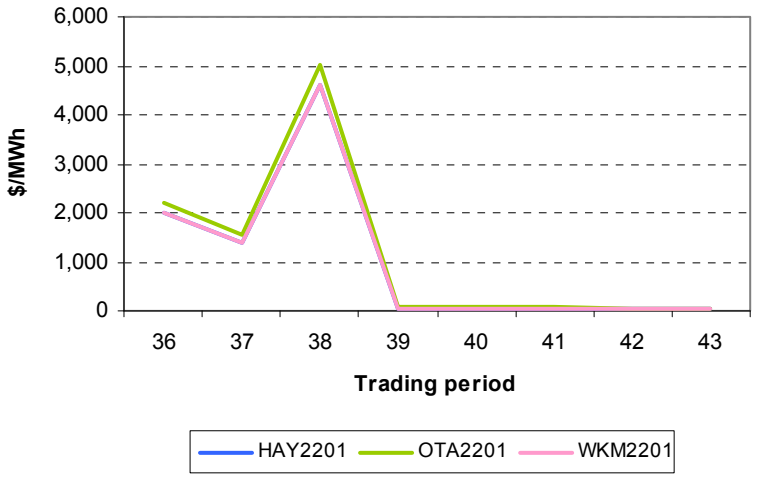
26 March 2011 15:40 (SDPQ):

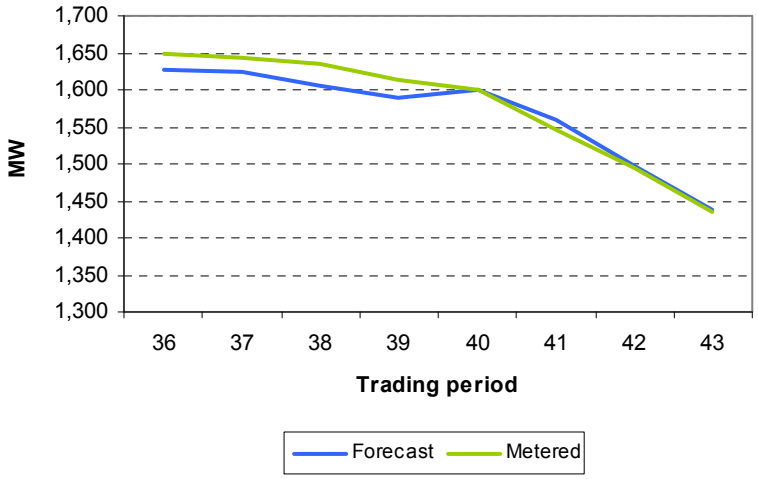
- Genesis' high-priced offers were needed to manage the upper North Island transmission constraint.
- $20,000/MWh prices were forecast in the upper North Island until trading period 39 (19:00).
- Transmission constraint was in place until trading period 39 (19:00).
- Load forecast was lower than actual metered amounts for 26 March 2011.



26 March 2011 17:40 (SDPQ):

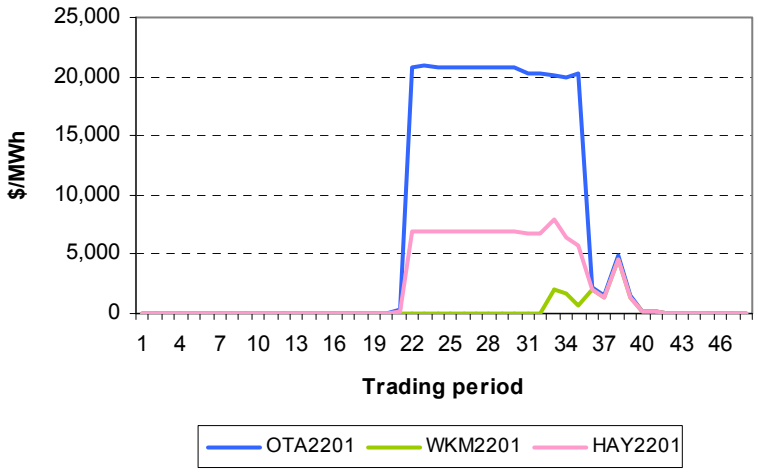
- No price separation was forecasted.
- Genesis' high-priced offers were not needed to manage the upper North Island transmission constraint.
- Transmission constraint removed from the schedule due to the end of the transmission outages.
- Load forecast was relatively close to actual metered amounts for 26 March 2011.





Interim Prices:

- ~20,000/MWh interim prices were produced in the upper North Island from TP22 to TP35 (inclusive).



Appendix C: Summary of UTS claims

1. Below is a table summarising the UTS claims received by the Authority in regard to 26 March 2011.

Party	Code reference[9]	Claim
General claims		
Meridian Energy	-	• Genesis used/took advantage of opportunity to adjust its offers for Huntly Units 2, 5 and 6 to between $19,000/MWh and $20,000/MWh. • Behaviour was premeditated in that the pricing outcomes that eventuated would have been obvious at the time the offers were made. • High prices appear to have been caused by a deliberate change in offer prices of Huntly Units 2, 5 and 6 for the anticipated duration of the transmission outages. • Considers the situation is exceptional. Offer prices and potential exposures of an order of magnitude greater than experienced at other similar periods of transmission constraint. Offer prices well above historical maximum offer tranches seen at Huntly, which have typically been around $5,000/MWh. • Would be undesirable for market to be "anything goes" (if it is to retain the confidence of electricity users). • Extent of exposure could give rise to solvency issues for small retailers or customers facing spot prices, which may put market settlement at risk. • Possibility of event recurring means that retailers who are not fully hedged may be forced to consider urgently selling off parts of their customer books. If pricing outcome is condoned, other participants may consider following suit whenever the opportunity arises and $20,000/MWh may be set as a benchmark/new norm.

[9] The Code reference column outlines specific references in the UTS claims to paragraphs of the definition of undesirable trading situation in Part 1 of the Code.

		• If prices become final prices, may threaten orderly trading and proper settlement, and may be at variance with generally accepted standards of trading (including self-restraint) and the public interest. Viability of the market could be threatened if sort of behaviour becomes the new norm.
Mighty River Power	(c)(i), (c)(iii), (c)(v)	• Participants' confidence in spot and hedge markets will be significantly affected by conduct of this type. • Impact of such financial magnitude means otherwise solvent participants may become insolvent and unable to trade. • Event may set a new benchmark regarding many transmission constraints that arise as necessary maintenance and upgrading of lines is undertaken. • If behaviour is considered acceptable, participants may need to make significant changes to their net market positions, which could result in over-investment in generation plant beyond optimum levels, increasing residential tariffs and leading to a significant loss of confidence in the electricity market in general. • Genesis appears to have deliberately caused the constraint to bind in two ways: increasing generation at the Tokaanu plant which exacerbated the problem (i.e. increased the chance that the constraint would bind), while also reducing the cleared generation at E3P. • Genesis' conduct was carried out in order to take advantage of the constraint to the material disadvantage of other market participants as it has caused unprecedented prices in the Auckland region, which is an undesirable practice that will affect many market participants. • If the Authority finds that there was no UTS arising from the event, there is a real prospect that participants may be encouraged to take advantage of similar circumstances in the future, which would seriously impact all electricity retailers in the affected area, large industrials exposed to the spot market, consumers and investors.
Powershop New Zealand	(c)(i)-(v)	• UTS arose from the blatant extreme exercise of transient market power by Genesis during Transpower's planned maintenance. Genesis was prepared to sell at less than $75/MWh only 1 week prior; prices on 26 March 2011 can only be explained as an opportunistic abuse of market power as there is unlikely to be a material change in the short-run marginal costs (which a disciplined market would converge to) of the plant over a week. Significant amounts of capacity (up to 300MW) available for dispatch at prices in excess of $19,500/MWh, which highlights there was never a physical supply

		issue. • If the situation is not found to be a UTS, abuse of transient market power by generators will effectively be endorsed and will become widespread, resulting in lessening of retail competition, tight geographic oligopolies centred around generation assets, higher wholesale price volatility and risk, and higher retail prices to all consumers. Consumer confidence in the electricity industry and credibility of the Authority will be undermined if abuse of market power is seen to be tolerated. • Orderly trading will be threatened if participants have no option other than to trade with counterparties that have the ability to exercise market power without restraint. • Underlying cause for the extreme prices on 26 March 2011 was a deliberate change in offer behaviour by Genesis at its Huntly site. • The prices observed on 26 March 2011 do not reflect any real risk of shortage, nor a need for new investment, and serve no economic purpose and would not exist in a competitive market (or one where regulation restrains transient market power).
	(c)(i)	• Genesis manipulated its offers to take advantage of transitory market power and price at levels approximating the value of lost load when there was sufficient capacity available to meet supply.
	(c)(ii)	• Misleading to offer prices that reflect a risk to supply when sufficient capacity is available and no extraordinary security risk is apparent. Nor are such price signals warranted to signal that any new investment might be required.
	(c)(iii)	• Genesis modified offers to take advantage of transient market power, which is highly undesirable for the reasons outlined above.
	(c)(iv)	• Genesis' behaviour might contravene section 36 (or other sections) of the Commerce Act.
	(c)(v)	• Opportunistic abuse of market power is not in the public interest.
Goodwood Industries, ASB	(c)(i), (c)(iii), (c)(v)	• Market events on 26 March 2011 advantaged a generator at the disadvantage of claimants and other scale consumers of spot electricity.

Bank, Wallace Corporation, Southern Spars, Bupa Care Services		
Juken, Smart Power, Vodafone, Westpac, Telecom	(c)(i), (c)(iii), (c)(v)	• Market events on 26 March 2011 advantaged a generator at the disadvantage of claimants and other consumers of spot electricity. • Level of prices could not have been predicted and is outside of any reasonable forecast, and businesses were not therefore in a position to mitigate the costs. Vodafone also notes lack of notification. • Leads to question future levels of spot exposure and hedging, and creates an environment which deters consumers from assisting the market by taking spot exposure (with the objective of offering demand side management where available). Undermines confidence in using spot market purchases as part of management of energy costs. • Likely that type of pricing will have flow on effects to the hedge and ultimately the fixed price market [Smart Power – which will have undesirable financial effects on consumers]. • Smart Power - Prices at such levels severely harm consumer confidence and will result in less being willing to participate. • Vodafone – type of event seriously undermines integrity of wholesale market for end users. • Juken - An example of monopoly pricing in the extreme and indicates a failure of the market.
Switch Utilities, Auckland War Memorial Museum, NZ Sugar, Southern Cross Hospitals,	-	• Concerned that if behaviour is allowed to continue, business will be significantly/seriously/negatively impacted. Parties (except NZ Sugar, Open Country Dairy and ABE'S Real Bagels) commented that this could ultimately lead to unreasonably higher energy prices; and ○ make it even more difficult for emerging retailers to enter the market (Switch Utilities); ○ impact on the preservation and maintenance of the 'A' listed (Historic Places Act) Auckland War Memorial Museum;

Prime Energy, PMP Print, Open Country Dairy, ABE'S Real Bagels		(Auckland War Memorial Museum) ○ drive businesses such as Prime Energy out of the market (Prime Energy); ○ is commercially unviable (PMP Print); and ○ lead to inability to trade on such days which may result in lost customers and lost revenue (ABE'S Real Bagels).
Nufarm	-	• Price set by Genesis does not fit with regular and expected market variability/volatility, is wholly unreasonable, monopolistic, and anti-competitive, is not in the best interest of New Zealand industry, and is not in keeping with open market pricing. • Such a pricing environment would make Nufarm's business and many others in Auckland unable to cover costs.
New Zealand Steel	(c)(i), (c)(iii), (c)(v)	• Offer behaviour of Genesis was opportunistic and unfair. Genesis took advantage of outage to offer Huntly generation for dispatch at unprecedented prices. Such behaviour is at odds with a well functioning competitive electricity market and undermines the viability of the market. No good reason, to New Zealand Steel's knowledge, for the Huntly generation to be offered at such extreme prices, and nothing that could justify such an abuse of transitory market power. No physical supply issues on 26 March 2011 or anything new in Genesis' cost base. Such pricing cannot be justified in a proper functioning competitive market. • Resulting cost of the event to some market participants will be enormous, will flow onto downstream electricity prices to end consumers, and will likely affect the future hedge market. In such an environment, purchasers of spot electricity and the wider economy can have no confidence that electricity market mechanisms are functioning properly, absent clear steps being taken to restrain such extreme abuses of market power.
New Zealand Refining Company	(c)(i), (c)(iii), (c)(v)	• Market events of 26 March 2011 led to unreasonable spot electricity pricing during this period. Spot electricity pricing on 26 March 2011 was at unreasonable and unprecedented levels, and beyond what NZRC would expect to pay within a competitive market. Such pricing is in danger of setting a new precedent for pricing within the market.
Air New	(c)(i), (c)(iii),	• Genesis' actions of raising offer prices to an unprecedented extreme level undermines confidence in the wholesale electricity market and constitutes an exercise of market power that has the potential to negatively impact on consumers in

Zealand	(c)(v)	the future. Genesis took advantage of a planned maintenance event to exploit its temporary market power to the disadvantage of other market participants and consumers. • Failure to address the situation will effectively endorse the exercise of market power and lead to more occurrences of this type of manipulation. • If pricing is allowed to stand, it will inevitably impact on the overall market, resulting in future pricing for all consumers being higher than necessary, which is not in the public interest.
Chris Brady	-	• Genesis "ripped off" the system and its action is based on management greed, which is not the spirit within which New Zealand companies should operate.
Convex Plastics	-	• Significant effect of event on end user. • Lost faith in New Zealand energy market.
Cynotech Holdings	-	• Unscheduled spike (if allowed to be repeated) undermines electricity supply in New Zealand and would create chaos, indicating that the current auction system is not a device that works in providing orderly power rates to consumers and businesses in New Zealand (such that they can plan business around electricity supply). • Inconsistent and abnormal usage rates will create 'informal and black market distribution offtakes' that are not metered to avoid such ridiculous prices, undermining the electrical generation, reticulation and supply industry, and thus potentially compromising safety of retail distribution networks buildings they supply to and the staff employed there. • No public warning or opportunity to ameliorate the situation. • Significant economic impact on businesses because retailers have indicated they intend to pass on the cost directly to consumers. Grossly unfair for generators and retailers to pass the full cost of the auction price on to consumers.
Fletcher Building	-	• Behaviour of Genesis on 26 March 2011 is a clear abuse of market power. • Fletcher Building was not advised of the potential price spikes by its electricity supplier, or offered additional hedge product.

		Cost to Golden Bay Cement could have been almost totally eliminated had the business been made aware of the situation.
Masterton District Council	-	• Councillors and ratepayers are extremely frustrated by a power pricing market that can cause such a huge and unrealistic price variations.
Vital Healthcare Property Trust	(c)(i), (c)(ii), (c)(iii), (c)(v)	• Market events on 26 March 2011 significantly advantaged a generator, who has used the event to unfairly levy at an extortionate rate the ACLF portion of the electricity costs on Vital Healthcare Property Trust and other consumers.
Waratah Farms	-	• Prices are very excessive/huge.
Total Utilities Management Group, MercyAscot Hospitals	-	• Genesis' action was taken in a manipulative/premeditated way to exploit a commercial opportunity presented by a serious projected shortfall in upper North Island energy generation. • Customers exposed to spot energy rates and ACLF were penalised unfairly. If available generation had been increased in response to market signals, the damaging effects to affected parties could have been mitigated. • The event threatens the ongoing viability of smaller generator/retailers in the energy market, is damaging to the New Zealand economy, and behaviour of this nature is not a good 'look' for the industry.
Television New Zealand	(c)(i), (c)(iii), (c)(iv)	• Market events on 26 March 2011 disadvantaged TVNZ and many other customers. • Event should have been better managed by generators. • Appears to be a generator premeditated situation for commercial gain, basically exploiting a market situation beyond fair practice. • Had TVNZ been adequately warned or advised on the event, its key sites could have switched to onsite emergency generators and reduced the impact. Communication around the event has been very poor. • The event raises concerns about the integrity of the market and the key generators. Not acceptable for businesses to be exposed as occurred in the event, and actions need to be taken to control and prevent future market events to provide improved stability around market pricing.

Other mechanisms available under the Code		
All parties	(b)	• No mechanisms available under the Code that could satisfactorily resolve the situation.
Meridian Energy	(b)	• Participants could seek hedges, but this is often a costly exercise and would not mitigate all circumstances. Meridian Energy doubts that hedging would be able to offset the risk if offer behaviour such as Genesis' offer behaviour on 26 March 2011 becomes the new norm.
Mighty River Power	(b)	• Transmission/basis hedges could theoretically be used to mitigate constraint risk, but this would not have been a practicable mitigant in this case.
Specific claims regarding financial impact		
Meridian Energy	-	• Approximate exposure of Meridian Energy: $[ ]. Approximate exposure of North Island purchasers expected to be $[ ] to $[ ]. End customers (such as large industrials) who are exposed to spot market prices will see some of this cost.
Mighty River Power	(c)(i), (c)(iii), (c)(v)	• Impact of event of considerable financial magnitude, with losses at an EBITDA level to Mighty River Power during the event estimated at up to $25 million (being the net effect of generation revenue and cost of purchases).
Powershop New Zealand	(c)(i)-(v)	• Based on provisional prices, estimated sales and residual load profile, Powershop estimates that its wholesale energy cost is approximately $1.7 million higher than it would ordinarily pay on a Saturday, which will have a significant impact on a company of its size. • Will place Powershop under significant cashflow pressure. Powershop will need to draw on emergency funding facilities if provisional prices become final.
Juken	(c)(i), (c)(iii), (c)(v)	• Financial impact is significant for Juken. Cost calculated to be $[ ] in excess of what Juken would normally have expected on a Saturday in March 2011. This is calculated as an additional spot market cost of around $[ ] less the expected hedge settlement of $[ ].
ASB Bank	(c)(i), (c)(iii), (c)(v)	• Financial magnitude of the impact will significantly affect ASB Bank's profitability. Estimate financial impact on ASB Bank's business: $[ ].

Wallace Corporation	(c)(i), (c)(iii), (c)(v)	• Financial magnitude of the impact will significantly affect Wallace Corporation's profitability. Estimate financial impact on Wallace Corporation's business: $[ ].
Vodafone	(c)(i), (c)(iii), (c)(v)	• Vodafone has suffered significant financial impact. Cost of 7 hour spike in pricing calculated to be in excess of [ ]% of the historical annual Vodafone electricity expenditure. Estimate financial impact on Vodafone's business: $[ ].
Southern Spars	(c)(i), (c)(iii), (c)(v)	• Financial magnitude of the impact will significantly affect Southern Spars' profitability. Estimate financial impact on Southern Spars' business: $[ ].
Bupa Care Services	(c)(i), (c)(iii), (c)(v)	• Financial magnitude of the impact is significant. Estimate financial impact on Bupa Care Services' business: $[ ].
Westpac	(c)(i), (c)(iii), (c)(v)	• Financial impact is significant for Westpac. Estimate cost of $[ ] in excess of what Westpac would normally have expected on a Saturday in March 2011.
Telecom	(c)(i), (c)(iii), (c)(v)	• Financial impact is significant for Telecom. Estimate cost in the order of $[ ] in excess of what Telecom would normally have expected on a Saturday in March 2011.
Goodwood Industries	(c)(i), (c)(iii), (c)(v)	• Financial magnitude of the impact will significantly affect Goodwood Industries' profitability. Estimate financial impact on Goodwood Industries' business: $[ ]. • Goodwood Industries closed production on Saturday 2 April and will not commence production outside of normal hours until it is advised that the situation will not occur again. The likely outcome will be that the company will cease production of export items for the US market, resulting in the loss of 8 full time jobs and production being moved offshore. Further production will be moved offshore if the company cannot be assured of electricity supply at competitive rates.
Switch Utilities	-	• Suffered a potential financial loss of $[ ], which is over [ ] times what Switch Utilities would expect to pay for electricity in a normal competitive market situation.
Auckland War Memorial	-	• Suffered a potential financial loss of $[ ], which is over [ ] times what Auckland War Memorial Museum would expect to pay for electricity in a normal competitive market situation.

Museum		
NZ Sugar	-	• Suffered a potential financial loss of $[ ], which is over [ ] times what NZ Sugar would expect to pay for electricity in a normal competitive market situation.
Southern Cross Hospitals	-	• Suffered a potential financial loss of $[ ], which is over [ ]% above what Southern Cross Hospitals would expect to pay for electricity in a normal competitive market situation.
Prime Energy	-	• Suffered a potential financial loss of $20,000, which is over 200 times what Prime Energy would expect to pay for electricity in a normal competitive market situation.
PMP Print	-	• Suffered a potential financial loss of $113,000, which is over 693 times what PMP Print would expect to pay for electricity in a normal competitive market situation.
Open Country Dairy	-	• Suffered a potential financial loss of $[ ], which is over [ ] times what Open Country Dairy would expect to pay for electricity in a normal competitive market situation.
ABE'S Real Bagels	-	• Suffered a potential financial loss of $[ ] to $[ ], which is over [ ] times what ABE'S Real Bagels would expect to pay for electricity in a normal competitive market situation.
Nufarm	-	• Nufarm could not sustain power supply at $20/KWh.
New Zealand Steel	(c)(i), (c)(iii), (c)(v)	• Resulting cost will be enormous and such electricity pricing would place significant financial pressure on the New Zealand Steel (including further investment decisions and the long-term financial viability of the business). Estimate financial impact on New Zealand Steel's business in the region of $[ ] (excluding the increased cost of gas delivered by the onsite Air Separation Unit as a result of the increased cost of electricity).
New Zealand Refining Company	(c)(i), (c)(iii), (c)(v)	• Estimate financial impact on NZRC's business in the order of $[ ] (which equates to [ ]% of NZRC's total expected annual electricity cost).
Air New	(c)(i), (c)(iii),	• Air New Zealand estimates a cost increase for the month of March 2011 across the entire network of 3.4%, with effected

Zealand	(c)(v)	sites experiencing up to 126% increases for the month. • An Air New Zealand supplier concerned about the impact to them had planned mitigation action that would have exposed Air New Zealand to operational business continuity risk.
Convex Plastics	-	• Effect on Convex Plastics (as end user): Normal AC Adjustment Factor (ACAF) charge is around $500 a month. ACAF charge for March 2011 was $17,229.41. • Unexpected charge is crippling for a manufacturing company like Convex Plastics.
Cynotech Holdings	-	• Cynotech Holdings is faced with unrecoverable costs to its business. • Impending additional invoice costs based on average daily usage of $[ ] for 26 March 2011.
Fletcher Building	-	• Event cost Golden Bay Cement $[ ].
Masterton District Council	-	• Event has caused a 50% increase in the Council's usual monthly account for its swimming pools, which has cost an extra (unbudgeted) $12,500. The Council's rate income is set based on budgets and the Council has no opportunity to increase the current year income in response to such unpredictable price movements.
Vital Healthcare Property Trust	(c)(i), (c)(ii), (c)(iii), (c)(v)	• Charges for March 2011 are effectively triple Vital Healthcare Property Trust's normal monthly charges due to the outage.
Waratah Farms	-	• Waratah Farms has been charged $[ ] (ACAF) for 6 hours of power on 26 March 2011, which is the same as what it normally gets charged for a month. • Seriously impacts on ability of Waratah Farms to pay its other creditors.
Total Utilities Management Group	-	• Auckland-based customers who were adversely impacted included 2 hospitals, 2 high schools and 4 large industrial sites. Examples of the harsh commercial impact are:

		- Hospital 1 – ACLF cost: $[ ] (January 2011), $[ ] (February 2011), $[ ] (March 2011). - Industrial sites 1 and 2 – Overall electricity costs (energy + lines) increased by $38,500 (63%) and $34,300 (32%) (respectively) between February 2011 and March 2011. - High School 1 – ACLF charges increased from $206 (in January 2011) to $5,812 (in March 2011). Tight budget constraints compound the problem for government schools.
MercyAscot Hospitals	-	• MercyAscot's power invoice would be approximately $[ ] for this consumption, but is over $[ ] because of an unacceptably high ACLF charge.
Television New Zealand	(c)(i), (c)(iii), (c)(v)	• TVNZ incurred significant costs from its exposure to the ACLF component of the electricity rates. Financial impact to TVNZ is in the order of $[ ].

Appendix D: Parties issued with information requests

1. On Friday 1 April 2011, the Authority issued information requests under section 46(2)(a) of the Act to the following parties:

    - Alinta ENZ Ltd
    - Bay of Plenty Energy Ltd
    - Bosco Connect Ltd
    - Carter Holt Harvey Pulp & Paper Ltd
    - Contact Energy Limited
    - Energy Direct
    - Energy Online Limited
    - Fonterra Co-operative Group
    - Genesis Power Limited (trading as Genesis Energy)
    - King Country Energy Ltd
    - Mercury Energy
    - Meridian Energy Limited
    - Methanex New Zealand Limited
    - Mighty River Power Limited
    - New Zealand Railways Corporation trading as KiwiRail
    - New Zealand Steel Limited
    - Norske Skog Tasman
    - Opunake Hydro Limited
    - Pacific Steel
    - Pan Pac Forest Products Limited
    - Powershop New Zealand Limited
    - Pulse Utilities
    - Simply Energy Limited
    - Smart Power Ltd
    - Southpark Utilities

- Switch Utilities Limited
- The New Zealand Refining Company Limited
- Todd Energy Limited
- Trustpower
- Winstone Pulp International
- Vodafone NZ Ltd.

2. On Monday 4 April 2011, the Authority issued further information requests, to the following parties:
   - ASB Bank Ltd
   - Auckland War Memorial Museum
   - Bupa Care Services
   - Juken NZ Ltd
   - Nufarm NZ Ltd
   - NZ Sugar
   - Open Country Dairy Limited
   - PMP Print
   - Prime Energy Limited
   - Southern Cross Hospitals Ltd
   - Southern Spars
   - Telecom NZ Limited (via Chorus)
   - Wallace Corporation Ltd
   - Westpac (NZ) Limited.
3. On Monday 11 April 2011, the Authority issued a further information request to Genesis.
4. On Thursday 28 April 2011, the Authority issued a further information request to each of Contact Energy and Mighty River Power.

Glossary of abbreviations and terms

ACAF	Alternating current adjustment factor
ACLF	Alternating current load factor
Act	Electricity Industry Act 2010
Authority	Electricity Authority
Code	Electricity Industry Participation Code 2010
FPVV	Fixed price variable volume
Genesis	Genesis Power Limited
GSC	Grid support contract
HVDC	High voltage direct current
kV	Kilovolt
kWh	Kilowatt hour
LRMC	Long run marginal cost
MW	Megawatt
MWh	Megawatt hour
OCGT	Open cycle gas turbine
POCP	Planned outage co-ordination process
SDPQ	Schedule of dispatch prices and quantities
SDS	Security dispatch schedule
SPD	Scheduling, pricing and dispatch
SRMC	Short run marginal cost
TCC	Taranaki Combined Cycle
TOU	Time of use
TP	Trading period
UTS	Undesirable trading situation
vSPD	Vectorised scheduling, pricing and dispatch
WDS	Weekly dispatch schedule
WITS	Wholesale information and trading system