INVESTIGATION REPORT

COMMERCE ACT 1986 S 27, S 30 AND S 36 ELECTRICITY INVESTIGATION
22 MAY 2009

COMMERCE COMMISSION

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EXECUTIVE SUMMARY

i. This report is a summary of, and final decision on, the Commerce Commission's investigation into the New Zealand electricity markets under Part 2 of the Commerce Act 1986 (Commerce Act). Part 2 of the Commerce Act prohibits certain restrictive trade practices. The Commission investigated whether parties in the electricity industry may have breached the Commerce Act by taking advantage of a substantial degree of market power for an anti-competitive purpose, or by entering into arrangements that had the purpose or effect of substantially lessening competition.

ii. The Commission's investigation has led the Commission to the view that the four main generators – Contact Energy Limited (Contact), Genesis Power Limited (Genesis), Meridian Energy Limited (Meridian) and Mighty River Power Limited (Mighty River Power) - have a substantial degree of market power in the wholesale electricity market. The Commission's analysis, based upon quantitative evidence provided by Professor Frank Wolak, suggests that over a period of some six and a half years the generators have exercised their substantial market power to earn market rents estimated conservatively to be $4.3 billion, which averages to 18 percent of the total wholesale market revenues received by all generators over the entire period. The exercise of market power to earn market power rents is not by itself a contravention of the Commerce Act, but is a lawful, rational exploitation of the ability and incentives available to the generators.

iii. The Commission's investigation focussed on the wholesale market. The Commission investigated certain allegations in both the wholesale and retail markets. Although the Commission considers that the generators have exercised market power, the Commission does not consider there is any evidence that market power was exercised for any anti-competitive purpose. The Commission also investigated particular allegations that generators may have entered into certain anti-competitive arrangements. The Commission has not found evidence to support such allegations. The Commission is continuing to investigate one outstanding issue.

iv. The Commission had to consider whether to continue its investigation further into potential anti-competitive behaviour in the retail electricity market. The Commission considers that the most likely explanation of increasing retail electricity prices is the effect of increased wholesale prices. The exercise of market power in the wholesale market appears to have been passed through in the form of higher retail prices over time. The Commission considers it does not have any significant evidence at this stage of further anti-competitive behaviour to warrant continuing its investigation into the retail electricity market under Part 2 of the Commerce Act.

v. The Commission considers that there are serious systemic issues arising out of the current market structure, market design and market rules that provide the generators with the ability and incentive to exercise market power under certain periodic and recurring conditions. Part 4 of the Commerce Act enables the Commission to consider price regulation where there is little or no competition. The Commission considered whether to initiate an inquiry under Part 4 of the Commerce Act, but does not consider it is appropriate at this stage.

vi. The Commission's investigation began in late 2005 following a number of complaints and concerns about the electricity wholesale and retail markets, regarding the alleged abuse of market power, low levels of competitive activity in the markets, the potential for collusion, high electricity prices and increasing company profits. The Commission's

investigation has involved gathering both quantitative and qualitative evidence on market behaviour, market interactions, and market outcomes. Quantitative analysis prepared for the Commission forms the principal basis for the finding that each of Contact, Genesis, Meridian and Mighty River Power periodically have had, and have exercised, market power.

vii. The Commission's analysis of a number of allegations of Commerce Act breaches has resulted in the decision to close the investigation with no further action. Whilst certain parties are found to have had and to have exercised unilateral market power, the anti-competitive purpose required for a contravention of s 36 has not been found. The market design, structure, and rules of engagement are such that certain firms are able to exercise market power under certain system conditions. These parties are found to be legitimately maximising returns to shareholders.

viii. Further, having analysed the alleged anti-competitive agreements included within this report, the Commission has concluded that none of the agreements were likely to have resulted in a breach of the Commerce Act. However, the Commission has warned one company that its behaviour was at risk of breaching s 27 of the Commerce Act.

ix. Therefore, the Commission has decided to close its investigation into the allegations presented in this investigation report, which relate to behaviour during the period from 2001 to mid-2007.

Investigation

x. The Commission has considered a wide range of allegations of breaches of the Commerce Act, primarily at the wholesale market level.

xi. The Commission has investigated whether the vertically integrated generator-retailers ('gentailers') are likely to have breached the provisions of Part 2 of the Commerce Act in the wholesale and retail markets. The Commission has investigated whether:

- any of the gentailers have a substantial degree of market power, and whether they have taken advantage of that market power for an anti-competitive purpose, in breach of s 36 of the Commerce Act; and
- any of the gentailers have entered into contracts, arrangements or understandings that have had the purpose, effect or likely effect, of substantially lessening competition in the wholesale and/or retail markets in breach of s 27 of the Commerce Act.

xii. The first stage in any investigation under s 36 of the Commerce Act is to assess whether any of the relevant businesses has a substantial degree of market power in a market. A related exercise is required under s 27 to assess the effect an arrangement or understanding has on competition. An increase in market power is the same as a lessening of competition.

xiii. Electricity wholesale markets are susceptible to the exercise of market power, due to the unique characteristics of electricity. Electricity, and the network on which it is transmitted, possess characteristics that differentiate electricity from most other products, and which enhance the ability of a supplier to exercise market power. These include: that supply must equal demand at every instant in time and at each location in the transmission network; the high cost of storing electricity; the inelastic consumer demand response to price changes; the finite capacities of individual production plants and the transmission network; the barriers to independent entry; and, in New Zealand, the geographical concentration of production capacity ownership.

xiv. It can be difficult to identify and measure market power in wholesale electricity markets. The wholesale market is a short-term auction market, designed such that the clearing price for each operating period is determined by both supply and demand. High prices may be a signal that supply shortages exist, rather than indicate the exercise of market power. However, if companies are able to sustain pricing at levels that substantially exceed prices that would be expected in a competitive market, it would be reasonable to infer that they hold market power. An analysis of whether gentailers exercise market power in the wholesale market necessitates a detailed empirical analysis of their behaviour within the market, in terms of supply offers they make.

xv. Given the specialised nature of the analysis required, the Commission retained an internationally-renowned expert in the field, Professor Wolak, to conduct a quantitative analysis to determine whether market power has been exercised at the wholesale level. It was also initially envisaged that the analysis would be extended into the retail sector, and used to assess the impact of the vertically integrated gentailer structure in the New Zealand market.

xvi. The analysis of electricity markets of the sort carried out by Professor Wolak is necessarily extremely data intensive. The New Zealand wholesale market is cleared every half hour. Every half hour, supply offers are received, expected load is indicated, and, after the fact, prices are set, for 255 nodes around the country. Certain information concerning the electricity industry, including the wholesale and retail markets, is collected (and to varying degrees stored) by a number of key parties, including (since September 2003) the Electricity Commission.

xvii. However, unlike the situation in many other jurisdictions, the regulatory bodies monitoring the electricity industry in New Zealand have not historically collected, and still do not collect, all of the information typically required by a competition authority to fully assess competition in the wholesale and retail markets. Consequently, the Commission had to request the required data from various sources, including directly from the electricity companies, industry bodies and market and transmission operators. The data collected by the Commission covers the key aspects and operations of the wholesale market (including generation stations, the wholesale market and the hedge market), as well as relevant information on transmission and hydrological storage. The data spans the period from January 2001 to July 2007, and so covers over 113,800 time periods, resulting in hundreds of millions of pieces of data. This dataset is the most comprehensive that has ever been collected on the New Zealand wholesale market.

xviii. Collecting, preparing and testing this data took over two years, with significant work being undertaken by Professor Wolak and the Commission to ensure consistency and compatibility between the datasets. Both consider that the dataset finally arrived at, and used to undertake the analysis, was fit for the purpose.

xix. The quantitative evidence is derived from three main pieces of analysis:

- the assessment of the ability and incentive of gentailers to exercise wholesale market power;
- an assessment of the aggregate impact of this behaviour on prices in the wholesale market over the sample period; and
- the testing of the hypothesis that when generators have the ability and incentive to exercise market power, they do so.

xx. The quantitative evidence strongly suggests that each of the four largest generators - Contact, Genesis, Meridian and Mighty River Power - has the ability and incentive

unilaterally to exercise market power, and hence to increase wholesale prices during certain periods. At other times in the sample period, they have little or no ability or incentive to exercise market power. The exercise of market power is associated with those periods when hydro storage was low, or was expected to become low.

xxi. In parallel with the quantitative analysis of market power, a qualitative analysis was undertaken by the Commission. Company documents were obtained and reviewed, and key electricity industry participants interviewed, both for their views, and to allow assessment of issues such as the conditions for entry and expansion. A number of the company documents and interviews indicated that Contact, Genesis, Meridian and Mighty River Power are viewed by market participants, both non-gentailers and the gentailers themselves, as having market power in the wholesale market.

xxii. The Commission has found there are significant barriers into the generation market that make entry difficult for new generators, increasing the ability of the incumbents to exercise market power. Consistent with this view, new independent entry into the market on a scale that would cause a change in incumbents' behaviour has not occurred.

xxiii. The Commission has considered all the evidence in reaching a view both on whether market power is held, and on whether market participants may have breached Part 2 of the Commerce Act. It considers that there is strong evidence that each of the largest four suppliers into the wholesale market - Contact, Genesis, Meridian and Mighty River Power - have a substantial degree of market power.

xxiv. The Commission also considers that these four companies have exercised their market power, for substantial periods, by offering their generation output into the wholesale market at prices above those that they would have offered under competitive conditions. The periodic and recurring nature of these bouts of high prices, together with high entry barriers, means that potential entry has not been able to provide a constraint on the exercise of market power.

xxv. An important finding is that transmission constraints, which are often cited by market participants as a cause of high prices, do not appear to be the predominant factor in explaining the recurrent exercise of market power. Whilst transmission constraints do occur, and do cause significant price differentials in some time periods, these account for only a small part of the overall levels of market power found.

xxvi. To assess the impact of the exercise of market power, competitive benchmark prices - the prices that would have been obtained had the gentailers behaved in a manner consistent with a competitive market - had to be calculated. This was done on a conservatively high basis. Using the estimates of competitive benchmark prices, the actual prices and the marginal cost of each generation unit, wholesale market revenues during each half-hour were able to be decomposed into variable production costs, competitive rents and market power rents. The first two combined represent the wholesale revenues that would have been earned by the gentailers in the hypothetical competitive situation. The competitive rents provide a significant contribution to the gentailers' overhead and fixed costs.

xxvii. The wholesale market power rents are estimated to be $4.3 billion in total over the six and a half year time period assessed by the Commission, which averages 18 percent of the total wholesale market revenues received by all generators over that period. It is important to note that the market outcomes vary considerably between years. During the 'dry' years of 2001 and 2003, 45 to 50 per cent of the wholesale market revenues earned by the generators (or about $1.5 billion per annum), are attributed to the exercise of market power across the wholesale supply industry. These results are derived after taking full account of the higher cost of hydroelectric generation during dry periods. In contrast,

during 2002, 2004 and early 2007, little or no exercise of market power was found, and as a result little or no market power rents were earned by generators.

xxviii. It is important to note that the market power rents accrue to the generators at the wholesale level. As the generators are vertically integrated with downstream retailing operations, where customer contracts are typically on a fixed price basis, this raises the question as to the extent to which the rents are passed through in higher prices to end customers. From preliminary analysis, it seems that high wholesale prices are generally passed through gradually over time. This would help to explain the sharply upward trend in retail prices observed over the sample period. There are two likely exceptions to this summary. The first is that some industrial and large commercial customers are only partially hedged, which leaves them partially exposed to wholesale prices that can be driven high by the exercise of market power in the wholesale market. The Commission understands that this partial exposure to wholesale prices may for some customers reflect user choice, but may for some customers also reflect an element of the retail package provided to the customer by the retailer. The second possible exception is that retail prices may increase in advance of expected increases in wholesale prices, rather than lag such changes.

xxix. Concerns are likely to be raised that competitive outcomes in the wholesale market may not adequately compensate generators for their large fixed costs, and hence may discourage future investment in additional capacity, which would threaten security of supply. However, the Commission is of the view that the substantial competitive rents that generators earn in the wholesale market when it operates competitively, and which would be expected to increase over time as demand expands towards supply capacity, would provide a more certain guide as to when new capacity is needed, than to rely on the haphazard and weather-related market power rents that occur periodically under present market circumstances.

xxx. It is important to note that a generator exercising all available unilateral market power subject to obeying the market rules may, on the facts, be found to be doing no more than taking all legal actions to maximise the profits it earns from participating in the wholesale market. However, what a company may not do under Part 2 of the Commerce Act is either to seek to maximise its profits through entering into arrangements that have an anti-competitive purpose or effect, or, for a party with a substantial degree of market power, to take advantage of that market power for an anti-competitive purpose, namely to lessen or exclude competition.

xxxi. In determining whether the Commerce Act has been breached, the Commission has adopted the following market definitions for the purposes of this report:

- the national wholesale electricity market, which includes generation and the sale and purchase of physical electricity; and
- the national market for hedge contracts.

xxxii. The Commission has investigated a number of general and specific allegations of breaches of s 36. The Commission considers that while Contact, Genesis, Meridian and Mighty River Power have exercised their market power, it has found, on the basis of the evidence before it, that they have not 'taken advantage of' their substantial market power for an anti-competitive purpose in breach of s 36, namely to prevent or hinder an actual or potential market participant from competing. The charging of above competitive prices, without an anti-competitive purpose, is not a breach of s 36.

xxxiii. The Commission has also investigated a number of alleged contracts, arrangements or understandings to determine whether such agreements had, in fact, been entered into, and if so, had they been entered into for the purpose, effect or likely effect of substantially lessening competition as prohibited by s 27. The Commission found, on the evidence before it, that no such arrangement had been entered into.

xxxiv. In one such case, the Commission considered an allegation involving Trustpower and an approach it made to one of its competitors, Genesis, concerning Genesis' actions in the retail market. The Commission considered that Trustpower's approach to Genesis was inappropriate and was, on the evidence before it, at risk of breaching the Commerce Act. The Commission also considered that it was inappropriate for the Board of Directors of TrustPower to agree that [ ] should talk to the Chairman of Genesis, one of its main competitors, in a manner that placed both [ ] and company at risk of breaching the Commerce Act.

xxxv. In this case, the Commission has decided to issue a warning letter to TrustPower, explaining that the approach to the Chairman of Genesis was inappropriate, and risked breaching the Commerce Act through constituting an attempt to contravene s 30.

Conclusion

xxxvi. The quantitative evidence provided by Professor Wolak's analysis strongly suggests that market participants in the wholesale market do have a substantial degree of market power, and have used that power to increase prices considerably above the competitive level for substantial periods during 2001, 2003 and 2005/06. In contrast, in 2002, 2004 and 2007 the market appears to have produced competitive outcomes.

xxxvii. The Commission has not found any significant conduct that would likely amount to a contravention of the Commerce Act. It appears that the periods of high prices simply reflect generators lawfully using their substantial market power to maximise profit, rather than being the result of anti-competitive conduct. The Commission has reached the view that this is the likely explanation for the behaviour observed, and the complaints received.

xxxviii. The Commission has, therefore, decided to close its investigation into the allegations described in this report.

xxxix. Wholesale electricity makes up a large portion of the price of retail electricity. In light of this, and the Commission's preliminary view that 'pass through' of wholesale market prices may help to explain the trend of retail market price increases, the Commission will not be asking Professor Wolak to complete planned reports into retail market power and vertical integration.

xl. The finding of the presence, and exercise, of market power is not inconsistent with a finding of no breach of Part 2 of the Commerce Act. Nor is it unusual, having regard to other electricity markets internationally. Rather, it is consistent with the nature of the electricity product, and the incentives within the market faced by the participants. Such incentives are a direct result of the market structure, design and rules within the setting of the wholesale electricity market, and in a hydro-dominated generation system that lacks significant water storage. The current market structure and rules of engagement in New Zealand's wholesale market give generators the ability, and the incentive, to exercise market power, but do not feature the market power mitigation tools that operate in other jurisdictions.

xli. Given the findings on market power in this investigation, the Commission anticipates that there may be calls for an inquiry under Part 4 of the Commerce Act. A Part 4 inquiry

could result in the Commission recommending the regulation of the price and quality of goods or services in markets, where there is little or no competition and little or no likelihood of a substantial increase in competition, and where the benefits of regulation would outweigh the costs.

xlii. The Commission considers that it would be premature for it to consider such an inquiry. The Government has convened a Ministerial Working Group that will be able to consider the Commission's investigation, along with other material. The Government, unlike the Commission, will be able to consider a full range of regulatory solutions.

xliii. The Commission has decided to release this investigation report, together with Professor Wolak's report, given the public interest in the electricity sector, and the significant number of requests the Commission has received under the Official Information Act 1982 (OIA) for information relating to the investigation. Copies of both reports will be provided to the Minister of Energy.

1. INTRODUCTION

1. This paper sets out:
   - an explanation of why electricity wholesale markets are particularly prone to market power issues;
   - a description of the origins of the Commission's investigation and the steps taken;
   - a brief description of the relevant parties;
   - an overview of the electricity industry;
   - the Commission's assessment of the relevant market definitions;
   - the Commission's assessment of whether any participants in the wholesale electricity market have a substantial degree of market power;
   - the Commission's assessment of whether any participants in the electricity industry has breached s 36;
   - the Commission's assessment of whether any participants in the electricity industry has breached s 27; and
   - the Commission's conclusions.
2. This paper attaches:
   - a glossary;
   - the Wolak Report (Appendix 1); and
   - a peer review of the Wolak Report by Professor Nils-Henrik von der Fehr (Appendix 2).

2. MARKET POWER AND ELECTRICITY MARKETS

3. The experience of countries that have liberalised wholesale electricity markets has shown that the assumption that markets will naturally produce a competitive result is not always justified. At first glance, an industry within which five main players generate and retail nationally, along with smaller localised generators and retailers, may appear to have more market participants, and therefore be more competitive, than many other industry sectors in New Zealand. The operation of a formal centralised market auction system also would in most cases be seen as sufficient to alleviate most common competition concerns.
4. However, the economics of electricity has specific attributes, which makes competition in this sector significantly different from that for most other products. These attributes include the following:
   - demand is generally unresponsive to changes in the wholesale price, as most consumers do not immediately face price increases as scarcity increases;
   - supply-side responsiveness to price changes can be limited in the short term, especially if plants are operating near to capacity;
   - new entry into supply involves large investment costs and can take many years to plan, receive consents, design, build, commission and finally operate; and

- the physical attributes of electricity impact upon the supply and demand of the product. Electricity cannot be stored, and so supply must equal demand at all periods, and the transmission grid can become congested at certain times. Congestion impacts upon the price charged for power taken off the grid at each node and so causes variations in pricing for wholesale electricity purchases across the network.

5. These attributes mean that electricity wholesale markets are particularly susceptible to periodic market power.

6. New Zealand is heavily reliant upon hydro generation to meet its electricity needs,[1] but has only limited hydro storage capacity (on average less than 10 per cent of annual electricity consumption) compared with many other hydro dominated markets. Reductions in hydro storage in periods of dry weather can significantly reduce the total generation capacity available during the peak winter demand months. This could exacerbate competition concerns, especially concerning the exercise of market power.

7. As a result of these characteristics and the importance of electricity to the economy, any breaches of Part 2 of the Commerce Act in the electricity industry might result in significant costs to New Zealanders.

3. INVESTIGATION

Investigation Background / Origins

8. Since the first reforms of the electricity sector in 1992, the Commission has examined various electricity markets through a large number of merger and customer swap clearances,[2] enforcement matters under the Commerce Act and Fair Trading Act 1986 (FTA), and regulatory matters under Electricity Industry Reform Act 1998 (EIRA) and Part 4A of the Commerce Act.

9. This investigation was opened in August 2005 following a number of complaints to the Commission about the behaviour of companies in the wholesale and retail electricity markets and mounting public concern and discussion about the competitiveness of those markets. The nature of these complaints is set out in more detail in the following section. Since commencing its investigation, the Commission received a number of further complaints alleging anti-competitive conduct in the electricity markets. The complaints ranged from alleged exclusion of potential competition to price-fixing. Many of the complaints have focussed on excessive pricing, which the Commission recognises is not a breach of the Commerce Act unless it can be shown to have been undertaken for an anti-competitive purpose.

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1 Annual hydro generation has typically met approximately 60 to 70 per cent of electricity demand in New Zealand. Electricity Commission, *Market Design Review – Issues Paper – Survey of Market Performance*, May 2007, para 138.

2 Examples include Commerce Commission, *Decision No. 270: Natural Gas Corporation of New Zealand Limited/Enerco New Zealand Limited*, 22 November 1993; *Decision 330: Natural Gas Corporation/Powerco Limited*, 11 November 1998; *Decision 333: Contact Energy Limited/Enerco New Zealand Limited*, 10 December 1998; *Decision 340: TransAlta Corporation of Canada/Contact Energy* Limited, 12 February 1999; *Decision 345: United Networks Limited/TransAlta New Zealand Limited*, 11 March 1999; *Decision 380: United Networks Limited/Orion New Zealand Limited*, 23 December 1999; *Decision 476: Genesis Power Limited/Energy Online Limited*, 10 October 2002; and *Decision 491: Contact Energy Limited/Natural Gas Corporation Holdings Limited*, 4 February 2003.

10. The Commission received complaints concerning both the wholesale and retail markets from electricity consumers both large and small, consumer representative groups, electricity lines companies, potential new entrants and industry commentators. Further concerns came to light through the Commission's ongoing surveillance of the industry and its interaction with industry bodies and affected parties.

11. Based on first impressions, the electricity markets should be exhibiting competitive conduct as there a number of generators/retailers (gentailers) in the market. The wholesale market has been designed to produce competitive outcomes and many of the obstacles to the national trading of electricity have been removed either by regulatory reform, such as EIRA, or voluntary development by the market participants, such as the reciprocal arrangements for meter services.[3]

12. Yet the market exhibited some behaviour that would not be expected in a competitive market. Most importantly, prices were steadily rising and it was very unclear why this should be so. It did not appear that higher prices were stimulating market entry or expansion, as might be expected to happen in other markets.

13. In opening its investigation, the Commission considered it important to establish the underlying cause of the behaviour being observed and the complaints it had received. Given the importance of electricity to the New Zealand economy, the Commission considered it needed to investigate to determine whether the price rises were the result of any anti-competitive conduct (as was alleged by some complainants) or had some alternative explanation, such as possible increasing costs or resource consents and generation constraints.

Complaints / Concerns

14. The complaints and concerns received by the Commission can be grouped into four main areas, as follows:

    - the alleged exercise of market power by companies in the wholesale and retail markets;
    - a perceived low level of competitive activity within the wholesale and retail markets, and the potential for industry coordination and collusion;
    - wholesale and retail electricity price increases; and
    - increases in gentailer profits.

15. The nature of the complaints and concerns in each area are described further in the sections below.

Alleged taking advantage of market power

16. Various parties have expressed concerns to the Commission about generators allegedly abusing their market power in the wholesale market.

17. For example, in January 2004, the Major Electricity Users' Group (MEUG), which represents approximately 22 of New Zealand's largest electricity consumers, wrote to the Commission alleging that:

    - on several occasions since 2001, "suppliers have exercised market power to raise prices";

[3] Albeit with some exceptions, notably the Commission's unsuccessful prosecution of Bay of Plenty Electricity Limited in respect of its metering conduct.

- in MEUG's view the "repeated examples of use of market power represent a more systemic competition problem"; and
- the markets had become more concentrated with the exit of some generators and retailers from the markets (some by acquisition), and argued that "there is now a real risk that the current market structure promotes behaviour that is creating barriers to entry for new generation, retailing and major user investments in onsite generation".

18. MEUG called upon the Commission to investigate competition in the markets further.[4]

19. A 2004 report commissioned by the Electricity Commission also identified possible competition problems (the LECG/TWSCL report). It found that "market share, market concentration and vertical integration all point to potential risks of market power in the wholesale and retail electricity markets, if significant barriers to investment and entry exist." The LECG/TWSCL report went on to identify five such major barriers to entry or investment (including the barrier referred to as "perceptions of market power and non-commercial behaviour"), and also identified a number of other significant barriers.[5]

20. In late 2005, questions were also being asked by the Government. The then Minister of Energy, the Hon David Parker, publicly indicated that he shared the concerns of large industrial electricity users and residential consumers about the effectiveness of competition in the electricity markets. While he did not conclude that the markets were uncompetitive he did state that "there is an issue there that needs to be investigated."[6]

21. The market power concerns of some were perhaps best captured by the International Energy Agency (IEA) in its 2006 review of conditions in the New Zealand market when it said: "the small number of market participants – exacerbated by the vertical integration between generators and retailers – is a cause for concern and market power abuse is a real threat." The IEA went on to state that "the lack of liquid and transparent financial markets to hedge electricity price risk and locational basis risk is a significant barrier to entry that exacerbates market power concerns."[7]

22. The Commission has received allegations that generators have acted to exclude entry of new generators and retailers.[8] This is consistent with concerns expressed by third parties summarised in the LECG/TWSCL report.[9] Such allegations are of particular concern where unusually high wholesale high prices had not resulted in entry by new market participants.

23. During the course of the investigation various parties have continued publicly to voice concerns about the use of market power and the 'gaming' of the market by generators.

24. Of critical importance to the assessment of these market power concerns is the identification of the amount (if any) of market power possessed by each generator, and

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4 Major Electricity Users' Group letter to the Commerce Commission, *Behaviour of electricity suppliers since winter 2001 through to the failure of the HVDC 9th to 12th January 2004 and the Commerce Act*, 16 January 2004.

5 Kieran Murray (LECG) and Toby Stevenson (TWSCL), *Report prepared for the Electricity Commission – Analysis of the state of competition and investment and entry barriers to New Zealand's wholesale and retail electricity markets*, 30 August 2004, p 15.

6 Adam Bennett, Minister's Eye on Competition, *The New Zealand Herald*, 28 October 2005, p 3.

7 International Energy Agency, *Energy Policies of IEA Countries – New Zealand 2006 Review,* p 15.

8 See for example the allegations by [ ] summarised at paragraph 458. Third parties have also expressed concern about the lack of access to EnergyHedge and the availability of hedge contracts more widely.

9 Above n 5, p 46.

the question as to whether any of them can be viewed as having taken advantage of the identified market power for an anti-competitive purpose. This is discussed in detail in later parts of this report.

Low level of competitive activity / coordination and collusion

25. Another concern raised by third parties is their perception that competition at both the wholesale and retail levels has weakened in recent years.[10] Such concerns appear to be based on the following factors:

    - wholesale prices have reached, and remained for significant periods at, high levels in a number of years, particularly 2001, 2003, 2006 and 2008;
    - retail electricity prices and gentailer profits have continued to increase steadily;
    - the apparent lack of investment in new generation facilities sufficient to constrain wholesale pricing during events that placed the system under stress; and
    - at the retail level, perceived low rates of customer switching, the apparent retreat by some retailers to their incumbent regions, and a general lack of competition (especially price-based competition) between retailers for residential and small to medium commercial customers.

26. These factors are not by themselves breaches of Part 2 of the Commerce Act, but could be symptomatic of anti-competitive agreements or behaviour.

27. Third parties have also expressed concern about the extent of industry collaboration and coordination and the potential for tacit and/or explicit collusion to be occurring. In particular, an industry group known as 'the CEO Forum' has been highlighted to the Commission as being of particular concern. A March 2006 complaint to the Commission from [ ] and [ ] alleged that the CEO Forum enabled collusion and price fixing to occur and raised two key concerns about the CEO Forum in the context of the approaching 2006 dry winter, namely that:

    - the gentailers intended to share maintenance schedule and fuel supply information, which may amount to collusion to allow wholesale market prices to reach high levels and amount to "massive profiteering"; and
    - the gentailers intended to collectively agree the form and substance of any savings campaign which would be offered to consumers. [11]

28. It is apparent to the Commission that at almost every functional level, the electricity industry is extremely complex technically and a degree of interaction between industry participants will likely be required to ensure that the industry works efficiently and effectively to deliver electricity to end-users. However, interactions between competitors can also facilitate explicit or tacit coordination and could lessen the extent of competition between the competitors, and would place the parties involved at risk of breaching s 27 of the Commerce Act.

Electricity prices

29. The most frequent complaint received by the Commission about the electricity wholesale and retail markets concerns increases in electricity price. Most complaints

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[10] [ ] letter to the Commerce Commission, 3 February 2006; Consumer Coalition on Energy (CC93) letter to the Commerce Commission, 15 August 2005, p 2. Karen Goodger, *Cobb generation almost stops*, The Nelson Mail, 17 November 2005, p 1.

[11] [ ] and [ ] letter to the Commerce Commission, 22 March 2006.

have come from residential and small commercial consumers, including complaints that retail prices to residential customers have increased more than those for other customers.[12]

30. Concerns about the retail price increases have continued to be voiced to the Commission[13] and publicly voiced by a range of parties[14] during the course of the investigation. Large consumers and consumer representative groups have also expressed concern at the level of price volatility seen in the wholesale market and the impact such volatility can have on hedge contract and retail market prices.[15]

31. The Commission is also aware, from its interviews with other parties, its surveillance of the industry and from media comment, that concerns about increasing wholesale market and retail market prices are more broadly held.

32. As discussed above, from a competition viewpoint, increasing or high prices may not be a cause for concern in themselves and may in fact result in positive outcomes if the charging of higher prices encourages greater investment or innovation from existing or new competitors. Higher prices can also signal a legitimate increase in the cost to supply a particular product or service. However, patterns and trends in pricing by both individual competitors and the market as a whole can be important and useful indicators of the competitiveness of the market and highlight instances that warrant further investigation.

Company profits

33. The profits made by the main gentailers since the introduction of EIRA has received considerable attention in the media, both from industry commentators and from concerned consumers. The gentailers are perceived to have posted sizeable profits each year while consumers have continued to face often substantial price increases. The Commission has received a number of complaints regarding the level of company profits since January 2004,[16] gentailers allegedly 'scaremongering' about the likelihood of hydro shortages to drive up profits,[17] and the re-valuation of assets to 'disguise' high rates of return.[18] The profits issue has also been the subject of submissions to the Electricity Commission[19] and has received considerable media attention.[20]

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12 These complaints are consistent with concerns raised in other arenas: for example, Minister of Energy Press Release, *Govt slams South Island power price hikes*, 30 September 2008; and Community Energy Action Charitable Trust, *Submission to the Electricity Commission – Market Design Review – Options Paper*, 1 September 2008, p 1.

13 For example: Consumer Coalition on Energy (CC93) letter to the Commerce Commission, 15 August 2005, p 2; and [ ] letter to the Commerce Commission, 3 February 2006.

14 For example: Marta Steeman, Generators accused of gouging, *The Dominion Post*, 30 November 2005, p C2; Karen Goodger, Cobb generation almost stops, *The Nelson Mail,17* November 2005, p 1; and Lucy Hall, Coast power prices double in 5yrs – Elderly feeling the brunt, *Greymouth Evening Star*, 3 January 2006, p 1.

15 Major Electricity Users' Group letter to the Commerce Commission, 18 November 2005.

16 For example, Commerce Commission Enquiry 115171, [ ], 5 October 2005.

17 For example, Commerce Commission Enquiry 121869, [ ], 17 March 2006.

18 See Grey Power, *Submission to the Electricity Commission – Grey Power Submission on Market Design Review – Options Paper*, 5 September 2008, p 3.

19 For example. Consumer Coalition on Energy (CC93), *Submission to the Electricity Commission – Market Design Review Issues Paper Consultation*, 20 July 2007, p 2; and Consumer Coalition on Energy (CC93), *Submission to the Electricity Commission – Market Design Review – Options Paper Consultation*, 1 September 2008, p 1.

20 For example, Winds of profit power in, *Bay of Plenty Times,* 28 October 2005, p 10; Marta Steeman, Record $50.7m profit for TrustPower, *The Dominion Post*, 28 October 2005, p C1; James Weir, Power rises

34. For example, Mr Terrance Currie, Chairman of MEUG was quoted in a March 2006 article as saying that "manufacturers are not impressed that New Zealand is losing production, and in some cases significant export sales, simply because SOE generators can set prices in a poorly performing market to make super profits."[21] Mr Currie argued that the continued record profits being made by the generators showed there was little competition in the generation sector.

35. However, one response is that large profits do not necessarily raise immediate competition concerns. Large profits may arise in a number of circumstances: they may be needed to adequately compensate investors for the large amounts of capital used by the company; they could result from a company possessing a superior product or from being more innovative or efficient than its competitors or they may be a signal that an expansion of supply is needed to meet increasing demand. Profit may also enable a company to expand and compete on a wider basis, or to invest in research and development to deliver better products and greater choice to its consumers. However, unusually high levels of industry profits over a period of time may suggest that market power is present, particularly in conjunction with other factors that suggest that competition may be limited.

Conclusion

36. In summary, the Commission received many complaints about the operation of the wholesale and retail electricity markets concerning:

    - the alleged exercise of market power by companies in the wholesale and retail markets;
    - a perceived low level of competitive activity within the wholesale and retail markets and the potential for industry coordination and collusion;
    - wholesale and retail electricity price increases; and
    - increases in gentailer profits.

37. The majority of complaints received by the Commission concerned increases in electricity prices and company profits.

38. The Commission considered that in light of the number and consistency of complaints, and the allegations regarding the exercise of market power and apparent low levels of competitive activity, it was appropriate for it to investigate whether the complaints represented symptoms of behaviour that contravened Part 2 of the Commerce Act, such as collusion or the exclusion of competition.

The Investigation

Part 2 of the Commerce Act

39. The purpose of the Commerce Act is to promote competition in markets for the long-term benefit of consumers. Part 2 of the Commerce Act deals with restrictive trade practices, and is directed at prohibiting conduct that tends to interfere with competition. Briefly, Part 2 contains:

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defended amid 'windfall profits', *The Dominion Post*, 12 December 2008; and Marta Steeman, Profits of $550m set to shock, *The Dominion Post*, 19 October 2005, p C1.

[21] Paul Gorman, *Power users group hits out over 'super profits'*, Waikato Times 20 March 2006, p 14.

- a general prohibition on co-ordinated conduct substantially lessening competition (ss 27 and 28);
- specific prohibitions of exclusionary conduct, cartel conduct and resale price maintenance (ss 29, 30 and 37/38); and
- a general prohibition on unilateral conduct by parties with substantial market power that is intended to reduce competition (s 36).

40. The Commission investigated a number of potential lines of inquiry. A considerable volume of evidence - both data and documentary evidence - was obtained from the market participants. The lines of inquiry followed, the evidence received, and the analysis undertaken, are spelt out in detail in the body of this report. However, this report is necessarily a summary of the Commission's work.

41. From the complaints received, and from its own investigation, the Commission identified a number of allegations, or potential 'theories of harm' that merited investigation. In particular, the Commission investigated and considered the following:

- whether one or more gentailers may have unilaterally taken advantage of their market power for an anti-competitive purpose, namely by:
  - increasing wholesale market prices to prevent or hinder retail competition;
  - decreasing wholesale market prices to prevent or hinder wholesale competition;
  - seeking to influence the Government to prevent or hinder wholesale competition;
  - affecting the availability and terms of hedge contracts to prevent or hinder retail competition;
  - allegations by [ ]; and
  - engaging in other anti-competitive strategies to prevent or hinder wholesale or retail competition.
- whether there has been any agreement between gentailers that fixed prices or otherwise substantially lessened competition, in particular through agreements concerning:
  - high level strategies which have the purpose, effect or likely effect of substantially lessening competition in the wholesale market;
  - price and quantity offers into the wholesale market (including in situations of tight supply) that have the purpose, effect or likely effect of substantially lessening competition in the wholesale market;
  - offers into the wholesale market in situations when the Whirinaki station may be dispatched, which have the purpose, effect or likely effect of substantially lessening competition in the wholesale market;
  - the introduction or expansion of generation capacity that have the purpose, effect or likely effect of substantially lessening competition in the wholesale market;
  - back-to-back supply of electricity hedges that have the purpose, effect or likely effect of substantially lessening competition in the wholesale market, or a market for generation assets;

- market sharing agreements (both geographically and for customer segments) that have the purpose, effect or likely effect of substantially lessening competition in the retail market;
- fixing retail pricing that have the purpose, effect or likely effect of substantially lessening competition in the retail market; and
- the long-term supply of electricity to large consumers that have the purpose, effect or likely effect of substantially lessening competition in the retail market.

Assessment of market power

42. The Commission formally opened its investigation in August 2005. The first stage in any investigation into s 36 is to assess whether any of the relevant businesses have a substantial degree of market power. The Commission therefore turned to properly understanding the relevant markets and whether there were any indicators of the exercise of market power. If there was evidence of the use of market power the Commission could then determine whether market power had been used for an anti-competitive purpose, or had been derived from anti-competitive conduct such as collusion between market participants as some complainants had alleged. If the investigation concluded that no party had market power, or that any market power had not been taken advantage of for an anti-competitive purpose, then the investigation could be closed.

43. Given the unique characteristics and complexity of electricity markets it was necessary to retain external expertise to assist the Commission in analysing the electricity markets. Professor Frank Wolak was retained and instructed to prepare an analysis of the electricity markets, and in particular was instructed to advise on whether there was evidence that any party held market power. Frank Wolak is a Professor in the Department of Economics at Stanford University, and Chairman of the Market Surveillance Committee of the California Independent System Operator for the electricity supply industry in California. Professor Wolak is an internationally recognised expert in this area, having analysed the exercise of market power in a number of other jurisdictions.

44. Professor Wolak's work on the operations of the New Zealand wholesale electricity market is attached to the Commission's report as Appendix 1.

45. The Commission also considered that the process of conducting this analysis might identify particular time periods, geographic locations, market participants or market transactions which should be further investigated.

46. The Commission had originally intended to obtain from Professor Wolak further analysis of the retail electricity market, and of the impact of vertical integration in the industry. However, as the investigation unfolded, no further retail market lines of inquiry arose which justified continuing the investigation. Further, Professor Wolak's preliminary analysis suggests that the trend of increasing retail market prices could be explained by wholesale market power being 'passed through' to the retail market in the form of higher wholesale market prices. There was no reason then for the Commission to instruct Professor Wolak to undertake this work.

Data requirements

47. Analysis of the kind undertaken by Professor Wolak is necessarily data-intensive. Electricity markets are very complex, and create very large amounts of data. The New

Zealand wholesale market is cleared every half hour. Every half hour, supply offers are received, expected load is indicated, and, after the fact, prices are set, for 255 nodes around the country.

48. Unlike other jurisdictions, New Zealand does not require the provision and collection of the data required for the calculation of competitive benchmark prices. Between December 2005 and February 2006, the Commission worked with Professor Wolak to establish a comprehensive picture of the information required to undertake this analysis. The Commission then worked with the Electricity Commission, the Ministry of Economic Development (MED) and Transpower Limited (Transpower) to identify the party best placed to provide each piece of information. It became clear that the information commonly gathered and held by a central regulatory body in many electricity markets in other countries was not held centrally in New Zealand.

49. The Commission then proceeded to collect the necessary information itself. In February 2006, the Commission sought information covering the period January 2001 to July 2005 from the main gentailers and key industry bodies, namely:

- Bay of Plenty Electricity Limited (BoPE);
- Contact Energy Limited (Contact);
- Genesis Power Limited (Genesis);
- Meridian Energy Limited (Meridian);
- Mighty River Power Limited (Mighty River Power);
- NGC Holdings Limited (NGC);
- Todd Energy Limited (Todd Energy);
- TrustPower Limited (TrustPower);
- Energy Market Services Limited (EMS); and
- The Marketplace Company Limited (M-co).

50. The Commission sought information from 2001 to facilitate analysis of alleged examples of the use of market power during the period since 2001 and to assess the high price periods of 2001 and 2003.

51. In early 2006, the Commission sought wholesale and retail market information from MED. This information related to the Electricity Statistics Annual Returns and to MED surveys of retail prices. An initial assessment of this data indicated that it was not sufficiently detailed for use in the work the Commission was undertaking.

52. The Commission also sought information from the Electricity Commission. Following its establishment in 2004, the Electricity Commission has been required to establish, maintain and publish a centralised dataset (CDS) of historical information to support decisions on transmission and transmission alternatives.[22] The CDS contains relevant half-hourly wholesale market information, hydrological data and transmission network configuration data. The Commission obtained an initial copy of the CDS from the Electricity Commission in August 2005, and then worked with the Electricity Commission throughout 2006 to obtain updates to the CDS information and to remedy problems identified with some of the information contained in the CDS.

[22] Under Part F, Section III of the Electricity Governance Rules 2003.

53. Throughout 2006 the Commission also sought and obtained quantitative and qualitative retail market information from the Electricity Commission, including information retrieved from the Electricity Registry, a database that contains information on each point of connection on the transmission and distribution networks to which electricity is supplied.

54. The Commission also sought wholesale market information from Transpower. This was predominantly information concerning how much each generator was required to generate for each half hour period by the System Operator, generation station outages, and transmission network information.

55. The Commission obtained a large amount of data throughout 2006. Once gathered, significant work was required to be undertaken by Professor Wolak and the Commission to ensure consistency and compatibility between the datasets. This was particularly burdensome given the number of parties from which data was acquired. The data formats (for both more recent and archived data) differed markedly between the industry participants, including between generation and retail companies and industry bodies. The quality of the data also varied significantly depending on the provider. In particular, there was a substantial amount of missing data for price, quantity demanded, and quantity supplied, in the data from the CDS held by the Electricity Commission which was based on Transpower data.[23] This necessitated rigorous checking of the datasets, comparison between datasets and in some cases rectification of the dataset by the party having supplied it.

56. The data collected by the Commission is the most comprehensive that has been collected to date on the New Zealand wholesale and retail markets. The data spans the period January 2001 to July 2007 and so covers over 113,800 time periods, resulting in hundreds of millions of pieces of data.

Investigation process

57. Whilst collecting data, the Commission began interviewing key electricity industry participants, including existing generators and retailers, potential new entrants to both markets, large electricity consumers, consumer representative groups and the various companies and governmental agencies involved in operating and overseeing the industry. Many of these interviews were completed in 2006, but the Commission continued as necessary with further interviews up until early 2009.

58. In December 2006, the Commission received a preliminary report from Professor Wolak. This report is presented as Appendix 2 to Professor Wolak's current report, and: summarised the market structure, rules and operating protocols; presented a history of the industry in New Zealand; and provided a detailed description of the operation of the wholesale market. It also described the results of an initial wholesale market analysis for the period 1997 to mid-2005 using information from the CDS. The report identified the need for further analysis of the 2005 year, as the preliminary analysis showed persistently high prices throughout the day (reminiscent of the low water years of 2001 and 2003), the causes of which could not be adequately explained.

59. The Commission considered that the analysis presented in the preliminary report suggested that high prices in 2005 reflected the kind of prices that would be expected

[23] For example, a third of all observed quantity observations between 1997 and 2004 were zero, nearly all of which are for nodes which have a name starting with "M" in 1999 and 2000,. These appear not to have been inputted correctly.

during a dry autumn or winter event. However, such conditions were not immediately evident and further explanation was thought necessary.

60. The preliminary report from Professor Wolak, and subsequent discussions with the Electricity Commission, EMS and Transpower also highlighted a number of outstanding issues with some of the wholesale market data obtained by the Commission. Significant discussions with these parties were required to identify the root cause of the data anomalies and omissions, and significant work was required to correct these problems.

61. At this point in time the Commission's concern about the extent of market power in the wholesale market, and the potential exercise of that market power, had increased. Further, the preliminary report from Professor Wolak had also raised questions concerning the years 2005 and 2006, a period for which the Commission had only a partial dataset. Additional wholesale market information had become available and in July and August 2007, the Commission sought further information from EMS, M-co and Transpower to extend the data set to include the period August 2005 to approximately July 2007.

62. In February 2007, the Commission was also still pursuing concerns about the retail market and Professor Wolak presented the Commission with some initial retail market analysis. However, Professor Wolak emphasised that the key retail market information obtained from MED used aggregated retail customer information only, and recommended that further detailed individual retail customer information be obtained to enable more detailed and robust analysis of competition in the retail market.

63. The Commission accepted this recommendation, and worked with Professor Wolak in early 2007 (March to June) to develop the parameters of a retail market sample that would be requested from individual retailers. A pilot sample was devised so the Commission could test the adequacy of the information able to be provided by the retailers. The pilot sample was requested from a single retailer in July 2007, and the response was received in October 2007. The Commission and Professor Wolak revised the full retail sample given the results of the pilot sample. A full retail sample was requested from the following retailers in November 2007: BoPE; Contact; Genesis; King Country Energy (KCE); Meridian; Mighty River Power; and TrustPower.

64. In November 2007, the Commission also sought from gentailers some additional wholesale market information and additional qualitative information and documents. The qualitative information was sought from the gentailers to address allegations of collusion between some of the gentailers in both the wholesale and retail markets.

65. The qualitative information and documents requested included: board papers, business strategy documents, and papers including discussions of investments, regional entry and generation and retail activities. The Commission also specifically requested copies of CEO Forum papers and minutes along with copies of correspondence, contracts, arrangements or understandings between competitors relating to certain wholesale and retail market strategies and activities.

66. The Commission received responses to the retail sample and qualitative information requests by March 2008. In many cases, the responses took long periods of time as generators, retailers and industry bodies experienced technical difficulties retrieving the data. In some cases the difficulties and delays were due to capability limitations with elements of current computer systems, and in other cases it was due to difficulties in retrieving historic data because the original computer system was no longer in use.

67. All told, the quantitative information gathering stage in this investigation took approximately two years. In the Commission's view, this largely reflects the lack of regulation regarding the centralised collection of information for the New Zealand wholesale market. Professor Wolak has commented that he has:

> […] compiled and analyzed market outcome data from wholesale electricity markets in California, England and Wales, Colombia, Australia, Spain, and PJM (Pennsylvania, New Jersey and Maryland). The process of compiling and verifying the validity of the dataset for the New Zealand electricity supply industry has taken several orders of magnitude longer than it required for any of these projects. In fact, I believe that it would not be an exaggeration to say that it has taken me more time to compile and clean the datasets I have received for the New Zealand electricity supply industry than it has taken me to compile and validate the datasets used in all of these other projects put together.[24]

68. The data collected by the Commission is comprehensive and likely to be the most extensive dataset ever compiled on the New Zealand wholesale and retail markets. As it covers wholesale market data for every half-hour trading period for every day from January 2001 to July 2007, consists of hundreds of millions of data points, with one dataset alone obtained from Transpower running to approximately 500 million rows of data. It also covers detailed retail market information for the same period.

69. The data relates to the key aspects and operations of the wholesale market and retail markets as well as to transmission and distribution businesses, and includes:

- wholesale market information: demand bids; generation and reserve offers; fixed and variable load obligations; and forward contract details;
- generation: generation quantities for grid-connected generators; embedded, scheduled and reserve generation quantities; fixed and variable operating and maintenance costs for hydroelectric and thermal generation units; thermal fuel use and input prices; generation technical operating data (for example, plant ramp rates and heat rates of fossil fuel used in generation); and generation outages (planned / unplanned);
- wholesale market prices: nodal and reserve prices; distribution charges and forward fixed price contract data;
- loads (demand): withdrawals by grid exit point (GXP) and by retailer and directly supplied customers; load profiles for retailers; and retail volumes and revenue;
- retail customer data: the Consumer Institute's Powerswitch database of retail prices; the Electricity Commission's Registry database; retail customer information for a sample dataset of ICPs; and distribution network average charges;
- transmission and distribution: transmission network details; transmission (and generation) outages; transmission line capacities; network configuration files; and distribution losses; and
- hydrology and climate: hydro inflows; lake levels; storage; National Climate Database – rainfall; and temperature and hydro spill data.

70. Both the Commission and Professor Wolak each consider that, following the work undertaken by Professor Wolak to identify and correct inconsistencies and errors, the

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[24] Frank Wolak, 1 November 2006, memorandum to Commerce Commission: "*The Challenges Associated with Compiling the Datasets Needed and a Summary of the Preliminary Tasks Completed*"

data obtained by the Commission and used for its analysis is fit for the purpose of undertaking his analysis.[25]

71. In December 2008, the Commission issued further s 98 notices to a number of parties requesting additional qualitative information. This information, relating to specific allegations of breach, was received by the Commission over January and February 2009. On the basis of the information the Commission had, it determined that it would not seek additional quantitative data to enable Professor Wolak's work to be extended from July 2007 to December 2008.

Closing the investigation

72. The Commission has investigated and assessed a number of potential or alleged breaches of the Commerce Act in the wholesale and retail markets. The Commission has concluded its investigation of alleged breaches, with the exception of one potential breach, which is not discussed in this report, and which the Commission is continuing to investigate. The matter involves a possible contract, arrangement or understanding between two parties, who will be notified of that investigation.

73. The Commission has not completed the investigation and analysis of possible market power in the retail market. However, in section 12 below, the Commission records its preliminary views for completeness and sets out in full its reasons for not continuing with its retail market power analysis.

74. Finally, the Commission has recently received a number of new complaints relating to electricity wholesale and retail markets in the 2008 year. These complaints will be assessed by the Commission in accordance with its usual process, and if appropriate the Commission may investigate those matters.

4. PARTIES

75. This section identifies parties of relevance to the investigation, describes the position within the electricity industry held by each party and provides essential information about each party's operations and performance.

76. The investigation has focused upon the activities and behaviours of the five gentailers: Contact; Genesis; Meridian; Mighty River Power; and TrustPower. However, the investigation has considered the behaviour of other parties where necessary, and has sought information from the wider industry as appropriate.

Contact Energy Limited

77. Contact is a company incorporated in New Zealand and listed on the New Zealand Stock Market (NZSX). Contact's majority shareholder, Origin Energy Pacific Holdings Limited holds approximately 50.5 per cent of the total shares in Contact. The remaining 49.5 per cent of the total shares are held by the public and institutions.

78. The principal business activities of Contact are:

- electricity generation – Contact owns and operates 10 generation stations spread across both the North and South Islands, and also is contracted to operate the Crown-owned reserve generation station at Whirinaki in the Hawke's Bay;

[25] For Professor Wolak's view, see Appendix 1 of his attached report.

- electricity wholesaling – Contact offers electricity into the wholesale market, and also sells financial contracts for electricity to large industrial consumers, generators and retailers;
- electricity retailing – Contact has approximately 520,000 retail electricity customers spread across both the North and South Islands; and
- gas wholesaling and retailing – Contact is a wholesaler of gas to large users (such as other generators, large industrial users and petrochemical producers). Contact is a major player in the retail of both gas and LPG to retail customers and as an electricity generator is also one of the largest users of gas.

79. Contact had total operating revenue of $2,756 million in the 2008 financial year.[26]

Genesis Power Limited

80. Genesis is a State Owned Enterprise (SOE). Its principal business activities are:

- electricity generation – Genesis owns and operates 8 generation stations throughout the North Island;[27]
- electricity wholesaling – Genesis offers electricity into the wholesale market, and also sells financial contracts for electricity to large industrial consumers, generators and retailers;
- electricity retailing – Genesis has approximately 581,000 retail electricity customers located predominantly in the North Island; and
- gas exploration and retailing – Genesis is involved in fuel exploration through its interests in the Kupe oil and gas field and the Cardiff deep gas project, and retails gas to customers in the North Island.

81. Genesis had total operating revenue of $2,482 million in the 2008 financial year.[28]

Meridian Energy Limited

82. Meridian is an SOE. Its principal business activities are:

- electricity generation - Meridian is New Zealand's largest generator. It owns and operates 11 generation stations, with all but one of them located in the lower half of the South Island;
- electricity wholesaling – Meridian offers electricity into the wholesale market , and also sells financial contracts for electricity to large industrial consumers, generators and retailers;
- electricity retailing – Meridian has approximately 183,000 retail electricity customers, located predominantly in the South Island, including New Zealand's largest single power user, the aluminium smelter at Tiwai Point;[29] and
- electricity related investments – Meridian has a number of subsidiaries involved in various aspects of the electricity industry, including: Right House (provides advice and products related to energy efficient and healthy homes); Whisper Tech

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26 Contact Energy Limited, Annual Report 2008, p 12.

27 The Commission has treated as a single generation station Genesis' Huntly station – which originally had 4 generation units, but since 2004 has had a further 2 generation units added to it.

28 Genesis Power Limited, Annual Report 2008.

29 Owned by New Zealand Aluminium Smelters Limited.

(the WhisperGen heat and power system); Arc Innovations (smart metering technology); and Damwatch (consultancy services to dam owners).

83. Meridian had total operating revenue of $2,603.5 million in the 2008 financial year.[30]

Mighty River Power Limited

84. Mighty River Power is an SOE. Its principal business activities are:

- electricity generation – Mighty River Power owns and operates 13 generation stations, located predominantly in the centre of the North Island;
- electricity wholesaling – Mighty River Power offers electricity into the wholesale market, and also sells financial contracts for electricity to large industrial consumers, generators and retailers;
- electricity retailing – Mighty River Power (through its retail business, Mercury Energy) has approximately 350,000 retail electricity customers located predominantly in the North Island; and
- electricity metering – Mighty River Power (through its metering business, Metrix) owns and operates a residential and commercial electricity metering business throughout the North Island.

85. Mighty River Power had total operating revenue of $1,172 million in the 2008 financial year.[31]

TrustPower Limited

86. TrustPower is a company incorporated in New Zealand and listed on the NZSX. TrustPower's majority shareholder, Infratil Limited, holds approximately 50.5 per cent of the total shares in TrustPower. The Tauranga Energy Consumer Trust holds 33 per cent of the shares, and the remaining 16.5 per cent of the shares are held by the public and institutions.

87. TrustPower's principal business activities are:

- electricity generation – TrustPower owns and operates 36 small-to-medium-sized hydro generation stations throughout the North and South Islands, and one wind farm located in the lower North Island;
- electricity wholesaling – TrustPower offers electricity into the wholesale market, and also sells financial contracts for electricity to large industrial consumers, generators and retailers;
- electricity retailing – TrustPower has approximately 222,000 retail electricity customers throughout both the North and South Islands; and
- telecommunications – TrustPower (through its subsidiary Kinect) provides phone and internet services to existing TrustPower retail electricity customers.

88. TrustPower had total operating revenue of $681 million in the 2008 financial year.[32]

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30 Meridian Energy Limited, Annual Report 2008, p 35.
31 Mighty River Power Limited, Annual Report 2008, p 58.
32 TrustPower Limited, Annual Report, p 26.

Other Parties

89. This report also references a number of other parties of relevance, either in their role as market participants or as parties involved in the operation of the industry. Brief descriptions of these parties are as follows:

- BoPE – is a generator and retailer of electricity, and a retailer of natural gas, based in Whakatane. Its operations are concentrated in the Bay of Plenty and the central North Island. BoPE is 100 per cent owned by Todd Energy; and
- KCE – is a generator and retailer of electricity based in Taumaranui with its operations concentrated in the King Country area. KCE is a public company with 35 per cent of the shares held by Todd Energy, 10 per cent held by The King Country Electric Power Trust, 8 per cent held by the Waitomo Energy Services Trust and the remaining 47 per cent held by the public.

90. There are a number of other parties mentioned throughout the report. Descriptions of the activities undertaken by those parties are provided within the body of the report.

5. INDUSTRY OVERVIEW

91. New Zealand's electricity industry has four key structural components:[33]

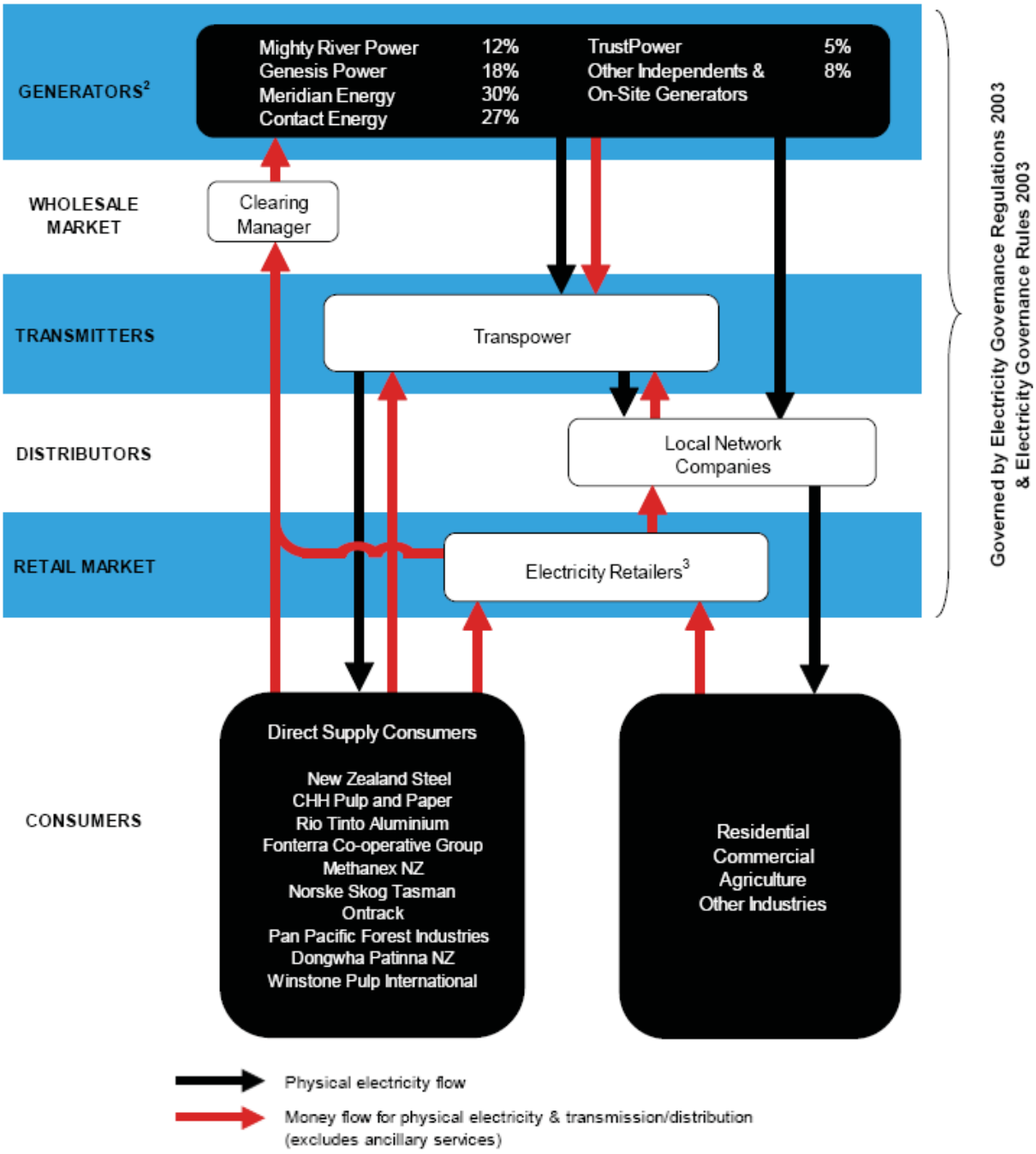
- generation and the wholesale sale of electricity;
- transmission of electricity over the high voltage network known as the national grid;
- distribution of electricity at the local level; and
- the retailing of electricity to end-users.

92. Electricity is physically produced at generation plants, and transmitted at high voltage on the national grid to local distribution networks around the country. Here the electricity is converted to a lower voltage for distribution to end-users connected to the local network.

93. Figure 1 illustrates the New Zealand electricity industry's structure and key parties. The following sub-sections describe each of these structural components.

[33] This section is based on the Electricity Commission's industry description available at http://www.electricitycommission.govt.nz/industry. For further detail on the industry, see the New Zealand Institute for Economic Research (NZIER) report to the Electricity Commission, February 2007, 'The markets for electricity in New Zealand'.

Figure 1: Electricity industry structure, 2007



Notes:

1 Company names are listed without the suffixes "Limited" and "New Zealand Limited" where applicable.
2 Embedded (distributed) generators can choose to sell their electricity directly to retailers trading on the same grid exit point.
3 Electricity retailers include Bay of Plenty Electricity, Contact Energy, Empower (owned by Contact Energy), Energy Online (owned by Genesis Power), Genesis Power, King Country Energy, Mercury Energy (owned by Mighty River Power), Meridian Energy and TrustPower.
4 Includes public transport, rail and urban traction.

Both the Commerce and Electricity Commissions have key roles in the electricity market. The Commerce Commission has regulatory oversight of distribution and transmission pricing while the Electricity Commission has regulatory oversight of the retail and wholesale markets, and transmission contracts. The Electricity Commission also has contracts with service providers for market operation services such as that of the Clearing Manager.

Source: MED New Zealand Energy Data File 2008

Generation and Wholesale

Electricity generation

94. Electricity is produced at generation stations and supplied at high voltage to the national grid, at grid injection points (GIPs). There are some 40 major electricity generation stations connected to the grid.

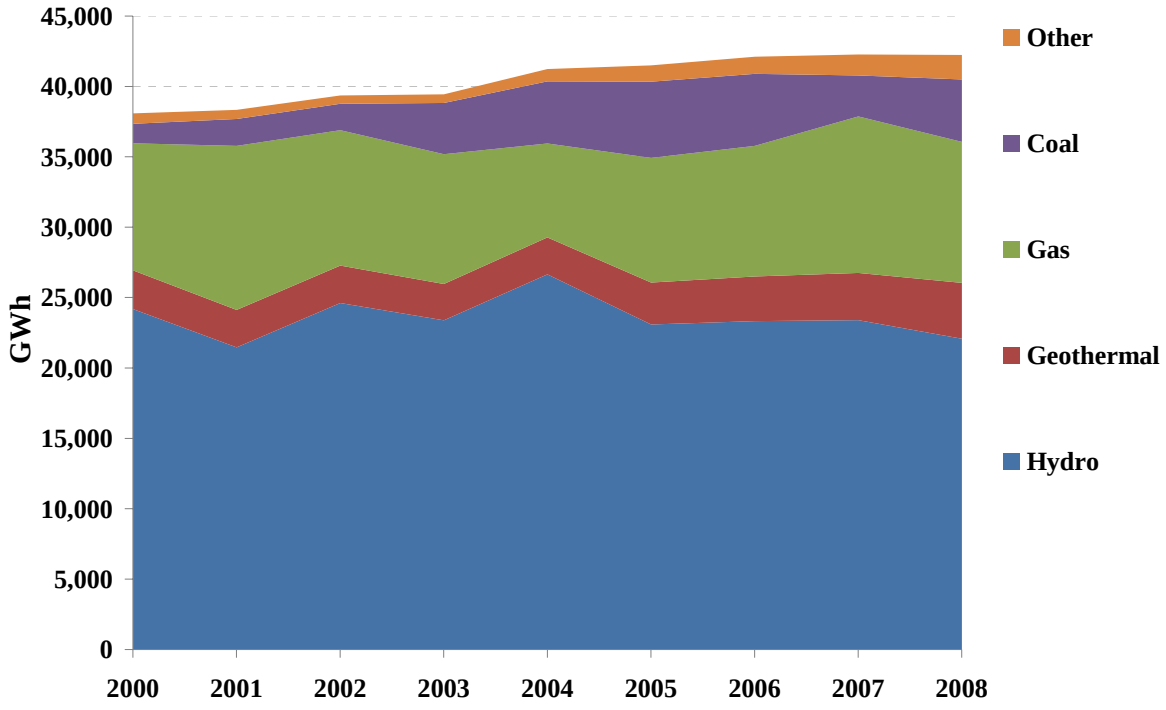
95. In New Zealand there are five main generation companies: Contact, Genesis, Meridian, Mighty River Power and TrustPower. In 2007 these companies generated over 92 per cent of New Zealand's electricity. There are also a number of small, independent generators and onsite co-generators. The main independent generators are: BoPE; KCE; NZ Windfarms Limited (NZ Windfarms); and the Tuaropaki Power Company Limited (TPC).

96. In 2004, the Government commissioned the 155 MW liquid fuel reserve energy generation station at Whirinaki. The Whirinaki station is owned by the Government, operated by Contact, and its offer strategy into the wholesale market is controlled by the Electricity Commission.

97. Generators produce electricity predominantly for supply into the energy market. However, they also provide ancillary services, such as reserves, frequency control, voltage support, black-start (to re-energise the system if electricity stops flowing) and transmission reserves (e.g. if lines come down). Ancillary services exist in order to maintain system reliability and security.

98. Electricity in New Zealand is largely generated from hydro, gas, coal and geothermal resources. Figure 2 below shows the growth in total net generation over the past three decades, as well as the contributions from the different resources. Of note is the recent growth in geothermal and gas generation. Wind generation is the main component of the 'other' category, but still represents a minor contribution to total power generation.

Figure 2: Net electricity generation by fuel type (GWh)



Source: Commerce Commission using MED New Zealand Energy Data Files

99. The predominant type of generation stations varies across New Zealand. Whilst the source of fuel for South Island is predominantly hydrological storage, stations on the North Island are a mix of hydro, thermal and wind fuel sources. Section 2 of the Wolak Report gives further information on the location, size and type of generation stations.

100. Hydro storage levels impact upon the fuel source availability for hydro generation. Section 2 of the Wolak Report also presents a discussion of variations in hydro storage levels over the period under assessment. Figure 3 below shows storage levels over the period 2001 to 2008.

Figure 3 Daily hydro storage levels 2001 - 2008

Source: Wolak 2009, Figure 2.39. Data from COMIT hydro (M-co)

The wholesale market

101. The New Zealand Electricity Market (NZEM) was formed in October 1996. Unlike the electricity wholesale markets developed in other jurisdictions, the NZEM was created as a voluntary market, and the market rules were developed by the market participants themselves rather than by a regulatory body or the Government. There also was no electricity industry regulatory body responsible for overseeing the operation of the market.

102. An NZEM Rules Committee developed and implemented a set of rules to govern the operation of the market. The monitoring and enforcement of compliance with the rules was undertaken by a Market Surveillance Committee (MSC). Members of both the Rules Committee and the MSC were appointed by the market participants themselves.

103. Another industry agreement, the Metering and Reconciliation Information Agreement (MARIA) had already been established in April 1994. MARIA was initially focused on technical metering and reconciliation standards. In 1999 its responsibilities were expanded to include retail market customer profiling and responsibility for the Registry, the national database which lists every point of electricity connection in New Zealand using a unique identifier referred to as an installation control point (ICP). As with the NZEM, the MARIA rules and operations were developed and overseen by the industry

participants rather than by the Government. The MARIA agreement also allowed generators, retailers and large end-users to trade electricity bilaterally without going through the NZEM. In October 1996, approximately 93 per cent of electricity was traded through the NZEM. By 1998 the amount traded through the NZEM had dropped to approximately 80 per cent due to an increase in the level of bilateral trading, and by 2004 it had dropped further to approximately 70 per cent.

104. In 1999, the Government began to look at ways to reform the electricity industry. A number of recommendations flowing from a Ministerial Inquiry began to be worked upon, including an industry body to develop a unified rule book. However, in 2003 an industry referendum failed to achieve the consensus needed for the introduction of the new rule book, and the Government moved to establish the Electricity Commission and to formally update the market rules. This resulted in the introduction of the Electricity Governance Regulations 2003 and the Electricity Governance Rules (EGRs), which were largely a continuation of the existing market rules, but with a number of important amendments. At this time, the market switched from being a voluntary market to being a mandatory market, meaning that all electricity generated at stations over a specified size had to offer their generation capacity into the central market. The MARIA agreement was terminated on 28 February 2004.

105. The market is overseen by a number of industry bodies that manage the various aspects of the wholesale market and associated financial contracts, including the following: the gathering of information relating to forecasting generation and consumption; the transmission network, energy scheduling and dispatch modelling and instructions; ancillary services management; power system security and management; and final price and volume settlement.

106. The wholesale electricity market (commonly referred to as the spot market) operates every day of the year on a continuous basis, in 30 minute trading periods, with a total of 48 trading periods per day. Broadly speaking, generators are required to submit generation offers to the system operator, indicating for each trading period how much electricity the generator is willing to supply, and at what price. The generator offers can contain up to five price bands, and can be different for each trading period. The price offered in each band must increase from band to band as the quantity increases. However, there is no limit on the maximum price that can be offered by each generator.

107. Likewise, electricity purchasers must also submit bids to the system operator, indicating how much electricity each intends to purchase for each trading period of the following day, at each GXP at which it intends to purchase electricity. These purchaser bids can contain up to 10 price bands for each trading period.

108. The market rules allow the generators and purchasers to revise or cancel their offers and bids up to two hours prior to the beginning of the trading period.[34] Part G, Section III of the EGRs relates to the scheduling and dispatching of generation, and describes the information the system operator must publish in order to meet its dispatch objectives and obligations under the rules.

109. The main tools the system operator, Transpower, uses to share information with market participants are: a pre-dispatch schedule, which provides market participants with broad generation dispatch, reserves, demand and price information for each trading period (at 1pm the day before the trading day); and a schedule of dispatch prices and quantities (SDPQ), which includes more detailed and up-to-date estimates of dispatch prices,

[34] The two hour rule does not apply to embedded generators and intermittent generators.

quantities, and transmission network information. The system operator provides the SDPQ to the market participants at or just before each trading period, together with information for the current trading period and the next seven trading periods (covering a four hour window in total).[35]

110. Once all offers and bids have been received and finalised for a particular trading period, the system operator issues actual dispatch instructions to each generator related to how much electricity it is required to generate and/or what actions it is required to take regarding the provision of ancillary services, such as the provision of instantaneous reserve generation.

111. As soon as is practical the system operator publishes a set of real time prices, which provide an indicative price for the electricity injected into and withdrawn from each GIP and GXP, on a five minute basis. At 12pm the day after each trading day, the pricing manager (M-co) uses updated information to calculate and publish final prices and final reserve prices for each node for each trading period. In certain situations further information may be required and the publication of final prices may be delayed.

112. For each trading period, the pricing manager, M-co, determines a single price per unit to be paid to generators for all electricity supplied.[36] This is the price of the marginal (i.e., highest price) generator actually dispatched in the relevant time period. However, the pricing manager sets specific energy purchase prices for each individual node, these reflecting the impact of transmission losses and of any congestion. This means that generation owners serving retail load requirements in locations different to their generation assets may have to pay wholesale purchase prices that are higher (or lower) than the prices received for the amount of electricity they generated.

113. Pre-agreed sales contracts exist between market participants, known as power purchase agreements (PPAs). Some of these are for a fixed quantity of power at a fixed price. Others reflect the wholesale market price. Both mechanisms reduce some or all of the risk of exposure for both buyer and seller of the contract to wholesale market price fluctuations. Contracts which contain a financial element linking the contract price to the wholesale market price, can be known as a 'contract for differences' (CfD), or are known also as a 'swap'. Both fixed price PPAs and PPAs with prices linked to the wholesale market price are often referred to as 'hedges'. As the quantity of a supplier's energy that is hedged at an agreed advance price increases, its incentive to exercise market power decreases. PPAs are defined in terms of physical and financial conditions. The physical dimensions are the minimum and maximum quantity of energy to be sold or purchased, the relevant input or offtake node on the transmission grid, and the relevant time periods. The financial dimension of the trade specifies the derivation of the final price for electricity traded under the contract.

114. A small quantity of total generation is hedged in New Zealand. Recent data provided to the Electricity Commission indicates that hedge contracts covered approximately 24 per cent of electricity generated in the year to March 2008. Analysis undertaken during this investigation and presented in paragraph 363 concurs.[37]

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35 See Appendix 2 of the Wolak Report for further details.

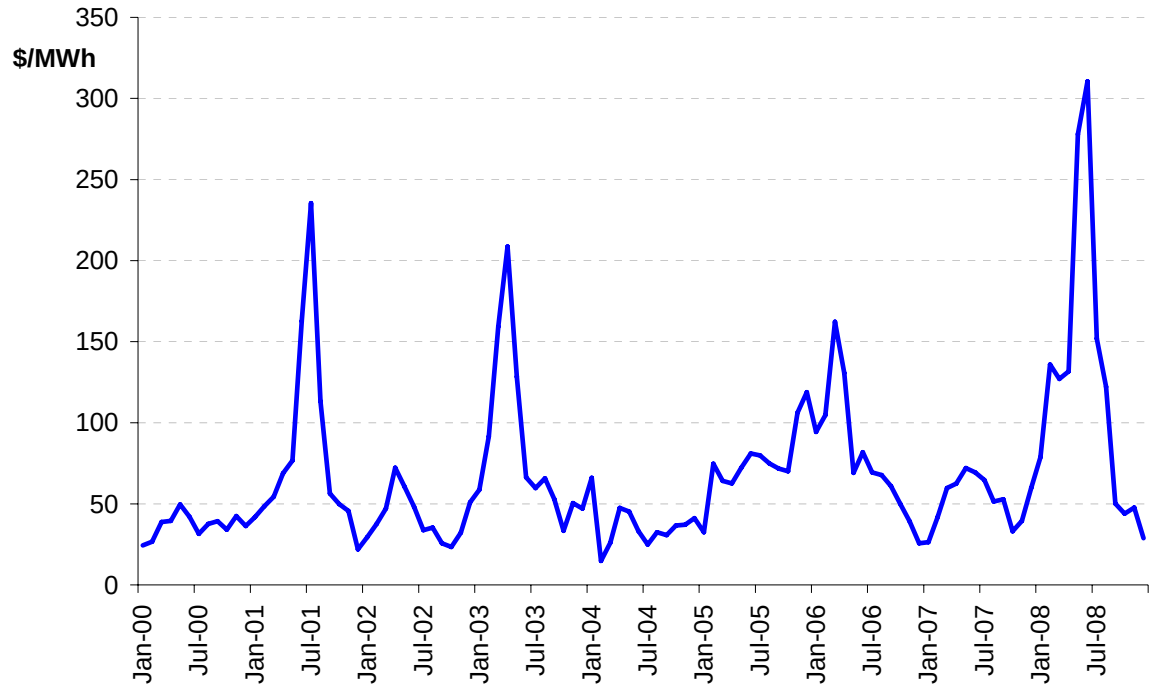
36 This is called single-settlement of nodal prices.

37 Electricity Commission, Hedge Market Issues Paper – A Qualitative and Quantitative Study, February 2008, p 9. The report states that: "[g]entailer respondents in this [UMR survey on the hedge market] had an aggregated total average load of 36, 730 GW/h and a total annual generation of 42,022 GW/h for the year ending March 2008. Of this, the combined total volume of hedges sold for the year to March 2008 was 10,311 GW/h."

115. Prices in the wholesale market vary according to supply offers, demand quantities, and system conditions.

116. Figure 4 below shows a three-month moving average of the daily price. Extremely high prices are evident in 2001, 2003 and 2006. Although prices in 2001 and 2003 reached higher peaks than in 2006, they remained at these high levels for a shorter period of time and then returned to below $50/MWh. In contrast, in 2005 and 2006 the average price remained well above $50/MWh for almost two years. In 2008, prices spiked to above the levels seen in 2001 and 2003.

Figure 4: Mean wholesale price, 2001-08



Source: Electricity Commission

Transmission

117. The electricity transmission system is owned by Transpower, an SOE. The transmission grid is the physical backbone of the electricity system, and comprises switchgear (substations), high voltage cables, transformers and overhead lines. This transmits high voltage electricity from GIPs at generating stations to GXPs, at which transformer substations reduce the voltage of electricity for distribution on local lines networks to end-users.

118. The transmission grid consists of two alternating current (AC) subsystems, one in each of the North and South Islands. These two subsystems are connected by a high voltage direct current (HVDC) link, which runs from Benmore in the South Island to Haywards in the North Island. The transmission grid in New Zealand is, compared to overseas networks, long and thin. It comprises a backbone of higher voltage cables that allow south-north carriage of electricity. Lower voltage cables connect this backbone to local distribution networks located away from the backbone. This grid pattern reflects the topography of this country, and the location of the major demand centres and key hydro and gas generation stations. New Zealand has a relatively small number of large

demand centres (especially the Auckland region), which are generally geographically distant from much of the country's generation resources.

119. Any transmission grid is subject to limits on the amount of electricity that it can transmit. Breaching these limits can cause lines to melt or stretch and sag, damaging the grid. To mitigate the risk of such occurrences, Transpower (as grid owner) specifies the maximum current flow rate possible on lines. The system operator then uses complex computer software programs to model the consequences of various generation and demand scenarios, and uses the output of this modelling to inform how much each generator should be instructed to generate. If a particular transmission line exceeds its security limit and becomes constrained, then the system operator may be forced to reallocate generation between stations and thereby reduce flows on particular links of the transmission system.

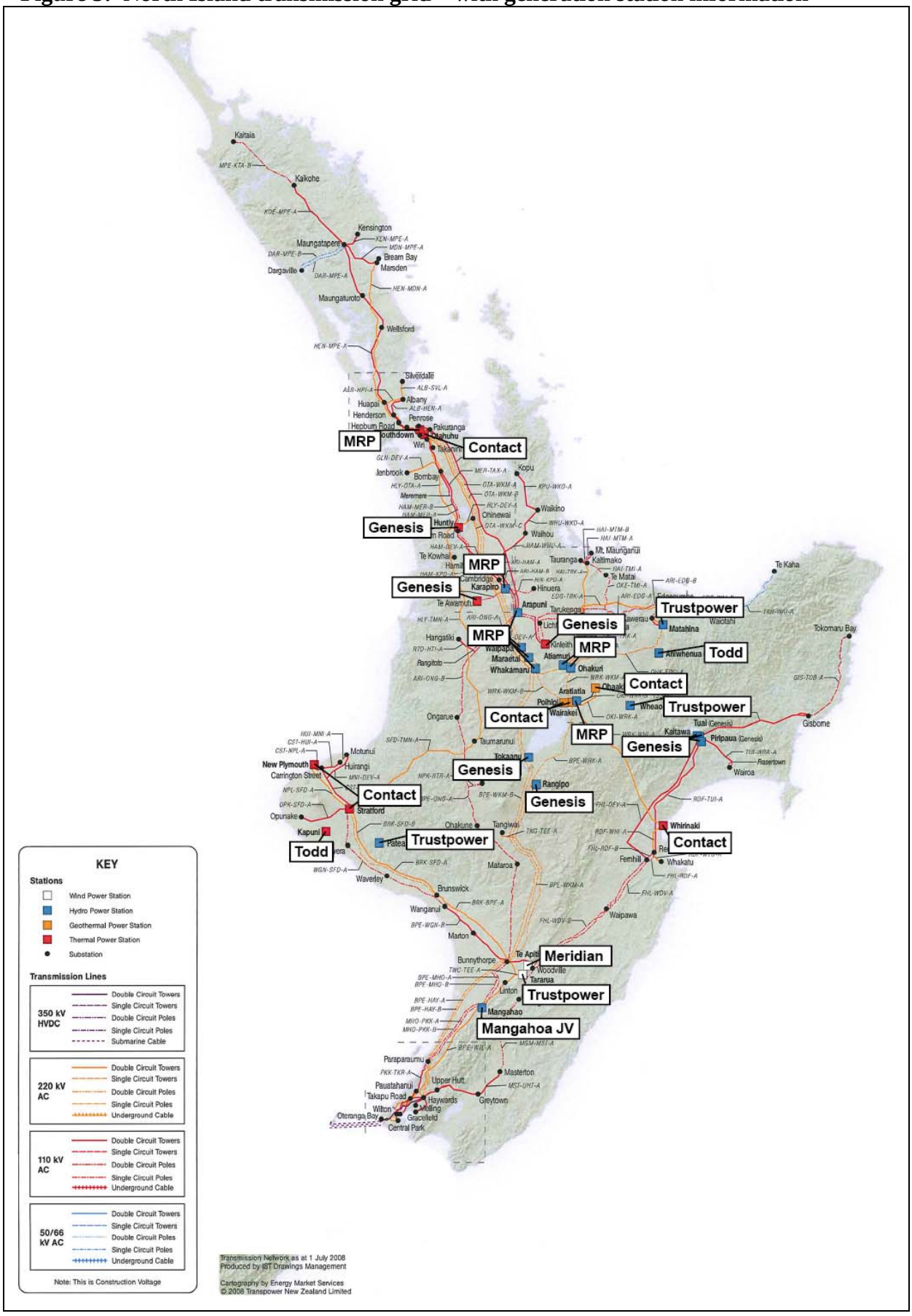
120. Transmission constraints can result in geographical areas 'separating'. This can potentially lead to higher wholesale market prices at either or both ends of the transmission constraint due to changes in the amount of supply able to meet demand in the constrained area, as well as due to the possible loss of competitive constraint between the two areas. This potential difference in pricing exposes each gentailer to the risk that the price received for its generation will be lower than the price it pays on the other side of the constraint for electricity. This is called 'nodal price risk', or 'basis risk'. This risk is particularly acute when the locations of a gentailer's generation and retail base differ, especially if there is an intervening constraint that frequently binds.

121. In New Zealand, a number of regions in the transmission grid have historically been prone to transmission constraints, due to remoteness, the limited number of lines linking the region with the grid backbone, and the limited amount of generation capacity within the region itself. Such regions include Northland, the Bay of Plenty, Marlborough / Nelson and the West Coast. There are also several areas that at times have difficulties transmitting electricity out of the region to other demand centres. Such areas include the central North Island, Taranaki and the lower South Island.

122. One of the most significant constraints in recent times has been the HVDC linking the North and South Islands. The HVDC is made up of two AC/DC conversion stations (or poles) at either end of the transmission cable. In September 2007, Pole 1, with a transmission capacity of 540 MW was stood down by Transpower, significantly constraining the amount of electricity able to be transmitted from one Island to the other. Since that time the transmission capacity of Pole 2 has been increased from 500 MW to 700 MW, and Pole 1 has been reconfigured to allow it to operate on a limited basis (at a transmission capacity of 270 MW) during peak or emergency periods.

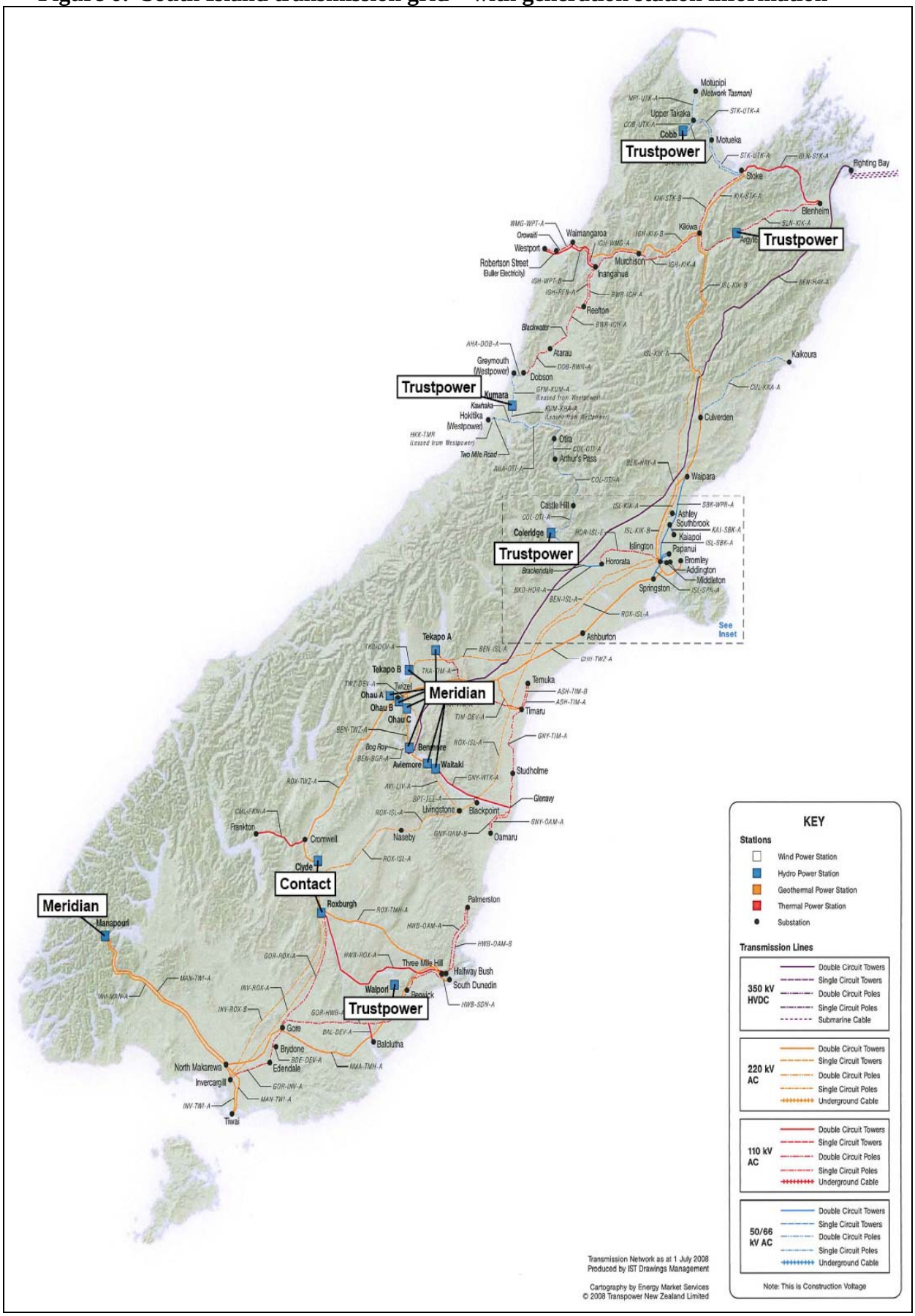
123. Figure 5 and Figure 6 below show the transmission grid across the two islands.

Figure 5: North Island transmission grid – with generation station information



Source: Transpower New Zealand Limited with Commerce Commission amendments

Figure 6: South Island transmission grid – with generation station information



Source: Transpower New Zealand Limited with Commerce Commission amendments

Distribution

124. There are approximately 28 electricity distribution businesses (EDBs) ranging in size from 5,000 to nearly 500,000 electricity connections.[38] The EDBs distribute low voltage electricity via the local networks to commercial and domestic consumers. The distribution networks are connected to the national grid at the GXPs. Generally, the EDBs sell their distribution services to retailers, who manage the electricity supply agreements with end-users. Some commercial and industrial consumers contract directly with EDBs for electricity supply.

125. The ownership of the EDBs is a mix of public listings, shareholder co-operatives, community trusts and local body ownership. Most EDBs are owned by trusts.

126. Since the initial introduction of EIRA in 1998, amendments have allowed EDBs to own some generation capacity, and to sell the output from those stations.

Retail

127. Retailing of electricity involves the supply of electricity to residential and small commercial and industrial customers. Electricity is purchased from the wholesale market, and so may derive from a vertically integrated gentailer's own upstream generation arm, or may have been supplied into the wholesale market by another generator. The retailer also pays the distribution company for distribution and transmission services,[39] which are passed on to end customers as components of their retail bill. Retailers typically charge for energy at a rate not directly linked to the wholesale price. Retailing of electricity is almost entirely carried out by gentailers.

128. EIRA required full ownership separation between the distribution network and retail functions of the then integrated businesses. The businesses therefore had to choose which function was retained and which would be sold as a separate business. All (apart from TrustPower) chose to keep the distribution function and became EDBs. As there was and is no prohibition on joint ownership of generation and retail businesses, the generation and retail functions of the supply companies were separated and sold, mainly to the existing generation companies. Over the following years a number of retail-only companies exited the market, and a number of customer swaps occurred between gentailers, seemingly to better align the location of entities' generation and retail operations.

129. The current main retailers are the same companies that are the main generators, namely: Contact, Genesis, Meridian, Mighty River Power and TrustPower. These companies retail approximately 96 per cent of the electricity purchased in the wholesale market. The remaining 4 per cent is purchased by a number of smaller retailers, including: BoPE, Bosco Connect Limited, Energy Direct NZ Limited (an independent trading division of Wanganui Gas Limited), EZY Networks, KCE, Nova Energy Limited, Pulse Utilities New Zealand Limited and Simply Energy.

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[38] Transpower provides a map of lines company boundaries on its website, at http://www.transpower.co.nz/f1010,109235/109235_lines-company-boundaries-nz.pdf

[39] Transmission charges are then passed on by the distribution companies to Transpower.

6. MARKET DEFINITION

Introduction

130. Markets are defined for the purpose of assisting in the analysis of competition and market power.

131. Section 3(1A) of the Commerce Act defines a market as:

> …a market in New Zealand for goods or services as well as other goods and services that, as a matter of fact and commercial sense, is substitutable for them.

132. In Telecom Corp of NZ Ltd v CC the High Court stated:[40]

- a market is the area of close competition between firms and the field of rivalry between them; and
- within a market there is the possibility of substitution on both the demand and supply sides in response to a small yet significant and non-transitory increase in price (SSNIP), assuming all other terms of sale remain constant.[41]

133. When defining the relevant markets, the Commission may consider five distinct characteristics or dimensions:[42]

- the goods or services supplied and purchased (the product dimension);
- the level in the production or distribution chain (the functional dimension);
- the geographic area from which the goods or services are obtained, or within which the goods or services are supplied (the geographic dimension);
- the temporal dimension; and
- the customer dimension.

134. Market definition is not an end in itself, but is a tool to assist with the analysis of the conduct at issue. In this instance, the Commission is seeking to define markets in a way that facilitates an assessment of: the existence and extent of market power; whether any firm has taken advantage of market power for a proscribed anti-competitive purpose; and whether any agreements have had the purpose, effect or likely effect of substantially lessening competition.

135. The Commission has undertaken previous investigations and determinations in the electricity sector that have required definition of the relevant market(s), and this experience has been used to inform the Commission's market definition assessment in the current investigation.[43] The Commission is also aided by the analysis contained in

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40 *Telecom Corp of NZ Ltd v Commerce Commission* (1991) 4 TCLR 473, 501-502.

41 For the purpose of determining relevant markets, the Commission will generally consider a SSNIP to involve a five percent increase in price for a period of one year. See Commerce Commission, *Merger and Acquisition Guidelines*, page 15. For assessing anti-competitive behaviour, the relevant benchmark is the hypothetical competitive price rather than the prevailing price. Since it is usually unclear what the competitive price would be, the SSNIP test is primarily used in anti-competitive practice investigations as a conceptual framework for considering the various substitution possibilities, rather than as an empirical framework.

42 Commerce Commission, *Mergers and Acquisitions Guidelines,* 1 January 2004.

43 Commerce Commission, *Decision No. 270: Natural Gas Corporation of New Zealand Limited/Enerco New Zealand Limited*, 22 November 1993; *Decision 330: Natural Gas Corporation/Powerco Limited*, 11 November 1998; *Decision 333: Contact Energy Limited/Enerco New Zealand Limited*, 10 December 1998; *Decision 340: TransAlta Corporation of Canada/Contact Energy Limited*, 12 February 1999; *Decision*

the Wolak Report and its Appendix 2, through its direct focus is on market power rather than on market definition.

136. The following section sets out the Commission's assessment of the relevant market at the wholesale retail levels.

Product Dimension

Introduction

137. At the heart of market definition is product substitutability. The first step in defining a market is to identify a group of products or services that consumers consider to be substitutable for each other. The greater the extent to which one good is substitutable for another, the greater the likelihood that those goods compete in the same market.

138. In analysing the relevant product market, the Commission examines whether there are possible substitutes from both demand- and supply-side perspectives. The Commission has considered:

- whether other energy forms (such as natural gas, liquefied petroleum gas (LPG), coal and wood) are sufficiently substitutable for electricity to be placed in the same product market;
- whether the sale and purchase of physical electricity in the wholesale market and the sale and purchase of derivative contracts are in the same relevant market; and
- whether electricity and ancillary services necessary to manage a power system in real-time are in the same relevant market.

Electricity and other energy forms

139. There are a range of energy forms in addition to electricity. These include natural gas, LPG, coal, wood waste and fuel oil. If these other energy forms were close substitutes for electricity, any attempt by an electricity generator to profitably raise prices above competitive levels would likely be defeated by consumers switching to another energy form, even if there were limited competition in electricity generation.

140. In previous decisions the Commission has found that other energy forms are substitutes for electricity in certain circumstances. However, in the main, consumers substitute between energy forms only when their energy consuming plant or appliance reaches the end of its economic life. Therefore, the Commission has considered the other energy forms to be "at best imperfect substitutes", and not to be regarded as being within the same product market as electricity. These findings are consistent with court judgments,[44] and with the normal view of overseas competition authorities. The Commission has not found reason to change its position in this investigation.

141. The Commission is of the view that for the purpose of the current investigation, electricity should be in a separate market from other energy forms.

345: United Networks Limited/TransAlta New Zealand Limited, 11 March 1999; *Decision 380: United Networks Limited/Orion New Zealand Limited*, 23 December 1999; *Decision 476: Genesis Power Limited/Energy Online Limited*, 10 October 2002; and *Decision 491: Contact Energy Limited/Natural Gas Corporation Holdings Limited*, 4 February 2003.

[44] *Power New Zealand Ltd v Mercury Energy Ltd* (1996) 1 NZLR 686 at 704 (HC) upheld by the Court of Appeal; and *Shell (Petroleum Mining) Company Limited v Kapuni Gas Contracts Limited* (1997) 7 TCLR 463 at 527.

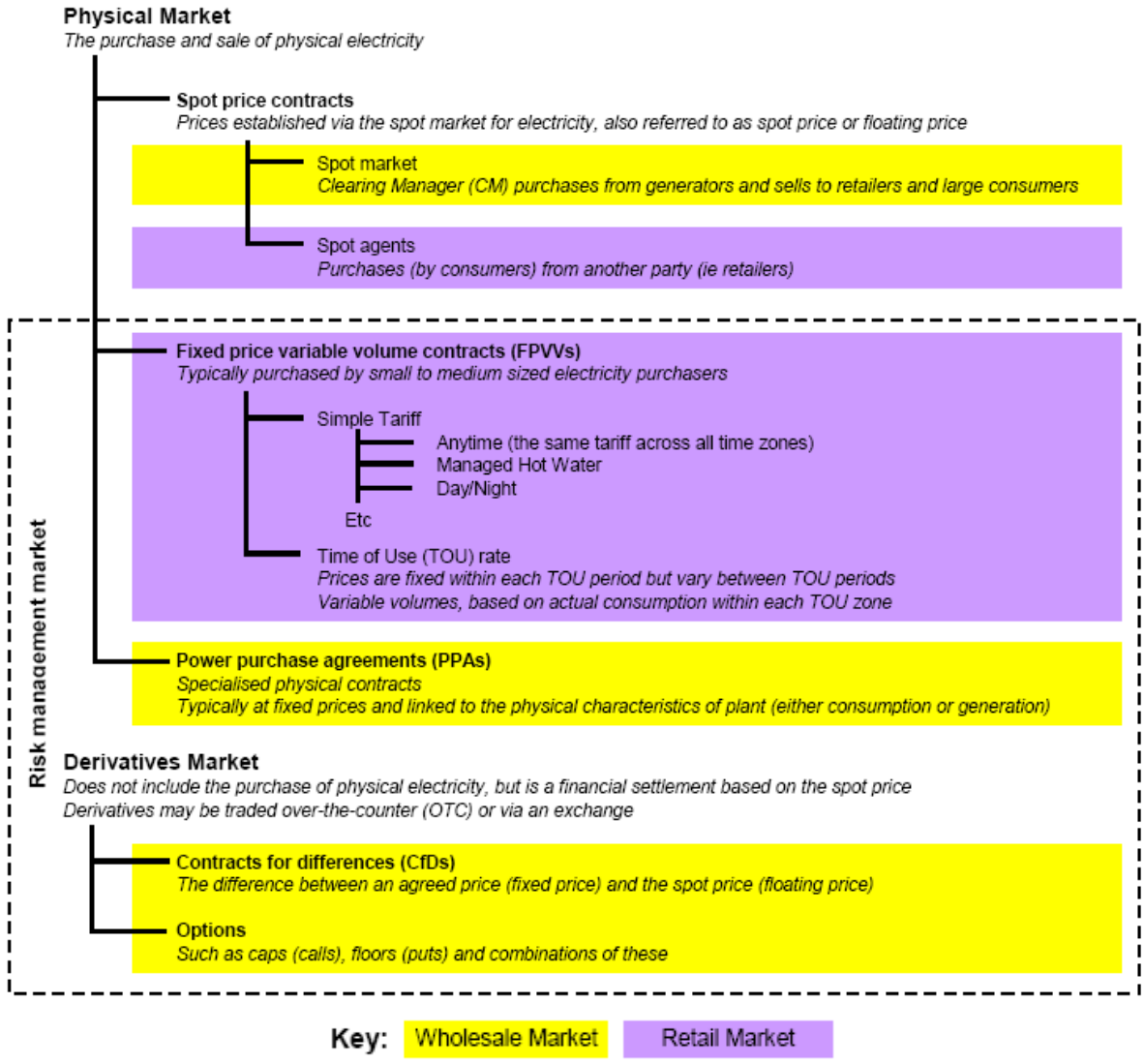
The sale and purchase of physical electricity and derivative contracts

142. At the heart of the wholesale market is the spot market. The great bulk of electricity generated is offered into the spot market by generators, and is acquired via the market's Clearing Manager by retailers and a small number of large electricity users at prices determined by supply and demand during each half hour period.

These supply and demand conditions can vary from period to period, sometimes in an unpredictable unpredictable manner. Thus, the spot price can be quite volatile. Both buyers and sellers of electricity sellers of electricity may prefer to avoid the risk associated with exposure to this volatility. There are a volatility. There are a number of risk management mechanisms and contracts that buyers and sellers can buyers and sellers can use to manage these risks.

143. Figure 7 below, shows the relationship between the physical market, risk management market and the derivatives market.

Figure 7: Relationship between the different electricity product markets



Source: Electricity Commission, 18 July 2006, Hedge Market Development – Issues and Options: Technical Paper

144. Risk management contracts commonly used in New Zealand include:

- fixed-price variable volume contracts; and
- power purchase agreements (PPAs), which may be either at a fixed or variable price; with the latter often linked to the spot market price.

145. Fixed-price variable volume contracts are for the sale and purchase of physical electricity, and are typically utilised by electricity retailers and small-to medium-sized electricity consumers. The contract can include both simple tariffs (e.g. domestic tariffs) and time-of-use rates (where prices are fixed within each different time-of-use period and consumption can vary within and between periods).

146. Power purchase agreements (PPAs) are specialised contracts for the sale and purchase of physical electricity between a generator and a consumer. The Electricity Commission estimated in 2006 that approximately 20 to 25 per cent of the electricity generated in New Zealand was covered by power purchase agreements.[45] The Commission's own analysis, presented at paragraph 362 supports this finding. PPAs contain physical and financial dimensions. The physical contract details specify the quantity of energy to be bought or sold, and the relevant node and time period(s). The financial dimension specifies the price attached to the PPA.

147. The most common financial derivative instrument in New Zealand is known as a CfD. A derivative contract is a financial instrument whose value is derived from the price of another asset (e.g. the spot market price of physical electricity). Such a contract results in an obligation for one party to pay money to another. It does not result in the delivery of electricity, and so may be a free-standing financial derivative contract linked to price changes at certain nodes, but in practice is often linked to a PPA. CfDs and fixed-price PPAs are referred to using the umbrella term 'hedge contract'[46].

148. As fixed-price variable volume contracts and PPAs encompass the sale and purchase of physical electricity, the physical component of the contract, the energy, is considered to form part of the electricity product market.

149. At issue is whether, for the purpose of considering the matters before us, the Commission should consider the sale and purchase of derivative contracts as being within the same product market as the sale and purchase of physical electricity through the wholesale spot market.

150. When discussing market definition in the Loy Yang case, which related to the Australian wholesale electricity sector, French J stated in the Australian Federal Court decision:

> The generators and retailers operate in a kind of 'virtual reality' of sale and purchase whose rules are defined by the bidding, spot pricing and dispatching mechanisms and the derivative contract arrangements which are an essential aspect of the relationship between participants. There is a degree of unreality involved in separating out and identifying separate markets for the sale of electricity and the provision of derivative contracts. Although there are some loose, but not entirely appropriate, analogies between the derivative contract and a form of insurance in my opinion, for present purposes the derivative contracts ought to be regarded as an integral part of the pricing and payment arrangements between generators and

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45 Electricity Commission, *Hedge Market Development – Issues and Options: Technical Paper*, 18 July 2006, p 14.

46 See Electricity Commission, *Hedge Market Development – Issues and Options: Technical Paper*, 18 July 2006, p 25 for the terminology of risk management mechanisms.

> retailers in relation to the underlying product, which is electrical energy, and which they deal with 'as if' it had been sold from supplier to retailer. [47]

151. The Australian situation described by French J appears reasonably analogous with that in New Zealand for the wholesaling of electricity.

152. However, the Commission recognises that financial derivative contracts and physical electricity sales have quite different characteristics, and clearly are not substitutable on the demand side.[48] Further, financial payments under hedge contracts can occur independently of whether the buyer and seller actually buy or sell electricity in the spot market.

153. The Commission therefore considers in this case it is appropriate to place the risk management tool of derivatives contracts, and the sale and purchase of the physical product - wholesale electricity, in separate product markets.

Electricity and ancillary services

154. A further product market question concerns whether the sale and purchase of electricity and the sale and purchase of ancillary services are in the same relevant market.

155. Ancillary services encompass a number of services that are necessary for the reliable supply of electricity. These include: instantaneous reserves; frequency control reserves; over-frequency arming; voltage support; and black start.[49]

156. To be in a position to provide these services, the system operator must enter into contracts mainly with generators. In most cases, these contracts are with generators that have stations with particular capabilities, such as the station's ability to generate additional output very quickly. Such a generator is able to offer the same generating capacity either into the spot market, or as instantaneous reserves into the reserves market. The System Operator is responsible for ensuring that the combined quantity of its dispatch instructions for energy and instantaneous reserves do not exceed the capacities of the individual generating stations.

157. There is some supply-side substitutability between electricity generation and ancillary services. In the event of relative price changes, a generator may have an incentive to switch between offering generation capacity solely into the spot market, to offering it for ancillary services, such as generation reserves. However, not all generators have plant that is sufficiently responsive to provide ancillary services, so that supply-side substitutability may be quite limited. On the demand-side, obviously there is no substitutability between electricity supply and generation held in reserve.

158. Ancillary services were placed in a discrete market in the Commission's Decision 369 relating to common quality standards for electricity. Further, the Electricity Commission in its "Market Design Review – Issues Paper" suggested that the prices of ancillary services were approximately $85 million a year in 2007,[50] and had been increasing at a faster rate than those for wholesale electricity. This appears to be consistent with them being in separate markets.

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47 *Australian Gas Light Company v Australian Competition and Consumer Commission* (No. 3) [2003] FCA 1525, para 382.

48 Hedge contracts might instead be considered a complement to energy sales and purchases.

49 Commerce Commission, *Decision No. 369: Transpower New Zealand Limited*, 13 August 1999, p 23, para 106; and *Decision No. 473; The Electricity Governance Board Limited*, 30 September 2002, p 45, para 214.

50 Electricity Commission, *Market Design Review, Issues Paper – Survey of Market Performance*, 21 May 2007, page 62.

159. The Commission has followed its approach in Decision 369 and placed ancillary services in a discrete market. As ancillary services are not directly relevant to the current matters before the Commission, this market will not be considered further below.

Conclusion on Product Markets

160. The Commission considers that the relevant product markets are:

i. electricity; and

ii. derivatives contracts (or 'forward ' or 'hedge' contracts), for electricity. For the purposes of the current matters before the Commission, the hedge market is deemed to comprise both power purchase agreements and related financial derivatives.

Functional Dimension

Introduction

161. The production, distribution and sale of a product typically occur through a series of functional levels, conventionally arranged vertically in descending order. In assessing the appropriate functional levels, the Commission considers factors such as the observed structures of seller-buyer relationships. Generally, the Commission identifies separate relevant markets at each functional level.

162. Between generation and consumption, electricity passes through a number of functional levels. The Commission has previously considered the generation/wholesale, transmission, distribution and retail functional levels.

163. As noted above, the matters currently before the Commission relate to the generation/wholesale of electricity. While the retail sector has an important influence on the upstream wholesale sector, those influences can be taken into account fully without defining precise retail markets. The transmission and distribution functions are not directly relevant to the matters currently being considered, although it has already been noted that transmission constraints may impact on wholesale prices.

Conclusion on functional dimension

164. The functional level of relevance is that for the wholesaling of electricity, this being the functional level where generators transact with retailers and large electricity users. These transactions encompass spot market transactions, but also include bilateral transactions and associated hedges.

165. The functional market also encompasses electricity supplied by embedded generators, although these account for only a small proportion of the total wholesale market.

Geographic Dimension

Introduction

166. The Commission defines the geographic dimension of a market to include all of the relevant, spatially dispersed sources of supply to which buyers would turn should the prices of local sources of supply be raised.

167. A geographic market is defined as an area of effective competition, or the area within which consumers of a product or service can source an alternative supplier. In assessing the geographic dimensions of markets, the Commission considers a range of factors,

including the extent to which the prices of a product in different geographic areas move in unison.[51]

168. Different geographic dimensions may be defined for each product and functional market under consideration. The scope of the geographic market can vary both over time, and depend on the issue under consideration.

Geographic dimensions of the wholesale electricity supply market

169. The spatial nature of New Zealand's electricity market is a dimension which differentiates it from other markets. Geographic distances vary between generation sites and load centres. Transmission constraints may impact upon the ability to move generation around the country.

170. The Commission has previously considered the generation and wholesaling market to be a national one, for although nodal offtake prices vary across the country reflecting lines losses, the generation and transmission network connections between them ensure that none individually can be considered to constitute a separate market. For example, higher prices in the North Island were not considered to indicate separate Island markets, as transmission constraints were not viewed to occur on a sufficiently regular and predictable basis to support that contention.[52]

171. In the Australian Loy Yang case, Justice French considered the temporal aspect of geographic market definition, and had the following to say about the geographic dimension of the Australian National Electricity Market (NEM):

> The geographic market is not to be determined by a view frozen in time or by observations based on shortrun time scales. The NEM is an evolving market which is intended and designed to operate as a single market for electricity throughout the regions which it covers. Transient price separations between those regions may define temporally limited sub-markets which can be referred to for the purposes of competition analysis. And they may well attract the appellation 'market' in the ordinary parlance of suppliers and retailers operating within them. In my opinion, however, having regard to the structure of the market and the extent to which its major participants operate across regional boundaries, I am satisfied that there is one NEM-wide geographic market for the supply of electricity, and associated with that, entry into electricity derivative contracts.[53]

172. It could be argued that Justice French's reasoning is even more compelling in the New Zealand context, given that we have only two networks (one on each Island) connected by a large interconnector (the HVDC), rather than the five interconnected regions comprising the Australian NEM.

173. The non-storability of electricity, and the need constantly to match demand and supply, means that the geographic scope of the market is dependent on the conditions of the transmission network, which can change rapidly if constraints emerge. A narrower geographic market was defined during a 2005 investigation report into behaviour in the upper part of the South Island. As the area had traditionally suffered (and continues to suffer) a greater number of periods in which transmission into the area is constrained

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51 Commerce Commission, *Merger and Acquisition Guidelines,* 1 January 2004, p 18.

52 Commerce Commission, *The Investigation into the Acquisition by Meridian of the South Island Retail Electricity Customer Base of On Energy*, 10 April 2003.

53 *Australian Gas Light Company v Australian Competition and Consumer Commission*, above n 47, para 387.

than in other areas, the relevant market was defined as that for the generation/wholesale of electricity in the upper South Island.[54]

174. Given that particular transmission conditions are repeatedly observed during certain time periods, there may be grounds for defining the geographic market for different time periods of the day, or across peak and off-peak periods, or across seasons.

175. Analysis provided by Professor Wolak in December 2006 presented a correlation analysis of nodal price movements in the wholesale electricity market, which provides evidence of the extent of the relevant geographic market.[55] By design, the price at every node would be equal in a wholesale electricity pool market with no transmission constraints or lines losses. The existence of constraints and losses will cause prices at different nodes to vary. Correlation analysis measures the degree to which two time series (which in this case are the prices at two nodes) move together over time. If the prices at two locations were highly correlated, they would fall in the same market. In contrast, if the prices at two locations were to exhibit a lower correlation, they would likely fall in separate markets. However, there exists no definitive threshold for how high the correlations have to be for two locations to be in the same market.

176. The analysis demonstrated that the correlations between pairs of nodal prices within the same Island are extremely high (in many cases the correlation coefficient is greater than 0.99), while those between pairs of nodal prices across the North and South Islands are slightly less, but still very close to one. For example, in the two years with the highest prices (2001 and 2003), most of the correlation coefficients of nodal prices across Islands are greater than 0.9, showing that even during those drier years, prices on average were very similar. This is consistent with the view that geographic market segmentation was not a frequent occurrence.

177. It was found that at certain times transmission constraints on various parts of the transmission network can result in significantly different nodal prices on either side of the constraint. In these situations the correlations between these nodes will likely be lower, indicating that the prices are no longer closely comparable. This suggests that it could be appropriate to define geographically distinct markets for a period of time, most likely to be the period of the constraint. An example of such a constraint might be the non-operation (or significant reduction in capacity) of the HVDC link joining the North and South Islands. For example, in 2004 the correlation coefficients within Islands were low, and between Haywards and Benmore were extremely low (at 0.169).

178. The nodal pricing correlation analysis concluded that the overall results from the correlation analysis provide strong evidence that nodal prices are sufficiently close that a single integrated wholesale market exists for the vast majority of the half-hours of the year.

179. While closer analysis of the wholesale pricing data could illuminate further the possibility of geographic markets varying with system conditions, the Commission has elected to adopt the most conservative approach, that being to define a national wholesale electricity market. This approach does not preclude using a narrower geographic market definition in future if appropriate on the basis of the facts in question at the time.

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[54] Commerce Commission, *Contract between Meridian Energy Limited and TrustPower Limited Investigation Termination Report*, 25 May 2005.

[55] See Appendix 2 to the Wolak Report.

180. Hedge contracts, or forward contracts, for wholesale electricity are usually signed with prices linked to the main reference nodes of Benmore and Haywards. However, such contracts are also signed with reference to other nodal prices. The Commission recognises that for areas situated behind temporal supply constraints, contracts signed with reference to other nodes may not represent an adequate substitute for a contract signed at the node of preference. However, for the purposes of the current matters before the Commission, the hedge market is conservatively defined as national in scope.

Conclusions on the geographic dimension

181. The Commission is of the view that for the purpose of this investigation, the relevant geographic market is that for the national wholesale supply of electricity.

182. The hedge market is also defined as a national market.

Temporal Dimension

Introduction

183. Most markets operate continuously over time. However, where a market is characterised by highly seasonal transactions, or where market conditions vary within definable periods (e.g. peak and off peak), it may be appropriate to consider these periods as falling into separate markets. The temporal market dimension may be thought of as an extension to the product dimension.[56] As noted above, temporal considerations may also inform the geographic market definition.

Temporal dimensions of the national wholesale electricity supply market

184. Electricity is a unique commodity as it cannot economically be stored. This means that it cannot be bought in one period and then sold (or used) in another, which prevents arbitrage between periods, and allows prices at different times of the day, days of the week, and months of the year to behave very differently.

185. The spot market determines the price that applies for each half hour period, according to supply and demand conditions in each period. As demand and supply changes significantly across peak and off-peak periods, weekdays and weekends, and seasonally, prices can change accordingly.[57] Demand patterns can vary in a predictable manner between weekdays and weekends, and during different seasons (e.g. winter months tend to exhibit higher demand as electricity is used for heating). In addition, end-users seem to be resistant to switching their consumption between time periods. Supply conditions can also vary over time, reflecting such factors as rainfall and snow melt for hydroelectric generators, and temperatures affecting the transmission system (e.g. metal expands and so a greater 'line sag' occurs in summer, changing the transmission system conditions). Such considerations have led some to discuss the possibility of defining temporal product markets for every half-hour settlement period, or for certain periods (e.g. peak and off-peak periods, day of week, or seasons) may be appropriate. For example, staff of the United States Federal Trade Commission have commented:

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[56] "Market Definition: Understanding Competition Law", Competition Law Guideline, UK Office of Fair Trading (2004).

[57] Analysis contained in the Wolak Report underpins this view. The findings detailed in Section 4 of the Wolak Report, show that the residual demand faced by each supplier varies in a significant and persistent manner over the 48 daily time periods of the New Zealand wholesale electricity market.

> We have found that each segment of time constitutes a separate product market and that the size and shape of the associated relevant geographic markets vary greatly depending on the geographic patterns of demands, fuel costs, and other factors.[58]

186. The Commission considers that market conditions can vary considerably over time, and that this could justify the use of a temporal dimension to market definition. This view is supported by the quantitative evidence provided to the Commission which finds that market power is most commonly exercised under certain market conditions.

187. However, the Commission's view in the electricity cases it has previously considered is that the definition of a temporal dimension has not been necessary, and would have unnecessarily increased the complexity of the competition analysis.

188. In this investigation, the focus is on the existence, cause and extent of market power, and this requires results that are aggregated over a period of time. This is in effect the approach taken by the methodology employed in the quantitative evidence presented by Professor Wolak.

Conclusion on the temporal dimension

189. The Commission considers that for the purposes of this investigation it is not necessary to formally define a temporal dimension to the wholesale electricity market, but it will take into account any variations in the extent of competition over time in its market power analysis below.

Customer Dimension

Introduction

190. The Commission has also examined the extent of, and potential for, suppliers (or acquirers) to discriminate between customers (or suppliers, as relevant) within identified relevant markets. Where a significant group of buyers within a relevant market is likely to be subject to price discrimination, the Commission considers whether it would be appropriate to define additional markets based on particular groups of buyers, or buyers in a particular geographic area that are captive to those products, and in the face of a price increase, would be unable to switch.

191. In this instance it is recognised that different customers can be in different situations when acquiring electricity at the wholesale level. For instance: large industrial customers may be in position to negotiate bilateral contracts; most retailers are vertically integrated with generators, and therefore have a 'natural hedge'; other retailers may feel the need to have a separate hedge arrangement to lessen the risk they would face if they were fully exposed to the spot market; and so on.

192. The Commission considers that these differences and their implication for market power analysis can be fully taken into account without the need to add a customer dimension to the market definition.

Conclusion on the customer dimension

193. The Commission does not consider it necessary, for the purpose of this investigation, to define a customer dimension for the wholesale market.

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[58] "Remedying Undue Discrimination through Open Access Transmission Service and Standard Electricity Market Design, Docket No. RM01-12-000", *Comment of the Staff of the Bureau of Economics and the Office of the General Counsel of the Federal Trade Commission* (2002)

Retail Market

194. The Commission's investigation has focussed on the wholesale level, but has pursued lines of inquiry at the retail level. Given our conclusions regarding these inquiries, some aspects of the retail market definition are left open.

195. Depending on the facts at the time and the question at hand, the Commission has previously defined the related customer and geographic dimensions of the retail market in one of two ways:

- separate markets for the regional sale of electricity to domestic retail customers (including small commercial customers), and the national sale of electricity to large commercial / industrial customers that have individual contracts with electricity retailers;[59] or
- a national market for retail customers,[60] while noting that in some circumstances it may be appropriate to adopt narrower regional markets.[61]

196. The Commission has not needed to reach a conclusion on these questions to assess the issues at hand,[62] nor on the temporal dimension of the market. Temporal market definition is unlikely to be a significant factor relevant to the retail market definition for residential and small commercial customer. Generally only the charges to larger industrial ('Time of Use') customers relate to the time of consumption. The Commission does not need to conclude on this in the present case.

197. For the purpose of this Report, and the outcome of the breach analyses relating to retail markets, the Commission has not considered it necessary to define a relevant retail market or markets.

Conclusion on Market Definition

198. The Commission concludes that the markets relevant to the breach analyses undertaken in this investigation are the:

- the national wholesale market for the supply and purchase of electricity; and
- the national market for the supply and purchase of hedge contracts, or forward contracts, for wholesale electricity.

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59 Commerce Commission, *Empower / TrustPower Section 47 Investigation Report*, 19 March 2004, para 47. This was also the Commission's general approach prior to the introduction of the Electricity Industry Reform Act 1998.

60 Commerce Commission, Decision No. 333: *Contact Energy Limited / Enerco New Zealand Limited*, 10 December 1998, paras 40-41; Commerce Commission, Decision No. 340: *TransAlta Corporation of Canada / Contact Energy Limited*, 12 February 1999, paras 71-73; Commerce Commission, Decision No. 387: *Natural Gas Corporation Holdings Limited and TransAlta New Zealand Limited*, 17 March 2000, paras 47-49; Commerce Commission, *Genesis / On Energy* Section 47 Investigation Report, 10 April 2003, para 85; Commerce Commission, Decision No. 476: *Genesis Power Limited / Energy Online Limited*, 10 October 2002, para 67; and Commerce Commission, *Termination Report – Investigation into On Energy's Exit From Electricity Retailing*, 4 November 2002, para 52.

61 For example, *Genesis / On Energy*, above n 60, para 81.

62 In *Commerce Commission v Bay of Plenty Electricity* (Unreported, 13 December 2007, Clifford J and Professor Richardson) at paragraph 541 the Court considered that the Commission failed to establish the existence of a local retail electricity market. However, the Court did not make affirmative findings on the appropriate market definition and noted the possibility of a local market existing.

7. SECTION 36 ANALYSIS

Introduction

199. Section 36 of the Commerce Act contains a general prohibition on unilateral conduct by parties with substantial market power that has the purpose of reducing or hindering competition. This part of the report first outlines the Commission's view on the appropriate legal framework, and then assesses the market power of the gentailers. Finally, the alleged breaches of act are assessed against the legal framework.

Substantial Degree of Market Power

Introduction

200. Section 36(2) of the Act states:

> A person that has a substantial degree of power in a market must not take advantage of that power for the purpose of—
>
> (a) restricting the entry of a person into that or any other market; or
>
> (b) preventing or deterring a person from engaging in competitive conduct in that or any other market; or
>
> (c) eliminating a person from that or any other market.

201. There are three key elements which must be established in order to prove a breach of s 36:

- substantial degree of market power;
- take advantage of; and
- a proscribed purpose.

202. This section outlines:

- the Commission's approach to defining market power;
- what it considers to be substantial market power; and
- how the substantiality of market power is assessed.

Defining market power

203. Market power has been described as "power which enables a corporation to behave independently of competition and the competitive forces in a relevant market",[63] and as the "absence of constraint from the conduct of competitors or customers".[64] According to the courts, the critical test for market power is the ability of a firm to raise prices above competitive levels without rivals taking away customers in due time.[65] In *Boral*, the Court went on to note the importance of pricing:

> Pricing may not be the only aspect of market behaviour that manifests power. Other aspects may be the capacity to withhold supply; or to decide the terms and

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63 *Eastern Express Pty Ltd v General Newspapers Pty Ltd* (1992) ATPR 41-167 (FCA FC) at p40, 300.
64 *Boral Besser Masonry Ltd v ACCC* (2003) 215 CLR 374 at para 121.
65 *Queensland Wire Industries Ltd v Broken Hill Pty Co Ltd* (1989) 167 CLR 177, 188-190; and *Boral Besser Masonry Ltd v ACCC*, above n 64, para 136.

> conditions, apart from price, upon which supply will take place. But pricing is ordinarily regarded as the critical test.[66]

204. Market power is a discretionary power that may or may not be exercised at any particular point in time.[67] As the High Court recently noted:

> Analysis of market power is ordinarily concerned with a firm's capacity to exercise control over price, not with the question whether it exploits its power in fact. A monopolist may be indolent or public-spirited.[68]

205. Factors identified by the Courts as relevant in determining whether a person has market power are:

- the capacity to withhold supply, or to decide the terms and conditions, apart from price, upon which supply will take place;
- the extent to which the conduct of the firm in that market is constrained by the conduct of competitors, or potential competitors, or customers;
- whether there are barriers to entry into the relevant market;
- whether potential entry is likely, sufficient in extent and timely (the "LET" test);
- large market share (bearing in mind the relative effect of percentage command of a market varies according to the particular setting); and
- the presence of vertical integration (but its presence does not necessarily mean that a substantial degree of market power exists). [69]

206. Financial strength is not market power, although if a firm has market power, its financial resources might be part of the explanation of that power.[70]

What is 'substantial' market power?

207. In 2001 the Commerce Act was amended, and the market power threshold in s 36 was altered from one of 'dominant position' to 'substantial degree of market power'. Prior to those amendments the dominance test was also contained in s 47 of the Commerce Act, which related to mergers.

208. In the only decision on the new s 36 provisions, *Bay of Plenty Electricity v Commerce Commission*,[71] the Court noted that the change was intended to lower the threshold from that set in the "*AMPS-A*" decision.[72] However, the Court considered the dominance threshold had already been lowered by the Court of Appeal in *Southern Cross v Commerce Commission.*[73] *Southern Cross* was heard after the amendments were passed. There the Court commented:

> [67]…Dominance is the statutory concept which represents the economic concept of market power without sufficient constraint. … [M]arket participants will almost always possess some degree of market power as perfectly competitive markets are seldom, if ever, encountered except in textbooks.

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66 *Boral Besser Masonry Ltd v ACCC,* above n,64 para 136

67 *Re Queensland Co-op Milling Association Ltd (Re Defiance Holdings Ltd*) (1976) 8 ALR 481, p 188.

68 *Commerce Commission v New Zealand Bus Ltd* (2006) 11 TCLR 679 at 195.

69 *Eastern Express Pty Ltd v General Newspapers Pty Ltd,* above n 63 at p 40, 300; *Queensland Wire Industries Pty Ltd v BHP Co Ltd,* above n 65, p 50,008-50,010; *Boral Besser Masonry Ltd v ACCC*, above n 64, para 136.

70 *Boral Besser Masonry Ltd v ACCC*, above n 64,para 138.

71 *Commerce Commission v Bay of Plenty Electricity* (Unreported, 13 December 2007), paras 297-298.

72 *Telecom Corporation of New Zealand Ltd v Commerce Commission* [1992] 3 NZLR 429.

73 *Southern Cross v Commerce Commission* (2001) 10 TCLR 269.

> [68] The crucial question is therefore not whether a particular firm has market power but whether such power as it has … is likely to or will enable it to act in an insufficiently constrained manner in the sense that it will have the ability to set prices or conditions without significant constraint from competitors or consumers. …. In practical terms, if market power is insufficiently constrained the firm possessing such power has the ability to increase its prices above marginal costs both sustainably and profitably.[74]

209. The Court considered that while the new threshold was lower, any difference between 'dominant' in *Southern Cross* and 'substantial' under the new s 36 was incapable of clear enunciation. The Court identified that, as under the old s 36, market share, barriers to entry and the effect of potential competition would be relevant to whether market power was substantial.[75] However, no further indication was given to assist in identification of a level of market power that could be described as substantial.

210. Further guidance on the meaning of substantial can be obtained from the Australian courts and their interpretation of the phrase as it appears in s 46 of the Trade Practices Act. The High Court of Australia has said:

> The notion of market power as the capacity to act in a manner unconstrained by the conduct of competitors is reflected in the terms of s 46(3). Such capacity may be absolute or relative. Market power may or may not be total; what is required for the purposes of s 46 is that it be substantial.[76]

211. The Australian case law concerning 'substantial' market power suggests that it must be "considerable or large", a "greater rather than less" degree of power.[77] However, it is not as high as the degree of market power required to control a market or determine the prices of a substantial part of the goods in the market.[78]

212. A business can therefore be said to have a substantial degree of market power if, having regard to all the factors in the market that could be said to constrain market power, the business's ability to raise prices, or otherwise exercise power in a market, can be described as considerable, large or weighty. The less constraint that a person faces from factors such as existing competitors, countervailing power of its customers and threat of entry, the greater the level of market power that business possesses, and the more likely that the market power can be described as substantial.

Assessing the substantiality of market power

213. Market power can in theory be assessed directly through the analysis of demand elasticities and price-cost margins, for example. However, there are practical and theoretical difficulties that can render direct assessment unreliable on its own.[79] Generally, the assessment of whether market power is substantial will also require an assessment of the available indirect evidence.

214. Ultimately, the assessment of market power is a matter of judgment, informed by the evidence available.[80] As the Court of Appeal has recently noted:

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74 Ibid, paras 67 - 68.
75 *Commerce Commission v Bay of Plenty Electricity,* above n 71, paras 299-304.
76 *Melway Publishing Pty Ltd v Robert Hicks Pty Ltd* (2001) 205 CLR 1, para 43.
77 *Eastern Express Pty Ltd v General Newspapers Ltd,* above n 63, p 40,300 - referring to explanatory memorandum to the Trade Practices Revision Bill 1986, paras 41-42.
78 *Dowling v Dalgety Australia Ltd* (1992) 106 ALR 75 at p 106
79 "*Competition and Monopoly: Single-Firm Conduct Under Section 2 of the Sherman Act*" (2008, US DOJ) at pages 27 – 30.
80 *Commerce Commission v Woolworths Ltd* (2008) 12 TCLR 194 (CA) at 191, *Telecom Corporation of New Zealand Ltd v Commerce Commission,* above n 72 p 446.

> A court is always required to simplify to some extent. As it is sometimes said, a competition law court cannot explore the world economy in order to decide a single monopoly case. What a court is doing when it draws a line around the relevant market and how various behaviours will be construed within it is making a critical judgment. It is true that some data will be weighed or considered in deciding whether the law is violated and some will not. Yet all the suggestions about more systematic ways to inform that judgment are merely techniques, or hand tools. In short, this Court should not allow a kind of false scientism to overtake what is in the end a fundamental judgment which is required by the Act itself.[81]

215. It is generally accepted that the most important influence on market power is the conditions required for entry or expansion.[82] It is said that it is the threat of the entry of a new firm into a market, or the expansion of an existing competitor, operates as "the ultimate regulator of competitive conduct" and "keeps a trader honest".[83] A firm's market power depends in large measure on the height of barriers constraining entry or expansion in the relevant market.[84]

216. There may be considerable debate over whether or not particular matters qualify as "barriers to entry" in an economic sense. However, the New Zealand Courts have indicated they are not concerned with whether particular conditions are "barriers" in the technical sense, but rather whether they have the potential to prevent, impede or slow entry and expansion, and if so to what extent.[85]

217. Before entry or expansion can be said to be a constraint on the exercise of market power, it must be likely, of sufficient extent and occur in a timely fashion. The Commission's well established approach to entry and expansion - known as the LET test – is explained in its Merger and Acquisitions Guidelines, and has been accepted and adopted by the New Zealand Courts on a number of occasions.[86]

218. Analysis frequently then turns to the concentration of the market, and to the relative market share of the parties. It is possible for more than one party to possess a substantial degree of market power in a market, in contrast to the "monopoly power" required under the US Sherman Act.[87] It is generally accepted that a firm with less than 35 to 40 per cent market share will be unlikely to have a substantial degree of market power, but this will in every case turn on the circumstances of the market in which

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81 *New Zealand Bus Ltd v Commerce Commission* [2008] 3 NZLR 433 (CA), para 104.

82 As to the approach to defining the appropriate conditions of entry, see *Commerce Commission v New Zealand Bus Ltd* (2006), above n 68, paras 145 – 160; and *New Zealand Bus Ltd v Commerce Commission* [2008], above n 81, para 249 – 254.

83 *Re Queensland Co-op Milling Association Ltd (Re Defiance Holdings Ltd*), above n 67, para 517; and *Fletcher Metals v Commerce Commission* (1986) 6 NZAR 33 (*Fletcher Metals*) (HC) at 43; See also US DoJ and FTC "*Horizontal Merger Guidelines*" (1997), p25; Australian Competition and Consumer Commission "*Draft Merger Guidelines*" (2008) at para 6.21.

84 *Commerce Commission v Southern Cross Medical Care Society* (2001) 10 TCLR 269 (CA) at para 69; *Commerce Commission v New Zealand Bus Ltd* (2006), above n 68, para 146; *Queensland Wire v Broken Hill Proprietary Co Ltd & Anor,* above n 65, p 189; and *United States v. Microsoft Corp*., 253 F.3d 34, 82 (D.C. Cir. 2001).

85 *New Zealand Bus Ltd v Commerce Commission* [2008] above n 81, para 252; and *Air New Zealand v Commerce Commission* (No 6) (2004) 11 TCLR 347 at para 102.

86 *New Zealand Bus Ltd v Commerce Commission* [2008] above n 81; and *Air New Zealand v Commerce Commission.*

87 See section 46(3D) of the Trade Practices Act 1974 and "*Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings*" (2009, EC) at page 7, "*Draft Updated Enforcement Guidelines on the Abuse of Dominance Provisions*" (2009, Canadian Competition Bureau) at page 13, and compare with "*Competition and Monopoly: Single-Firm Conduct Under Section 2 of the Sherman Act*" (2008, US DOJ) at pages 21-22.

market power is being assessed.[88] However, there may be cases below that threshold where competitors are not in a position to constrain market power where, for example, those competitors face serious capacity limitations.

219. The Courts and the Commission have accepted that in some cases market power can be constrained by the exercise of some countervailing market power, such as may be held by some customers.[89] In every case it is a factual inquiry as to whether there is the ability and incentive to exercise countervailing market power.

220. For market power to be substantial it must be able to be exercised over a significant period of time without erosion by existing competitors or new entrants. This will vary depending on the product and market in question, but a period of one to two years will generally be sufficient.[90] It must be durable and more than fleeting or temporary.[91] This is consistent with the approach of the New Zealand and Australian Courts that short term competition effects are unlikely to be substantial.[92]

Take Advantage Of

221. Liability under s 36 requires a causal connection between a party's substantial market power and its prohibited purpose. That causal connection is expressed as the requirement that a person not "take advantage of" its market power.

222. From 1986 to 2001 s 36 prohibited the "use" of market power. The meaning of "use" was considered by the Privy Council twice, in *Telecom v Clear Communications*[93] and *Carter Holt Harvey v Commerce Commission*.[94] In *Carter Holt Harvey* the Privy Council held:

> The object of s 36, like its counterpart in Australia, is to protect the interests of consumers. It is predicated on the assumption that competition is a means to that end. A dominant firm is as free to compete in the market as a firm that is non–dominant, so long as it does not act in an anticompetitive manner by abusing its position of dominance. With this in view, the section is carefully worded. The word "use" requires that a causal relationship is shown between the conduct which is alleged against the dominant firm and its dominance or market power. Only if that connection is shown can it be said that its conduct is a use of that dominance.[95]

223. Considering that causal relationship, the Privy Council in *Telecom v Clear* held that:

> It cannot be said that a person in a dominant market position "uses" that position for the purposes of s 36 unless he acts in a way which a person not in a dominant position but otherwise in the same circumstances would [not] have acted.[96]

224. This test, known as the "counterfactual test", had its origins in judgments of the High Court of Australia in *Queensland Wire Industries Pty Ltd v Broken Hill Proprietary Co*

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88 EC Guidelines at p7, Canadian Guidelines at p13 and in the Australian context, *Australian Competition and Consumer Commission v Australian Safeway Stores Pty Ltd* (2003) 129 FCR 339 (FCFCA) at 307

89 *Commerce Commission v New Zealand Bus Ltd* (2006), above n 68, paras 192-198.

90 EC Guidelines at p6, Canadian Guidelines at p11.

91 "*Competition and Monopoly: Single-Firm Conduct Under Section 2 of the Sherman Act*" (2008, US DOJ) at page 20 and footnote 12,

92 *ANZCO Foods Waitara Ltd v AFFCO New Zealand Ltd* [2006] 3 NZLR 351 (CA), para 247.

93 *Telecom v Clear Communications* [1995] 1 NZLR 385.

94 *Carter Holt Harvey Building Products Group Ltd v Commerce Commission* [2006] 1 NZLR 145 (PC).

95 Ibid para 51.

96 *Telecom v Clear Communications,* above n 93, p 403.

Ltd.[97] It is a "judicially constructed tool, fashioned for the purpose of assisting in answering the question to which … s 36 does demand an answer, namely has there been use of a dominant position?".[98] The rigid use of the counterfactual test under s 36 has been criticised, with the New Zealand Courts and the minority of the Privy Council indicating a preference for a more straightforward factual inquiry.[99]

225. Section 36 was amended in 2001 replacing "use" with "taking advantage". The Select Committee considering the amendment noted:

> Government members wish to make very clear that the intention of Parliament in adopting the words 'take advantage of' would be to reverse this interpretation by the Privy Council, and to provide the New Zealand courts with the opportunity to apply the test with an appropriate level of flexibility without giving them carte blanche to adopt a subjective purpose driven approach.[100]

226. The new s 36 was considered in *Bay of Plenty Electricity v Commerce Commission*. While the decision was decided on other grounds, the High Court did consider the meaning of "taking advantage", holding that:

> the 2001 amendments to s 36 substituted the phrase "takes advantage of" for "use". That is the phrase that is used in the Australian legislation (since 1986) and which formed the basis for the counterfactual test in Queensland Wire. As the Privy Council affirmed the counterfactual test in part reliance on Queensland Wire, we think the counterfactual test enunciated in Carter Holt (2006) continues to be the law in New Zealand at present, notwithstanding the statutory language applicable when that case was decided referred to "use" rather than "takes advantage". We acknowledge, however, the relevance of High Court of Australia authority subsequent to Queensland Wire which has arguably taken a more expansive approach to the counterfactual test under the "takes advantage" element of the section.
>
> …
>
> in our view the core question remains whether the firm would rationally engage in the conduct in question if it did not enjoy dominance or possess a substantial degree of market power. … it must be accepted that conduct which may be legitimate for a firm not possessing market power (and, given that it was undertaken by such a firm, the presumption has to be that there is a profit maximising business rationale for such conduct), can nevertheless be illegitimate if carried out by a firm enjoying dominance and/or a substantial degree of market power, for an illegitimate purpose.

227. The appropriateness of applying the counterfactual analysis in particular cases, and the extent to which the Court may adopt the more flexible Australian approach in decisions

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97 *Queensland Wire Industries Pty Ltd v Broken Hill Proprietary Co Ltd*, above n 65, p 192, Dawson J at pp 202-203, Toohey J at p 216.

98 *Carter Holt Harvey Building Products Group Ltd v Commerce Commission,* above n 94, para 78.

99 See, *Port Nelson Ltd v Commerce Commission* [1996] 3 NZLR 554 (CA), Gault J at p 577; Gault J's comments in Clear Communications Ltd v Telecom Corporation of NZ Ltd (1993) 5 TCLR 413 (CA) at p 430, *Carter Holt Harvey v Commerce Commission* (2001) 10 TCLR 247 (CA) at paras 72, 73 and 75, and *Carter Holt Harvey Building Products Group Ltd v Commerce Commission,* above n 94, para 81.

100 Report from the Commerce Committee, 296-2, p 14.

of the High Court of Australia after *Queensland Wire*[101], is currently under consideration in two s 36 proceedings currently pending judgment.[102]

For a Proscribed Purpose

228. The final element of s 36 is purpose. A person must not take advantage of the substantial market power for the purpose of:

   a. Restricting the entry of any person into that or any other market;

   b. Preventing or deterring any person from engaging in competitive conduct in that or in any other market; or

   c. Eliminating any person from that or any other market.

229. The proscribed purpose(s) does not need to be the sole purpose. Under s 2(5)(b) a person shall be deemed to have engaged in conduct for a particular purpose if that purpose was or is a substantial purpose of the conduct.

230. "Purpose" implies object or aim and intent to achieve the result spoken of. The requirement is that "the conduct producing the consequences was motivated or inspired by a wish for the occurrence of the consequences".[103] Section 36B provides that purpose can be inferred "from the conduct of any relevant person or from any other relevant circumstances". The Privy Council in *Telecom v Clear* considered the relevant purpose could be inferred from the effect of the conduct:

> If a person has used his dominant position it is hard to imagine a case in which he would have done so otherwise than for the purpose of producing an anti-competitive effect; there will be no need to use the dominant position in the process of ordinary competition. Therefore, it will frequently be legitimate for a Court to infer from the defendant's use of his dominant position that his purpose was to produce the effect in fact produced.[104]

231. The High Court in *Bay of Plenty Electricity v Commerce Commission* considered the Privy Council's observations and s 2(5), and concluded that the test of purpose was an objective one, but that evidence of subjective statements of purpose and intention could be used in ascertaining that objective purpose.[105] In any event, the Court of Appeal in Port Nelson observed that in most cases there will be little difference in result between ascertaining subjective purpose by inference from what was said and done and ascribing objectively a purpose from evidence of what was said and done.[106]

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101 *Melway Publishing Pty Ltd v Robert Hicks Pty Ltd,* above n 76; *Rural Press Ltd v ACCC* (2003) 216 CLR 53; *Boral Besser Masonry Ltd v ACCC,* above n 64, p 374; and *NT Power Generation Pty Ltd v Power and Water Authority* (2004) 219 CLR 90. These alternative approaches have now been codified in s 46(6A) of the Trade Practices Act 1974.

102 *Commerce Commission v Telecom* (CA 288/2008), the "0867" proceedings, appeal heard March 2009; and *Commerce Commission v Telecom* (CIV-2004-404-1333), the "Datatails" proceedings, heard before Hansen J and Professor Richardson in July/August 2008).

103 *Union Shipping NZ Ltd v Port Nelson Ltd* [1990] 2 NZLR 662; 707.

104 *Telecom v Clear Communications,* above n 93, p 402.

105 *Commerce Commission v Bay of Plenty Electricity,* above n 71, para 325. See also the decision of the Court of Appeal in *ANZCO Foods Waitara Ltd v AFFCO New Zealand Ltd,* above n 92.

106 *Port Nelson Ltd v Commerce Commission,* above n 99, para 564. See also *Clear Communications Ltd v Telecom Corp of New Zealand* {1992} 5 TCLR 166, 198.

Monopoly Pricing

232. It is important to note that the Commerce Act does not prohibit the existence of substantial market power, nor the earning of monopoly rents. A high or even monopoly price, unless instituted for an anti-competitive purpose, does not constitute taking advantage of market power for an anticompetitive purpose under s 36. The Privy Council noted in *Telecom v Clear*:

> Monopolies act to the detriment of the consumer by permitting the monopolist to charge higher prices than would be the case if there were a fully competitive market. This problem can be tackled in one or other or both of two ways viz by a regulatory body artificially restricting the price chargeable or by introducing efficient competition. The introduction of efficient competition (by such anti-trust legislation as s 36) does not in itself instantly remove the evils of the monopolist's overcharging: it produces the conditions which, by market forces, force the monopolist to operate efficiently and to abandon policies of excessive charging. Such legislation is neither effective nor apt to take the place of a regulatory proceeding which, after detailed investigation of the efficiency of the monopoly system, can set a maximum price for goods or services to be supplied having regard to economies that could be affected and a reasonable rate of return. The Commerce Act, inter alia, directed itself to both these processes: s 36 is designed to produce the competition which will, it is hoped, in due course compete out monopoly rents: Part IV of the Act enables immediate price restriction to be imposed by regulation.
>
> …
>
> s 36 does not operate to exclude [a party with market power] from initially charging monopoly rents (if any) and the elimination of such monopoly rents is (otherwise than by competition) within the province of Part IV of the Act[107]

233. This position is consistent with the approach of the US Supreme Court, most recently in *Verizon Communications v Law Offices of Curtis V Trinko*:

> The mere possession of monopoly power, and the concomitant charging of monopoly prices, is not only not unlawful; it is an important element of the free-market system. The opportunity to charge monopoly prices—at least for a short period— is what attracts "business acumen" in the first place; it induces risk taking that produces innovation and economic growth. To safeguard the incentive to innovate, the possession of monopoly power will not be found unlawful unless it is accompanied by an element of anticompetitive conduct.[108]

8. THE ASSESSMENT OF SUBSTANTIAL MARKET POWER

Introduction

234. Once the relevant market(s) have been defined, an investigation into alleged breaches of Part 2 of the Commerce Act requires an assessment of whether any of the relevant businesses have a substantial degree of market power.

235. In the following section we briefly describe some of the key characteristics of electricity relevant to market power. Then describe how market power is typically defined in relation to wholesale electricity markets.

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[107] *Telecom v Clear Communications,* above n 93, p 407-408.

[108] *Verizon Communications v Law Offices of Curtis V Trinko* 540 U. S. 398 (2004) at 407 per Scalia J

236. We then assess which parties, if any, have market power in the wholesale electricity markets and consider whether any party assessed as having market power has taken advantage of that market power for an anti-competitive purpose.

237. In order to assess whether any participants in the wholesale electricity market have, or have had, a substantial degree of market power, the Commission considered the extent of any constraint from:

- existing competition;
- potential competition; and
- countervailing buyer power.

238. This section does not cover an assessment of whether any participants in the electricity retail market have a substantial degree of market power, as such an assessment was not deemed necessary to investigate the alleged breaches pertaining to the retail market.

Market Power and Electricity Markets

Characteristics of electricity and electricity markets

239. Wholesale electricity markets have unusual attributes that render them particularly susceptible to the periodic exercise of market power. These attributes include the following:

- electricity is not storable, and so supply must equal demand at all times to avoid system failure;
- demand is generally unresponsive to changes in the wholesale price, as most consumers do not immediately face price increases when wholesale prices rise;
- supply-side responsiveness to price changes can be limited in the short term, especially if plants are operating near to capacity;
- new entry into supply involves large, sunk investments, and can take many years to plan, receive consents, design, build, commission and finally operate; and
- the transmission grid can become congested at certain times, and can cause variations in wholesale electricity prices across the network.

240. New Zealand is heavily reliant upon hydro generation to meet its electricity needs,[109] but has only limited hydro storage capacity (on average less than 10 per cent of annual electricity consumption), unlike many other hydro dominated markets. Reductions in hydro storage in periods of dry weather can significantly reduce the total generation capacity available during the peak winter demand months. This could exacerbate concerns about the exercise of market power in the wholesale market.

241. In addition to the characteristics of electricity as a product, electricity markets also have a number of characteristics that may make them more susceptible to the exercise of market power than other markets. These characteristics include frequent and repeated interactions between market participants (every half-hour), a stable market structure and a high degree of transparency (for example, all parties have access to information on hydro output and storage levels). Moreover, given that the supply side of the wholesale

[109] Annual hydro generation has typically met approximately 60 to 70 per cent of electricity demand in New Zealand. Electricity Commission, *Market Design Review – Issues Paper – Survey of Market Performance*, May 2007, para 138.

market is highly concentrated, it would not be surprising if both unilateral and the co-ordinated exercise of market power may be possible.

Defining market power in wholesale electricity markets

242. Market power is typically defined as the ability to profitably alter prices away from competitive levels.[110] Unilateral market power has been defined for wholesale electricity markets as the ability to reduce output or increase offer prices in order to change the market price.[111] The exercise of unilateral market power may take the form of 'physical withholding' (offering less supply into the market than under competitive conditions) or 'economic withholding' (offering the same amount of supply as under competitive conditions, but at a higher price).

243. In assessing whether a firm has (or firms have) unilateral market power, consideration must also be given to the conditions of entry and expansion in the longer term. The use of market power in the short-run may be less likely, and would be self-defeating in the longer term, if timely effective new entry and/or expansion were likely to occur in response to an elevation of prices above competitive levels.

Existing competition

Introduction

244. The most immediate constraint on a firm's decision-making is from existing competitors. The Commission received expert quantitative evidence assessing the presence, and exercise, of market power, and carried out a qualitative analysis of the same. If generators were able to exercise market power, this would suggest that existing competition has not constrained the behaviour of market participants.

245. The following section presents the Commission's quantitative, and qualitative, assessments of existing competition in the wholesale electricity market.

Quantitative analysis

246. Detecting the existence of market power in electricity markets is not an easy task. National regulators use a variety of tools, techniques and measures, some of which derive from standard industrial organization theory, and some of which have been developed especially for electricity markets.

247. Structural market concentration indices such as market shares, market concentration ratios and the Herfindahl-Hirschmann Index (HHI) are scalar metrics that measure the supplier concentration of a market, and are traditionally employed by competition authorities to assess the existence, or the potential for the exercise, of market power.[112] A criticism of using structural concentration indices for electricity market assessments is that these are static measures that are inappropriate in a dynamic market such as electricity, as these may underestimate the ability and incentive of firms to increase prices during periods of peak demand. This is due to the fact that concentration measures incorporate no information about the elasticity of demand.

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110 Stoft S, 2002, Power System Economics, pg 318

111 Borenstein S, "Understanding Competitive Pricing and Market Power in Wholesale Electricity Markets", University of California Energy Institute, and NBER Working Paper No. CPC99-08, 1999. At http://repositories.cdlib.org/cgi/viewcontent.cgi?article=1018&context=iber/cpc

112 The HHI is calculated as $HHI = \Sigma S_i$, where S_i is the market share of the i^{th} firm. With only one firm in an industry (pure monopoly), the index reaches its maximum of 10000.

248. Structural measures may indicate relatively low levels of concentration when applied to wholesale electricity markets, yet market power may still be being exercised. As a consequence, alternative approaches have been developed to measure market power in wholesale electricity markets directly.

249. The pivotal supplier indicator (PSI) incorporates both supply and demand conditions in a measure of potential market power. This measure examines whether the capacity of a generator is larger than the surplus supply (the difference between total supply and demand) in the wholesale market, and so shows whether a given generator is necessary (or 'pivotal') in serving demand. The PSI is a binary indicator for a supplier at a point in time which is set equal to one if the supplier is pivotal, and zero if the supplier is not pivotal. The Supply Margin Assessment (SMA) is the pivotal supplier indicator adopted in the US by the Federal Energy Regulatory Commission (FERC). FERC adopted the SMA as a market power screen in 2001 to replace the 20 per cent market share.[113] However, the measure does not account for net buying or selling positions in the market.

250. The Residual Supply Index (RSI) is similar to the PSI, however is based on a continuous, rather than a binary, scale. The Residual Supply Index (RSI) is defined as the ratio of residual supply (the total available supply minus the capacity of a large supplier) over demand. The RSI captures the proportion of market that residual suppliers must meet. Therefore the RSI captures the possibility for a firm to exercise market power when it is nearly, but not actually, pivotal. The RSI was developed by the California Independent System Operator (CAISO).

251. Residual demand analysis is a more sophisticated measure of the incentive of a company to exercise market power that is derived from examining the residual demand curve faced by a company. The residual demand curve is calculated as the total demand curve less supply offers from all other suppliers. Residual demand analysis is a behavioural measure which focuses on the actual behaviour of generators in terms of their offers into the market. This approach has been made possible by the data generated by the introduction of electricity wholesale auction markets to set prices.

252. Due to the specialised and complex nature of the quantitative market power analysis required by the Commission, Professor Frank Wolak was engaged to provide an independent quantitative assessment of whether generators in the wholesale market have market power, and if so, to what extent this has been exercised. The period under assessment was from 1 January 2001 to 1 July 2007.

253. A full copy of the report provided by Professor Wolak is presented in Appendix 1.

254. The quantitative evidence regarding market power presents three main pieces of analysis:

    A. development of a theoretical framework, and assessment of generators' ability and incentive to exercise wholesale market power;

    B. an assessment of the aggregate impact on the New Zealand market of the observed behaviour; and

    C. testing the hypothesis that when generators have the ability and incentive to exercise market power, they do so.

255. We now examine each in turn.

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[113] Twomey P, Green R, Neuhoff K, Newbery D, November 2004, *A Review of the Monitoring of Market Power,* Report prepared at the request of European Electricity Transmission System Operators (ETSO).

A) Theoretical framework and assessment of ability and incentive to exercise wholesale market power

256. Section 3 of the quantitative evidence presents the method used in the residual demand analysis. This measures the ability and incentive of each generator to unilaterally exercise market power. Ability and incentive are determined by the residual demand curve faced by each generator, where residual demand is the portion of total market demand that is not being supplied by other generators. A generator that is able to estimate its residual demand will know how its customers are likely to respond to changes in price,[114] and so can then offer into the market in a manner designed to be profit-maximising.

257. Section 4 presents an ability measure that quantifies the effect on the market clearing price of a one percent reduction in output by a generator. The incentive to exercise market power is determined by the generator's ability to exercise market power, and its quantity of output generated which is net long, i.e. surplus to its own downstream retail requirements. The incentive measure presented quantifies the effect on the market clearing price of a one percent reduction in the net position of a generator.

258. The offer behaviour of all four of the larger suppliers, Contact, Genesis, Meridian and Mighty River Power, was assessed. As TrustPower is net short across the time period and so would not have the incentive to exercise any market power it had to increase prices, TrustPower was not featured in the main body of the quantitative evidence.

Measures of ability and incentive to exercise market power are associated with higher wholesale market prices

259. Firm-level measures of the ability to exercise unilateral market are found to closely track the behaviour of the wholesale market clearing price.[115] Specifically, higher levels of the firm-level indices of the ability measures are associated with higher values of the wholesale market prices. Similarly, higher values of each of the firm-level indexes of the incentive measure are associated with higher values of the wholesale market prices.

260. A one percent reduction in total output by Meridian is found on average to have the highest impact on the market clearing price, followed by Contact, then Genesis and Mighty River Power.

261. Over the whole period, the supplier that most often has surplus generation is Contact, which was net long in 93 per cent of the half-hour periods of our sample. Contact is found to have maintained a significant incentive to exercise unilateral market power to raise prices during mid-2001, early 2003, and early 2006.

262. The analysis finds that all four of the largest suppliers had more than double the ability to exercise unilateral market power in early 2003 relative to mid-2001. At this time, only Contact had both a significant ability and incentive to exercise unilateral market power.

263. In June 2001, Meridian purchased 115,000 South Island retail customers from On Energy Limited (On Energy), the retail brand of NGC. In August 2001, Genesis purchased 290,000 North Island retail customers from On Energy. The acquisition of significant numbers of customers from On Energy resulted in both Meridian and Genesis having a greatly reduced incentive, relative to their ability, to exercise unilateral market power by raising wholesale market prices during early 2003. For example, the

[114] Customers' responsiveness to changes in price is their price elasticity of demand.
[115] The price assessed is the quantity-weighted average of the half-hourly nodal prices across New Zealand.

average values of the incentive measure for Genesis during early 2003 were less than half of what they were during mid-2001.

264. In summary, the analysis of the relationship between the ability and incentive measures of the four large generators and the market-clearing price found that the measures of ability and incentive are highly positively correlated with the market-clearing price, and so when the ability and/or incentive measure increase, the wholesale market price also tends to increase.

Higher wholesale market prices are the result of the ability and incentive to exercise unilateral market power

265. Evidence that this positive relationship between the half-hourly firm-level ability to exercise unilateral market power and half-hourly market prices is the result of the unilateral profit-maximizing actions of the four large suppliers is then presented.

266. The findings demonstrate that when each of Contact, Genesis, Meridian and Mighty River Power has a greater ability, or a greater incentive, to exercise unilateral market power, they submit substantially higher priced offers into the wholesale market for a pre-specified quantity of energy. The predicted increase in the offer price for a one unit change in the incentive measure is much larger than the predicted increase in the firm's offer price from a one unit change in its ability measure. This result is explained by the logic that having the ability to exercise unilateral market power is only a necessary condition. To do so, a firm must also have a strong incentive to exploit this ability, in terms of having net surplus generation sold on the wholesale market.

267. Observed offer behaviour by the fossil fuel generators is also assessed. If a fossil fuel generation unit owner believed that it had no ability to exercise unilateral market power, the analysis assumes that it would offer to supply wholesale electricity at a price that depended only on its input fossil fuel costs and other variable operating costs. The amount of water available to the hydroelectric suppliers would not impact the variable cost of these suppliers, so daily water levels should not predict changes in the offer prices of the fossil fuel suppliers. Econometric evidence is presented demonstrating that the offer behaviour of each of Contact and Genesis, owners of fossil fuel generation units, can be predicted from water storage levels. Low water levels are found to predict higher offer prices from fossil fuel generators, which is consistent with the fact that during low hydro storage periods, fossil fuel generators face less vigorous competition in the wholesale market.

268. The quantitative evidence strongly suggests that when each of the four largest generators has the ability and incentive to unilaterally exercise market power, they do so by offering into the market at higher priced offers to supply, and so cause an increase in wholesale market prices. This behaviour is found to be sustained, on average, during long time periods.

B) Aggregate impact on the wholesale market

269. Determining the aggregate impact on the wholesale electricity market of the exercise of market power necessitates comparison of actual market outcomes with conservative estimates of competitive market outcomes. Section 5 of the Wolak Report presents the methodology and findings of this analysis.

270. The competitive benchmark prices estimated are based on the proposition that a profit-maximising supplier with no market power would submit supply offers equal to its marginal cost of production. Using the estimates of competitive benchmark prices,

actual prices and the marginal cost of each generation unit for each half-hour period over the sample period, aggregate wholesale market revenues during each half-hour were decomposed into variable production costs, competitive rents and market power rents.

271. An overview provided of the results on a monthly basis shows that during the drier periods of 2001, 2003 and 2005, prices were greatly in excess of competitive levels. The market power rents have been calculated taking into account the higher marginal cost of hydro production (due to the higher opportunity cost of using water) during those years. In contrast, virtually no exercise of market power was identified in 2002, 2004 and 2007, indicating competitive outcomes on average during those years.

272. Wholesale market power rents are estimated to be $4.3 billion in total over the six and a half year time period assessed, which is, on average, 18 per cent of revenue across the whole generation industry. In years in which market power is exercised, market power rents represent up to 50 per cent of the wholesale industry's revenue, which corresponds to approximately $1.5 billion in each of the years 2001 and 2003. In years in which participants faced effective competition, market rents are estimated as negligible.

273. Wholesale prices in 2008 reached levels above that of 2001 and 2003. Whilst 2008 was outside the period covered by Professor Wolak's quantitative analysis, the Commission's view is that the market response to dry periods is consistent, and so the high clearing prices of 2008 may be explained by the findings presented above.

274. It is important to note that the market power rents estimated are the total market rents obtained by all generators, and do not relate to any estimation of profits made by the four largest gentailers. A preliminary analysis, presented in Section 12, indicates that as the wholesale cost component has shown the greatest increase when compared to the other cost components of the retail price, the likely candidate to explain the upward trend in retail prices is the recurrent exercise of market power in the wholesale market.

275. The analysis presented to the Commission also assessed whether generators are able to exercise unilateral market power by causing transmission congestion, and so whether the exercise of unilateral market power has increased the cost of transmission.[116] Specifically, the actual cost of congestion is compared to the cost of congestion under the nodal pricing competitive benchmark. Transmission constraints are identified as occurring with low frequency, and so can explain a significant, but only small, proportion of the market power rents identified.[117]

276. These findings support a conclusion that the exercise of market power in the wholesale market is a systemic issue, which cannot be attributed to the capacity of the transmission network. This is an important point as industry participants often point to transmission congestion being the cause of high wholesale market prices, rather than the exercise of market power.

277. Concerns raised regarding the competitive benchmarking methodology employed by Professor Wolak point to the need to allow for recoupment of long-run entry costs and so argue for a competitive benchmark price of long-run marginal cost, rather than short-run marginal cost. However, the wholesale market is designed to be a short-run

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116 The usual way to measure transmission congestion is the difference between the total amount paid by load takers and the total amount paid to generation unit owners. In New Zealand this measure will also account for line losses.

117 Whilst small when viewed as a proportion of the market as a whole, the increased prices due to transmission congestion may have a significant impact on major industrial users whose power price is often directly linked to the wholesale spot price.

mechanism clearing supply and demand in every half-hour period. Whilst competitive rents total at $7 billion over the time period, and so may be sufficient to fund new entry, the market is not designed in a manner to guarantee the recovery of the cost of new generation. This issue is further discussed at Section 13.

278. The Commission also notes that inefficiencies that may be present in the wholesale market are potentially overlooked by Professor Wolak's analysis. For example, the distortion of offer prices away from competitive levels may affect dispatch, and hence the overall cost of output (for example, the total cost of thermal generation). Higher average prices may also incentivise over-investment in capacity. To measure the effect of such inefficiencies requires assessment of the impact of the exercise of market power on the availability and use of individual plants. As Professor Wolak's approach uses the actual level of output that was supplied, any such inefficiencies due to the exercise of market power are not taken into account. Again, this results in a conservative estimation of the cost of the exercise of market power.

C) Link between ability and incentive to exercise market power and high prices

279. The final piece of quantitative evidence presented to the Commission is a test of the hypothesis that when generators have the ability and incentive to exercise market power, they do so. To do this, the analysis used three alternative measures of half-hourly market power rents for the market as a whole, and for each of Contact, Genesis, Meridian and Mighty River Power. These measures were regressed on half-hourly values of firm-level indexes of the ability and incentive to exercise market power derived (as part of the first piece of evidence discussed above).

280. In New Zealand, a number of regions in the transmission grid have historically been prone to transmission constraints, due to remoteness, the limited number of lines linking the region with the grid backbone, and the limited amount of generation capacity within the region itself. Such regions include Northland, the Bay of Plenty, Marlborough / Nelson and the West Coast. There are also several areas that at times have difficulties transmitting electricity out of the region to other demand centres. Such areas include the central North Island, Taranaki and the lower South Island.

Summary of quantitative evidence findings

281. The results presented to the Commission are consistent with Contact, Genesis, Meridian and Mighty River Power each attempting to maximize profits, given the actions of their competitors, through their participation in the short-term wholesale market, or equivalently, maximizing all available unilateral market power. And thus the findings strongly suggest that each of Contact, Genesis, Meridian and Mighty River Power have market power, and that when conditions are such that they have the incentive to exercise market power, they do so. The exercise of market power is found to be both recurring and substantial.

282. Professor Nils-Henrik von der Fehr, of Oslo University, who was an academic advisor to the European Commission sponsored study of market power in the wholesale markets of six European countries,[118] provided the following comments in a peer review of the Wolak Report:

> Professor Wolak's analysis is founded on well-established economic theory, statistical methods and empirical practice. In addition, the analysis utilises a number

[118] European Commission, February 2007, *Structure and Performance of Six European Wholesale Electricity Markets in 2003, 2004 and 2005.*

> of new and sophisticated methods, mostly develop[ed] by Professor Wolak himself for the study of wholesale electricity markets around the world.
>
> [and]
>
> To sum up, I conclude from my preliminary review of the Wholesale Market report that Professor Wolak's approach is fundamentally sound, well founded on accepted economic methods and practices. As such, the conclusions of the report are reasonable. In particular, Professor Wolak's investigation has identified that:
>
> - generators in the New Zealand electricity industry have periodic market power;
> - generators with market power have exercised this market power to raise prices above underlying costs; and that
> - generators have obtained significant rents, at the cost of customers purchasing from the wholesale market, by exercising market power.

283. The Commission accepts the peer reviewer's view that the approach is fundamentally sound, well founded on accepted economic methods and practices.

Qualitative analysis

284. In parallel with the quantitative analysis presented above, the Commission has assessed qualitative evidence that can shed light upon the question of whether generators hold market power in the electricity wholesale market. The Commission has reviewed confidential company documents, interview statements made to the Commission and publicly available documents and media comments.

285. The Commission has considered whether the market participants consider that any generator has market power in the wholesale market.

286. The Commission's review has highlighted a number of examples that indicate that Contact, Genesis, Meridian and Mighty River Power are viewed by some gentailers themselves as having market power in the wholesale market.

Gentailer company documents

287. The references below indicate that each of [ ], [ ], [ ] and [ ] have held the view that the main gentailers enjoy, under certain conditions, a degree of market power, and that the exercise of that market power was having an impact upon competition in the wholesale market and the hedge contract market.

288. A 2001 [ ] document stated that:

> The wholesale electricity market design from a retailer's perspective is fundamentally flawed and provides generators easy opportunity to game price and exercise market power.
>
> **Generator Competition** is assumed in the NZEM rules to be perfect competition as an economist would define it. The reality is that generation is local and relatively isolated because of transmission constraints. Genesis are more often the marginal generator in the upper North Island and Meridian dominate the South Island price.
>
> **Gaming or exercise of market power** by generators is achieved by withholding generation or backing off generation for a short period to get the spot price up. A generator offers 350 MW at $40. From the pre-dispatch schedule they see they are going to get 350 MW dispatched. For the next ½ hour they bid 300 MW at $90 as load moves up. They then continue to bid $90 until they see load dropping off.

> With the spot price being the marginal price, they generate at the margin and instead of making $7,000 for 350 MW they make $13,500 for 300 MW.
>
> …
>
> **Generators under hedge** because they know they can earn more by being exposed to spot prices which they know they can game. This provides the retailers with no financial protection against generators exercising market power.[119]

289. In the same document, [ ] stated that, in reality, generation is local and relatively isolated because of transmission constraints, and that existing generators have local market power, which creates "an untenable financial risk for the local retailer when the generator offers retail prices that reflect a lower wholesaler price than they are prepared to sell at wholesale." [ ] stated that it moved out of the [ ] market in [ ] and it is no longer actively seeking customers [ ] because the wholesale purchasing risks are greater than the margin rewards.[120]

290. Another [ ] document from 2001 stated that "an outage at Otahuhu has lead to increased market power by Genesis and the resultant impact of dominance on the market demonstrated."[121] It also stated that the "impact of market power on areas where localized constraints may occur are severe", and that "the level of generator market power is more material than expected with increased levels of opportunistic pricing" occurring.[122]

291. [ ] went on to state that:

> In a competitive market, generators are expected to offer energy a little above their marginal cost a significant amount of the time. The NZ market however is proving to place considerable market dominance with a few generators. In certain areas, particularly during Transmission Outages, a single generator may have complete market power.
>
> These factors can be expected to increase the benchmark price of electricity toward the new entrant generator cost more quickly then may have been previously been expected. This is particularly likely in the upper North Island where Genesis has shown little caution in increasing price to above $300MW when opportunity permits.
>
> There is clear evidence that the hydro - stations will risk reasonable levels of spill to keep prices high. [123]

292. In a 2003 Board Paper, [ ] stated that as a net generator Mighty River Power "often seek to drive the Spot Price as high as possible" and that such high spot prices were likely to flow through into pricing of (hedge contracts) to [ ].[124] This statement indicates that [ ] views Mighty River Power as having a degree of market power, at least in certain periods, and that such market power enables Mighty River Power to increase both spot market clearing prices and future hedge contracts aimed at minimising the spot market risk to [ ].

293. In another 2003 Board Paper, [ ] noted the concentration of ownership of discretionary capacity (or peaking capacity) by Contact and Genesis, and went on to

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119 [ ].
120 Ibid, p 7.
121 [ ].
122 Ibid, p 2.
123 Ibid, p 2.
124 [ ].

state that "securing contracts from Genesis and Contact is problematic because of their market power." [ ] also stated that "countervailing market power either real or implied is required to produce a more competitive outcome at the margin during these periods of shortage." This passage implies that [ ] did not believe the hydro generators had sufficient countervailing market power, and that the outcomes they were observing during periods of shortage were not competitive.[125]

294. [ ], in a 2004 Business Plan, discussed its then view of the wholesale market situation, and stated that it believed Contact, Genesis, Meridian and Mighty River Power were "totally dominant in the market and any one player can set the level of the market price by their pricing strategy."[126] [ ] repeated this view in its 2006 and 2007 Business Plans.[127]

295. A 2007 [ ] document stated that its tactics of pricing significant [ ] assets considerably above existing market offers "forced increased thermal generation from discretionary plant [ ] [ ] stated that the market initially conceived its actions to be a short term tactic, but it was able to sustain its behaviour for over a month, and stated that it would continue to be employed in the near term as both market and hydrological conditions deem it effective.[128] This document seems to corroborate [ ] view in 2003 that Mighty River Power had the ability to drive the spot price higher.

Public information and media statements

296. In a 2002 report to MED, John Small stated that it seemed "reasonable to believe that substantial market power exists in both the generation and retail sectors, at least in some regions and time periods", and pointed to both structural and conduct evidence that he argued supported this view.[129]

297. In 2005, the Electricity Commission commissioned UMR Research Limited (UMR) to conduct research predominantly into hedge contract issues, but also into the market power of generators, and the effects on competition of vertical integration. UMR surveyed a range of parties, including generators, gentailers, purchasers and other industry participants, and conducted in-depth interviews with 35 parties.[130]

298. UMR stated that "a high degree of polarisation exists between purchasers and large generator-retailers over whether there is a competitive market for hedges with the former believing that the market is not-competitive. 26 of 34 purchasers who responded to the survey believed a competitive hedge market did not exist and four of eight generator-retailers were of this view." UMR went on to note that the principal reasons given for believing the hedge market was not competitive revolved "around the vertical integration of generator-retailers and perceptions of regional domination."[131] Comments made by respondents concerning market power and competition in the wholesale market included:

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125 [ ].
126 [ ].
127 [ ].
128 [ ].
129 John Small, *Hedge markets for electric power in New Zealand – A report to the Ministry of Economic Development*, 14 February 2002.
130 UMR Research Limited, *Electricity Hedge Market Issues – A Qualitative and Quantitative Study*, August 2005.
131 Ibid p 6.

> "I suspect if the state owned enterprises didn't own Genesis, Meridian and Mighty River Power then we would have seen even more significant market power abuse than we have in the market as it stands now because they're government owned – it's in their interests to ensure that the market works. [But you think there is market power being exerted?] Plainly, yes. (Generator-Retailer)"[132]

> "You can't get access to competitively priced electricity. The simple reality is you are competing at their mercy in terms of your buying price. You have vertically integrated entities in a market that is short on generation with very few options for a quick fix in that area. You really can't survive as an independent in that environment. You do get hedges traded, but the fundamental structure is that people are going to be on the receiving end. Every independent retailer has either got out unscathed or got burned like Fresh Start and NGC, and no-one has entered the market. (Other)"[133]

> "It comes down to what you define a competitive market to be. To me it comes down to there being several market participants and the more the better, none with a particularly dominant position – less than 20% market share and all that compete aggressively for business. I don't think that can really characterise the New Zealand market. There has been a lot of debate about vertical integration in particular and its impact on the wholesale market. (Generator-Retailer)"[134]

> "Uncompetitive and excessive pricing and the extraordinary profitability of electricity companies only reflects basically the monopoly. All the benefits are currently arriving to the generators which is a very good reflection that there is monopoly power in the system and that the industries that exist are being blackmailed into paying excessive prices. Lack of generation capacity – we'll be between a rock and hard place pretty soon. (Purchaser)"[135]

299. In 2008, UMR conducted and published follow-up research concerning hedge contract issues at the request of the Electricity Commission.[136] In relation to competition in the supply of hedge contracts, UMR noted that "perceptions of competitiveness remain more or less as polarised as they were in 2005 between gentailers, the majority of whom believe a competitive hedge market exists, and purchasers, the majority of whom believe that one does not exist."[137] UMR noted that critical issues for the supply of hedge contracts included liquidity and vertical integration, and went on to list the following critical issues for the wider electricity industry that it had obtained from the in-depth interviews:

- lack of competition;
- the emphasis being placed on renewable energy over the medium to long term;
- political interference;
- barriers to entry for new generators;
- competing regulatory regimes; and
- transmission issues.[138]

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132 Ibid p 55.
133 Ibid p 57.
134 Ibid p 60.
135 Ibid p 129.
136 UMR Research Limited, *Electricity Hedge Market Issues – A Qualitative and Quantitative Study*, February 2008. UMR received survey responses from 43 parties (including generators, gentailers, purchasers and other industry participants) and conducted in-depth interviews with 29 parties.
137 Ibid p 6.
138 Ibid p 6.

300. A 2008 Pan Pac submission to the Electricity Commission outlined its view that the existing generators in the wholesale market are "an oligopoly", and that individual generators "are able to exert market power", particularly during times of drought.[139] Pan Pac went on to state that it viewed the wholesale market as "dysfunctional", that the number of existing generators and retailers was insufficient to result in effective competition, and that the existing wholesale market has "substantial barriers in place" that are impacting on the ease of entry into the market.[140]

301. In a November 2008 interview, Todd Energy Managing Director, Mr Richard Tweedie, discussed, amongst other things, his views of competition in the wholesale market. Mr Tweedie stated that:

> Where the problem lies is not at the retail end it is at the generation end of the market, and the market power that Contact, Genesis, Mighty River Power and Meridian have, to determine prices. If we've got demand exceeding supply in a dry winter, each of them can game the market and drive the price through the roof. The only reason they haven't done this is to avoid being regulated.
>
> The only way you can fix the problem is by increasing the supply of generation. The other complaint would be the lack of new entrants. There are significant barriers to entry in the electricity market. Some smaller players have tried, but right now if you haven't got generation to match your retail customer load you'd be insane. [sic] To attempt to enter the market.
>
> The hedge market is not an effective hedge market. Where you would buy a hedge off say one of the SOE's, then find that SOE was competing against you in the retail market for prices less than what you paid him for the wholesale electricity, and we've seen examples of that.[141]

The Commission's investigation

302. As described in paragraph 17 above, in a 2004 letter to the Commission,[142] MEUG alleged that on several occasions since 2001 "suppliers have exercised market power to raise prices", and that the repeated use of market power represented "a more systematic competition problem." MEUG argued that the "supply oligopoly" was becoming more concentrated given the exit from the wholesale market of NGC, and the lack of any new generators entering the market.

303. In 2006, the Commission interviewed a number of large industrial consumers of electricity.[143] Most of these indicated that they believed there was only limited competition in the wholesale market. They believed that the bulk of a gentailer's electricity went to satisfy its own retail arm's load requirements, leaving little to offer to other parties. While many of the industrial consumers had PPAs with more than one gentailer, they stated that in many cases only one or two gentailers would respond to requests for PPAs, and there was little opportunity to negotiate on key terms.

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139 Pan Pac Forest Products Limited, *Submission to the Electricity Commission – Market Design Review – Options Paper Consultation*, 1 September 2008, p 1.

140 Ibid p 4.

141 Matt Freeman, Energy News, *Executive Interview: Richard Tweedie – Managing Director, Todd Energy*, 21 November 2008.

142 MEUG, *Letter to the Commission – Behaviour of electricity suppliers since winter 2001 through to the failure of the HVDC 9th to 12th January 2004 and the Commerce Act*, 16 January 2004.

143 Commerce Commission interviews with: Carter Holt Harvey, 8 June 2006; Comalco New Zealand Limited, 25 May 2006; Fletcher Building Limited, 23 May 2006; Fonterra Co-operative Group Limited, 23 May 2006; Norske Skog Tasman Limited, 22 May 2006; The New Zealand Refining Company Limited, 24 May 2006; New Zealand Steel Limited, 8 June 2006; and Pan Pac Forest Products Limited, 22 May 2006.

304. Comments made by the industrial consumers in regard to competition in the wholesale market included:

- [ ] considered Meridian could set the spot market price to be whatever it wanted it to be, especially at night;
- [ ] considered gentailers have collective market power; and
- [ ] did not consider another generator had [ ] to effectively compete with its existing supplier, and believed that gentailers had been able to contract out of any transmission risk associated with hedge contracts because of a lack of competition in the wholesale market.

Existing competition from diversification of generation assets

305. Participants within the wholesale market may experience competition from other existing generators, dependent on both the location of each participants' generation assets, and the type of asset – whether fossil fuel or hydro generation.

306. The split of generation between the North and South Islands varies between the main gentailers:

- of the main five gentailers, only two can be said to have a significant proportion of their generation capacity spread across both the North and South Islands, namely Contact (approximately 70 / 30 by capacity) and TrustPower (approximately 50 / 50 by capacity);
- in the North Island, generation capacity is dominated by Contact, Genesis and Mighty River Power who between them account for approximately 90 per cent of the available capacity; and
- in the South Island, generation capacity is dominated by Meridian who has approximately 70 per cent of the available capacity.

307. There is also differentiation in terms of generation type and most common dispatch order. The differing characteristics of the various types of generation plants mean that some generation stations are typically offered in at lower prices, and so are called on to generate (are dispatched) ahead of others. This is sometimes referred to as the 'dispatch merit order.'

308. Generation types that are typically offered into the market at lower prices and so dispatched first include hydro, wind and geothermal generation (often also referred to as baseload generation). Combined-cycle gas turbine (CCGT) plants and coal fired stations are considered mid-merit order stations. Open-cycle gas turbine (OCGT) plants and oil / distillate stations (such as the Whirinaki reserve generation plant) are high merit order plants, and due to the higher prices usually attached to supply offers, are usually the last to be dispatched.

309. All of the main gentailers have some form of baseload generation and compete with each other across both the North and South Islands to have that generation capacity dispatched. Only three of the gentailers have mid-merit order stations, namely Contact (Otahuhu B and TCC), Genesis (Huntly) and Mighty River Power (Southdown). At the

top of the merit order only Contact (New Plymouth) and Genesis (Huntly / E3P) usually compete to be dispatched.[144]

310. The geographic location of the existing generation stations is also relevant to this discussion. The North Island has a mix of hydro, geothermal, coal, gas and wind generation stations distributed across the Island. This covers a full range of generation types, from base-load hydro stations through to gas-fired peaking stations. Conversely, the South Island is dominated by hydro stations located predominantly in the lower half of the Island. The South Island has no geothermal, coal and gas generation stations to compete with the existing hydro stations, or in times of hydro shortages, compensate for a lack of hydro generation. The effects of this geographic separation of generation types are felt most acutely during periods of transmission constraint which either seriously reduces or stops the transfer of generation supply between regions or between Islands.

311. Consequently, the wholesale market appears to be relatively highly concentrated with considerable differentiation between competitors. During times of hydrological supply shortage, competition from existing players may not be sufficient to constrain the exercise of market power. And during the rare occurrence of transmission constraints, location of peaking plant may not be adequate to constrain behaviour of temporarily isolated generators.

Existing competition conclusion

312. The Commission considers that the quantitative evidence presented to the Commission strongly suggests that:

- Contact, Genesis, Meridian and Mighty River Power each have had the ability and incentive to exercise unilateral market power in the wholesale market;
- each of these parties has periodically exercised market power by offering into the wholesale market at prices above the competitive benchmark level;
- market power rents are estimated to have been substantial; and
- market power is most acute in periods of low hydro inflow, i.e., low rainfall. During other periods, such as most of 2004, the market appears to have been competitive.

313. This report provides three lines of evidence consistent with the view that Contact, Genesis, Meridian and Mighty River Power have both the ability and incentive to exercise unilateral market power, and that this exercise of unilateral market power has resulted in substantial wealth transfers from consumers to producers during certain time periods from, 1 January 2001 to 30 June 2007.

314. The Commission accepts the peer reviewer, Professor Nils-Henrik von der Fehr's view that the approach is fundamentally sound, well founded on accepted economic methods and practices. As such, the Commission considers that the quantitative analysis contained in the Wolak Report provides the Commission with a *prima facie* basis for finding that Contact, Genesis, Meridian and Mighty River Power have market power in the wholesale market, a necessary first step under s 36.

315. A number of the company documents and interviews indicate that Contact, Genesis, Meridian and Mighty River Power are viewed by some market participants, both gentailers and non-gentailers, as having market power in the wholesale market.

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[144] During times of hydro shortages hydro stations also come in higher up the merit order as the opportunity cost of water increases.

316. The Commission's review of company documents and public information, and with views expressed in interviews, suggests that each of Contact, Genesis Meridian and Mighty River Power may have market power in the national wholesale electricity market. The existence of limited actual competition is also consistent with the complaints the Commission has received asserting the existence and exercise of market power in the wholesale market.

317. The Commission recognises also that the potential for competition between existing generators will depend upon the location, and type of, generation assets held by each market participant.

318. In summary, the evidence obtained by the Commission strongly suggests that Contact, Genesis, Meridian and Mighty River Power were periodically able profitably to increase prices substantially above competitive levels, and did so. This limited competition has been particularly acute in periods of low hydro inflow, i.e., low rainfall, when the thermal generators face less competition from hydroelectric suppliers. During other periods, such as most of 2004, the market appears to have been competitive.

319. The findings above are discussed within the context of the Commission's analysis on existing competition. However we note that the findings presented are also relevant to the analysis of potential competition and countervailing buyer power. If either or both of potential competition or countervailing buyer power were adequate to restrain the exercise of market power, the exercise of market power would not have been identified in the wholesale market. Nonetheless, for completeness, the Commission's analyses of potential competition and countervailing buyer power are presented in the sub-sections below.

Potential competition

Introduction

320. Our assessment now turns to whether potential competition, the possibility of entry and/or expansion, is likely, sufficient and timely to constrain the market power that Contact, Genesis, Meridian and Mighty River Power are identified as possessing in the sections above. In assessing whether entry or expansion is likely, sufficient in extent or timely, the Commission has, amongst other things, interviewed market participants and parties who may have considered or attempted new entry during the period 2001-2008.

321. The following sections consider the main factors which could impact the likelihood, sufficiency and timeliness of entry and/or expansion:

- generation entry and/or expansion (actual and potential);
- development and construction costs;
- financial risk;
- the RMA consent process;
- regulatory uncertainty; and
- vertical integration between generation and retail.

322. These factors have been described as conditions of entry (and/or expansion) by the Court of Appeal.[145]

[145] Commerce Commission v New Zealand Bus Limited, above n 68, paras.145-182.

323. There are a number of other issues that have been identified by market participants and industry reports. For example, an LECG/TWSCL report for the Electricity Commission also identified the following as being key barriers to further investment in generation:

- fuel supply uncertainty, particularly relating to gas;[146]
- transmission investment and pricing; and
- perceptions of market power and non-commercial behaviour. [147]

324. The Commission does not rely on these barriers for the purposes of its assessment of market power.

Generation entry and/or expansion (actual and potential)

325. Potential competitors can act as a constraint on a business or businesses that might otherwise be able to exert market power. The Commission considers the history of past market entry can be a useful indicator of the likelihood of future entry.

326. It is important to emphasise that the Commission is assessing whether the generation entry and expansion that has occurred, has been sufficient to constrain the use of market power by existing generators. This is different to assessing whether sufficient new capacity has been added to meet current demand and expected demand growth.

327. The section below presents wholesale market shares to assess whether any new entry has occurred.

Observed market shares

328. Figure 8 below shows wholesale market shares for the period 2000 to 2008. The Commission recognises that static market shares may infer either vigorous competition or an oligopoly market. Therefore, market shares are assessed to assess only the presence of new entry or significantly declining market shares. If market shares were changing over time due to new entry eroding the positions of the existing players, this may suggest competitive conditions.

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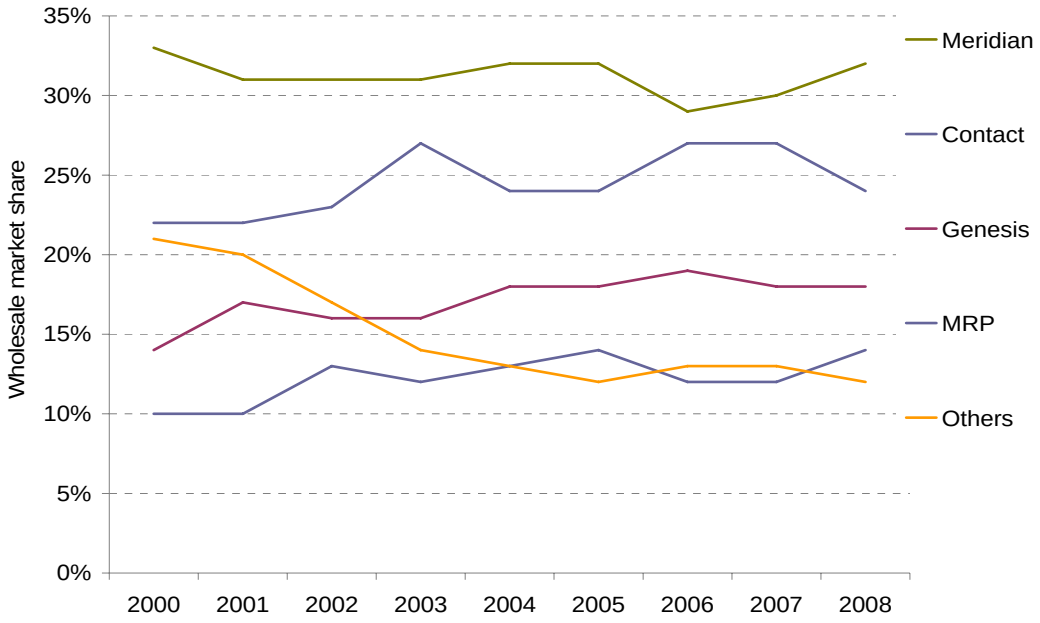
146 The evaluation of gas reserves changes over time. For example, see http://www.stuff.co.nz/business/industries/2331945/Doubt-Maui-upgrade-will-produce-more-gas. Market participants appear not to agree about the obstacle access to gas amounts to in the current marketplace. For example, see http://www.energynews.co.nz/features/richard-tweedie/1935/executive-interview-richard-tweedie-managing-director-todd-energy. The Electricity Commission report recently considered that there was a 50 per cent chance of gas prices being $25 per GJ, a substantial increase on previous estimates for the Electricity Commission. http://www.electricitycommission.govt.nz/pdfs/opdev/modelling/pdfsmodelling/gas-generation.pdf

147 Kieran Murray (LECG) and Toby Stevenson (TWSCL), *Report prepared for the Electricity Commission – Analysis of the state of competition and investment and entry barriers to New Zealand's wholesale and retail electricity markets*, 30 August 2004.

Figure 8: Generation market shares by company based on actual generation (GWh)



Source: MED New Zealand Energy Data Files
Note: Others include Cogeneration, Independent Generators and TrustPower

329. The following observations can be made on the market share data:

- Contact, Genesis, Meridian and Mighty River Power account for approximately 80 to 90 per cent of the market based on annual generation quantities over the period 2001 to present;
- market shares have remained relatively consistent over the period;
- Contact and Meridian have consistently had the greatest share of generation, with average market shares of approximately 24.4 and 31.2 per cent, respectively;
- Genesis and Mighty River Power both exhibited the largest increases in market share (4 per cent); and
- no significant new entry has occurred, and the largest overall change was experienced by 'Other generators', which saw a reduction in market share of 9 per cent.

330. Professor Wolak has noted that the New Zealand wholesale electricity market appears to be more highly concentrated than in other industrialised countries, such as Australia, the UK, the Nordic countries, and all of the regional markets in the US. However, the concentration appears to be in line with countries such as Spain, and virtually all Latin American countries.[148]

Potential new generation

331. The threat of new entry and/or expansion by small generators may provide a competitive constraint on the behaviour of existing market participants. Recent publications by the Electricity Commission, MED and NZIER all provide details of potential generation station investments. Such investment options are normally described as either

[148] Appendix 2 of the Wolak Report.

'committed', 'likely' or 'possible'. NZIER recently stated that in a study it undertook for a client it identified over 6,000 MW of potential generating station investments, but that only 25 per cent or approximately 1,500 MW of such investment was judged to be economic given likely station costs and forecast prices.[149]

332. New entry by an independent generator into New Zealand's wholesale electricity market (with a generation station greater than 10 MW in capacity)[150] has not occurred in the period under investigation (2001 to present).[151]

333. The last independent generator to enter the market above this level was the Tuaropaki Power Company Limited (TPC).[152] TPC entered the market in 2000 with its 55 MW Mokai 1 geothermal station. In 2005, TPC commissioned the Mokai 2 station which added an additional 38 MW of capacity. In 2007, TPC increased the capacity of its Mokai 1 station by 19 MW, bringing the total capacity from both stations to 112 MW.[153]

334. There has also been limited introduction of new generation capacity by large industrial consumers. In 2005, Pan Pac Forest Products Limited (Pan Pac)[154] commissioned a 13 MW wood combustion generation station which burns wood bark and saw dust to generate high pressure steam. The steam is used to generate electricity and dry additional wood waste products. It is worth noting that Pan Pac is a large consumer of electricity and its co-generation station provides electricity for its own use rather than for sale in the wholesale market. It does, however, reduce the total amount of electricity Pan Pac is required to buy from the wholesale market.

335. In addition, in 2004 the Crown commissioned the 155 MW liquid fuel (diesel) reserve energy station at Whirinaki, near Napier. The Whirinaki station is owned by the Crown and operated by Contact Energy under direction from the Electricity Commission. The Commission does not consider this new entry by an independent generator.[155] The Whirinaki station is operated according to parameters set out in the EGRs and according to offer strategies disclosed to the public by the Electricity Commission. The Whirinaki station does however add to the overall capacity of the system in times of generation shortage.

336. As can be seen in Figure 8 above, the share of total electricity generated by independent generators (including TrustPower) and cogeneration stations on an annual basis has been steadily reducing since 2000. This is likely to mean that the perceived competitive constraint represented by the threat of new entry (and actual new entry) is also likely to have reduced over that period.

337. More frequent has been investment in new generation capacity by existing generators. This includes both the addition of new generation capacity at existing generation sites

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149 New Zealand Institute of Economic Research, Report to the Electricity Commission – Market Design Report – Initial Stock-Take Paper, August 2005, p 32.

150 The 10 MW level is used by MED for their reporting of current generation stations in the New Zealand Energy Data File – and is the level at which the a generation station will typically be required to offer its output into the spot market so that the impact of its operation can adequately be taken into account by the System Operator.

151 In September 2006, NZ Windfarms commissioned Stage 1 of its Te Rere Hau wind farm. However, only 5 turbines were installed and the capacity is therefore less than 10MW. Work is underway on Stages 2 and 3 which will see a further 60 wind turbines installed on the wind farm. At 31 December 2008, a further 4 turbines had already been fully commissioned.

152 Mighty River Power has been a 25 per cent shareholder in TPC since 2003.

153 MED, New Zealand Energy Data File, June 2008, p 104.

154 During its interview with the Commission, Pan Pac indicated that its co-generation plant was to a large extent commissioned in response to the high price event of 2003.

155 Contact has a contract to operate and maintain the Whirinaki plant.

and new generation stations on new sites. Since 2001, Contact Energy, Genesis, Meridian, Mighty River Power and TrustPower have commissioned approximately 11 new generation stations (or added significant new capacity to an existing station) with a combined total increase in capacity of approximately 1,027 MW. This equates to an average annual increase in generation capacity of approximately 128.4 MW.[156] However, this increase in capacity has also been offset to some degree by a reduction in capacity at some generation stations, and the decommissioning of others.[157]

338. As described in the existing competition section above, electricity demand has been forecast to grow by approximately 2.7 per cent or 125 MW per year in the short term. Therefore, the new capacity added by both independent generators, large industrial consumers and the main gentailers appears sufficient to meet that growing demand. However, the generation market shares of the respective gentailers have remained fairly static since 2001.

339. As described above, the vast majority of the new capacity added to the system since 2001 has been added by the existing five main generators, with very limited entry or expansion coming from independent generators.

340. The quantitative evidence presented to the Commission suggests that any investment that has occurred by smaller generators has not been sufficient to remove or significantly mitigate the ability and incentive of Contact, Genesis, Meridian and Mighty River Power to exercise market power in the period since 2001.

Development and construction costs

341. Setting up a generation station involves significant sunk costs and takes a considerable period of time. Sunk costs as a barrier to entry into wholesale electricity markets have been acknowledged by the UK Office of Fair Trading.[158]

342. The level of sunk costs varies depending on the type of plant being developed. Some recent publicly available cost estimates of planned generation stations are as follows:

- $250 million – Contact's planned 200 MW gas-fired peaking station on the site of the disused Stratford power station;
- $400 million – Meridian's planned 143 MW wind farm in Makara, Wellington;
- $430 million – Contact's planned 200 MW Tauhara geothermal station near Taupo;
- $900 million – Meridian's planned North Bank tunnel hydro scheme on the Waitaki River; and
- $1.5 billion – Contact's proposed 350 MW Tuapeka Mouth hydro dam in Central Otago.[159]

343. A large proportion of these costs will be sunk.

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156 This covers the period 1 January 2001 to 31 December 2008.

157 Examples of stations that have had their capacity reduced include Contact Energy's 162 MW Whirinaki station (generation units sold in 2001), and the 580 MW New Plymouth station (reduced to 300 MW for most of the period until October 2007 when new asbestos was found and the entire plant was decommissioned. Since that time one 100 MW unit has been brought back on line to assist with dry winter capacity).

158 The OFT decision on the completed acquisition by ScottishPower plc of the remaining 50 per cent shareholding in South Coast Power Limited of 4 August 2004 http://www.oft.gov.uk/advice_and_resources/resource_base/Mergers_home/decisions/2004/scottish-power

159 Otago Daily Times, *Contact unveils Clutha dam plans*, 17 April 2009.

344. Construction lead times for new generation stations vary depending upon the technology selected for the station. For example, the time needed to construct a large scale hydro dam will be significantly longer than the time needed to construct a modern gas-fired CCGT generation station, given the significantly larger earthworks and dam construction involved. The time taken will also depend upon a number of other factors, including ease of access to land, obtaining RMA consent, ease of connection, permission to connect to the transmission grid, and the availability of parts necessary for construction.

345. In relation to its proposed Tuapeka Mouth hydro dam, Contact has estimated that it may take up to 12 years to fully construct and commission the station, with construction potentially beginning at some point in the period 2015 to 2025. The 12 year period included: four years for community feedback, consultation and in-depth investigations; one to three years to obtain resource consent; and four to five years to construct.[160]

346. Clearly these factors will differ for each different type of generation plant, and indeed for each proposed generation project. In particular, RMA consent is a major issue and this is considered in more detail below.

Financial Risk

347. Potential entrants interviewed by the Commission noted the large costs involved in building a new generation station and the need to seek such finance from investment institutions. The potential entrants have highlighted that as is the norm for investment finance, these institutions require a degree of certainty of the likely rate of return on their investment and of the ability of the generator to meet its repayment obligations. In that regard, the institutions have been unwilling to provide the necessary finance purely on the basis of the returns the potential entrant expects to make from selling its electricity into the wholesale market. This is due to the volatility of the pricing in that market and the impact low wholesale market prices may have on the generator's ability to meet its repayment obligations.[161] The current economic situation may have exacerbated the difficulty to obtain investment finance.

348. Therefore, a generator looking to enter the market must try and enter into a long-term hedge contract or power purchase agreement with a retailer or large consumer.

349. A generator seeking to obtain a hedge contract has two primary options. First, a generator can try and join the Energy Hedge trading platform and purchase hedge contract cover through that market.

350. Energy Hedge is a web-based standardised hedge contract trading platform formed by Contact Energy, Genesis, Meridian and Mighty River Power in late 2003. However, potential new entrants (and large consumers) have raised concerns about Energy Hedge both with the Commission and in a 2008 survey conducted by UMR Research for the Electricity Commission.[162]

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160 Contact Energy Limited, *Options for future hydro development on the Clutha / Matau-Au River*, April 2009, p 3.

161 Commerce Commission interview with [ ]. [ ] stated that all gentailers had indicated they would be willing to act as agent for it and sell its electricity on the spot market, but it did not consider this to be an option that would satisfy the investment banks. Commerce Commission interview with [ ]. [ ] also stated that they can not get funding from a bank based purely on sales into the spot market because of the spot price volatility.

162 UMR Research Limited, *Electricity Hedge Market Issues – A Qualitative and Quantitative Study*, February 2008.

351. Potential entrants have expressed concern at the fact that Energy Hedge is dominated by the main gentailers and to date only TrustPower and more recently ANZ National Bank Limited (ANZ) have successfully gained approval to participate in the market. Strict credit requirements and a requirement that market participants must both buy and sell hedge contracts appear to have prevented other generators, retailers and consumers participating in the market. The presence in the market of ANZ in particular may now provide an additional option for potential entrants as it will be able to trade on the behalf of other parties and is more likely to be perceived as independent, being neither a generator nor retailer.

352. The maximum duration of hedge contracts traded on Energy Hedge is only three years. This duration is unlikely to satisfy the investment institutions who typically require greater revenue certainty and security over a longer period, typically between 10 to 15 years in duration.[163]

353. The Electricity Commission, in a 2006 paper on hedge market development, stated that as at 13 March 2006, Energy Hedge had traded approximately 1078 contracts, representing $34 million in turnover since its inception in late 2003. It also noted that total energy contracted through Energy Hedge was approximately 507 GWh over a three year period, compared to the approximately 120,000 GWh that was traded through the wholesale market.[164] Over the three year period that means only 0.4 per cent of the energy was covered by an Energy Hedge contract.

354. The Electricity Commission stated that the primary influence of Energy Hedge is in how it provides information on the Energy Hedge participants' view of forward prices, which are able to be viewed on its website, and according to the Electricity Commission are being increasingly referenced by consumers when negotiating separate hedge contracts.

355. The Commission notes that Energy Hedge was created by the gentailers as a platform for inter-gentailer hedging, and therefore facilitates hedge contract trading between the main gentailers. But it does not meet the needs of non-vertically integrated potential new entrants. Some in the industry would argue that Energy Hedge is simply satisfying the purpose for which it was set up, and that it is not intended to be of use to new entrants.[165]

356. The second option for a generator is to seek to enter into a hedge contract directly with either a retailer or a large consumer. Potential entrants have raised the following concerns with the Commission:

- the unwillingness of the existing gentailers to enter into hedge contracts with potential entrants;
- low hedge contract offer prices;
- the short duration of hedge contract offers; and
- the illiquidity of the market generally.

357. Potential entrants highlighted that the main gentailers are generally unwilling to enter into hedge contracts with new entrants due to a preference for purchasing electricity from their own generation businesses and a preference for their own plans for future generation investment. Some potential entrants have argued that the gentailers do not

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163 Commerce Commission interview with [ ], 19 September 2008.

164 Electricity Commission, *Hedge Market Development – Issues and Options: Technical Paper*, 18 July 2006, p 30.

165 Comment by [ ] during the [ ] Commerce Commission interview with [ ].

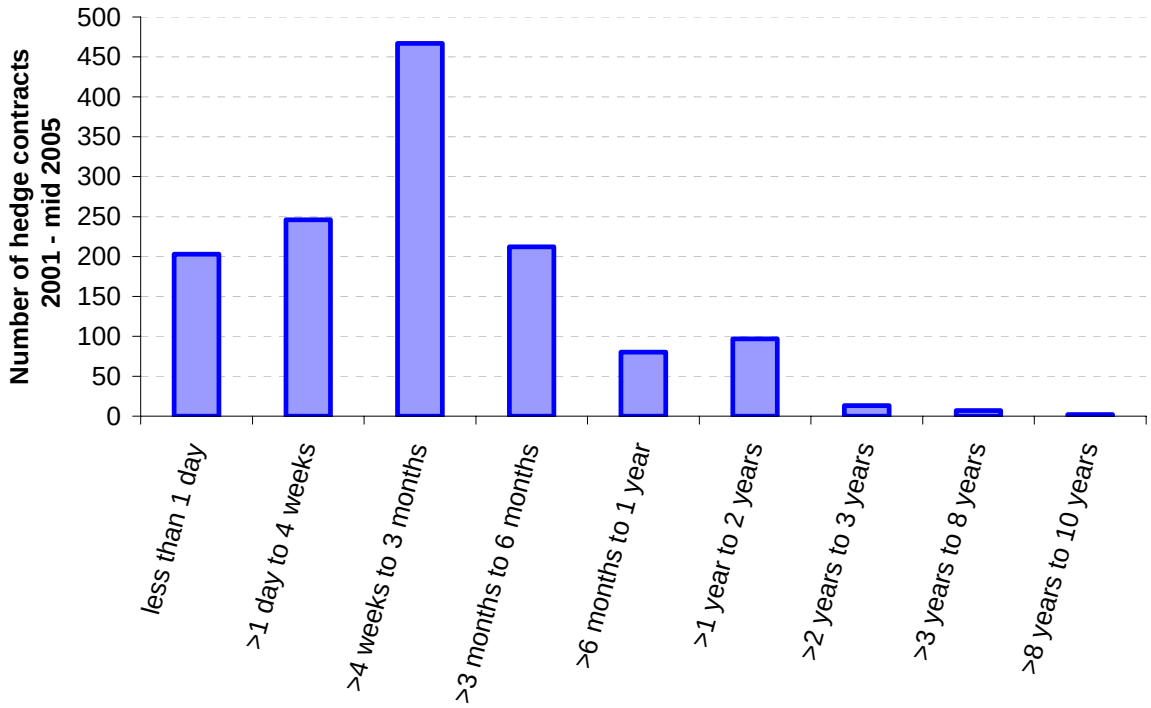
want to see an independent generator successfully enter the market (especially with low marginal cost plants such as wind and geothermal) as this may affect outcomes in the wholesale market and may enable that generator to create or acquire a retail arm in the future and provide greater competition as a vertically integrated player.[166]

358. Potential new entrants have also raised concerns with the Commission regarding the hedge contract prices they are being offered by gentailers. The new entrants believe the prices are too low and do not make it economic for the generation development to proceed.[167] New entrants consider this to reflect gentailers discriminating in favour of their own generation arms.[168]

359. Potential entrants have also raised concerns about the short duration of the contracts being offered to them by gentailers. [ ] stated that the hedge contracts on offer were generally for 2, 3 or 5 years. Such contract lengths are considerably shorter than those typically required by an investment institution looking to secure the investment finance being sought by the new entrant.

360. The Commission has collected data on every hedge contract signed by the generators in New Zealand between 2001 and mid-2007. Analysis of the duration of hedge contracts signed is presented in Figure 9 below.

Figure 9: Number of hedge contracts by duration of operation



Source: Commerce Commission analysis using hedge contract data provided by generators

361. The Commission's analysis of hedge market data has highlighted the relatively small proportion of generation supplied that is covered by a forward contract. The majority of contracts signed are for periods of short duration, most commonly from four weeks to

166 Commerce Commission interview [ ], 19 September 2008.
167 Ibid.
168 Commerce Commission interview with [ ]. Commerce Commission interview [ ], 19 September 2008.

three months. Only one hedge in the entire database was signed for a period exceeding ten years.

362. The relative illiquidity or 'thinness' of hedge contract markets in New Zealand may also make new entry more difficult.[169] Analysis by the Commission has found that the quantity of generation covered by hedge contracts ranged from 20 to 29 per cent of total generation, over the period 2001 to 2004.[170]

Table 1: Hedge contract quantities as a share of total annual generation (GWh)

	2001	2002	2003	2004	Average (2001-04)
Minimum share	32.1%	17.6%	19.6%	10.9%	20.1%
Maximum share	62.8%	17.9%	23.0%	13.6%	29.3%
Annual total generation (GWh)	38,237	40,029	40,006	41,095	

Source: Commerce Commission analysis using hedge contract data provided by generators and MED New Zealand Energy Data Files

Notes:
1) Hedge contract data used for this analysis included minimum and maximum quantities covered by the contract, but not by actual generation sold under the contract. Therefore lower and upper bounds are provided.
2) Contracts cover a range of durations. The date attributed to the contract is the start date and so all generation covered by the hedge contract is attributed to the year of the start-date. A larger proportion of hedge contracts in the dataset began in 2001, which explains the higher volume of generation attributed to 2001.

363. Perceived illiquidity of the hedge contract market is consistent with statements viewed by the Commission in company documents gathered in the course of this investigation.[171] The documents of [ ] refer to this risk. The documents of a [ ], also commented on the 'little concrete availability' of hedges throughout the year,[172] that generators "still appear to treat a hedge as a supply contract rather than a financial instrument," and that "the process of obtaining hedges remains tortuous."[173] Similar comments can be found in many subsequent [ ] documents, and it appears that this continues to be a major concern for [ ]. Views stated by [ ] on the hedge trading platform EnergyHedge include that it is an 'exclusive club' and there is a lack of willingness to trade with 'outsiders'.[174] One [ ] was concerned that large customers were being sold hedge contracts by net generators at prices lower than that it was being offered by those same gentailers. It was also concerned at the unavailability of hedge contracts, and noted that Genesis had declined to offer any hedge

169 This is consistent with the findings of the European Commission: "[i]lliquid wholesale markets are a barrier to entry as they are characterised by higher price volatility. Volatile wholesale markets might oblige new entrants to enter as a vertically integrated generator and supplier, which is more difficult." http://ec.europa.eu/competition/sectors/energy/inquiry/full_report_part2.pdf pp 169

170 Data on hedge contracts signed was collected from gentailers for the period 2001 to mid-2005 only.

171 For example, a [ ] document of March 2003 [ ] notes that "February was again a quiet month in terms of new hedging activity. The market has continued to be illiquid and thinly traded."

172 [ ].

173 [ ].

174 [ ].

contracts for the winter 2003 period.[175] Lack of access to hedge products leaves a net retailer, open to the risk of volatile wholesale market prices.

364. In its 2006 review of the New Zealand electricity industry, the International Energy Agency found the lack of a liquid hedge market to be a significant barrier to entry and commented upon its impact on overall competition:

> Most notably, the lack of liquid and transparent financial markets to hedge energy price risk and locational basis risk (risk from price separation between locations) is a significant barrier to entry. Retailers cannot readily hedge price risk financially by purchasing futures contracts for power, so they can either take on the risk themselves and buy all electricity on the spot market, or they can own generation outright. It is not surprising, then, that the five main generators are also the five main retailers. To reduce their locational basis risk, generators have realigned their retail generation portfolios so that they better match the geographic locations of their customers. While this vertical integration reduces price and basis risk for these companies, it does it at the expense of competition. Vertically integrated generator-retailers can limit competition because they operate in two markets and can cross-subsidise their operations. In addition, potential new retail supplier entrants must take on energy price risk that generator-retailers can hedge through their generation ownership. Finally, the generation-retail structure means that companies are managing risk internally, to the detriment of transparency and price discovery – prerequisites for a competitive market. Geographically matched, vertically integrated generator-retailers are particularly problematic for competition in the retail market. Though there is still regulated open access to distribution, it is less important because the regional vertically integrated generator-retailers effectively create unregulated regional monopolies that can raise prices to retail customers above competitive levels. Financial markets that allow companies to hedge both price and basis risk would help reduce commercial incentives for generation-retail vertical integration, reduce barriers to entry and increase competition. It would also build on New Zealand's already impressive level of transparency in the physical market.[176]

365. Various aspects of the hedge market in New Zealand therefore tend to make new entry less likely.

366. The lack of a developed hedge market tends to make entry by a stand-alone generator significantly more risky – and therefore less attractive – without the natural hedge of a retail arm. The likely success of entry of a new firm as a vertically integrated 'gentailer' is doubtful given that the sunk investment (see below) would be needed before a firm could contract with new customers to hedge its risk. No such entry has occurred in the New Zealand marketplace. Even if such an entry would mitigate some of the risk, entry at this level would be more costly.

The RMA consent process

367. Since its introduction, the Resource Management Act 1991 (RMA) has generated significant debate as to its impact on large investment projects, such as electricity generation stations. It has been the subject of a number of reviews and legislative amendments, the most recent of which, the Resource Management (Simplifying and Streamlining) Amendment Bill 2009, was introduced by the National Government in early February 2009. In a Cabinet paper dealing with the new bill, the Minister for the Environment stated:

> In the 17 years since the RMA came into force there has been growing criticism of its ability to effectively manage complex environmental issues and the slow and

[175] [ ].

[176] International Energy Agency, *Energy Policies of IEA Countries – New Zealand 2006 Review, p* 145.

> costly plan preparation and consenting processes. Some environmental groups claim the RMA (or its implementation) does not do enough to protect the environment, while businesses claim processes and regulations (predominantly plans) impose a heavy burden of compliance costs, stifle innovation, and contribute to the high cost of land and housing.[177]

368. The process of obtaining an RMA consent impacts on the likelihood and timeliness of development of potential new generation stations by both existing participants and potential entrants for a number of reasons, including:
    - the likelihood of challenge to large scale developments on environmental (or other) grounds;
    - the time required to obtain an RMA consent; and
    - the cost to obtain an RMA consent.
369. Large scale electricity generation projects, particularly hydro, wind, geothermal and coal-fired generation projects, have had difficulty receiving RMA consents during the period under investigation.[178] Objections to large scale electricity projects are frequent, both locally and nationally, given the size and nature of the projects and the perceived physical and visual impacts on the environment.
370. The 2009 Cabinet paper went on to consider the RMA issues faced by large scale proposals, which are often of national significance, and stated that:

> under the RMA it is relatively common for decisions on significant… electricity projects, and other large scale infrastructure projects to be appealed to the Environment Court – either by project opponents or the applicant themselves (against a decision to decline the application or against consent conditions that threaten the financial viability of the project).
>
> The holding costs associated with delays and uncertain timeframes, the direct costs of defending or taking appeals and the cost of consent conditions imposed to mitigate localised effects can be significant. In some instances the costs and/or delays can be out of proportion with the scale of expected environmental effects and have the potential to threaten the viability of projects that are in the national interest or have broad, but localised community benefits.[179]

371. The significant cost and time taken by RMA consent and Environment Court appeal processes can deter other parties from undertaking similar generation developments. For example, in a September 2006 interview, an overseas renewable energy plant developer, [ ] told the Commission that following Meridian's experiences with Project Aqua it was not considering investing in hydro generation in New Zealand.[180]
372. RMA consent and Environment Court appeal processes can add significant time to the timescale for developing new generation stations (if the project obtains consent).

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177 Office of the Minister for the Environment, Cabinet Paper, *Reform of the Resource Management Act 1991: Phase One Proposals*, February 2009, p 3.

178 Examples include: Meridian's 540 MW ($1.2 billion) Project Aqua hydroelectric generation scheme along a 60 kilometre canal proposed to be built alongside the Waitaki River which was discontinued in 2004 and had been met with strong opposition from local communities and environmental groups; Unison and Roaring 40's proposed 102 MW wind farm near the Te Waka Range which had its RMA consent application turned down by the Environment Court in February 2009; and Mighty River Power's plan to consent and re-commission its coal-fired Marsden B power station which met with strong protest from local and environment groups and was eventually abandoned (due to economic reasons) in 2007.

179 Office of the Minister for the Environment, Cabinet Paper, *Reform of the Resource Management Act 1991: Phase One Proposals*, February 2009, p 9.

180 Commerce Commission interview with [ ].

Examples of generation projects which have taken significant time during the RMA consent and appeal stages include:

- Contact's Wairakei and Pohipi geothermal stations: Consent applications for the existing Wairakei and Pohipi Road geothermal stations were lodged in 2001, granted in 2004, and then appealed to the Environment Court. Approval was obtained from the Environment Court in 2007. This process took approximately six years;
- Contact's Clutha River generation stations (Clyde and Roxburgh dams): The process to renew the Clutha River consents began in 1998 with consent applications being lodged in approximately 2001, granted in September 2003, and then subsequently appealed to the Environment Court. The Environment Court delivered its final decision, which confirmed Contact's consents with additional conditions, in May 2007. This process took approximately six years;
- Meridian's Project Aqua: Meridian announced its plans for Project Aqua (see footnote 178 for further information) and began consultation with local communities in April 2001. Meridian lodged its formal consent applications in May 2003. Due to the size and significance of the project, and the potential impact on other Waitaki catchment water users the Government took a number of important steps, including: the Minister for the Environment calling in the applications for Waitaki catchment water use in September 2003; and introducing the Resource Management (Waitaki Catchment) Amendment Bill in December 2003. The High Court declined Meridian's request to strike out an application for a declaration on existing water rights in March 2004. Meridian publically announced it would not proceed with Project Aqua in late March 2004. This amounted to only approximately one year during the formal consent phase. However, Meridian announced it would not proceed with the project before a final decision on the consents had been made;
- Meridian's Project West Wind: Consent applications for Meridian's 142 MW (62 turbine) wind farm near Wellington were lodged in July 2005, granted in December 2005 and appealed to the Environment Court by several parties. The Environment Court ruled in favour of Meridian in May 2007. This amounted to approximately two years;
- Meridian's North Bank Tunnel Concept: Water-only consent applications for Meridian's proposed 34 kilometre hydro generation tunnel were lodged in October 2006 and granted by Environment Canterbury in December 2008. Five appeals have been lodged with the Environment Court which are expected to be heard later in 2009. This has taken over two years and is yet to be finalised;
- Meridian's Project Hayes: Consent applications for Meridian's $1.5 billion 630 MW (176 turbine) wind farm in Central Otago were lodged in November 2006, granted in October 2007, and then appealed to the Environment Court with a judgment expected in mid-2009. This has taken over two years and is yet to be finalised; and
- Unison Networks Limited (Unison) and Roaring 40's Te Waka wind farm: Consent applications for the 102 MW (34 turbine) Te Waka wind farm near Napier were lodged in November 2005, granted by the Hastings District Council in June 2006, and then declined by the Environment Court in April 2007. Unison and Roaring 40's applied for a revised consent in June 2007 and the Minister for the Environment granted a ministerial call-in to fast track the request through the

resource consent process. The Environment Court considered the matter in December 2008 and declined the application in February 2009. This amounts to approximately four years since the initial consent application.

373. Table 2 below summarises relevant details regarding the RMA process regarding these projects:

Table 2: Time taken by RMA process for proposed generation investments

Company	Project	Type	Date consent applied for	Date consent granted	Environment Court decision	Time taken (years)
Contact	Wairakei & Pohipi re-consent	Geothermal	2001	2004	2007	6
Contact	Clutha River	Hydro	2001	2003	2007	6
Meridian	Project Aqua	Hydro	2003	N/A	Withdrawn 2004	
Meridian	West Wind	Wind	2005	2005	2007	2
Meridian	North Bank Tunnel	Hydro	2006	2008	Expected late-2009	2+
Meridian	Project Hayes	Wind	2006	2007	Expected mid-2009	2+
Unison / Roaring 40's	Te Waka	Wind	2005	2006	2009	4

Source(s): Company annual reports and media statements

374. Some projects have negotiated the RMA consent process more quickly. Examples of this include: Meridian's Te Apiti wind farm which took approximately three months to obtain an RMA consent with no appeals;[181] and the WEL Networks Limited (in partnership with Meridian) 64 MW (28 turbine) Te Uku wind farm project near Raglan, which took approximately 16 months to receive its RMA consent and Environment Court approval in November 2008. However, such experiences do not appear to be the norm and they are unlikely to fully counteract the experiences parties have had with the larger scale projects described above.

375. Often significant costs can be incurred by a party seeking an RMA consent without any certainty about the eventual outcome of the RMA process. Meridian's Project Aqua is an example of such a situation, where Meridian incurred significant costs - approximately $31 million (after tax) – during the planning and consent phases, but consents were not received for the project and the generation capacity associated with

[181] Meridian Energy Limited, Annul Report 2004, p 9.

Project Aqua was never built.[182] Key elements in Meridian's decision not to proceed with Project Aqua were uncertainty about the RMA rules applicable to the Waitaki catchment area, uncertainty about the nature of any consents available to Meridian and the uncertainty concerning project costs created by increased delays in the consenting process.[183]

376. Another example is the Te Waka wind farm described above which has been declined after four years of RMA processes. Unison's chief executive Ken Sutherland has stated that "the decision sends some seriously disconcerting signals to companies trying to undertake environmentally friendly energy production" and that Unison and Roaring 40's had spent "more than five years going through legal processes to get this far, and have spent significant sums pursuing consent for this excellent energy source."[184]

377. The costs incurred by parties during the RMA consent and appeals processes, as noted in the Cabinet paper, have the potential to undermine the financial viability of particular projects, and in the case of some potential new entrants the potential to undermine the financial viability of the new entrant itself.[185]

378. Potential new entrants have also stated that there are substantial costs involved in seeing a project through the RMA process, and that the nature of such costs favours investment in larger projects over smaller ones. [ ] stated that in its experience it cost the same to gain an RMA consent for a 30 MW wind project as it did for a 90 MW wind project. [ ] saw this as a disincentive to investment in smaller scale generation projects.[186]

379. These comments were echoed by New Zealand Wind Energy Chief Executive, Mr James Glennie, in 2006 when discussing the Environment Court's approval of consents for Genesis' 18 MW Awhitu wind farm south of Auckland. Mr Glennie welcomed the decision, but stated that the time and money Genesis had spent was out of proportion to the project's scale. Mr Glennie said that the reality of the RMA process was that the cost of obtaining resource consent was similar irrespective of the size of the wind farm being considered. Mr Glennie concluded that "with very high consent costs as a proportion of total project costs, small wind farm developers are, in effect, shut out of the market."[187]

380. The RMA clearly affects both the likelihood and timeliness of entry and expansion. However, this impact is greater for some types of generation and some types of project. Large scale hydro, wind and coal projects seem to be most affected by this, but there is some evidence to suggest that elements of the RMA process may also have a chilling effect upon investment by potential new entrant generators in smaller generation projects.

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182 Meridian stated in its 2004 Annual Report that the cost of the cancelled project amounted to approximately $31 million (after tax).

183 Meridian Energy Limited, Annual Report 2004, p 22.

184 Matt Freeman, Energy News, *Unison wind farm rejected. Sutherland calls for changes to legislation*, 25 February 2009.

185 Geotherm Group Limited (Geotherm Group) applied for a resource consent in 2001 for a planned geothermal generation station in Taupo. Environment Waikato granted a resource consent in December 2004, which was subsequently appealed by several parties, including Contact. The Environment Court appeal was not concluded until late 2006, early 2007. In an 11 October 2006 interview with the Commission, Geotherm Group stated that the construction delays caused by the additional Environment Court appeal were costing it approximately [ ] per month. Geotherm Group was placed in receivership in December 2006 for defaulting on a loan payment to Matrix Funding Group.

186 Commerce Commission interview with [ ], 19 September 2008.

187 Mark Peart, Green energy feels the heat of RMA's whip, *National Business Review*, 20 January 2006, p 11.

Regulatory uncertainty

381. Regulatory uncertainty can increase the risk of new investment by new and/or existing generators. Both market participants and potential entrants have cited the lack of clarity over future plans for environmental policies on carbon pricing as a factor which have complicated revenue projections during the period under investigation. This can further increase the difficulty for new players to obtain finance.

382. Market participants and industry commentators have also argued that actions by the Government during the period under investigation have significantly added to the regulatory uncertainty faced by both existing market participants and potential entrants. For example, third parties have raised concerns about the following Government actions:

- the underwriting of Genesis' gas contracts for its E3P generation project;
- the introduction of the Crown owned Whirinaki reserve generation station, which some argue should have been left to the market to provide and is unduly expensive given the decision to run it on expensive diesel; and
- the introduction by the Labour Government of a moratorium on new baseload thermal generation;[188] and its subsequent repeal by the National Government in December 2008.[189]

Vertical integration between generation and retail

383. The extent of vertical integration between the major generators and retailers has been cited by potential market participants as a barrier to entry into both the wholesale and retail markets.[190]

384. Vertical integration was stated as a factor which restricts the ability of prospective new entrant generators to agree long term supply contracts with downstream retailers. Furthermore, prospective entrant retailers stated that the vertically integrated gentailers are less likely to enter into long term supply contracts than in other overseas markets that do not feature vertical integration between wholesale and retail markets.

385. Vector recently stated that in its view vertical integration "acts as a significant barrier to the entry of non-vertically integrated parties" and believed this will continue to act as "the most significant barrier to efficient wholesale and retail markets."[191]

Potential competition conclusion

386. In the period under investigation, new generation entry has been limited and the generation expansion by existing generators has not significantly changed the relative market shares of the main gentailers or the extent of competition between them.

387. Setting up a generation station involves significant sunk costs and takes a considerable period of time. Clearly these factors will differ for each different type of generation plant, and indeed for each proposed generation project. In particular, RMA consent is a major issue for smaller new entrant generators.

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188 Electricity (Renewable Preference) Amendment Act 2008 amended the Electricity Act 1992 and made it an offence to connect new thermal generation above 10 MW for which an exemption had not been granted.

189 Electricity (Renewable Preference) Repeal Act 2008.

190 See for example: [ ]; and [ ].

191 Vector Limited, *Submission to the Electricity Commission on the Market Design Review Options Paper*, 1 September 2008, p 16.

388. A generator looking to enter the market will most commonly attempt to enter into a long-term hedge contract or power purchase agreement with a retailer or large consumer. A hedge contract provides insurance against financial risk, and so may also be a necessary condition of the investment finance required to build a generation asset. Potential new entrants into the wholesale market have cited lack of availability of long term hedges, either directly from the gentailers, or via Energy Hedge, represent a barrier to entering the market. The Commission's analysis of hedge market data has highlighted the relatively small proportion of generation supplied that is covered by a forward contract. Moreover, the majority of contracts signed are for periods of short duration, most commonly form four weeks to three months. Only one hedge in the entire database was signed for a period exceeding ten years.

389. The process of obtaining an RMA consent impacts on the likelihood and timeliness of development of potential new generation stations by both existing participants and potential entrants. The costs incurred by parties during the RMA consent and appeals processes have the potential to undermine the financial viability of particular projects and in the case of some potential new entrants the potential to undermine the financial viability of the new entrant itself.

390. The Commission typically considers entry within two years as being timely.[192] As noted above, the process of obtaining an RMA consent (including the possibility of appeal to the Environment Court) for a generation station of significant size can often take longer than two years. On this basis alone the Commission is therefore likely to consider that the RMA process means that entry and/or expansion is unlikely to be sufficiently timely to offset any market power concerns.

391. Both market participants and potential entrants have cited the lack of clarity over future plans for regulation, such as policy regarding environmental policies on carbon pricing during the period under investigation, as a factor which have complicated revenue projections. This factor can further increase the difficulty for new players to obtain finance.

392. The electricity sector's structure of vertical integration between generators and retailers has also been cited by potential market participants as a barrier to entry into both the wholesale and retail markets.

393. For these reasons the Commission considers that generation entry and/or expansion is not likely, sufficient in extent or timely enough to constrain the exercise of market power by Contact, Genesis, Meridian and Mighty River Power.

394. This conclusion is consistent with the findings of the quantitative evidence on existing competition - that a number of firms have the ability and incentive to exercise market power over a number of years, undefeated by actual or threatened entry.

Countervailing power

395. A buyer with sufficient countervailing buyer power may be able to constrain a supplier's market power. Countervailing power typically requires the buyer to have the ability to credibly threaten to switch to an effective alternative supplier, to vertically integrate itself, or to sponsor the entry of a new supplier.

396. The quantitative evidence submitted to the Commission shows that suppliers are periodically able to exercise market power in the wholesale market. Given their ability

[192] Commerce Commission, *Mergers and Acquisitions Guidelines*, 1 January 2004, p 29.

to do so, buyers are not exercising countervailing power. Buyers from the wholesale market are either the downstream retailing arms of the vertically integrated gentailers, or large industrial customers.

397. Given the market structure and market rules in the wholesale market, the downstream retailing arms of vertically integrated will not face the same incentives as a stand-alone retailer. There does not appear to be countervailing buyer power from the existing retailers.

398. Large customers also do not appear to be exercising countervailing power. Information obtained from the Commission's interviews with large industrial consumers. [ ] all considered that they were effectively price takers, with very little if any effective buyer power or negotiating power in negotiating the price, duration, location or key terms (such as the form of any included force majeure clauses) in hedge contracts with Contact, Genesis, Meridian and Mighty River Power. Many actually thought their size and location were a disadvantage.

399. On the other hand, [ ] and [ ] thought that they may have some buyer power at certain times when negotiating supply contracts or hedge contracts, due to the particular levers each had in negotiations, such as the positive relationship the consumer had with the gentailers or the implications for generation, retail and transmission in a region should the consumer switch to a competing gentailer for supply. This buyer power may insulate these players from the effects of market power to some degree, but they do not protect other purchasers.

400. Another way in which a large industrial consumer can potentially exercise countervailing power is to reduce (or threaten to reduce) its consumption of electricity either by cutting back its overall level of electricity consumption or by reducing the level of electricity purchased by generating its own electricity.

401. All the large industrial consumers interviewed by the Commission stated that they had only limited ability to reduce their levels of consumption in response to short-term increases in electricity prices, for a number of reasons, including:

- the nature of their facilities, including the ability to actually shut machines down safely and the time taken to restart machines and processes; and
- obligations upon the industrial consumers to meet existing contract terms and product orders or risk suffering financial and reputational losses and harm.

402. Some industrial consumers have invested in onsite electricity generation for their own supply, largely in the form of co-generation stations which provide both electricity and energy for other industrial processes in the form of steam or heat. For example:

- Pan Pac commissioned a 13 MW co-generation station in 2005; and
- NZ Steel has an onsite co-generation station which generates electricity with the waste heat from the process of burning coal for making iron (and supplemented by burning gas in times of very high prices).[193]

403. Other large consumers, such as Fonterra and CHH have developed co-generation capacity in partnership with gentailers. However, irrespective of whether the co-generation was built independently of, or in conjunction with a gentailer, the industrial consumers did not consider such generation (or the possibility of further co-generation

[193] NZ Steel originally built and owned the co-generation station in 1986, then sold it to Duke Energy in 1999, who sold it to its current owner Alinta Energy (New Zealand) Limited.

stations) to be a significant threat to the market power of the main gentailers. The Commission considers co-generation is unlikely to be a significant competitive constraint on the behaviour of the main gentailers. Further, [ ] noted that because it has its own generation station it actually pays twice for high prices – as it pays for its own generation costs – then also pays a portion of the costs to run the Whirinaki reserve station. [ ] saw this as a disincentive to investment in new generation for its own supply.

404. The Commission considers that any countervailing buyer power that does exist is insufficient to constrain or undermine the market power held by Contact, Genesis, Meridian and Mighty River Power.

Conclusion on Substantial Market Power

405. The Commission has assessed the quantitative and qualitative evidence put before it on market power. Evidence on existing competition, potential competition, and countervailing power of buyers has been considered.

406. This report provides three lines of evidence consistent with the view that the four large suppliers in the New Zealand electricity market have both the ability and incentive to exercise unilateral market power, and that this exercise of unilateral market power has resulted in substantial wealth transfers from consumers of wholesale electricity to producers during certain time periods from January 1, 2001 to June 30, 2007.

407. Qualitative evidence assessed by the Commission provides evidence that the generators themselves are aware that they, and/or their competitors, are able at times to offer into the wholesale market with limited constraints from other existing generators.

408. The Commission has considered the evidence on existing competition and concludes that each of Contact, Genesis, Meridian and Mighty River Power has, periodically, held market power and each has exercised its market power through its offer behaviour into the wholesale market.

409. The Commission has assessed the scope for potential competition to provide a constraint on the behaviour of existing participants in the wholesale market. Barriers to entry are found to exist, in the form of lengthy timelines for development and construction and the financial risks involved in setting up a new generation plant, which is exacerbated by the difficulty experienced by potential new entrants in obtaining hedge contracts, which would provide a degree of financial certainty. Further barriers to entry and expansion by smaller generators are present in the potentially lengthy process to gaining RMA consent, and by regulatory uncertainty over future Government policy relevant to the generation industry.

410. The Commission considers that any countervailing buyer power that does exist is insufficient to constrain or undermine the market power held by Contact, Genesis, Meridian and Mighty River Power.

411. Therefore, having considered the evidence presented and gathered, the Commission considers that entry and/or expansion is not likely, sufficient in extent or timely enough to constrain the exercise of market power.

412. The Commission considers that the quantitative evidence presented to the Commission strongly suggests that:

- Contact, Genesis, Meridian and Mighty River Power each have had the ability and incentive to exercise unilateral market power in the wholesale market;

- each of these parties has periodically exercised market power by offering into the wholesale market at prices above the competitive benchmark level;
- market power rents are estimated to have been substantial;
- market power is most acute in periods of low hydro inflow, i.e., low rainfall. During other periods, such as most of 2004, the market appears to have been competitive; and
- the frequent and repeated nature of the market power observed in this case suggest it is recurring in nature. The Commission considers that it cannot be described as merely temporary or transitory.

413. The Commission therefore considers that each of Contact, Genesis Meridian and Mighty River Power are likely to have held market power, and to have exercised a substantial degree of market power on a recurring basis for significant periods, in the national wholesale electricity market. The exercise of market power is particularly evident during periods of low hydro inflows when fossil fuel generators experience less competitive constraints on their offer behaviour from the hydroelectric generators.

9. SECTION 36 BREACH ASSESSMENT

Introduction

414. This section describes the Commission's assessment of whether Contact, Genesis, Meridian and/or Mighty River Power can be said to have taken advantage of a substantial degree of market power in the wholesale market for an anti-competitive purpose proscribed by s 36.

415. The Commission has considered a number of possible ways that generators may have breached s 36. The Commission has been informed by the complaints it has received, the discussions it has had with consumers, affected parties and industry bodies, and by its ongoing surveillance of the industry.

416. The sections below consider the alleged conduct investigated by the Commission and are set out using the following headings:

- have generators increased wholesale market prices to prevent or hinder retail competition;
- have generators decreased wholesale market prices to prevent or hinder wholesale competition;
- did [ ] seek to influence the Government to prevent or hinder wholesale competition;
- have generators affected the availability and terms of hedge contracts to prevent or hinder retail competition;
- allegations by [ ]; and
- have generators engaged in other anti-competitive strategies to prevent or hinder wholesale or retail competition.

417. These are considered in turn below. All of these allegations rely on the use of market power in the wholesale market.

Have Generators Increased Wholesale Market Prices to Prevent or Hinder Retail Competition

418. At issue here is whether Contact, Genesis, Meridian and/or Mighty River Power have taken advantage of a substantial degree of market power in the wholesale market to prevent or hinder competition in the retail market.

419. As stated in paragraph 413 above, the Commission considers that each of Contact, Genesis, Meridian and Mighty River Power have a substantial degree of market power in the wholesale market. The evidence obtained by the Commission has also shown that each gentailer has used its market power to increase wholesale market prices, and that this exercise of market power has re-occurred over a sustained period.

420. The Commission considers that the main way in which the four gentailers have used their market power has been to increase the prices at which each party has offered generation capacity into the wholesale market during periods when they have an ability and incentive to do so. This type of behaviour can also be referred to as 'economic withholding' of capacity.

421. The Commission's quantitative analysis has not specifically considered whether any of the generators offering into the wholesale market have physically withheld generation capacity from the wholesale market. The quantitative analysis does, however, identify that there are very few high price periods in which all available generation capacity, especially thermal or peaking capacity, has been offered into the wholesale market.[194] Given the extent of economic withholding of capacity observed in the wholesale market, it may be reasonable to assume that some degree of physical withholding of capacity has also occurred.

422. The Commission has considered whether by behaving in this way, Contact, Genesis, Meridian and Mighty River Power can be said to have taken advantage of their substantial degree of market power.

423. As noted previously, unless a high or monopoly price is instituted for an anti-competitive purpose, the setting of that price does not constitute taking advantage of market power for an anticompetitive purpose under s 36.[195] It is worth repeating the US Supreme Court's view that:

> The mere possession of monopoly power, and the concomitant charging of monopoly prices, is not only not unlawful; it is an important element of the free-market system. The opportunity to charge monopoly prices—at least for a short period— is what attracts "business acumen" in the first place; it induces risk taking that produces innovation and economic growth. To safeguard the incentive to innovate, the possession of monopoly power will not be found unlawful unless it is accompanied by an element of anticompetitive conduct.[196]

424. In theory, high wholesale market prices should encourage generation entry and expansion rather than prevent or deter competition at this level. Whether entry or expansion actually occurs or not will depend upon the conditions of entry faced by a party wanting to enter the market or expand their existing generation capacity. Where

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194 See section 5 of the Wolak Report for further detail.
195 *Telecom v Clear*, above n 93 paras 407-408.
196 *Verizon Communications v Law Offices of Curtis V Trinko,* above n 108, para 407.

monopoly power (and pricing) persists, the remedy to mitigate it will generally be a regulatory one, under Part 4 of the Commerce Act or otherwise, or structural reform.[197]

425. As stated in paragraph's 386 and 393 above, in the period under investigation the Commission considers that new generation entry has been limited and the generation expansion by existing generators has not significantly changed the relative market shares of the main gentailers or the extent of competition between them. Further, the Commission considered that generation entry and/or expansion is not likely, sufficient or timely enough to constrain the exercise of market power by Contact, Genesis, Meridian and Mighty River Power.

426. The Commission considers that the impact of the exercise of market power in the wholesale market is most likely to be experienced in the downstream retail market, given that wholesale market and wholesale market prices are a significant cost component of the retail price.

427. All generators offering into the wholesale market are required to sell their output to a central body, the Clearing Manager. All retailers are required to buy their electricity from the Clearing Manager and are charged a price determined by the Clearing Manager based on information obtained from a number of parties involved in the dispatch, pricing and reconciliation processes. In this way, a vertically integrated gentailer sells electricity to, and buys electricity from, the Clearing Manager.

428. A gentailer that sells more electricity to the Clearing Manager as a generator than it buys from the Clearing Manager as a retailer can be referred to as a 'net generator', or 'net long'. It is a net generator both in terms of the amount of electricity injected into the system as a generator and withdrawn from the system as a retailer,[198] as well as in terms of its net financial position with the Clearing Manager. Conversely, a 'net retailer' retails more electricity to its customers than it sells to the Clearing Manager as a generator.

429. As described above, generators, retailers and large consumers can enter into hedge contracts which afford the parties to the hedge contract a degree of protection from the price volatility of the wholesale market, and could in theory affect whether a party is a net generator or net retailer in a financial sense.

430. High or volatile wholesale market prices may deter a new entrant retailer from entering the retail market due to the volatility of such a key cost input and/or as a result of a suspicion that such wholesale market price volatility is the result of the exercise of market power by one or more generators. A retailer seeking to guard against exposure to wholesale market price volatility will for the most part be forced to seek a hedge contract from a vertically integrated generator against which it will also likely compete in the retail market.

431. High or volatile wholesale market prices may also deter or hinder existing retailers from competing in the market or expanding their market share. The use of market power to increase wholesale market prices would impact most on net retailers and stand-alone retailers,[199] due to their net exposure to the wholesale market. In some cases, the effect of higher or more volatile input costs may be significant enough to deter an existing retailer from remaining in the market.

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197 *Telecom v Clear,* above n 93, paras 407-408. See also Appendix 3 of the Wolak Report regarding some of the market power mitigation mechanisms adopted in other jurisdictions.

198 The Commission notes that electricity is not withdrawn from the system by the retailer itself, but by its customers.

199 A 'stand-alone retailer' is a retailer that does not have any generation assets or capability.

432. Retail competition may be affected on a national basis, but it may also be affected on a regional basis as a result of more extreme wholesale market and hedge contract price increases in areas behind transmission lines prone to occasional constraints. This may further lessen the extent of retail competition that can be expected in these areas.

433. The Commission has spoken with a number of new entrants and potential entrants. Some of them noted the potential for high wholesale prices to make entry into the retail market difficult. However, the Commission has found nothing, in the information provided to the Commission by Contact, Genesis, Meridian and Mighty River Power or otherwise, to support the allegation that gentailers may be behaving in a manner designed to raise wholesale prices specifically in order to exclude any particular retailer, or to deter the entry of a potential retail competitors.

434. As noted above, the Commission found that Contact, Genesis, Meridian and Mighty River Power each have a substantial degree of market power in the wholesale market and that they have each used that market power to increase the price at which they offer generation capacity into the wholesale market, thereby increasing wholesale market prices. However, the Commission has found no evidence to suggest that in doing so, Contact, Genesis, Meridian and Mighty River Power, took advantage of their market power at the wholesale level for the purpose of preventing, deterring or hindering competition at the retail level.

435. The Commission notes that the lack of evidence pointing to an anti-competitive purpose appears consistent with the quantitative evidence presented to the Commission which suggests that each of Contact, Genesis, Meridian and Mighty River Power exercised their market power for legitimate profit-maximising purposes. In the circumstances it is unlikely that any such purpose could or should be inferred from any anti-competitive effect.

436. The Commission therefore concludes that Contact, Genesis, Meridian and Mighty River Power have not taken advantage of their market power, in the wholesale market, for an anti-competitive purpose by increasing wholesale market prices.

Have Generators Decreased Wholesale Market Prices to Prevent or Hinder Wholesale Competition

437. The deliberate sale of a good or service at a price below production cost so as to exclude competitors is often referred to as 'predatory pricing'.[200] It is generally accepted that such pricing is only anti-competitive where, if successful, it enables a party to later raise prices following the exclusion of one or more competitors.

438. It has been suggested to the Commission by a potential new entrant generator that some gentailers may have priced hedge contracts with large industrial consumers in a predatory fashion to discourage or prevent new entry by a competing generator.[201] The suggested purpose of such behaviour would be to prevent a new entrant generator securing entry into the market by signing a hedge contract for part or all of its expected generation output. Without such a contract, the new entrant generator may be deterred from actually entering the market given the risks associated with selling its generation

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[200] See for example: *Brooke Group Ltd v Brown & Williamson Tobacco Corp* 509 US 209 (1993) (USSC); *Boral Besser Masonry Ltd v ACCC,* above n 64; and *Carter Holt Harvey Building Products Group Limited v Commerce Commission,* above 94.

[201] [ ].

output solely into the wholesale market, and the perceived unwillingness of investment financiers to provide funding without such output agreements in place.

439. The Commission has found no credible evidence to support such allegations. Indeed, the evidence obtained by the Commission is that wholesale pricing has tended to be above, rather than below, production cost by a significant margin.

Did [ ] Seek to Influence the Government to Prevent or Hinder Wholesale Competition

440. As part of the Commission's investigation, the Commission has investigated concerns that [ ] took advantage of its market power to seek policy decisions from the Government for an anti-competitive purpose, namely to restrict, prevent or deter construction of competitor generation stations, contrary to s 36.

441. The key evidence supporting this allegation was a July 2007 internal [ ] Board Paper describing the proposition to Government of [

]. It was noted that this [ ] could delay – at least until [ ] – the need for [ ] to be built. This included [ ] own plans for [ ] and, importantly, a competitor's ([ ]) plans for [ ].

442. Significantly, the [ ] document also noted that:

> [ ] requires from Government the following to underpin the value of [ ]:
>
> - Government policy direction that would prevent the construction of [ ] and [ ]
>
> - Increase in the despatch price of the Government owned Whirinaki from $200/MW to a price that reflects diesel fuel generation (approx $300/MWH).[202]

443. [

]. [ ] motive for requesting the Government to ban the [ ] may have been to take the decision out of [ ] hands and avoid further public criticism – and enable [ ] to proceed with its plans for [ ].

444. The addition of [ ] area and the overall wholesale market would likely add significant capacity and competition to the wholesale market and would likely relieve some of the upward pressure on wholesale market prices due to annual demand growth and limited new generation capacity. In [ ] view, preferring new renewable generation and [ ] will be significantly value enhancing for [ ] at the likely expense of other gentailers.

445. In August 2007, the Minister of Energy presented a paper to Cabinet seeking agreement in principle to a moratorium on the commissioning of new baseload thermal power generation in the short to medium term (and noted there had not been previous consideration of this). On 11 October 2007, letters were sent by the Minister for State Owned Enterprises (SOE) to Genesis, Meridian and Mighty River Power informing

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202 [ ].

them of the Government's decision to limit the development of new thermal generation capacity for SOEs.

446. In December 2007, the Government introduced the Climate Change (Emissions Trading and Renewable Preference) Bill, which introduced a 10 year moratorium on baseload thermal generation. This in turn became the Electricity (Renewable Preference) Amendment Act 2008, which received royal assent on 25 September 2008.

447. The Commission issued a s 98 notice to [ ] requiring further information on the [ ] Board paper and details of [ ] dealings with the Government in respect of this issue. In its s 98 response relevant to this issue, [ ] noted that it had met with the then Minister of Energy, Hon David Parker, a number of times to set out its view of energy strategy matters. [ ] stated:

> These discussions were [ ];
>
> - [ ];
> - [ ];
> - [ ]; and
> - [ ].
>
> To our knowledge, the question of the Whirinaki price has not been discussed with the Government in terms guaranteeing that should be propped up in any way. We are also not aware of any discussions with the Minister or officials about Government policy direction that would prevent the construction of [ ]. [203]

448. [ ] The Commission considers that this conduct is unlikely to have breached s 36 of the Commerce Act in any case, as there appears to be insufficient causative link between [ ] seeking to influence the Minister and its market power in the wholesale market. Any person, regardless of resources or market power, can seek to influence or lobby members of Parliament and Ministers for favourable changes to the business environment. Indeed, it is frequently parties without market power, and who seek to erode the market power of another, who succeed in convincing the government of the day to intervene.

449. Further, the major consequence of [ ] use of its market power would have been the passing of the Electricity (Renewable Preference) Amendment Act 2008. That legislation was repealed by the new National Government in December 2008. The Commission understands that [ ] is still pursuing [ ]. Accordingly, it would appear that, even if a breach could be established, the ongoing detriment associated with the conduct would likely be negligible as a consequence of the legislation being repealed so quickly.

450. The Commission considers that government agencies should be careful to ensure that market participants are not able to use regulatory interventions to enhance their market power. In particular, agencies should ensure they fully appreciate the competitive effects of regulatory proposals put forward by industry players, and close attention should be paid to policies which increase the cost of, or entirely prevent, entry and expansion.

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[203] [ ].

Have Generators Affected the Availability and Terms of Hedge Contracts to Prevent or Hinder Retail Competition

451. A generator could use its market power in the wholesale market to reduce the availability of hedge contracts or increase the price of hedge contracts. This could prevent a rival retailer entering the retail market or an existing retailer competing in the market, by increasing the rivals' exposure to wholesale market price volatility. Most retail customers pay a fixed price for their electricity that does not vary with the short term fluctuations in the wholesale market price.[204] Hedge contracts are seen as an essential tool by retailers to manage this price risk. A generator with market power in a particular geographic region may also deter potential new entrant retailers from entering the retail market by withholding hedge contract capacity (either partially or completely) or by increasing the prices of such hedge contracts.

452. For the purpose of this investigation, the hedge market is conservatively defined as a national market. The Commission's analysis, as presented in paragraph 362 above, notes that approximately 25 per cent of electricity generated is covered by hedge contracts. This is a small proportion when compared to other markets.

453. The Commission spoke with, and reviewed documents provided by a number of existing players and potential entrants. It was acknowledged that obtaining hedge contracts could be difficult, and something of a barrier to retailing. One company document noted:

> Management confirmed [ ] and [ ] were reluctant to talk with [ ] about hedging. Talks were not likely to be given priority by these companies due to [ ] being considered to be a competitor.[205]

454. A refusal to supply an essential input to a competitor may constitute taking advantage of market power for a prohibited purpose.[206] The Courts have required that parties with substantial market power supply downstream competitors on terms that would have existed in the competitive market, such as through the application of the Efficient Component Price Rule.[207]

455. However, the Commission has found no evidence to suggest that Contact, Genesis, Meridian or Mighty River Power have affected the availability and terms of hedge contracts for the purpose of preventing, deterring or hindering competition at the retail level. While the terms and hedges available may not have been to the liking of existing or potential retailers, they do not appear to have been set for an unlawful purpose.

456. As with the allegations around high wholesale market prices, the Commission considers that the lack of evidence pointing to an anti-competitive purpose appears to be consistent with the view that each of Contact, Genesis, Meridian and Mighty River Power exercised their market power for legitimate profit-maximising purposes. In the circumstances it is unlikely that any such purpose could or should be inferred from any anti-competitive effect.

457. The Commission, therefore, concluded that Contact, Genesis, Meridian and Mighty River Power have not taken advantage of their market power, in the wholesale market,

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204 These are referred to by Professor Wolak as a retailer's fixed-price retail load obligations.

205 [ ].

206 See *Commerce Commission v Bay of Plenty Electricity,* above n 71, paras 386 to 389 and paras 395 to 397, and the cases cited therein.

207 *Telecom v Clear*, above n 93.

for an anti-competitive purpose by affecting the availability and terms of hedge contracts.

Allegations by [ ]

458. As part of the investigation, the Commission interviewed [ ] of [ ] to obtain its views on the competitiveness of the wholesale and retail electricity markets as a potential new entrant electricity generator.

459. [ ] alleged breaches of Part 2 of the Commerce Act by participants in the electricity industry, namely [ ].

460. The investigation team assessed the allegations made by [ ] and concluded that three allegations warranted further investigation. The three allegations were, that contrary to s 36:

- [ ] obstructed [ ] from drilling initial test geothermal wells at [ ] by denying access to [ ] drilling rig, taking advantage of its market power in a market for the acquisition of drilling services (and/or a market for electricity generation);

- [ ] and [ ] each prevented [ ], for the purpose of preventing or deterring [ ] from entering the wholesale electricity market, by

  - [ ] taking advantage of its market power in a market for the acquisition of drilling services (and/or in the wholesale market) by undercutting [ ] price to secure a drilling contract at the [ ];

  - [ ] taking advantage of its market power in a market for the acquisition of drilling services (and/or a market for wholesale electricity) by refusing [ ] to allow [ ] at the [ ]; and

- [ ] took advantage of its market power in the wholesale electricity market by undercutting [ ] supply contract offer to a large industrial customer, [ ], to deter [ ] entry into the wholesale electricity market.

461. Dealing with each of the allegations in turn:

- The Commission found no evidence that [ ] asked or induced [ ] to deny [ ] access to [ ] drilling rig;
- The second allegation appears to have been based on a misunderstanding of what occurred. The Commission concluded that:
  - [ ] did not make an offer to [ ], the owners of the [ ], and the offers from [ ] did not undercut [ ] offer;
  - The [ ] tendered for the drilling contract at [ ]. However, [ ] believed it had responsibility to contract for these services as operator of the field, and had already contracted with a third party for them. A commercial solution was reached by [ ] to use the services contracted by [ ]. There appears to have been a genuine misunderstanding about the contractual responsibilities of [

], as well as a breakdown in communication between those parties about putting these responsibilities into practice; and

- The Commission has evaluated [ ] bid to [ ]. It appears to have been in line with other hedge contract offers at the relevant time, while [ ] offer was significantly above the market rate. In any event, [ ] saw many risks with [ ] offer, which contributed to its decision to accept [ ] bid.

462. The Commission concluded that the facts did not support the allegations made by [ ], and that either the acts complained of had not occurred, or that no breach of the Commerce Act was likely.

Have Generators Engaged in Other Anti-competitive Strategies to Prevent or Hinder Wholesale or Retail Competition

463. A generator with market power in the wholesale market could seek to take advantage of that market power to stop a new or existing competitor adding new generation capacity to the wholesale market. This potential strategy might allow the generator to maintain high prices for longer.

464. This strategy could be carried out in a number of ways. For example, it could purchase essential assets or land. It could tie up essential inputs, such as fuel, through long-term contracts. It could use legal processes, such as Resource Management Act process, to raise rivals' costs.

465. Regarding the latter, a third party raised that Contact challenging the RMA consents granted to TrustPower for its 200 MW Mahinerangi wind farm in Otago might be Contact taking advantage of its wholesale market power to prevent or hinder a competitor in the wholesale market. The Otago Regional and Clutha District Councils granted resource consents in October 2007. Contact, and the Uplands Protection Society, appealed these to the Environment Court. The Environment Court rejected both appeals in July 2008.

466. Legal processes, including the enforcement of legal rights, can be used for anti-competitive purposes.[208] However, while we do not rule out that such activity could amount to a breach of s 36, it will not normally amount to 'taking advantage of' market power. If it was not the firm's market power that enabled it to act as it did, and if a firm without market power would have acted in the same way, then no breach of s 36 is likely. There must be a link between the existence of market power and the relevant conduct. The Commission does not consider that this link is sufficiently strong in this case to warrant detailed investigation.

467. The Commission received a number of other suggestions that generators had taken advantage of a substantial degree of market power to deter new generation entry and expansion, but none were sufficiently specific, credible or likely to involve a breach of s 36 to warrant further investigation.

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[208] See for example: *Electricity Corp Ltd v Geotherm Energy Ltd* [1992] 2 NZLR 641 (CA); and *Telecom Corporation of New Zealand Limited v Clear Communications Ltd* [1992] 3 NZLR 247 (HC) and the authorities discussed in *Gault on Commercial Law* at 36.26

Conclusion of Section 36 Breach Assessment

468. The Commission has considered a variety of ways in which generators could have taken advantage of a substantial degree of market power in the wholesale market for an anti-competitive purpose.

469. In several cases the conduct simply did not, or could not, constitute a generator 'taking advantage' of its market power. In others, the conduct could not be said to have been for an anti-competitive purpose. In others, the Commission found that the factual basis for the allegation was not made out. In no case did the Commission find that a breach of s 36 was likely.

10. SECTIONS 27 AND 30 ANALYSIS

Introduction

470. Section 27 is a broad provision, prohibiting the intended, likely or actual effect of a substantial lessening of competition through concerted action (whether through contracts, arrangements or understandings). It covers both horizontal and vertical arrangements, and does not require that any or all parties to the prohibited action are in competition with each other.

471. By contrast, s 30 prohibits concerted action with the intended, likely or actual effect of fixing, controlling or maintaining prices only where two or more of the parties are in competition. Such action is deemed to substantially lessen competition.

472. Section 27 of the Commerce Act states:

> Contracts, arrangements, or understandings substantially lessening competition prohibited
>
> (1) No person shall enter into a contract or arrangement, or arrive at an understanding, containing a provision that has the purpose, or has or is likely to have the effect, of substantially lessening competition in a market.
>
> (2) No person shall give effect to a provision of a contract, arrangement, or understanding that has the purpose, or has or is likely to have the effect, of substantially lessening competition in a market.

473. Section 30 of the Commerce Act states:

> (1) Without limiting the generality of section 27 of this Act, a provision of a contract, arrangement, or understanding shall be deemed for the purposes of that section to have the purpose, or to have or to be likely to have the effect, of substantially lessening competition in a market if the provision has the purpose, or has or is likely to have the effect of fixing, controlling, or maintaining, or providing for the fixing, controlling, or maintaining, of the price for goods or services, or any discount, allowance, rebate, or credit in relation to goods or services, that are—
>
> (a) Supplied or acquired by the parties to the contract, arrangement, or understanding, or by any of them, or by any bodies corporate that are interconnected with any of them, in competition with each other; or
>
> (b) Resupplied by persons to whom the goods are supplied by the parties to the contract, arrangement, or understanding, or by any of them, or by any

> bodies corporate that are interconnected with any of them in competition with each other.
>
> (2) The reference in subsection (1)(a) of this section to the supply or acquisition of goods or services by persons in competition with each other includes a reference to the supply or acquisition of goods or services by persons who, but for a provision of any contract, arrangement, or understanding would be, or would be likely to be, in competition with each other in relation to the supply or acquisition of the goods or services.

474. The elements of ss 27 and 30 are considered below.

A Contract, Arrangement or Understanding

475. Sections 27 and 30 cover concerted, as opposed to unilateral, conduct. The first requirement of both sections is the establishment of a contract, arrangement or understanding.

476. A contract requires a degree of formality, requiring an offer, acceptance and an exchange of something of value (consideration). Contracts are marked out by their enforceability at law.[209] However, s 27 prohibits not only formal contracts and agreements, but also less formal arrangements or understandings.

What amounts to an arrangement or understanding?

477. For the purposes of ss 27 and 30 the word 'arrangement' carries its ordinary meaning:

> Arrangement is a perfectly ordinary English word and in the context of s 27 involves no more than a meeting of minds between two or more persons, not amounting to a formal contract, but leading to an agreed course of action.[210]

478. An understanding is substantially similar, although less formal than an arrangement and may be easier to prove.[211] The leading New Zealand authority on requirements for establishing a contract, arrangement or understanding is *Commerce Commission v Giltrap City Limited*. Tipping J (for himself and Gault P) stated the requirements for an arrangement or understanding:

> [15] We do not consider it appropriate to be tied in any determinative way to the concepts of mutuality, obligation and duty. While the concept of moral obligation is helpful in that it will often reflect the effect of an arrangement or understanding under s 27, the flexible purpose of the section is such that it is best to focus the ultimate inquiry on the concepts of consensus and expectation. A finding that there was a consensus giving rise to an expectation that the parties would act in a certain way necessarily involves communication among the parties of the assumption of a moral obligation.
>
> …
>
> [17] Before there can be an arrangement under s27 (or for that matter an understanding) there must be a consensus between those said to have entered into the arrangement. Their minds must have met — they must have agreed — on the subject matter. The consensus must engender an expectation that at least one person will act or refrain from acting in the manner the consensus envisages. In other words, there must be an expectation that the consensus will be implemented in

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209 *Hughes v Western Australian Cricket Association (Inc) & Ors (1986) ATPR 48-020 at 48-040*

210 *New Zealand Apple & Pear Marketing Board v Apple Fields Limited* [1991] 1NZLR 257-261.

211 *Auckland Regional Authority v Mutual Rental Cars (Auckland Airport) Limited* [1987] 2NZLR 647, p 662; and *TPC v TNT Management PTY Ltd* (1985) ATPR 40-512 46-098.

> accordance with its terms. If no specific action or inaction is envisaged on anyone's part, it would be difficult to find an arrangement under s27, if only for want of the existence of the necessary purpose or effect of substantially lessening competition.
>
> [18] We therefore consider that the question whether a particular person entered into an arrangement or arrived at an understanding under s 27 should be answered by asking whether that person was part of a consensus giving rise to an expectation that some proscribed action or inaction take place. If they were, they will have entered into an arrangement. If they were not, they will not have entered into any arrangement, but they may nevertheless have contravened s 27 by being a secondary party …[212].

479. On that basis, to constitute an arrangement or understanding:

- there must have been a consensus or 'meeting of minds';
- the meeting of minds must have given rise to an agreed course of conduct with a clear expectation as to that future conduct; and
- there need not be any mutual obligations between the parties.

Proving an Arrangement or Understanding

480. Tipping J and Gault P in *Giltrap* also considered how an arrangement or understanding is to be proved. They considered the proof of arrangements in contract and tort and held that:

> Section 27 is concerned with and designed to cover contracts in the strict sense, as well as arrangements and understandings. It is therefore appropriate and in accordance with the policy and purpose of the section to adopt the same approach to proof of arrangements and understandings as that taken with contracts and analogous issues. The existence of the necessary consensus is therefore to be judged by reference to what reasonable people would infer from the conduct of the person whose participation in the consensus is in issue. As noted earlier, the consensus must of course be such that it engenders an expectation in the minds of the participants that at least one person will act in a proscribed manner.[213]

481. While the elements of an arrangement can be established from evidence as to the verbal or written communications between the parties, this is not required. To insist on such evidence would ignore the reality that concerted action is often covert, and carried out by sophisticated parties. Therefore, the Court may infer an arrangement or understanding from observed conduct. For example:

- In *Re Mileage Conference Group of the Tyre Manufacturers' Conference Ltd's Agreement*, the UK Restrictive Practices Court said at p 859:

  > The law is not so subtle or unrealistic as to involve the conclusion that, while an arrangement can come into being as a result of information as to one another's intentions supplied in words or writing or by a nod or a wink, it cannot come into being as a result of information as to one another's intentions derived from their actual and continuing conduct towards one another.[214]

- In *Commerce Commission v Wellington Branch NZ Institute of Driving Instructors* Jefferies J said at p 24:

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212 *Commerce Commission v Giltrap City Limited* [2004] 1NZLR 608, paras 15-18.
213 *Auckland Regional Authority v Mutual Rental Cars (Auckland Airport) Limited,* above n 212, para 23.
214 *Re Mileage Conference Group of the Tyre Manufacturers' Conference Ltd's Agreement* [1966] 2 All ER 849, p 859.

> In my view it would be wrong for a Court to set the test for establishment of an arrangement or understanding too high. A Court must look at the evidence with a sophisticated and detached eye, astute to subtlety and shrewdness in the commercial world.[215]

- In *Commerce Commission v Caltex NZ Ltd*, Salmon J adopted the approach that:

> Community of purpose may be proved by independent facts, but it need not be. If the other defendant is shown to be committing other acts, tending to the same end, then though primarily each set of acts is attributable to the person whose acts they are, and to him alone, there may be such a concurrence of time, character, direction and result as naturally to lead to the inference that these separate acts were the outcome of pre-concert, or some mutual contemporaneous engagement, or that they were themselves the manifestations of mutual consent to carry out a common purpose, thus forming as well as evidencing a combination to effect the one object towards which the separate acts are found to converge.[216]

- In *ACCC v Leahy Petroleum Pty Limited,* the Court noted that:

> For an arrangement or understanding to exist between two people, it must have had an origin. In many cases, it might be expected that an arrangement or understanding arose by reason of express communication to the effect that there should be such an arrangement or understanding. Alternatively, it might be the case that a culture has developed amongst those engaged in a particular market, so that the recipient of a certain type of information will know that there is an expectation that he or she should act upon that information in a particular way.[217]

A contract, arrangement or understanding between competitors?

482. Section 30(1)(a) states that "the parties to the contract, arrangement, or understanding, or by any of them…in competition with each other". The effect of s 30(1)(a) is that it catches all parties to the arrangement or understanding regardless of their competitive status. But, that is provided that at least two of the parties are in competition.[218] Establishing that parties are "in competition" does not require the full market definition exercise required by s 27.[219]

A Purpose, Effect or Likely Effect

483. Having established the existence of a contract arrangement or understanding, the analysis then shifts to whether it has the purpose, effect or likely effect of either:

- substantially lessening competition in market; or
- fixing, controlling or maintaining the price of good or services.

Purpose

484. It is the purpose of the provision, and the agreement itself, objectively assessed, that matters. The approach to purpose can involve subjective and/or objective considerations:

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215 *Commerce Commission v Wellington Branch NZ Institute of Driving Instructors* (1990) 4 TCLR 19, p 24.
216 *Commerce Commission v Caltex NZ Ltd* (1999) 9 TCLR 305, p 314.
217 *ACCC v Leahy Petroleum Pty Limited* [2007] FCA 794, p 150.
218 *Trade Practices Commission v David Jones (Aust) Pty ltd* (1986) ATPR 40-671.
219 *ACCC v J McPhee & Son (Australia) Pty Ltd* (1997) ATPR 41-570, at p 43,921

- 'subjective', meaning direct evidence that an anti-competitive outcome was a real and substantial purpose[220] of one or more of the parties, which can include direct evidence from parties' written and oral statements contemporaneous to the conduct;[221] and

- 'objective', meaning an anti-competitive purpose can be inferred from objective facts, such as actions and circumstances; relevant situations include that in which it is obvious on the face of the agreement[222] and that in which an anti-competitive purpose can be inferred from a likely anti-competitive effect.[223]

485. The following principles apply when assessing whether a provision has an anti-competitive purpose:

- The lack of any substantial anti-competitive effect or likely effect does not vitiate any anti-competitive purpose.[224] However, if the prospect of achieving a substantial lessening of competition is objectively impossible, this may or may not overcome countervailing evidence of an anti-competitive purpose, depending on the strength of the countervailing evidence.[225]

- If an anti-competitive purpose is established using the 'objective' approach above, it is not a defence to say the subjective purpose was otherwise.[226]

486. 'Purpose' in s 27 need not be a purpose common to both parties to the contract, arrangement or understanding.[227] This stems from the focus on the term 'provision.' Section 2(5)(a) of the Act provides that a provision will be deemed to have a particular purpose if the provision was included in the arrangement for that purpose, and the purpose was a substantial purpose.

Effect or likely effect

487. 'Effect' is concerned with the actual or potential consequences of the provision in question. When considering whether a provision of a contract, arrangement or understanding has the 'effect' of substantially lessening competition in a market, it is the actual results of the provision that are relevant. This is a question of fact. In contrast, 'likely effect' involves considering the results that may eventuate.

488. The Courts have interpreted 'likely' to mean 'something that might well happen', or a 'real or not remote chance or possibility'. The degree of likelihood necessary to establish that a provision is 'likely' to have the effect is "above mere possibility but not so high as more likely than not and is best expressed as a real and substantial risk that the stated consequence will happen".[228]

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220 *Commerce Commission v Telecom* CIV 2000-485-673 (CA), para 92.
221 *ANZCO Foods Waitara Ltd v AFFCO NZ Ltd* (2005) 11 TCLR 278 (CA), para 306(a); and *Commerce Commission v Bay of Plenty Electricity Limited* CIV-2001-485-917 (HC), paras 493-530 and para 547.
222 *Tui Foods Ltd v NZ Milk Corp Ltd* (1993) 5 TCLR 406 at p 409. The case related to s 29 of the Act, but is relevant to s 27, see *Commerce Commission v Port Nelson Ltd* (1995) 6 TCLR 406 at p 426.
223 *ANZCO Foods Waitara Ltd v AFFCO NZ Ltd* (2005) 11 TCLR 278 (CA) at *304.*
224 *ANZCO Foods Waitara Ltd v AFFCO NZ Ltd* (2005) 11 TCLR 278 (CA) at paras 152, 302. See also *Commerce Commission v Ophthalmological Society of NZ* [2004] 10 TCLR 994 (HC) at para 122 and *Commerce Commission v Bay of Plenty Electricity Limited* CIV-2001-485-917 (HC) at para. 547.
225 Ibid para 548, 550.
226 *Commerce Commission v Port Nelson Ltd* (1995) 6 TCLR 406 at p 429 (HC).
227 Ibid p 425.
228 *Port Nelson v Commerce Commission* [1996] 3 NZLR 554, 562-563 (CA).

Substantially Lessening Competition

489. 'Substantial' in this context means 'real' or 'of substance' (see s 2(1A)) and more than more than illusory or transitory.[229] That term has, in turn, been defined as meaning "not insignificant, not ephemeral, not nominal or minimal".[230]

490. Section 3(1) provides that 'competition' means workable or effective competition. That encompasses a market framework which participants may enter and in which they may engage in rivalrous behaviour with the expectation of deriving advantage from greater efficiency.[231]

491. Section 3(2) provides that references to the lessening of competition include references to the hindering or preventing of competition. The word 'hinder' covers senses which include 'do harm to' and 'prevent'; but also to 'keep back; impede, deter, obstruct', and 'delay or frustrate action, by an obstacle or impediment'. One can 'hinder' by merely delaying or obstructing for the immediate time.[232]

492. The Courts have applied a test for substantially lessening competition that focuses on a "possible change along the spectrum of market power" (comparing the factual and counterfactual).[233] A lessening of competition is synonymous with an increase in market power or reduction in constraints on market power.[234] As set out above, the Courts have identified the critical test for market power as the ability of a firm to raise prices above competitive levels without rivals taking away customers in due time.[235]

493. The High Court recently noted that because "likely" means something less than "more likely than not", there may be more than one "likely" counterfactual. With any alleged restrictive trade practice, the Commission must assess what could possibly occur, and discard those possibilities that have only remote prospects of occurring. Each real and substantial possibility becomes a counterfactual against which the factual is to be assessed. It is not a case of choosing the one counterfactual that we think has the greatest prospect of occurring.[236] If in the factual, as compared with any of the relevant counterfactuals, competition is substantially lessened then the alleged behaviour has a "likely" effect of substantially lessening competition in a market.[237]

494. Accordingly, the Court does not have to determine a "most likely" counterfactual. Rather, it must analyse all "likely" counterfactuals against the factual to determine whether there would be a substantial lessening of competition. If the provision of an agreement resulted in a substantial lessening of competition in respect of any of the likely counterfactuals, this would be sufficient to constitute a breach of s 27.

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229 *New Zealand Bus Ltd v Commerce Commission* (2008) 12 TCLR 69, paras 270-271.

230 *Tillmans Butcheries Pty Limited v Australian Meat Industry Employees Union* (1980) 42 FLR 321-348; Commerce Commission v Port Nelson (1995) 6 TCLR 406 at 433-434; *Air NZ/Qantas v Commerce Commission* (2004) 11 TCLR 347, para 35; and *Woolworths Ltd v Commerce Commission* (2008) 12 TCLR 154, paras 127-129.

231 *Port Nelson v Commerce Commission* [1996] 3 NZLR 554, paras 564-565.

232 *Commerce Commission v Port Nelson Ltd* [1995] 6 TCLR 406, 434 (HC).

233 *Air New Zealand v Commerce Commission* [2004] 11 TCLR 347, para 42; and *Brambles v Commerce Commission* [2003] 10 TCLR 868, paras 237, 241.

234 *Re Queensland Co-operative Milling Association Ltd* [1976] ATPR 40-012, p 17,246.

235 *Queensland Wire* at 188-190, *Boral Besser Masonry Ltd v ACCC* [2003] HCA 5, 195 ALR 609, para 136.

236 *Woolworths Ltd v Commerce Commission* (2008) 12 TCLR 154, para 118.

237 Ibid at 122.

Fixing, Controlling, or Maintaining Price?

495. We must now consider the meaning of the purpose, effect, or likely effect of fixing, controlling or maintaining price.

496. In regard to 'fixing':

- in *Radio 2UE Re: Radio 2UE Sydney and Stereo FM Pty Limited and 2 Day-FM Limited*, Lockhart J said:

> … It is helpful to refer to some relevant meanings in the Dictionaries.
>
> The Shorter Oxford English Dictionary defines the verb 'fix' as: 'To fasten, make firm of or stable; … to attach firmly; … to settle permanently.'
>
> The Macquarie Dictionary defines the word as:
>
> '1. To make fast, firm, or stable. 2. To place definitely and more or less permanently. 3. To settle definitely; determine; to fix a price.'
>
> In my view the fixing of a price for the purpose of s. 45A does not necessarily connote an element of permanency, but generally suggests the settling or determining of a price for a period of time that is not ephemeral. A person may fix a price for his goods knowing that he may wish to vary it at some future time, but generally not so soon as would to business people be regarded as merely momentary or transitory.[238]

497. That decision was followed in Re Insurance Council of New Zealand (Inc) where the Commission concluded:

> …, the terms 'fix', 'control' and 'maintain' are synonymous with an interference with the settling of a price, as opposed to allowing such a price to be set in response to changes in the supply and demand for goods and services. Thus, in a technical sense any agreement by competitors in a market which has an influence on, or interferes with the setting of a price, amounts to 'price-fixing'. However, following Lockhart J for that interference to have any significance in a competition sense, the price that is fixed must not be "instantaneous or merely ephemeral, momentary or transitory or be the result of arrangements which merely incidentally affect it.[239]

498. The words 'control' and 'maintain' extend s 30 to capture agreements that, while they may not prescribe an exact price or pricing formulae, nevertheless interfere in the competitive determination of price, and thus constitute a potential breach of s 30.

499. In ACCC v CC (NSW) Pty Ltd, Lindgren J held that:

> An arrangement or understanding has the effect of 'controlling price' if it restrains a freedom that would otherwise exist as to a price to be charged. [240]
>
> it is arguable, for example, that it would "maintain" a price not yet fixed at a minimum level if all tenderers were to reach an understanding that a component sufficiently influential on price was to be included in their tender prices.[241]

500. In Commerce Commission v Caltex NZ Ltd, Salmon J adopted a similar definition:

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238 *Radio 2UE Re: Radio 2UE Sydney and Stereo FM Pty Limited and 2 Day-FM Limited* (1982) 62 FLR 437.
239 *Re Insurance Council of New Zealand* (1989) 2 NZBLC (Com) 99-522 at 104,482.
240 *ACCC* v *CC (NSW) Pty Ltd* [1999] FCA 954.
241 Ibid, p 133.

> … the statue, of course, also uses the word 'controlling'. Amongst the definitions of the word 'control' in the Shorter Oxford English Dictionary is the following: 'To exercise restraint or direction upon the free action of'.[242]

11. SECTIONS 27 AND 30 BREACH ASSESSMENT

Introduction

501. This section describes the Commission's assessment of whether any parties have, contrary to ss 27 and/or 30 of the Commerce Act, entered into and/or given effect to contracts, arrangements or understandings (agreements) which have the purpose, effect or likely effect, of substantially lessening competition in the wholesale and/or retail markets.

502. First the Commission considers alleged agreements pertaining to the wholesale market. In particular, the Commission has investigated whether, contrary to ss 27 and/or 30, generators have entered into and/or given effect to agreements concerning:

- high level strategies which have the purpose, effect or likely effect of substantially lessening competition in the wholesale market;
- price and quantity offers into the wholesale market (including in situations of tight supply) which have the purpose, effect or likely effect of substantially lessening competition in the wholesale market;
- offers into the wholesale market in situations when the Whirinaki station may be dispatched, which have the purpose, effect or likely effect of substantially lessening competition in the wholesale market;
- the introduction or expansion of generation capacity which have the purpose, effect or likely effect of substantially lessening competition in the wholesale market; and
- the supply of hedge contracts which have the purpose, effect or likely effect of substantially lessening competition in the wholesale market, retail market or a market for generation assets.

503. Then the Commission considers alleged agreements pertaining to the retail market. In particular, the Commission has investigated whether, contrary to ss 27 and/or 30, retailers have entered into and/or given effect to agreements concerning:

- market sharing agreements (both geographically and for customer segments) which have the purpose, effect or likely effect of substantially lessening competition in the retail market;
- fixing retail pricing which have the purpose, effect or likely effect of substantially lessening competition in the retail market; and
- the long term supply of electricity to large consumers which have the purpose, effect or likely effect of substantially lessening competition in the retail market.

504. Both the wholesale market and retail market allegations are considered in turn below.

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[242] *Commerce Commission* v *Caltex NZ Ltd* (1999) 9 TCLR 305, p 311.

The CEO Forum

Allegation and background

505. As described in paragraph 27 above, third parties have expressed their concern to the Commission about the extent of alleged industry collaboration and coordination and the potential for tacit and/or explicit collusion to be occurring within both the wholesale and retail markets. There was particular concern about the industry group known as the CEO Forum and the potential for the parties attending CEO Forum meetings to have entered into agreements which may have had the purpose or effect of lessening competition in either the wholesale and/or retail market.

506. As discussed in paragraph's 64 and 65 above, in November 2007 the Commission sought significant qualitative information aimed at addressing the allegations of collusion raised by third parties. The Commission sought information from: BoPE; Contact; Genesis; KCE; Meridian; Mighty River Power; and TrustPower. The information sought included a range of board papers and business strategy documents, as well as copies of CEO Forum papers and minutes and copies of correspondence, and contracts, arrangements or understandings between competitors relating to certain wholesale and retail market strategies and activities.

507. The information sought from the parties covered the period 1 January 2001 to 30 October 2007, and included the 2006 dry winter period referenced in the complaint to the Commission from [ ] described in paragraph 27.

508. The Commission's review of documents provided by the parties provided examples of discussions between competitors which indicated that commercially sensitive information appeared to have been shared between competitors at the CEO Forum and raised suspicions that the parties may have entered into agreements which may have been at risk of breaching ss 27 and/or 30.

509. This led the Commission, on 12 December 2008, to issue further s 98 Notices to Contact, Genesis, Meridian, Mighty River Power and TrustPower seeking additional documents and explanations, including more specific details concerning CEO Forum meetings involving the five gentailers from January 2002 (the date the CEO Forum is believed to have been formed) until December 2008.

510. Initial CEO Forum minutes obtained by the Commission documented the fact that participants were alive to the potential for meetings to raise Commerce Act issues. The Minutes of the first CEO Forum meeting noted the following:

> Steve Barrett referred to the need for the participants in the meeting to be aware of the provisions of the Commerce Act and take care that the meeting did not involve any discussions that could be anti-competitive. For that reason, Tony Dellow of Buddle Findlay had been invited to sit in on the meeting to advise participants if the discussion raised any such concerns.[243]

511. According to the CEO Forum documents obtained by the Commission, every subsequent CEO Forum meeting was attended by a legal representative and a number of topics discussed at meetings appear to have been prefaced by warnings from the legal representative present that members should not disclose any confidential information on the basis that Commerce Act issues could arise.[244]

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[243] See CEO Forum Meeting Minutes dated 29 January 2002 [ ].
[244] See CEO Forum Meeting Agenda dated 25 October 2002 [ ].

512. The meeting minutes also indicated that on a number of occasions, the legal representative advised the CEO Forum that discussions between CEO's on certain topics, such as hedge contracts, must occur on a bilateral basis as discussing them in a CEO Forum meeting could raise potential Commerce Act issues.[245]

513. The Commission reviewed the full set of CEO Forum documents supplied and concluded that for the purposes of our assessment the CEO Forum meetings could be separated into three distinct time periods, namely:

- period one - January 2002 to July 2004 – inception of the CEO Forum through to the aftermath of the 2003 Winter Crisis;
- period two - August 2004 to July 2006 – responses of the industry to the increasing role of the Electricity Commission; and
- period three - August 2006 to late 2008 – decreasing relevance of the CEO Forum and decreasing frequency of meetings.

Period one – January 2002 to July 2004

514. CEO Forum documents reviewed by the Commission indicated that the CEO Forum was set up at the behest of the Government in 2002 to respond to criticism that the industry had not dealt adequately with the 2001 energy crisis and to address a perceived lack of competition in the retail market.[246] Documents obtained by the Commission indicated that at this stage the CEO Forum meeting discussions centred on methods to increase competition in the retail electricity market.

515. Towards the end of 2002, industry concerns began to arise over security of supply for the forthcoming 2003 winter. In this context, the CEO Forum meeting discussions appeared to change focus to topics such as:

- maximising fuel availability;
- transparency of fuel positions; and
- methods to maximise output.

516. The CEO Forum meeting minutes also indicated that personnel from MED appeared to regularly attend CEO Forum Meetings during this period.

517. The information contained in an April 2003 CEO Forum meeting minute reviewed by the Commission indicated that the parties at the meeting may have shared commercially sensitive information with each other, which may have resulted in them reaching an agreement that had the purpose or effect of substantially lessening competition between them.

518. The April 2003 minutes stated that the then CEO of Genesis, Mr Murray Jackson, gave the CEO Forum meeting a full brief on Genesis' fuel position, covering both existing and future supplies of gas and coal for its Huntly generation station.[247] According to the April 2003 minutes, Mr Jackson also told the meeting that Genesis' Huntly station had generated an average of 860 MW the previous week and estimated that Huntly would run at 850 MW until May and then at 800 MW after that. Mr Jackson estimated that in total, Huntly would generate 3450 GWh from 1 April to 30 September 2003.

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245 See CEO Forum Meeting Minutes dated 25 March 2002 [ ].

246 CEO Forum Draft Agenda for Inaugural Meeting dated 25 January 2002 [ ].

247 CEO Forum meeting minute dated 7 April 2003 [ ].

519. The April 2003 minutes stated that other gentailers at the meeting had raised concerns that Huntly had not been running as much as had been expected. Mr Jackson informed the meeting that Genesis would look at its offer profile and would then negotiate contracts with the other generators on a bilateral basis to allow the Huntly station to generate more.

520. According to the minutes, the CEO Forum meeting then discussed proposals to accelerate the introduction of new generation capacity into the wholesale market by 2004. It stated that the then CEO of Contact, Mr Steve Barrett, discussed suggestions Contact had made to the Minister of Energy about a potential dual-fuel station. The CEO's of Genesis, Meridian and Mighty River Power then outlined the proposals each company had for increasing generation capacity in the short term, and agreed that the CEO Forum should meet again in one week's time to discuss the proposals further.

521. Briefings from the CEO's at subsequent CEO Forum meetings provided information concerning the progress each company had had with generation developments, including updates on such matters as the status of RMA consent applications.

522. Further CEO Forum meeting minutes document similar discussions throughout the 2003 winter crisis, during which the CEO Forum met on an almost weekly basis to ostensibly address security of supply issues.

Period two – August 2004 to July 2006

523. In June 2004, the Government commissioned the Whirinaki reserve generation station to help address security of supply concerns. The CEO Forum documents indicated that security of supply was less of a concern during this period and that the main topic of discussion was what role would the Electricity Commission assume, and how would that impact upon the CEO Forum members.

Period three – August 2006 to December 2008

524. By the latter part of 2006, the Electricity Commission appeared from the documents to be coordinating discussion and action on many of the topics that had pre-occupied the CEO Forum at its inception and during the 2003 winter crisis. The documents reviewed suggest that, as a result of Electricity Commission coordination, the relevance of the CEO Forum had diminished. Indeed, in late 2006, CEO Forum meeting minutes record members' desire to review the purpose of the CEO Forum in response to a drop off in attendance by members.

525. As a result, CEO Forum meetings during the period 2007 to late 2008 became less frequent. In April 2007, one document noted that the CEO Forum was still struggling with its exact role and noted that:

> It was agreed that the Forum should be seen as the pre-eminent group for industry and provide leadership. It was unclear whether this required formal terms of reference or a charter. I noted that previous advice and suggestions from Keith Turner that a formal secretariat be established and that in view of Commerce Act requirements it was important that members were clear on the role of the Forum.
>
> The Forum noted the perception of a drop off in attendance from CEs and that if this was to continue then the Forum would have little relevance or appropriateness.[248]

[248] Filenote of CEO Forum Meeting dated 8 November 2006 [ ].

Breach Analysis

526. The Commission's review of the CEO Forum documents raised two key potential breaches of the Commerce Act, both arising from CEO Forum discussions in there period January 2002 to July 2004, namely:

- did Contact, Genesis, Meridian, Mighty River Power and TrustPower enter into an agreement concerning wholesale market offering strategies during the winter of 2003 which had the purpose, effect or likely effect of substantially lessening competition in the wholesale market (contrary to s 27) or which interfered with the competitive determination of price (contrary to s 30); and/or
- did Contact, Genesis, Meridian, Mighty River Power and TrustPower enter into an agreement concerning generation station development plans which had the purpose, effect or likely effect of substantially lessening competition in the wholesale market (contrary to s 27) or which interfered with the competitive determination of price (contrary to s 30)?

527. In regard to the first potential breach, the documents reviewed by the Commission suggest that Genesis, in particular, shared with its competitors present at the CEO Forum meeting commercially sensitive information concerning its current and future fuel supplies and the intended generation output quantity at its Huntly station.

528. The unilateral sharing of information, even commercially sensitive information, by competitors does not of itself breach the Commerce Act. However, it may be inferred that the parties have reached a consensus as to the information sharing, and have an expectation that it will be acted on. This is most likely where the information sharing does not serve some wider purpose.

529. The documents do not suggest that this information sharing formed part of, or led to, a broader agreement between the competitors concerning each party's generation output or wholesale market offering strategies during the winter of 2003. Further, the Commission has not identified in its broader review of company documents any evidence indicating that the parties formulated any agreements or altered their behaviour in a coordinated way in response to the information shared by Genesis.

530. In this case the documents represent (at most) unilateral statements by Genesis, well short of indicating any arrangement or understanding between these competitors. Nor has the Commission observed any behaviour around this time from which it might be inferred that the parties had reached such an arrangement.

531. The Commission concluded that despite the fact that Genesis shared commercially sensitive information with its competitors, it has not found any evidence that the parties entered into a contract, arrangement or understanding with each other. As a result, the Commission has not considered whether the actions of the parties had the purpose, effect or likely effect of substantially lessening competition in the wholesale market, contrary to s 27 of the Commerce Act.

532. The Commission also considered the discussions between CEO Forum members concerning future generation station developments and strategies. The Commission was concerned that detailed discussion of each competitor's generation entry or expansion plans may have led to an agreement about which developments were to actually proceed or about the timing of each development, and may have led to a lessening of competition in the wholesale market.

533. While the documents reviewed by the Commission did show evidence of detailed briefings from individual CEO's on each generator's development plans and progress, they did not show evidence of broader discussion by the CEO Forum as a whole of the generation developments. Neither did the CEO Forum documents contain any evidence that an agreement was entered into between the CEO Forum members concerning which generation projects would go ahead or not. Further, the Commission has not found any evidence of any such agreement in its broader review of company documents.

Conclusion

534. The Commission has determined that on the basis of the information it has reviewed, the CEO Forum discussions assessed above are unlikely to constitute a breach of ss 27 and/or 30 of the Commerce Act.

Coordination Via the Media

Allegation and background

535. In a May 2006 interview, an industry participant, [ ], raised with the Commission the high wholesale market pricing observed in the first part of 2006 and suggested that gentailer CEO's were making public comments in the media which may have indicated or amounted to collusion between the competitors. The Commission considered this to be an allegation that the main gentailers had entered into a contract, arrangement or understanding concerning high level generation output and wholesale market pricing strategies in situations of perceived hydro shortage which had the purpose, effect or likely effect of substantially lessening competition in the wholesale market.

536. [ ] alleged that in the lead up to potential dry winter situations the generators have signalled to each other through the media each company's view of the likelihood of a dry winter eventuating and outline in broad terms the steps each company is likely to take over subsequent months, thereby lessening the extent of competition between the generators. Such statements by the generators in the media are also thought to exaggerate the perceived severity of the hydro situation, thereby encouraging the public to believe that there is in fact a hydro shortage in order to justify the higher wholesale market prices.

Breach analysis

537. The Commission recognises that there are many ways in which the parties to a collusive agreement can communicate with each other, including through statements in the media. The Commission considered that there was the potential, in this case, for some gentailers to be communicating with each other in this way.

538. However the Commission also considered that there may also be other ostensibly valid reasons for the gentailers to comment in the media, including raising concerns about the security of supply and alerting consumers to the possibility that some form of demand side response may be, or may become, necessary.

539. Parallel unilateral behaviour, such as signalling in the media, or 'conscious parallelism' does not amount to an arrangement or understanding and does not represent a breach of the Commerce Act.[249] The existence of conscious parallelism would likely be consistent

[249] Such behaviour lacks the necessary consensus required under *Giltrap,* see footnote 212 above. Similarly in the US, it is generally accepted that a court may infer agreement from parallel behaviour, but that an

with the findings presented in Professor Wolak's quantitative evidence on market power.

540. Where competitors communicate in this unilateral way, including via a medium such as the media, there is a risk that the communication may progress to or result in an arrangement or understanding. The Courts are prepared, in some cases, to infer that such conduct results from an arrangement or understanding.

541. However, the Commission has not found any evidence in this case to suggest that the gentailers have entered into an arrangement or understanding, whether tacit or explicit, concerning communicating with each other via the media.

Conclusion

542. The Commission has determined that on the basis of the evidence before it, the allegation of gentailers colluding with each other via the media in periods of hydro shortages is unlikely to constitute a breach of ss 27 and/or 30 of the Commerce Act.

Offers Into the Wholesale Market in Situations When the Whirinaki Station May Be Dispatched

Allegation and background

543. The Commission has assessed an allegation that the gentailers have entered into an agreement concerning offers into the wholesale market in situations when the Whirinaki reserve energy generation station may be dispatched, which have the purpose, effect or likely effect of substantially lessening competition in the wholesale market.

544. The Whirinaki station is owned by the Government and its offer strategy into the wholesale market, and therefore its conditions of dispatch, are the responsibility of the Electricity Commission. The current instructions from the Electricity Commission require the output of the Whirinaki station to be offered into the market at $1,000/MWh. However, in situations where the average wholesale market prices for the coming eight half-hourly periods at the Whirinaki node exceed the higher of $200/MWh or the variable costs of the station (the reserve energy trigger price, or RETP, – currently $387/MWh), then the output from the Whirinaki station is to be offered into the market at the RETP in the first trading period after those eight half-hour trading periods.

545. It has been alleged to the Commission that during periods of tight supply generators have offered generation output into the wholesale market at prices above the RETP for up to fiver trading periods, but have then reduced their offers back below the RETP within the required eight trading periods to ensure that the Whirinaki station is not actually dispatched.[250] It is alleged that the offers and prices have then been observed to go back up above the RETP in subsequent periods, and that this amounts to gaming of the RETP by the gentailers.

546. The Commission believes that the intent of this allegedly coordinated offering behaviour could be to temporarily raise wholesale market prices above the RETP without requiring the Whirinaki station to be dispatched. This would allow wholesale market prices to temporarily remain at higher levels than those likely were Whirinaki to be dispatched at the RETP. Another consequence of Whirinaki not being dispatched would be to ensure

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agreement is required. See for example *Theatre Enterprises, Inc. v. Paramount Film Distributing Corp*, 346 U.S. 537, 540-41 (1954).

[250] This issue has been raised by [ ] and [ ].

that the wholesale market revenues for the relevant trading periods were paid to only those market participants with generation stations that had been dispatched, rather than also to the Government had Whirinaki actually been dispatched.

Breach analysis

547. The Commission has not found any evidence to suggest that a contract, arrangement or understanding has been entered into between one or more of the gentailers concerning offers into the wholesale market in situations when the Whirinaki station may be dispatched. The Commission has not therefore considered whether such an agreement could have the purpose, effect or likely effect of substantially lessening competition in the wholesale market.

548. It is important to note that to some extent the Whirinaki station appears to be fulfilling one of its purposes – to provide a soft price cap on offer prices into the wholesale market. In that sense, the Whirinaki station could be considered to be having a disciplining effect upon prices whether or not it is actually dispatched. Further, the Commission considers that the alleged 'gaming' of the Whirinaki station by gentailers temporarily pricing above the RETP would likely not be a breach of the Commerce Act if the firms can be shown to be exercising their unilateral market power for other than one of the proscribed purposes, i.e. they are exercising their unilateral market power to maximise their returns.

Conclusion

549. The Commission considers that, on the basis of the evidence before it, the gentailers have not entered into any arrangement or understanding, in breach of ss 27 or 30 of the Commerce Act, concerning offers into the wholesale market in situations when the Whirinaki reserve energy generation station may be dispatched.

The Introduction, Expansion or Operation of Generation Capacity

550. The Commission has assessed two potential agreements relating to the introduction, expansion or operation of generation capacity, which may have been entered into with the purpose, effect or likely effect of substantially lessening competition in the wholesale market.

551. The first concerns a potential agreement between [ ] and the Government. The second concerns a potential agreement between Contact and Mighty River Power. Both are dealt with in turn below.

Agreement to ban new thermal generation

Allegation and background

552. The facts relevant to this s 27 assessment concerning a potential agreement between [ ] and the Government have already been fully described at paragraph 440 above. At issue under s 27 is whether [ ] and the Government entered into an agreement relating to the Government's 2007 ban on new thermal generation stations, and whether any such agreement had the purpose, effect or likely effect of substantially lessening competition in the wholesale market.

Breach analysis

553. The competition effect of any agreement, whether or not it actually amounted to a contract, arrangement or understanding, arose from the legislative instrument passed by Parliament, namely the Electricity (Renewable Preference) Amendment Act 2008. Commerce Act proceedings may be viewed as a challenge to the introduction of the legislation, or the Government policy behind it. Such challenges are generally impermissible for reasons of Parliamentary Sovereignty, even where the challenge is directed at an underlying agreement that sits behind the legislation.[251]

Conclusion

554. The Commission concluded that any arrangement or understanding between [ ] and the Government leading to the passing of the Electricity (Renewable Preference) Amendment Act 2008 is not an actionable breach of the Commerce Act.

Agreement re Southdown station

Allegation and background

555. The second potential agreement was considered by the Commission as a result of comments contained in a Contact Board Paper dated November 2004.[252] The Contact Board Paper was entitled "There are incentives for Contact and Mighty River Power ('Mighty River Power') to reach agreement on the longer term operation of Southdown." The Commission was concerned that given the statements in the Board Paper, Contact and Mighty River Power may have entered into a contract, arrangement or understanding which had the purpose, effect or likely effect of substantially lessening competition in the wholesale market and/or the retail market. Slide 6 of the Contact Board Paper contained the following key passages:

> Southdown's gas contract runs out in 2005;
>
> It is very unlikely that Mighty River Power will secure a gas contract that permits economic operation of Southdown in future – it cannot compete against the higher efficiencies of Otahuhu-B [Contact] or e3p [Genesis];
>
> This means that in the future Southdown will operate as a peaker plant, requiring intermittent access to fuel;
>
> both Contact and Mighty River Power will be incentivised to see Southdown operate at times of high spot prices in Auckland; and
>
> It has been agreed that Mighty River Power and Contact will **work in good faith** to determine arrangements for future operation of Southdown. Ideally, Contact would like to achieve a result where Southdown almost becomes a '**virtual' Contact peaker plant.**[253] (Emphasis added)

556. The Contact Board Paper described Contact's attempts to secure a hedge contract from either Genesis or Mighty River Power to cover the planned Otahuhu-B outage in the summer of 2005 / 2006. Mighty River Power agreed to a hedge contract conditional

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[251] See for example: *Potaka-Dewes v Attorney-General* {2009} NZAR 248, *New Zealand Māori Council v Attorney-General* [2008] 1 NZLR 318; *Milroy v Attorney-General* [2005] NZAR 562, *Westco Lagan Ltd v Attorney-General* [2001] 1 NZLR 40; and *Comalco Power (New Zealand) Ltd v Attorney-General* [2003] NZAR 1.

[252] See Contact Board Paper Number: 10502 – Update on Otahuhu Peaker (EL2/CON/RDR/038).

[253] Ibid.

upon Contact providing it with gas for its Southdown generation station during the Otahuhu-B outage in November to December 2005, and during the winter of 2007. The Board Paper also recommended that work on the Contact peaking plant at Otahuhu be ceased given Contact had secured hedge contract cover from Mighty River Power.

557. On 12 December 2008, the Commission requested further information and documents from Contact and Mighty River Power under s 98 notices.

558. In its s 98 response, Mighty River Power noted it had not identified any documents indicating Mighty River Power has or had an agreement to work together in good faith with Contact regarding the operation of its Southdown generation station. Mighty River Power raised the issue with its CEO, Mr Doug Heffernan, as well as with Mr James Moulder and Mr Bruce Miller, the two Mighty River Power managers responsible for Mighty River Power's relationship with Contact. Mighty River Power stated that Mr Heffernan, Mr Moulder and Mr Miller were not aware of any agreement to "work in good faith" with Contact concerning its Southdown station.

559. However, Mighty River Power indicated that a number of documents could be "indirectly" related to the issue. Firstly, a hedge contract arrangement between Contact and Mighty River Power intended to cover the planned outage at Contact's Otahuhu-B generation station in November to December 2005. Mighty River Power stated that the agreement had two sides, namely: a hedge contract under which Mighty River Power agreed to supply electricity to Contact; and a gas supply agreement under which Contact agreed to supply gas to Mighty River Power which was to be used by Mighty River Power at its Southdown station to generate the electricity required for the hedge contract with Contact. Mighty River Power stated that at the time, gas supplies from other producers were restricted and Mighty River Power would not have been able to offer Contact the hedge contract without the gas supply agreement.

560. Secondly, email correspondence between Mr Miller of Mighty River Power, and Mr Mark Trigg and Mr Steve Cross of Contact, dated 10 and 12 November 2004, related to negotiation of the hedge contract.

561. In an email dated 10 November 2004, Mr Trigg made a proposal to Mr Moulder and Mr Miller relating to the hedge contract. In paragraph three of his email, Mr Trigg stated that:

> …[t]here is some considerable difficulty in making gas available on a fully flexible basis, however, noting that our interests are aligned in ensuring SDN runs at the appropriate times, the commercial incentives exist to enable an arrangement to be concluded for a longer term period. I will touch base with you tomorrow. Thanks for the meeting and the lunch today.

562. Mr Miller responded to Mr Trigg and Mr Cross in an email dated 12 November 2004, offering to sell a [ ] MW hedge contract between [ ] and [ ] at the [ ] node ([ ]) at $[ ]/MWh. Mr Miller also stated that Mighty River Power will buy gas during this period from Contact, delivered to [ ] at $[ ]/GJ. Mr Miller added:

> In addition CEN provide the equivalent amount of gas, used during the above outage [ ], at a pre determined price during the calendar year 2007. It is proposed that this volume of gas be supplied over a 6 month period from 1/3/2007 to 30/9/2007 base loaded. Mighty River Power/Contact commit to work together to develop a longer term arrangement whereby Mighty River Power purchase gas from CEN, and CEN tolls gas through Southdown at times of Otahuhu and TCC outages.

563. This passage is also quoted on an undated slide provided by Mighty River Power. The last bullet point on the slide stated: "note that both companies' interests are aligned to make gas available for generation at SDN (Southdown) at appropriate times."

564. Mighty River Power advised that, despite the sentiments expressed in the documents at the time the agreement was negotiated, no 'longer term relationship' as referred to in the email correspondence was in fact contractually agreed or subsequently pursued between Contact and Mighty River Power. Mighty River Power stated that after agreeing the hedge contract with Contact more gas became available, largely as a result of re-determinations of the Maui gas field, and Mighty River Power was able to contract sufficient gas to operate Southdown and actually expanded its generation capacity in 2007. Mighty River Power stated that to date, no similar agreements (linking hedge contracts and gas supply contracts) have been entered into between the parties.

565. In its s 98 response, Contact identified the relevant employees involved in the transaction with Mighty River Power and supplied copies of the hedge contract and the Gas Supply Agreement entered into with Mighty River Power, as well as the relevant email correspondence between the two companies on the matter. Contact also noted that the agreement to "work in good faith" in respect of Southdown was not documented.

566. Contact confirmed that the hedge contract entered into with Mighty River Power was intended to provide cover for the planned outage at its Otahuhu-B station, and was for [ ] MW at [ ]/MWh.

Breach analysis

567. The Commission has considered whether the hedge contract and gas supply agreement entered into between Contact and Mighty River Power formed aspects of a broader, anti-competitive agreement between the two companies. The main aspects of concern were:

- did Contact and Mighty River Power enter into an agreement concerning how Mighty River Power's Southdown station was to operate; and
- did Contact and Mighty River Power enter into a broader agreement concerning how Contact and Mighty River Power would operate existing generation stations and/or how and when they would introduce new generation stations.

568. Having entered into both a hedge contract and a gas supply agreement, the Commission considered that Contact and Mighty River Power had entered into a contract, arrangement or understanding with each other for the purposes of s 27 of the Commerce Act. The Commission then considered whether the agreement had the purpose, effect or likely effect of substantially lessening competition in the wholesale market and/or the retail market.

569. The two key comments in the Contact Board Paper are the references to:

- "work in good faith to determine arrangements for the future operation of Southdown;" and
- Contact's desire to see "Southdown almost become a virtual Contact peaker plant."[254]

570. The term "work in good faith" appears, from the documents obtained by the Commission, to have originated in the 12 November 2004 email quoted above in which Mr Miller stated that "Mighty River Power/Contact commit to work together to develop

[254] See Contact Board Paper Number: 10502 – Update on Otahuhu Peaker (EL2/CON/RDR/038).

a longer term arrangement whereby Mighty River Power purchase gas from CEN, and CEN tolls gas through Southdown at times of Otahuhu or TCC outages."[255] However, Mighty River Power also provided a Contact presentation of around the same time frame which stated "Contact's [sic] commits to work constructively with Mighty River Power to develop a longer term arrangement whereby Mighty River Power purchases gas from CEN and CEN tolls gas through SDN at times of Otahuhu or TCC outages."[256]

571. The Contact Board Paper at issue also highlighted that:

> However, this arrangement should ensure that Southdown runs through the winter of 2007, helping keep prices down in Auckland where at times we are a net retailer.[257]

572. The Contact documents reviewed by the Commission indicated that Contact was concerned that as a result of its planned outage at Otahuhu-B, it would change from being a net-generator in the Auckland region to instead being a net-retailer, and thereby be exposed to wholesale market price volatility risk. Contact therefore sought to protect its position through entering into a hedge contract with Mighty River Power. It is also clear from the Contact documents that Contact believed Mighty River Power was having difficulty obtaining gas contracts which would enable the economic operation of its Southdown station, and Contact clearly saw value for both parties in agreeing some form of gas supply agreement.

573. The Mighty River Power documents reviewed by the Commission indicated that Mighty River Power was unlikely to have been able to enter into the hedge contract with Contact without having also secured the gas supply agreement. Mighty River Power also appeared incentivised to ensure it had sufficient gas to enable its Southdown station to continue to generate given Mighty River Power's sizeable position in the Auckland retail market.

574. The Commission concluded that Contact and Mighty River Power entered into the hedge contract and gas supply agreement for a legitimate purpose, and found no evidence to suggest that either party entered into the agreements for the purpose of substantially lessening competition in the wholesale market and/or the retail market.

575. Further, the Commission concluded that the agreements were unlikely to have had the effect of substantially lessening competition in either market, and may in fact have had a potentially pro-competitive impact. In particular, the gas supply agreement appeared to enable Mighty River Power to generate additional output from its Southdown station during the Otahuhu-B outage and this potentially helped keep wholesale market prices in the Auckland region at lower levels than may otherwise have eventuated, thereby potentially reducing the wholesale market price volatility risk faced by all retailers in that region.

576. The Commission found no evidence to suggest that the comments from the Contact Board Paper of November 2004, concerning Southdown becoming a 'virtual' Contact peaker plant, were in any way reflected in an agreement between the parties and no agreement has been identified giving Contact control, whether direct or indirect, over the operation and/or output of Mighty River Power's Southdown station.

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255 Mighty River Power response to Commerce Commission s 98 notice of 12 December 2008, dated 27 February 2009.

256 See Contact Board Paper Number: 10502 – Update on Otahuhu Peaker (EL2/CON/RDR/038).

257 See Contact Board Paper Number: 10502 – Update on Otahuhu Peaker (EL2/CON/RDR/038).

Conclusion

577. The Commission concluded that:

- Contact and Mighty River Power entered into an arrangement or understanding; but
- that arrangement or understanding did not contain a provision which had the purpose, effect or likely effect of substantially lessening competition in a market.

Have Retailers Entered Into Market Sharing Agreements

578. The Commission has assessed an allegation of retailers entering into and/or giving effect to market sharing agreements (both geographically and for customer segments) which have the purpose, effect or likely effect of substantially lessening competition in the retail market.

579. The relative geographic strengths of retailers might be considered consistent with market-sharing between retailers. However, retail market concentration fell in most regions of New Zealand between 1999 and 2006. This would not be consistent with market-sharing occurring.

580. The [ ] has alleged that there is very little retail competition between Contact, Meridian and TrustPower in the West Coast area and that prices are noticeably higher than in other equally remote and sparsely populated areas. Recent retail pricing analysis carried out for the Electricity Commission's Market Design Review confirms that prices are comparably high in this area.[258] The Commission understands that the West Coast retail market remains more highly concentrated than other regions.

581. The Commission has not received nor, based on its review of company documents, uncovered any evidence of any market-sharing agreements in the electricity industry during the course of its investigation. The Commission's investigation has specifically addressed the West Coast allegation, but has uncovered no agreement to limit competition in that region. The Commission therefore has decided that there is no evidence of a breach.

Influencing or Fixing Retail Prices: TrustPower and Genesis/Energy Online

Allegation and background

582. The Commission has assessed an allegation of retailers entering into and/or giving effect to agreements to influence or fix retail pricing which have the purpose, effect or likely effect of substantially lessening competition in the retail market.

583. The Commission's review of internal documents provided by the gentailers in March 2008 raised concerns about potentially anti-competitive discussions between retailers, including between TrustPower and Genesis in Rotorua. In particular:

- the TrustPower "Sales Division Management Report for the Month of March 2004" (considered at the Board of Directors meeting of 29 April 2004) noted:

[258] Electricity Commission, *Market Design Review – Options Paper,* 8 July 2008, p 3-32.

[

]. [259]

- the minutes of the TrustPower Board of Directors meeting of 29 April 2004 noted:

> [ ]. It was agreed [ ] would speak to the Chairman of Genesis. Management to follow up with some facts with respect to the situation and confirm who is on the Genesis Board. [260]

584. The Commission investigated whether TrustPower and Genesis entered into an agreement, or attempted to, concerning the retail market in Rotorua, which had the: purpose, effect or likely effect of substantially lessening competition in that market, contrary to s 27; or interfered with the competitive determination of price, contrary to s 30.

585. The Commission issued s 98 notices to Genesis and TrustPower, and interviewed [ ], to establish:

- whether [ ] had spoken with the Chairman of Genesis, and if so, for what purpose; and
- if the individuals had spoken with each other, whether they reached any arrangement or understanding as a result.

Genesis' response

586. In response to the Commission's investigation, Genesis spoke with Mr Brian Corban, the Chairman of Genesis since 1999, and asked him to recall any approach by TrustPower in a manner the Commission indicated may have taken place. Genesis advised the Commission that:

- [

]; and

- Mr Corban recalls being approached by [ ] in the car park when returning to his car after [ ], but could not recall the date of the discussion.

587. According to Genesis:

> The nature of the concerns expressed by [ ] to Mr Corban was that Genesis Energy's retail activity in an area where Trustpower also retail electricity was un-commercial. Mr Corban does not recall whether [ ] referred to a particular region.
>
> In response to the approach from [ ], Mr Corban immediately asked [ ] to explain what he meant by un-commercial, adding that if he was referring to pricing that would be a Commerce Act issue, and he would not be able to discuss the matter. Mr Corban advised that [ ] did not explain what he meant by un-commercial and that there was no further discussion about the matter.[261]

588. Genesis noted that Mr Corban discussed the approach from [ ] with Mr Murray Jackson, the then Chief Executive of Genesis, who agreed with Mr Corban that the

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259 TrustPower Limited, Energy Sales Division Report for the Month of March 2004 (EL2/TRP/DJC/001).
260 TrustPower Limited, Board of Directors Meeting Minutes, dated 29 April 2004 (EL2/TRP/DJC/002).
261 Genesis Power Limited response to Commerce Commission s 98 notice of 13 March 2009, dated 27 March 2009.

approach from [ ] was inappropriate. Genesis advised the Commission that no further action on the matter was taken by either Mr Corban or Mr Jackson.

589. The Commission considers that the approach likely occurred on 1 June 2004, as this is the first time that[ ] after the TrustPower Board of Directors meeting of 29 April 2004.

590. While the specifics of what exactly was said in the car park are unclear, Mr Corban recalled a reference to "un-commercial" behaviour and considered the comments to be so inappropriate as to reject the approach from [ ] and subsequently advised his Chief Executive, Mr Jackson, of the matter. The Commission considers Genesis' description of Mr Corban's actions, in advising Mr Jackson of the matter, to be consistent with the discussion in the car park likely containing some inappropriate reference to pricing matters.

TrustPower's response

591. TrustPower's response to the Commission's s 98 notice was that:

- while TrustPower did not deny the meeting took place, it was unable to locate any documentation to substantiate the matters referred to in the 29 April 2004 Board of Director's meeting minutes, or any subsequent actions;[262]
- the "uncommercial" activity was likely Genesis/Energy Online (EOL) misrepresenting the ownership of TrustPower, a matter which TrustPower says it may have complained to the Commission about;[263] and
- the "uncommercial" activity was unlikely to refer to pricing as TrustPower "has [been], and continues to be, critical of SOE shareholder rate of return expectations but does not consider inefficient use of capital or uneconomic pricing as "un-commercial."[264]

592. On 2 April 2009, the Commission interviewed [ ] in order to acquire his personal version of events relevant to this investigation.[265] [ ] indicated that:

- [

];
- he believed that he had been requested by the Board of Directors to speak to the Chairman of Genesis only because [ ]; and
- he did not recall ever having approached Mr Corban on the issue.

593. The Commission then put Mr Corban's recollection of the approach in the car park to [ ]. [ ] said that, although he had no specific recollection, he may have approached Mr Corban in the car park and offered him a copy of a report, or made

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262 TrustPower Limited response to Commerce Commission s 98 notice of 12 December 2008, dated 5 February 2009.

263 The Commission has been unable to locate any record of a complaint lodged with the Commission by TrustPower concerning this specific issue. However, the Commission did receive a number of complaints regarding Energy Online's practices, and in October 2004, TrustPower complained that Energy Online was switching clients without their approval. The Commission made enquiries but could not find evidence to substantiate the allegations and no further action was taken.

264 TrustPower Limited response to Commerce Commission s 98 notice of 12 December 2008, dated 5 February 2009.

265 Commerce Commission interview with [ ], dated 3 April 2009.

reference to a report, TrustPower had commissioned which proved that Genesis had been acting un-commercially by "undergearing its balance sheet in a non-business way" and not earning a commercial rate of return on its equity. [ ] thought that he may have also made a statement along the lines of "no wonder you're selling at such cheap prices".

594. [ ], however, maintained that the reference in TrustPower's Board of Director's minutes to "un-commercial behaviour" was a reference to the alleged sales misrepresentation by Genesis and no contact on this issue had occurred. [ ] saw nothing wrong with any subsequent, and separate approach that may have happened (even though he had no clear recollection of such), as it was only likely to have been an 'ad lib' comment simply drawing Mr Corban's attention to a public document which highlighted that Genesis was not earning an appropriate rate of return on its equity.

Change in pricing

595. In 2002, Energy Online was acquired by Genesis. Between the years ended 30 June 2003 and 30 June 2004 EOL's turnover increased from $14.4 million to $48.3 million. In a February 2004 Chief Executive's Report to the Genesis Board of Directors, Rotorua was discussed as a region where it could potentially attract new customers. The report stated that:

> Price rises by Contact Energy in the Auckland region and Trustpower in the Bay of Plenty has positioned Genesis as a preferable energy provider, which is reflected in a number of customers joining Genesis Energy and Energy Online. [266]

596. However, the minutes of the Genesis Board of Directors meeting held on 24 February 2004 also recognised that the pricing strategy being employed by its subsidiary, EOL was of concern:

> A review of the strategy of EOL is underway; this will entail a shift in emphasis from customer acquisition to a greater focus on profitability.[267]

597. The prices for the Rotorua region being offered by Genesis, Energy Online and TrustPower over the relevant period are outlined below:

Table 3: Rotorua prices in 2004

Price as at:	Genesis Power (c/kWh)	Energy Online (c/kWh)	TrustPower (c/kWh)
15 Feb 2004	16.11	15.69	18.18
15 May 2004	16.11	17.61 (+12%)	20.20 (+11%)
15 Aug 2004	16.11	17.61	20.20
15 Nov 2004	15.19 (-6%)	16.84 (-4%)	19.58

Source: Schedule of Domestic prices: Bay of Plenty. Updated quarterly by the Ministry of Economic development (www.med.govt.nz)

[266] Genesis Power Limited, Chief Executive's Report to the Board of Directors, February 2004.
[267] Genesis Power Limited, extract from Board Paper (EL2/GEN/RDR/20040224).

598. The Commission has also reviewed material relevant to the marketing campaigns run in the Rotorua region at this time. It is clear from those documents that Energy Online and TrustPower did not reduce their marketing activity following the 1 June 2004 approach by [ ] to Mr Corban, and TrustPower appeared to take active marketing steps to counter EOL's campaign.

Breach analysis

599. [

]. The Commission considers that TrustPower's reference in its Board of Directors meeting minutes of 29 April 2004 to Genesis' "un-commercial behaviour" – about which the Board of Directors agreed [ ] was to speak with Mr Corban - is more likely a reference to Energy Online's perceived aggressive marketing strategies rather than to any purported sales misrepresentation. In particular, Energy Online's marketing strategies included offering price discounts and incentives to retail customers in Rotorua, which were seen by TrustPower as only being possible because Genesis was accepting a lower rate of return than TrustPower.

600. The Commission accepts the evidence of Mr Corban that a discussion with [ ] took place, but that it was short, and did not lead to any arrangement or understanding between Mr Corban and [ ], nor between Genesis and TrustPower. The Commission has not identified any correlation between [ ] June 2004 approach to Mr Corban and changes in pricing by either party. EOL's pricing changes occurred prior to the approach, and EOL continued to price significantly lower than TrustPower in the Rotorua region.[268]

601. The Commission has concluded above that the approach by [ ] to Mr Corban did not lead to a contract, arrangement or understanding between [ ], or between TrustPower and Genesis. However, the Commerce Act also prohibits parties' attempts to breach the provisions of the Commerce Act. The Commission now turns to consider whether [ ] and TrustPower can be said to have attempted to breach the provisions of ss 27 and/or 30 of the Commerce Act.

602. The conduct said to amount to an attempt must go at least someway towards a breach of the Commerce Act. In *TPC v Parkfield Operations Pty Ltd*, the full Federal Court of Australia stated:

> [A]n attempt must involve the taking of a step towards the commission of the illegal act and that it is not sufficient that it be merely remotely connected or preparatory to the commission of it …
>
> We do not think that there is any warrant for holding that an attempt must have reached an advanced stage before it comes within the purview of para 76(1)(b) [NZ s 80(1)(b)].[269]

603. A unilateral statement of a person's intention to do, or refrain from doing something, is unlikely to constitute an attempt. In *TPC v Tubemakers of Australia Ltd*, Toohey J said:

> …a statement relied upon to found an allegation must carry within its terms the potential for an arrangement or an understanding. A statement made quite unilaterally of intention or to refrain from doing something, with no suggestion,

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[268] The Commission considers the prices increases over the period in question are associated with increased network charges and the review of EOL's pricing strategy.

[269] *TPC v Parkfield Operations Pty Ltd* (1985) ATPR 40-639, 47,189-47,190.

> express or implied, that others might act in some way, is hard to visualise as an attempt to make an arrangement or arrive at an understanding.[270]

604. The Commission considers that:

- [ ] approached Mr Corban as a result of the TrustPower Board of Directors agreement that [ ] speak to the Chairman of Genesis about its retail pricing in Rotorua;
- [ ] approached Mr Corban with the intention of: drawing to his attention the aggressive competitive actions of Genesis/EOL in Rotorua, including the 20-25 per cent discounts; indicating that TrustPower considered them to "un-commercial"; and, by implication, indicating that the un-commercial behaviour should cease; and
- Based on the evidence provided by Genesis and Mr Corban, [ ] was rebuffed at the outset of his approach to Mr Corban on the basis that Mr Corban considered any discussion of pricing would be inappropriate, and [ ] did not pursue the issue further.

605. The Commission considers that given the facts available to it, the approach by [ ] may not have reached the stage at which it would amount to an attempt to enter into an arrangement or understanding.

Conclusion

606. The Commission considers that [ ] approach to Mr Corban was inappropriate, and was, on the evidence before the Commission, at risk of breaching the Commerce Act. The Commission also considers that it was inappropriate for the Board of Directors of TrustPower to agree that [ ] should talk to the Chairman of Genesis, one of its main competitors, in a manner that placed [ ] at risk of breaching the Commerce Act.

607. The Commission has decided to provide a warning letter to TrustPower, explaining that the approach to Mr Corban was inappropriate and risked breaching the Commerce Act through constituting an attempt to contravene s 30.

Long Term Supply Agreements

608. The Commission has assessed an allegation of retailers entering into and/or giving effect to long term supply agreements with large consumers which have the purpose, effect or likely effect of substantially lessening competition in the retail market, contrary to ss 27 and/or 30?

609. An important s 27 theory in the retail market considered in other jurisdictions relates to whether retailers are entering into long-term supply agreements with consumers.[271] Such agreements might lessen competition in the retail market by removing important

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[270] *TPC v Tubemakers of Australia Ltd* (1983) 76 FLR 455; ATPR 40-358, at p 472; p 44,324.

[271] For example, the European Commission is currently investigating long-term contracts in both France (Case COMP/39.386) and Belgium (Case COMP/39.387). In the former case, the European Commission has reached the preliminary view that the contracts breach Article 82 of the EC Treaty: http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/08/809&format=HTML&aged=0&language=EN&guiLanguage=en. This was flagged as an issue in the Energy Sector Inquiry Report (see page 285) available at http://ec.europa.eu/competition/sectors/energy/inquiry/full_report_part3.pdf. The European Commission has recently decided that long-term contracts in the gas sector breached Article 82 (COMP/37.966 – Distrigaz): see http://ec.europa.eu/competition/antitrust/cases/decisions/37966/en.pdf

customers from the market for extended periods of time, thereby potentially making it more difficult for existing or new entrant retailers to adequately compete. The Commission however recognizes that long-term agreements can have pro-competitive, as well as anti-competitive, effects. For example, they can facilitate efficient investment by producers and/or customers by reducing the associated financial risk.

610. The Commission has not received nor uncovered any evidence of any anti-competitive long-term agreements in the electricity industry during the course of its investigation. The Commission therefore does not pursue this allegation further.

Conclusion of Sections 27 and 30 Breach Assessment

611. The Commission has considered a number of agreements, or potential agreements, which could have had the purpose or effect of substantially lessening competition or fixing, controlling or maintaining a price.

612. In several cases the Commission found no evidence that any such agreement had been entered into, and that any conduct of the parties was unilateral. In others, there were agreements, but the Commission concluded they did not have an anti-competitive purpose or effect. In one case the Commission concluded that TrustPower was at risk of breaching the Act, and has issued them with a warning accordingly.

12. CONCLUSIONS ON S 36 AND S 27 BREACH ANALYSES

Breach Analysis Conclusions

613. The Commission has investigated and assessed a number of potential or alleged breaches of the Commerce Act in the wholesale market. These investigations are summarised in section 9.

614. In all but one case the Commission has concluded that the conduct did not occur, or did not breach the Commerce Act. The Commission has found that the complaints are in many cases complaints about the lawful profit maximising behaviour of the generators, reflecting the incentives established by the current market structure, design, and rules.

615. There is one remaining matter, which is not discussed in this report, where the Commission is continuing with its investigation in relation to a potential breach. The matter involves a possible contract, arrangement or understanding between two parties, who will be notified of that investigation.

616. The Commission has also investigated and assessed a number of potential or alleged breaches in the retail market. These investigations are summarised in section 11 above. Again, the Commission has concluded that the conduct did not occur, or did not breach the Commerce Act.

617. In one case the Commission has determined that the conduct placed a company and an individual at risk of breaching the Commerce Act. The Commission will be issuing a warning letter to that company.

618. The Commission has not completed the investigation and analysis of possible market power in the retail market. For the reasons outlined below the Commission does not intend to do so. In essence, the Commission considers that it is likely the market structure, design, and rules will similarly explain the complaints the Commission has

received regarding the retail market. However, the Commission records its preliminary views for completeness.

619. Finally, the Commission has recently received a number of new complaints relating to electricity generation and retail markets in the 2008 year. These complaints will be assessed by the Commission in accordance with its usual process, and if appropriate the Commission may investigate those matters.

Investigation of Market Power in the Retail Market

620. The Commission has assessed complaints and alleged breaches of Part 2 of the Commerce Act in the retail market. As part of this work, the Commission anticipated assessing whether the concerns raised by parties regarding high retail prices were due to anti-competitive behaviour by retailers. Therefore, the Commission collected considerable data on retail prices and on the conduct of the gentailers at the retail level. The retail price data was provided to Professor Wolak for further analysis. However, priority was given to analysing market power in the wholesale market.

621. The investigation into alleged breaches and complaints under ss 27 and 30 has resulted in findings of no further action in all cases bar one, for which a warning is to be issued. No evidence was found of behaviour amounting to a clear breach of these sections.

622. The Commission has considered whether to continue its analysis, particularly to provide a detailed explanation of the impact of the exercise of unilateral market power in the wholesale market on retail pricing behaviour. It would be useful and interesting to complete this work, but it was not required as the analysis of complaints about, and behaviour in, the retail sector (under Part 2 of the Commerce Act) did not require an assessment of market power at the retail level. Therefore, the Commission considers it would not be reasonable to continue to subject the industry to further investigation without sufficient indication of such behaviour in the retail market, given the Commission's current understanding of the use of market power at the wholesale level.

623. The Commission has made no conclusions regarding the exercise of market power at the retail level. Analysis from the Electricity Commission presented below indicates that the main driver of increasing retail prices has been increases in the wholesale energy component. Analysis contained in section 5.6 of the Wolak Report suggests that higher prices from the exercise of market power at the wholesale level are being passed through to retail customers and thus contribute to the increase in retail energy costs. This is considered further below.

624. The Commission's analysis of the wholesale market suggests it is possible that increasing retail prices can largely be explained by the lawful and rational profit-maximising exercise of unilateral market power at the wholesale level, which is possible due to the market structure, design and rules, as well as the characteristics of the demand and supply conditions for electricity.

Effect of the exercise of wholesale market power on the retail market

625. Given the size of the market power rents estimated by Professor Wolak to have been earned by the gentailers in the wholesale electricity market over the period from 2001 to mid-2007, the question naturally arises as to whether, and if so, to what extent, these rents were passed through to electricity customers in the form of higher prices in the downstream retail electricity market. This question lies outside of the focus on whether market power is being exercised in the wholesale market.

626. However, the Commission recognises the need to assess the impact of the market power rents identified as arising in the wholesale market in the context of the vertical integration between wholesaling and retailing in the electricity industry. For this reason, and for completeness, a preliminary discussion of this question is presented below. As this work is not required for the assessment of wholesale market power, nor the breach analyses undertaken, it is presented in this section, rather than within the earlier breach analysis sections of this investigation report.

Wholesale market power rents in the context of a vertically integrated industry

627. Professor Wolak's analysis identified both competitive rents, which occur in a competitive market setting, and market power rents that arise only from the exercise of market power at the wholesale level. The price setting mechanism of the wholesale market means that all generators who are required to dispatch electricity receive the market clearing price. Under competitive conditions, the market clearing price is set by the (short-run) marginal cost of the highest cost dispatched generation unit. Since all generators receive the competitive benchmark price, all bar the highest cost dispatched unit earn competitive rents.[272] Market power rents are the additional margin earned by generators if the marginal (last dispatched) generator offered in at a price above their marginal costs, so that the actual wholesale market price struck is above the hypothetical competitive benchmark price.

628. The competitive rent and market power rent calculations presented in section 5 of the Wolak Report are based on the total amount of energy generated per period, by all generators. Table 5.2 presents the break-down of wholesale market revenues into variable costs, competitive rents and market power rents. The magnitude of market power rents calculated by Professor Wolak is substantial, averaging about 18 percent of wholesale revenues over the six-and-a-half year sample period.

629. It is important to note that the market power rents accrue to the generators at the wholesale level. As the generators are vertically integrated with downstream retailing operations, where customer contracts are typically on a fixed price basis, this raises the question as to the extent to which the rents are passed through in higher prices to end customers. This is particularly so as average retail prices do not show any of the price volatility seen in the wholesale market. This suggests that when wholesale prices peak, and the generating arms earn market power rents, the profits of the retailing arms may suffer, because they have to pay the high wholesale prices without any commensurate increase in retail prices, or sufficient margins to absorb the higher wholesale prices, in the short term. In this case, the 'high' profits earned by the generating arms would have to be balanced against the 'low' profits earned by the retailing arms. Alternatively, if the generator and retailer arms are formally hedged, then the actual price at which wholesale electricity is traded between them would avoid the peaks and troughs of the wholesale price. In both cases, the market power rents would be diluted compared to a focus limited to the wholesale market alone.

630. From the preliminary analysis, it seems clear that high wholesale prices are generally not passed through immediately, but are likely to be passed through gradually over time. This would help to explain the sharply upward trend in retail prices observed over the

[272] Under competitive conditions, the clearing price in any period will equal the marginal cost of the highest cost dispatched generation unit, and all dispatched generation units whose marginal cost of production is below that of the highest-offering unit will receive a margin defined as the wholesale price less its own marginal production cost. The sum of these margins across all dispatched generation units is known as the competitive rent.

sample period. There are two likely exceptions to this summary. The first is that some industrial and large commercial customers are only partially hedged, which leaves them partially exposed to wholesale prices that can be driven high by the exercise of market power in the wholesale market. The Commission understands that this partial exposure to wholesale prices may for some customers reflect user choice, but may for some other customers reflect an element of the retail package provided to the customer by the retailer. The second possible exception is that retail prices may increase in advance of expected increases in wholesale prices, rather than lag such changes.

631. A further, subtle point that needs to be borne in mind is that, as Professor Wolak makes clear, at the estimated competitive benchmark prices, the associated wholesale revenues earned may exceed, or fall short of, the generators' total costs (even though the prices reflect a short-run equilibrium state). In other words, generators can, accordingly, earn either profits (monopoly rents) or losses respectively in the short term.[273] In the latter case, some of the estimated market power rents in the companies' accounts would be swallowed up to cover the economic losses. This provides another possible way in which the profits earned from the market power rents in the wholesale market would look smaller from the companies' perspective.

632. All things being equal, the presence of market power rents in the wholesale market would be expected to attract wholesale market entry, yet entry by new firms has not occurred during the period under investigation. The fact that market power rents have not led to entry is a matter of concern. Section 8 presents the Commission's findings on barriers to entry to new generators.

Effect on retail prices

633. A careful and complete analysis of the impact on retail consumers of the exercise of market power at the wholesale level would require analysis of retail margins, levels of retail competition and the interaction between the wholesale and retail markets, over a lengthy period of time. For the reasons given above, the Commission has decided not to embark upon such a detailed, lengthy and costly study. Nonetheless, some limited analysis can be justified to test the possible impact of the Commission's conclusions on market power rents at the wholesale level.

634. The Commission has conducted a preliminary analysis of the trends in wholesale and retail prices over the sample period. Professor Wolak's analysis provides suggestive evidence on the extent to which retail prices have increased in order to cover higher wholesale prices that were caused by the exercise of market power.

635. As shown in Figure 4 above, the wholesale price fluctuates considerably over the period, and reaches high peaks at times during 2001, 2003, 2005/06 and 2008.

636. In contrast, Figure 10 below presents the trends in average retail prices (covering residential, commercial and industrial users) over a longer time period.[274] These trends show no such volatility, but rather increase more smoothly than wholesale prices over the relevant sample period, as well as over the earlier pre-2001 period. Note that the pre-2000 trends show the impact of the rebalancing of retail prices between residential and commercial users.

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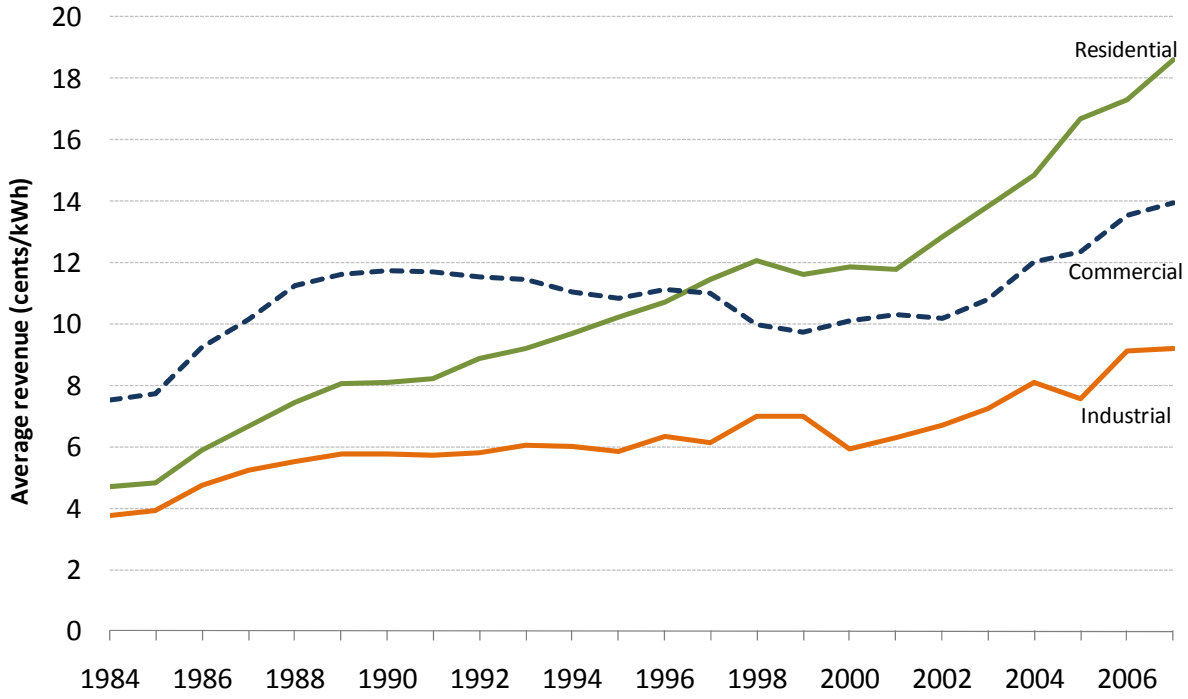
[273] Put another way, the competitive rents earned may exceed fixed and overhead costs, or fall below them, respectively.

[274] The average electricity prices are calculated as average revenue (that is, annual electricity revenue from that sector divided by annual electricity consumption in that sector), rather than based on published list prices for each retailer.

Figure 10: Average revenue by sector, 1984-2006



Source: Wolak 2009, Figure 5.23. Data from Ministry of Economic Development Energy Data File

637. The retail price trends in Figure 10 reflect the smoothing approach used by the retailers in setting their prices, that is, they do not raise retail prices immediately to reflect higher wholesale prices, nor lower them when wholesale prices are low. The smooth, upward trend in retail prices presented in Figure 10 indicates changes in the underlying cost components and/or margins are gradually passed through into higher retail prices over an extended time period.

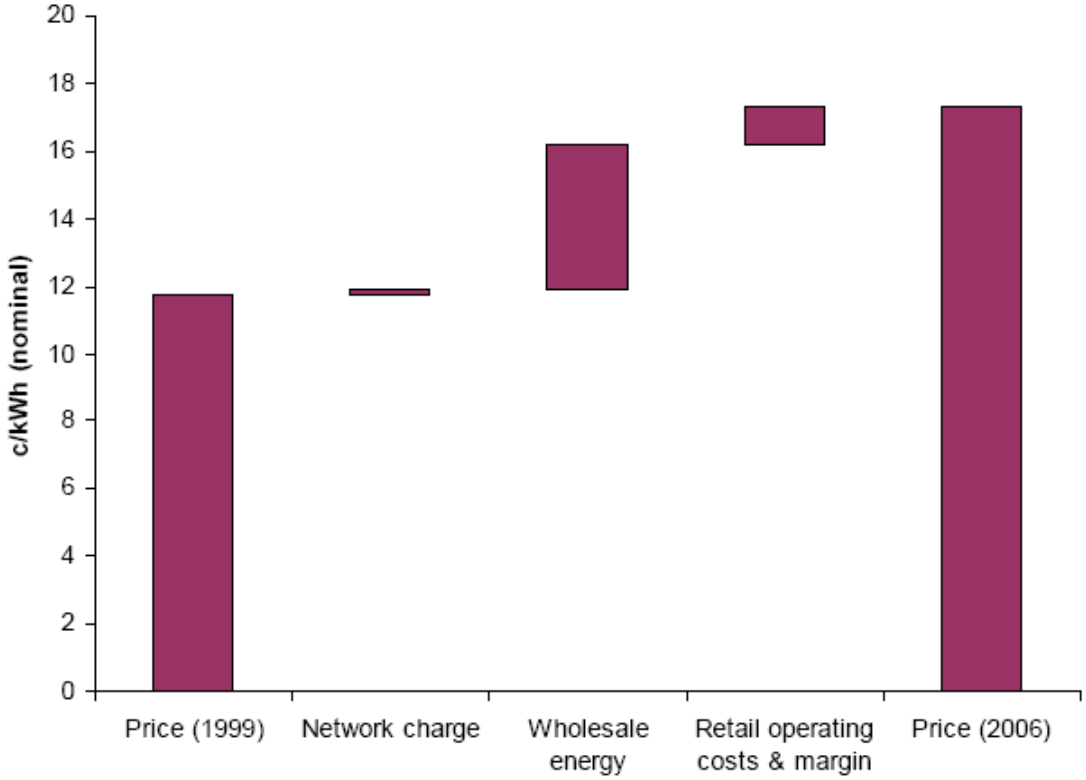
638. Retail prices comprise a number of cost components and potential margins, as follows:

- cost of wholesale electricity, which will be a function of both the wholesale spot price and the price of hedge contracts for supply;
- retail operating costs, which will depend upon retail production efficiency, and input costs such as staffing, billing, metering and operations;
- the retail margin; and
- other 'external' costs, including transmission, distribution and ancillary service charges.

639. In 2008, the Electricity Commission presented a break-down of changes in the major components of the final retail price between 1999 and 2006. This is reproduced in Figure 11 below.[275]

[275] Electricity Commission, *Market Design Review – Options Paper*, July 2008, p 3-27.

Figure 11: Change in components of residential prices 1999-2006



Source: Electricity Commission, Market Design Review- Options Paper, July 2008, Figure 6

640. In the same paper, the Electricity Commission, made the following assessment of the main drivers of retail price increases:

> While a degree of caution is warranted in interpreting the data for the reasons set out in the Issues Paper, the analysis clearly suggests that:
>
> • wholesale procurement costs have been the major contributor to the increase in final prices. This in turn raises the question of whether the movements reflect underlying cost increases, or weak competition in the generation market; and
>
> • there has also been a sizeable increase in the estimated gross retail margin (i.e. retail operating costs and margin). This raises a question about competition in the retail market, or whether other factors can explain the margin increase.[276]

641. The Electricity Commission also found, whilst noting considerable variation in the network component of retail bills around the country, that:

> [N]etwork charges - have fallen in nominal terms for commercial and industrial customers, and increased by only 4 percent for residential users between 1999 and 2006.[277]

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[276] Further discussion of the variations between incumbents' and others' retail margins, and geographic variations in retail margins, is presented in the papers comprising the Electricity Commission's Market Design Review.

[277] Electricity Commission, *Market Design Review – Options Paper*, July 2008, p 3-20. In particular, residential network charges are reported to have increased by 4 per cent over the period 1999 to 2006, whereas commercial and industrial network charges are found to have decreased by 9 per cent and 17 per cent respectively.

642. Professor Wolak's analysis provides some suggestive evidence on whether the movements in the wholesale component of retail prices reflect underlying cost increases, or weak competition in the generation market. The analysis also provides some preliminary findings concerning the state of competition in the retail market and supports the conclusion that network charges comprise only a small part of the increase in retail prices.

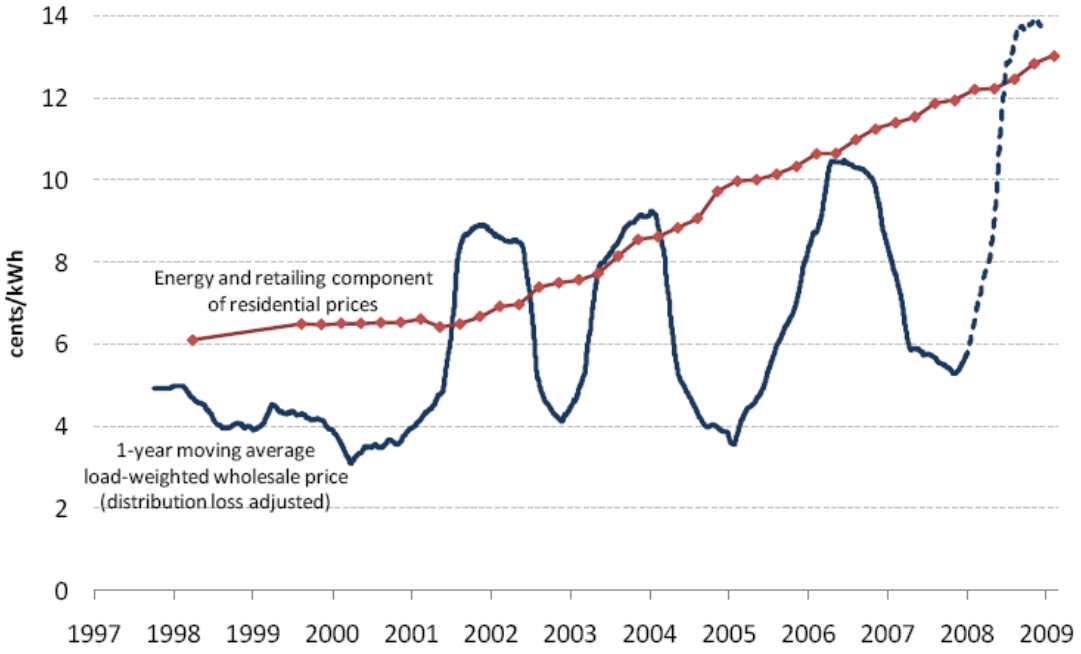
643. The increase in the wholesale energy component could have been due to: changes in fuel costs; changes in competitive rents; the exercise of market power at the wholesale level; or some combination of the above. Wholesale input costs will mainly be driven by fuel costs, and the opportunity cost of using stored hydro water. Professor Wolak's Figure 2.64 shows the increase in fossil fuel costs. Between 2001 and 2007 these have risen approximately 60 percent. The analysis undertaken by Professor Wolak takes into account increases in fossil fuel and water opportunity costs when calculating the competitive benchmark prices.[278] Accounting for the increased fuel costs, market power rents were still estimated to average 18 percent of wholesale revenues over the sample period. In Section 5.6, Professor Wolak assesses whether suppliers have recovered higher wholesale prices through retail price increases.

644. Figure 12 below, shows the rolling average quantity weighted wholesale price and a retail price trend. The retail price is the total average retail price for incumbent retailers, less the line and transmission component of the retail price. With regards to the line and transmission charges, Professor Wolak in Section 5.6 provides the following analysis:

> […] increases in the regulated component of electricity prices—line and transmission charges—comprise only a small part of the total increase in prices since the start of retail competition in 1999. Line and transmission charges increased from 6.7 cents/kWh in 1999 to 8.5 cents/kWh in 2009, an average annual rate of increase of 2.6%, or almost zero in real terms. Over the same period, energy and retailing charges for the incumbent retailer more than doubled, from 7.3 cents/kWh in 1999 to 14.7 cents/kWh in 2009. This represented an average annual rate of increase of 7.6%. As a result, the share of line and transmission charges in the total retail price fell from 48% in 1999 to 37% in 2009. The difference between the average price for the incumbent retailer and the cheapest available price from any competing retailer has remained between 0.6 and 1.7 cents/kWh over the whole sample period.[279]

[278] Presented in Section 5 of the Wolak Report.
[279] The Wolak Report, para 408.

Figure 12: Wholesale prices and energy and retail component of residential prices



Source: Wolak Report Figure 5.24, using MED Quarterly Survey of domestic electricity prices and Centralised Data Set.

645. Wolak concludes that:

> The ordering of the time series behavior of these two prices is consistent with the complete pass-through of wholesale prices into future retail prices.[280]

and also provides some preliminary analysis into the state of competition in the retail market :

> […].the significantly larger number of sustained periods when the difference between [the retail price] and the one-year moving average of the wholesale price is large and positive relative to the two short periods that this difference is negative suggests more than a complete pass-through of wholesale prices into retail prices, meaning that market power rents exist at the retail level as well as the wholesale level.[281]

Conclusion on effect of the exercise of wholesale market power on the retail market

646. A preliminary analysis undertaken by Professor Wolak suggests that suppliers have been able to pass-through these wholesale price increases in higher retail prices with a time lag. Without further study, the Commission is limited in the conclusions that it can reach on the question of the size of pass-through of market power rents in the wholesale market to the retail prices paid by end-consumers of electricity. However, the Commission can say that:

- market power rents are being earned at the wholesale level;
- wholesale prices fluctuate significantly, related largely to the degree of market power being exercised;
- retail market prices increase steadily over the period under assessment;

280 Presented in Section 5 of the Wolak Report.
281 The Wolak Report, page 211.

- the Commission's investigation has found no evidence of widespread anti-competitive behaviour in the retail market, such as collusion to raise prices; and
- given Professor Wolak's findings, higher wholesale prices are likely to have been passed-though, with a lag, in their entirety, to retail prices.

647. The Commission considers that if there were less ability and incentive to exercise market power at the wholesale level, the level, and potentially also the rate of increase, of wholesale prices could be lower. Moreover, although the Commission cannot make firm conclusions regarding the exact degree to which the market power rents earned at the wholesale level are passed on to retail customers, its preliminary analysis indicates that the wholesale electricity cost component has shown the greatest increase of all the cost components covered by the retail price. As line charges have increased by very little, and retail costs are a small proportion of the final retail price, the most likely reason for the increase in retail prices is pass-through of increased wholesale prices to the retail level. Therefore a likely candidate to explain the upward trend in retail prices is the recurrent exercise of market power in the wholesale market that was identified by Professor Wolak.

648. The Commission is aware that some parties will want the Commission to complete its analysis at the retail level. There will be questions as to how the gentailers respond at the retail level to the unilateral market power exhibited at the wholesale level. There will inevitably be questions as to the overall efficiency of the gentailers, and to the potential pass-through of apparent market power rents. Such issues would be relevant should consideration be given to the need to regulate prices in electricity wholesaling and/or retailing, or to other measures to ameliorate market power in the wholesale market.

649. Market power concerns are matters that can be considered in an inquiry under Part 4 of the Commerce Act as to whether goods and services need to be regulated. We turn to this issue in the next section of the report.

13. PART 4 OF THE COMMERCE ACT

650. As noted, this investigation is under Part 2 of the Commerce Act. The investigation sought to discover whether there was evidence of anti-competitive behaviour in the electricity markets. The investigation has found that electricity generators have substantial market power and are rationally using that power to profit maximise.

651. The Commission also considers that gentailers likely have market power in the retail market. It is possible that gentailers are passing the high prices obtained in the wholesale market through to the retail market, as retail prices appear to have been increasing at a rate greater than the wholesale prices.

652. The Commerce Act enables the Commission to consider whether regulation is required to control high prices that result from the exercise of substantial market power in certain circumstances. Part 4 of the Commerce Act provides that goods and services can be controlled where:

- there is little or no competition; and
- there is little or no likelihood of a substantial increase in competition; and

- the benefits of regulation would materially outweigh the costs of regulation.

653. There are three types of regulation that can be considered:

- information disclosure, where suppliers have to disclose specified financial information including pricing information, asset values and the like;
- negotiate and arbitrate regulation where suppliers negotiate prices with parties purchasing the goods or services; or
- price and quality regulation.

654. Part 4 regulation does not give the Commission the power to implement measures relating to market structure or design. Part 4 does enable the Commission to consider public information disclosure.

655. Given the findings on market power in this investigation, and the potential for this market power to have been passed through into the retail market, the Commission has considered whether to take steps under Part 4 of the Commerce Act.

656. From the Commission's investigation a preliminary view is that there appear to be systemic problems in the wholesale electricity market. If market participants are not breaching Part 2 of the Commerce Act, the wholesale market power rents must be the result of legitimate maximisation of profits. Market participants offer into the market in a manner determined by the market structure, design and rules of engagement and due to the characteristics of electricity.

657. Mitigation mechanisms, such as general price, or price cap, regulation, may be targeted at the wholesale and/or the retail level. Proponents of price caps point to their usefulness in mitigating market power when a market is not competitive.

658. Price caps may be viewed as a means to mitigate the exercise of market power, and argued by some to be of relevance until such time that additional generation production,[282] or additional retail competition, reduces the ability of generators to exercise market power. Indeed, a regulatory mechanism is viewed by market design experts as only ever part of the solution, if applied at all.

Wholesale price caps

659. A wholesale price cap may lead to an undersupply of generation, unless other mechanisms, such as generating-capacity obligations and capacity payments, are used. Yet those mechanisms do not necessarily remove all the detrimental effects of price caps. Joskow and Tirole (2007) suggest that generators with market power, which can choose the number and quantity of hedge contracts they offer, are likely to restrict the number of these. This issue would not be remedied by generating-capacity obligations and capacity payments.[283] Oren and Spiller (2000), when discussing the Californian electricity crisis and attempts made to fix it, argue that price caps on wholesale transactions will create further problems:

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[282] Waxman H, The California Energy Crisis: Myths and Facts, at http://oversight.house.gov/documents/20040826162730-57047.pdf

[283] For further discussion of wholesale price cap types and their potential impact, see Paul Joskow and Jean Tirole, *Rand Journal of Economics*, 38(1), 60-84, Spring 2007 (published November 2007). At http://econ-www.mit.edu/files/1927

> The recently imposed price caps on spot electricity transactions amounts to following a series of bad decisions with a worse one. While such price caps may temporarily ease the pain, they will make the patient sicker by the end of the day. Price caps on wholesale transactions will create short-term shortages, and discourage imports. Price caps also reduce the incentives to invest in generating plants. A low price cap also discourages demand side participation in the mitigation of shortages through demand side management.[284]

660. The particular circumstances of each market are relevant to determining the sensibility of wholesale price caps. From the commentary available it is clear that care is needed and other options need to be considered. Wholesale price caps may distort the wholesale market and so negatively affect signals for investment incentives. Solutions may exist, but clearly any such tools must be carefully designed so as to retain efficient signals to market participants.

Retail price caps

661. A retail price cap is a regulatory instrument that specifies a maximum price beyond which prices to retail customers of electricity may not rise. Retail customers are generally defined to include residential, small commercial and any larger customers who are charged a set per unit rate for consumption, and not a rate dependent on their time of power usage.

662. Customers whose retail charges are capped face greater certainty regarding their likely expenditure on electricity consumption. However, a limit on the amount a retailer may charge to its customers may have a number of detrimental effects, including:

- the inability of the retailer to recoup increased wholesale market charges; and
- the inability of customers to vary demand due to a lack of price signals.

663. These are explained as follows. Firstly, if wholesale prices rise, a retailer may not be able to recoup its increased 'input' charges. If this revenue shortfall is substantial and cannot be covered by other revenue streams, market exit may result. Secondly, customers who face capped prices will have reduced incentives to vary their own demand as prices fluctuate. Electricity is generally considered to be a price-inelastic good, and so any reduction in price variability will only serve to further dampen demand responsiveness. Mandated demand reductions may not be targeted at the parties who least value the reduced electricity consumption, and so may result in market inefficiencies.

Conclusion

664. Joskow (2003) states that regulatory measures designed to mitigate market power, including price caps, may have been detrimental relative to the outcomes likely with structural remedies:

> Significant wholesale market power problems have been identified empirically in a number of countries using both ex post empirical evidence and ex ante simulation models (Wolfram 1999, Borenstein, Bushnell and Wolak 2002, Joskow and Kahn 2002). The problems can be attributed to the interactions between the attributes of electricity networks noted above, too few competing generating companies,

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[284] Shmuel Oren and Pablo T. Spiller, High electricity prices in the west: What can be done about it?, *Public Utilities Fortnightly* Vol 138 No. 20 November 1, 2000. At http://faculty.haas.berkeley.edu/spiller/CALIFORNIA.doc

> wholesale market design flaws, vertical integration between transmission and generation that creates the incentive and opportunity for exclusionary behavior, excessive reliance on spot markets rather than forward contracts, and limited diffusion of real time prices and associated communications and control technology that facilitates the participant of demand in wholesale spot markets. As a result, market power mitigation strategies have become an important component of wholesale market reforms. However, efforts to mitigate market power with restrictions on bidding behavior and price caps, rather than with structural remedies (e.g. divestiture of generating plants by firms with market power, mandatory forward contracts, and market design improvements), may have caused more harm than good and adversely affected investments in new generating capacity.[285] (emphasis added)

665. In a more recent version of the same article, Joskow goes on to state that:

> [m]arket power is a significant potential problem in electricity markets, but the cure can be worse than the disease. Try to deal with potential market power structurally ex ante rather than ex post.[286] (emphasis added)

666. Regulating prices without addressing issues such as market structure and design is likely to be a second best outcome and is thought by some to lead to less than satisfactory outcomes in some circumstances.

667. It is possible that if market structure and design are addressed there might be little need for regulation of prices. Great care is required in considering potential solutions due to the risks to investment in new generation, the issues related to system security and supply, and the need to ensure an outcome that adequately addresses the incentive and ability to exercise market power.

668. The Commission does not consider a Part 4 inquiry focusing on price regulation will, on its own, necessarily be able to consider these issues. Moreover, the tools available to the Commission under Part 4 of the Commerce Act may not be sufficient to address the problem. Professor Wolak, in Appendix 1 of the Wolak Report, has provided observations on relevant mechanisms to mitigate the use of market power. The solutions include altering the market structure, the market rules and public information disclosure. Part 4 of the Commerce Act does not enable the Commission to consider the mix of effective solutions such as divestment of generating assets and market design. The Commission could consider public information disclosure, but this on its own is not likely to be effective.

669. The issues raised by the current investigation are significant. It is important for the government, industry and consumers of electricity to have the opportunity to consider the issues raised by this report. The Commission does not consider that it is appropriate to commence an inquiry under Part 4 of the Commerce Act of its own motion prior to relevant parties having the opportunity to consider the issues. There are many issues to consider and it would be inappropriate for the Commission to consider what appears to be a second best option on its own, especially one that may risk exacerbating the current problems.

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[285] Joskow, Cuadernos de Economía, Año 40, N° 121, pp. 548-558 (diciembre 2003). in the section: "Electricity Sector Restructuring and Competition: Lessons Learned" At http://www.scielo.cl/scielo.php?pid=S0717-68212003012100023&script=sci_arttext

[286] Joskow, 2007, Lessons Learned from Electricity Market Liberalization, page 12, At http://econ-www.mit.edu/files/2093.

670. A Part 4 inquiry is a significant undertaking. It would require a major input by the industry and interested parties both in terms of time and cost. Moreover, the government has convened a Ministerial Working Group, to be assisted by an appointed expert panel, to consider issues in the electricity industry including appropriate regulation of the sector and the market design. In light, firstly of the government review underway, secondly that it is by no means certain that price regulation will be necessary, and third, that it is unclear whether price regulation in some form can adequately address the systemic issues affecting the industry, the Commission considers it would not be reasonable to pursue an inquiry at this stage based simply on the outcome of this investigation. The Commission is of this view notwithstanding the significance of the issues raised by its investigation.

14. WHOLESALE MARKET DESIGN AS A SHORT-RUN CLEARING MECHANISM

671. As explained previously, the wholesale spot market is a market in which generators make supply offers, and the market clearing manager dispatches supply instructions so as to meet demand at least cost, subject to physical constraints imposed by generation technology and the transmission network. Thus, the wholesale market is designed as a short-run market, with market clearing prices being set at the point where supply equals demand for each half-hour. Importantly, all generation units dispatched receive the market clearing price, which is set by the supply offer of the highest dispatched unit. This market clearing mechanism is repeated for every half-hour period, for every day, throughout the year.

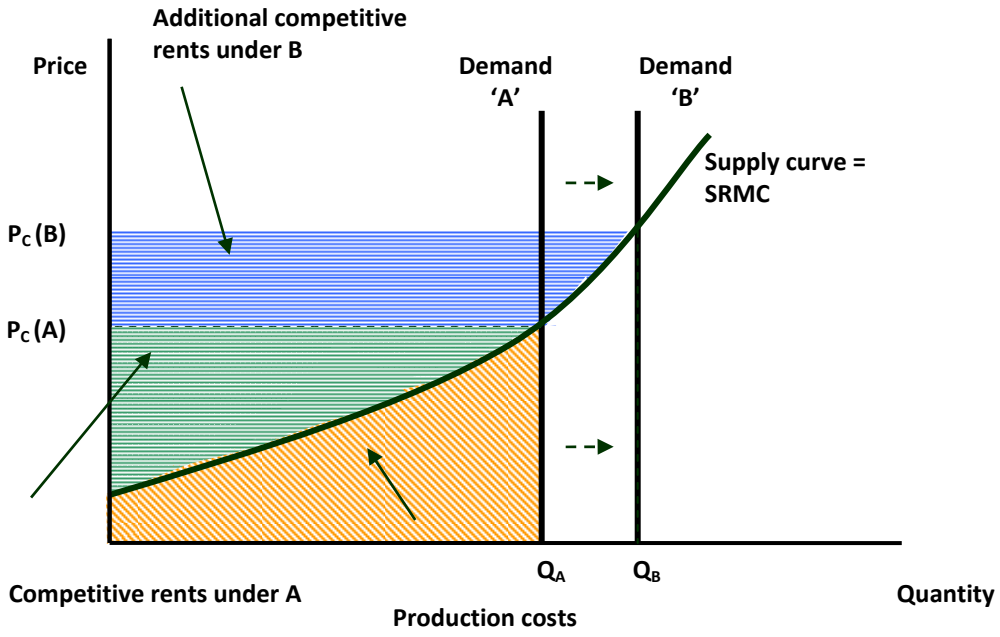
672. The methodology used by Professor Wolak shows that under competitive supply conditions, where each generator effectively faces a roughly horizontal demand curve, supply offers into the market would be made on the basis of the price and quantity pairs along a generator's short-run marginal cost (SRMC) schedule of production. Offering in at marginal cost is the profit-maximising approach, since all of a generator's offers made at a marginal cost of less than or equal to price will be accepted, and each of these offers bar the last will provide a margin of price over marginal cost, that is, will contribute to the competitive rent earned.

673. Under competitive conditions in the market as a whole, then, the market clearing price in any period will equal the marginal cost of the highest cost dispatched generation unit, and all dispatched generation units whose marginal cost of production is below that of the highest-offering unit will receive a margin defined as the wholesale price less its own marginal production cost. This means that the total wholesale revenues earned in the period are sufficient to cover both the sum of all generators' variable production costs, and to provide, through the sum of the margins above marginal costs across all dispatched generation units (the competitive rents), revenue to contribute towards the generator's fixed and overhead costs. In a given short-run period, the competitive rents may exceed, equal or fall below, the generator's fixed and overhead costs. In addition, this situation can change from period to period, and over the longer term as market demand and other factors change, as explained below.

674. A graphical analysis of the competitive wholesale market outcome is shown in below. Assume for the moment that the short-run, perfectly inelastic, market demand curve for the period is "Demand A". The generators' aggregate supply curve is shown by the SRMC curve, which slopes upwards, reflecting the dispatch order of plants according to

their individual marginal costs. This curve is smoothed, rather than stepped, for simplicity. The market equilibrium is found where demand equals supply, at a quantity of Q_A and price of $P_C(A)$. Here, the brown shaded area beneath the SRMC curve represents the sum of all the variable production costs incurred by the generators in supplying Q_A units, and the green shaded area depicts the sum of the competitive rents earned by the generators. The two shaded areas combined represents the total wholesale revenues earned for that period.

Figure 13: Increasing demand results in increasing competitive rents



675. As discussed earlier, the variable production costs are composed of two elements: the variable operating and maintenance costs of all the plants; and the fuel costs incurred in producing that quantity of electricity by the plants dispatched. The fuel cost for hydroelectric plants is measured by the opportunity cost of water. However, the bulk of the costs of production - the fixed and overhead costs of the plants - do not enter into the short-run production decisions of the generators, as their magnitude cannot by definition be changed in the short-run. The best that the generators can do in the short-run is to produce where their SRMC curves intersect with the market price. In doing so, they earn competitive rents that contribute to meeting the fixed and overhead costs.

676. The Commission anticipates that concerns may be raised that the competitive rents earned in a competitive market may be insufficient, either to cover the generators' fixed and overhead costs, or to provide a sufficient inducement to invest in new generation capacity. It might be suggested that the need for generators to earn sufficient returns to cover the building of new capacity should be factored into the analysis, such that they should be allowed to earn a further margin above the competitive level. This argument contends that wholesale prices should be judged using the long-run marginal cost (LRMC) of production as the measure of costs, which it is contended is a more appropriate pricing benchmark. It is argued that the price has to reach the level of LRMC in order to provide an inducement for new generation capacity to be built.

Implicit in this argument is that LRMC is higher than SRMC, so the acceptance of this viewpoint is tantamount to saying that in the short-run, it is appropriate (even desirable) for price to exceed SRMC. This then implies that the definition of market power should be relaxed, such that firms can, in the short-run, earn a certain level of market power rents, as this is considered necessary to ensure security of supply in the longer term.

677. In terms of , the market power rents could be shown by the elevation of the price from $P_C(A)$ to $P_C(B)$, as would occur if, in accord with Professor Wolak's methodology, generators were to submit offer curves that lie above their SRMC curves. The aggregate SRMC curve (not shown in) would then intersect with the vertical demand curve "Demand A" at a higher price (here assumed to be $P_C B$), leaving the output quantity unchanged at Q_A. This would give a further slice of revenue to the generators represented by most of the blue shaded area as far right as that output quantity.

678. Security of supply is clearly an important public policy objective. The Commission agrees that existing generators must earn sufficient revenues to ensure that the fixed and overhead costs of existing, efficient generation plants can be recouped in the longer term, so as to ensure that there is an incentive to build new plants as the demand for electricity grows.

679. The New Zealand wholesale market structure, because it is a short-term market, does not contain an explicit provision for ensuring that returns are sufficient to meet the policy aim of supply security. Thus, it may be claimed that there is a 'missing market' problem. Commentators have argued that in the New Zealand setting, the high rents earned from time to time in the wholesale market are necessary in order to achieve security of supply aims.

680. The Commission's view is that this line of reasoning is flawed, and is based on a misunderstanding as to how competitive markets work. Borenstein *et. al.* (1999)[287] provide a summary of the theoretical competitive process in electricity markets. They state:

> If the total contribution generates more revenue than is necessary to cover the fixed costs of some type of generation, then in a competitive market with no barriers to entry, new generation of that type will enter the market. Conversely, if the total contribution generates less revenue than is necessary to cover the fixed costs of some type of generation, then some generators of that type are likely to exit. When exit occurs, the supply curve in the industry shifts in and the equilibrium market prices rise, so that all remaining firms earn higher prices and great contributions to fixed costs. In a competitive market, this process of entry and exit occurs until, in long-run equilibrium, all generators in the market are able to cover their fixed costs and no other generator could enter and cover its fixed costs at the current market prices. There is no economic argument for the necessity of market power to ensure the viability of the industry.
>
> […] Note that this does not mean that all current capacity in an industry will be able to cover its sunk investment costs or even its fixed going-forward costs in a deregulated market. Some firms or generating units may have to exit the market because they cannot cover their total going-forward costs of operation. This can occur because such generators are just not sufficiently efficient to be viable in a competitive market, or because there is simply too much capacity in the market and some of it must exit in order for market prices to rise to a level that allow the

[287] Borenstein, Bushnell, and Knittel, Market Power in Electricity Markets: Beyond Concentration Measures, *The Energy Journal*, 20(4), October 1999.

> remaining firms to break even as an outcome of the competitive supply/demand process.

681. This adjustment process in a competitive generation market can be portrayed using Figure 13. Over time, demand for electricity will increase, say, from "Demand A" to "Demand B". With the existing generation plants, greater demand will be met by a movement up the SRMC curve, with marginal production costs rising as more expensive plants are dispatched. The quantity supplied will increase from Q_A to Q_B, and the competitive market clearing price will accordingly increase from $P_C(A)$ to $P_C(B)$. As a result, the total competitive rents now become the area between the new higher price and the SRMC curve, or the sum of the green and blue shaded areas. In other words, the competitive rents have increased by the size of the entirety of the blue shaded area.

682. Of critical importance, this addition to the competitive rents is (as drawn) comparable to (in fact, larger than) the size of the market power rents that we had when depicting the situation argued for by some commentators – that market power rents are needed to ensure security of supply. The point is that as demand increases, competitive rents will also increase. When competitive rents reach a level that makes new generation profitable, this signal will be read as such by the generators. Furthermore, competitive rents provide a much better signal than market power rents that investment in new plant is needed, because they only arise on average when demand gets close to available capacity. In contrast, market power rents arise on a haphazard basis, depending mainly on low hydro water storage levels, and as they arise periodically, cannot provide a consistent signal that new investment is needed.

683. Professor Wolak has provided the following counter to the argument that long-run costs are the appropriate metric by which to consider signals for investment in new capacity:

> The decision to invest in new capacity depends on the future time path of short-term prices and variable input costs relative to the up-front construction costs and other non-volume-variable costs. This decision rule follows from the fact that once the fixed cost of constructing the generation unit has been incurred, the vast majority of these costs cannot be recovered unless the unit produces electricity. Assuming that both future short-term electricity prices and input prices are uncertain, if the firm maximizes expected profits, it will enter if the expected discounted present value of the revenues it earns from building the generation unit discounted at the appropriate risk-adjusted rate of interest, r_r, is greater than the expected discounted present value of the up-front construction costs discounted at that same risk-adjusted rate of interest.
>
> […] the basic conclusion {is} that the long-run marginal cost of output in the current period is largely irrelevant to the decision of new entrant to build a generation unit that has a finite capacity with significant sunk costs.[288]

684. To be sure, in any given period, the short-run competitive rents may or may not be sufficient to meet the generators' fixed and overhead costs. But the same also applies to the alternative situation where reliance is placed on market power rents, since as Professor Wolak's analysis shows, there were a number of months over his sample period when no market power rents were earned. At these times, the generators would have been able to call only on the competitive rents earned to meet their fixed and overhead costs.

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[288] The Wolak Report, Section 5, para 339.

685. His results also sheds interesting light on the notion advanced by some that we should aim only for workable competition as the standard of performance in the wholesale market, as though this is some less stringent standard than a fully competitive one. Professor Wolak's results indicate that even as the market operates now, in competitive conditions it produces outcomes that are fully competitive, in the sense that there is a complete absence of market power rents. Hence, the Commission considers that workable competition in this market can be equated with fully competitive outcomes, as fully competitive outcomes are clearly attainable.

686. As previously described, Professor Wolak decomposed total wholesale revenues for every time period into variable cost, competitive rents and market power rents. The monthly break-downs are presented in his Figures 5.14 and 5.15. The annual total of each is presented in his Table 5.2. It is interesting to note that across the six and a half year period analysed, market power rents total $4.3 billion, but competitive rents are conservatively estimated at $7 billion. This implies that had competitive conditions prevailed throughout the sample period, average wholesale prices would have been approximately 18 per cent lower overall,[289] yet generators would have earned returns in excess of variable production costs of $7 billion. Professor Wolak's Figures 5.14 and 5.15 also suggest that during periods of hydro water shortage, such as in mid-2001, competitive rents rise above the level calculated in periods of abundant hydro supply, reflecting the higher opportunity cost of hydro water, but nowhere near to the extent provided by the market power rents in those periods. Further, the Figures suggest that competitive rents have tended to increase gradually over the period.

687. Thus, the discussion suggests that under normal competitive conditions, entry should occur when the price signals indicate that it is desirable and profitable to do so, and that electricity generation is no different from other industries in this respect. Commentators who argue that the spot price is designed to rise to the levels of existing peaks are implying that the market was designed to permit the exercise of market power. However, there is no inherent link between the size of the market power rents earned and the rents required to signal and attract investment in new generation.

688. As the wholesale market is a clearing market designed to balance supply and demand in the short-run, it may be correct that insufficient incentives exist to address the adequacy of supply issue. This point is made in the paper by Joskow, which states that:

> Evidence from the U.S. and some other countries indicates that organized wholesale markets for electrical energy and operating reserves do not provide adequate incentives to stimulate the proper quantity or mix of generating capacity consistent with mandatory reliability criteria.[290]

689. Should adequacy of supply over market levels be deemed to be a desirable outcome this may be better addressed by means of an explicit mechanism separate to the design of the short-run clearing mechanism, in the same way that the need for ancillary services such as frequency keeping, and reserve energy markets, are separately addressed. A mechanism designed to address the need for adequacy of supply may be preferable to the current situation which appears to allow for market power rents to be earned as and when made possible by random weather patterns, with the hope that these rents will

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[289] The assumption that under competitive conditions, prices would be 18 per cent lower is conditional on there being no demand response to the change in the wholesale price.

[290] Joskow, P, *Competitive Electricity Markets And Investment In New Generating Capacity*, MIT working paper, April 2006, at http://tisiphone.mit.edu/RePEc/mee/wpaper/2006-009.pdf

stimulate investment in new generation. The Commission recognises that a mechanism designed to create additional incentives to invest and so meet the adequacy of supply issue would come at an additional cost to consumers over competitive wholesale prices. Optimal market design would take account of the adequacy of supply issue. For example, Professor Wolak, in Appendix 1 of the Wolak Report describes a reliability insurance system designed to reduce the frequency of apparent supply shortfalls by providing generators incentives to invest in needed new generation.

15. INVESTIGATION CONCLUSION

690. The Commission has undertaken an investigation into alleged breaches of Part 2 of the Commerce Act by participants in the wholesale or retail electricity markets.

691. The Commission's current investigation was opened in late 2005 following a number of complaints and concerns about the electricity wholesale and retail markets, regarding the alleged abuse of market power, low levels of competitive activity in the markets and the potential for collusion, high electricity prices and increasing company profits. The Commission has considered a wide range of alleged breaches of the Commerce Act, primarily at the wholesale market level.

692. The Commission has investigated whether the vertically integrated generator-retailers ('gentailers') are likely to have breached the provisions of Part 2 of the Commerce Act in the wholesale and retail markets. The Commission has investigated whether:

- any of the gentailers have a substantial degree of market power, and whether they have taken advantage of that market power for an anti-competitive purpose, in breach of s 36 of the Commerce Act; and
- any of the gentailers have entered into arrangements or understandings that have purpose, or effect, of substantially lessening competition in electricity markets in breach of s 27 of the Commerce Act.

693. In any s 36 breach analysis, the Commission must form a view on whether the parties under analysis have a substantial degree of market power in a market. This assessment is informed by both qualitative and quantitative information. In determining any party had market power in this case, and whether the Commerce Act has been breached, the Commission has adopted the following market definitions for the purposes of this report:

- the national wholesale electricity market, which includes generation and the sale and purchase of physical electricity; and
- the national market for hedge contracts.

694. Electricity wholesale markets may be susceptible to the exercise of market power, due to the unique characteristics of electricity. Electricity, and the network on which it is transmitted, possess characteristics that differentiate electricity from almost all other products and enhance the ability of a supplier to exercise market power. These include: supply must equal demand at every instant in time and at each location in the transmission network; it is very expensive to store electricity; inelastic consumer demand response to price changes; individual production plants and the transmission network have finite capacities; barriers to independent entry; and, in New Zealand, the geographical concentration of production capacity ownership.

695. It can be difficult to identify and measure market power in wholesale electricity markets. The wholesale market is a short-term auction market, designed such that the clearing

price for each operating period is determined by both supply and demand. High prices may be a signal that supply shortages exist, rather than indicate the exercise of market power. However, if companies are able to sustain pricing at levels that substantially exceed prices that would be expected in a competitive market, it would be reasonable to infer that they hold market power. An analysis of whether gentailers exercise market power in the wholesale market necessitates a detailed empirical analysis of their behaviour within the market, in terms of supply offers made.

696. Given the unique characteristics of electricity, the Commission retained an internationally-renowned expert in the field, Professor Wolak, to assist with a quantitative analysis as to whether market power has been exercised at the wholesale level.

697. The quantitative evidence strongly suggests that each of the four largest generators - Contact, Genesis, Meridian and Mighty River Power, has the ability and incentive to unilaterally exercise market power and increase wholesale prices during certain periods. At other times in the sample period they have no ability or incentive to exercise market power. The exercise of market power is associated with those periods when hydro storage was low, or was expected to become low.

698. Qualitative evidence was also analysed was undertaken by the Commission. Company documents were obtained and reviewed, and key electricity industry participants interviewed, both for their views, and to allow assessment of issues such as the conditions for entry and expansion.

699. The qualitative evidence indicates that Contact, Genesis, Meridian and Mighty River Power are viewed by market participants, both non-gentailers and the gentailers themselves, as having market power in the wholesale market. The Commission has found there are significant barriers which make entry difficult, increasing participants ability to exercise market power. Consistent with this, new independent entry into the market at a scale that would cause a change in existing market participants' behaviour is not occurring.

700. Overall, the Commission considers there is strong prima facie evidence that each of the largest four suppliers into the wholesale market (Contact, Genesis, Meridian and Mighty River Power) have a substantial degree of market power. That market power is exercised, for substantial periods, by offering into the wholesale market at prices above those that they would offer under competitive conditions. The periodic nature of these bouts of high prices, together with high entry barriers, means that potential competition does not provide a constraint on the exercise of market power.

701. The Commission has investigated a number of general and specific allegations of breaches of s 36. The Commission considers that, on the basis of the evidence before it, gentailers have not 'taken advantage of' their substantial market power for an anti-competitive purpose in breach of s 36. The Commission's investigation has uncovered no evidence of an anti-competitive purpose. Such a purpose includes the prevention or hindering of an actual or potential market participant from competing. The charging of above competitive prices, without an anti-competitive purpose, is not a breach of s 36.

702. The analysis undertaken on market power suggests that the identified exercise of wholesale market power by Contact, Genesis, Meridian and Mighty River Power reflects normal, legitimate profit-maximising behaviour in the context of the characteristics of the electricity product, and the current market structure, design and rules. It has not suggested this conduct is possible because of anti-competitive activity. The Commission's view is that the fact that the size of the distortion of wholesale prices

away from competitive benchmark levels varies over time, and, indeed, that for long periods of time there is no sign of such distortion, is consistent with the finding that firms exercise unilateral, rather than coordinated, market power.

703. There is one remaining wholesale market matter, which is not discussed in this report, where the Commission is continuing with its investigation in relation to a potential breach. The matter involves a possible contract arrangement or understanding between two parties, who will be notified of that investigation.

704. The Commission has also investigated a number of general and specific allegations of arrangements with an anti-competitive purpose or effect in breach of s 27. The Commission has found, again on the evidence before it, that no such arrangements have been entered into.

705. In one case the Commission has determined that the conduct placed a company and an individual at risk of breaching the Commerce Act. The Commission will be issuing a warning letter to that company.

706. The Commission has, therefore, closed its investigation into the wholesale and retail market allegations described in this report.

Release of Investigation Report and Quantitative Evidence

707. The Commission has, both recently and over the life of the investigation, received numerous OIA requests, many of which have been deferred until such time as the investigation is completed. The Commission has considered the wider public interest in the release of this investigation report, and any potential prejudice that may arise from that release, and has decided to release an appropriately redacted version.

708. The Commission has provided gentailers with an opportunity to review a draft of this report prior to release, and highlight any commercially sensitive information. The Commission has considered the requests, and where the Commission has determined that information is commercially sensitive, this has been redacted from the public version.

709. The report will be posted on the Commission's website and made available to interested and affected parties.

710. As noted above, the Commission will not be asking Professor Wolak to undertake any further analysis of the retail market nor the impact of the vertically integrated market structure that exists in New Zealand. The Commission will consider any requests for the data obtained for this purpose under the OIA using its usual process, seeking the consent of parties to any release commercially sensitive information as appropriate.

16. COMMISSION DECISIONS

711. The Commission's Commerce Act Division has decided that:

- the Commission's investigation into the allegations contained in this report that participants in the wholesale or retail electricity markets have breached Part 2 of the Commerce Act, should now be closed;
- the Commission will not at this time commence a regulatory inquiry under Part 4 of the Commerce Act; and

- bearing in mind the public interest in this matter, the Commission's investigation report and the Wolak Report should be released in response to the OIA requests the Commission has received to date, subject to the withholding of material where appropriate under ss 6 or 9 of the OIA.

GLOSSARY

Term	Meaning
Ancillary service	The system operator has contracts with generators, customers, retailers and distributors to provide ancillary services, which comprise black start, over frequency reserve, frequency keeping reserve (also known as frequency regulating reserve), instantaneous reserve and voltage support. The System Operator purchases instantaneous reserves on a half-hourly basis through the market.
Benmore	The location on the national grid at which Benmore power station injects electricity. Benmore is the southern end of the HVDC, and half-hourly prices at the Benmore node generally reflect the half-hourly prices across the South Island. Benmore is one of the three key reference nodes, along with Haywards and Otahuhu.
Black start	Certain generators have the ability to 'black start', meaning they can restart their generation plant with no electrical input if the system has blacked out. Generators without this capability require power from the grid to restart their generating plant.
Clearing Manager	The service provider responsible for monitoring prudential security requirements and invoicing and settling electricity and ancillary service payments. This role is currently fulfilled by M-co.
Combined-cycle gas turbine (CCGT)	A gas turbine generator that generates electricity. The waste heat is used to make steam to generate additional electricity via a steam turbine.
Contract for Difference (CfD)	A trade in which the purchaser pays the seller the difference between the contract price and some market price, usually the spot price.
EIRA	Electricity Industry Reform Act 1998.
Electricity Governance Regulations and Rules (Rules) EGR	The Electricity Governance Regulations 2003 and the Electricity Governance Rules 2003 under which the electricity market has operated since 1 March 2004. The Regulations include provisions related to service provider agreements, undesirable trading situations, rules breaches and exemptions, the proceedings of the Rulings Panel, and appeals from decisions by the Commission or the Rulings Panel. The Rules set out

	various authorities and responsibilities of the Commission to carry out market and system governance functions, as well as to make a number of decisions relating to Transpower and the transmission grid (part F of the Rules). These rules (parts A, C, D, E, G, H, and I) were approved by the Minister of Energy on 18 December 2003, and took effect on1 March 2004. Part F, dealing with transmission issues only, came into force in May 2004.
Embedded generation	Generation that is connected to a local network rather than to the national grid.
EnergyHedge	EnergyHedge is a web-based centralised trading platform for standardised derivative contracts on electricity prices (hedge contracts) in New Zealand. EnergyHedge was formed by Contact, Genesis, Meridian and Mighty River Power in late 2003.
Frequency control reserves / Frequency keeping Reserve or Frequency Regulating Reserve (FRR)	An ancillary service that keeps the frequency of the grid within its normal band. The frequency keeping station increases or decreases generation within a set band to ensure that supply equals demand on a second by second basis.
Grid	The high-voltage electricity transmission network, which transmits electricity throughout New Zealand over more than 12,000km of transmission lines, from generators to distributors and major industrial users. It is also referred to as the national grid, and it is owned by state-owned enterprise Transpower.
Grid Injection Point (GIP)	A point of connection where electricity flows into the national grid from generating stations.
Grid Exit Point (GXP)	A point of connection where electricity flows out of the national grid to local networks or direct consumers.
Haywards	The location on the national grid at which the HVDC is connected to the North Island. Prices at the Haywards node, located in the Hutt Valley, give a good indication of prices across the lower half of the North Island. Haywards is one of the three key reference nodes, along with Benmore and Otahuhu.
Hedge contract	A financial risk management product or contract for sale and purchase of electricity that protects against price risks associated with the spot price of electricity. It sets a price at which a buyer will purchase a specific quantity of electricity at a specified node for a set period. The buyer pays this

	price regardless of whether the market price is higher or lower that the set price. They are also known as a contract for difference (CfD).
High Voltage Direct Current (HVDC)	The high voltage transmission cable that transports electricity in both directions between the North and South Islands from Haywards substation and Benmore substation.
Instantaneous reserves	Generation capacity that is made available to be used in the event of a sudden failure of a generating or transmission facility in order to maintain system frequency at 50 Hz. Fast instantaneous reserve is available within six seconds and must be able to operate for one minute. Sustained instantaneous reserve is available within 60 seconds and must be available for 15 minutes.
Kilowatt (kW)	A watt is a unit of measure that tells the rate at which energy is produced or consumed. A kilowatt (kW) is a thousand watts.
Kilowatt hour (kWh)	A kilowatt hour (kWh) is a measurement of the quantity of electrical energy supplied at a steady rate of l,000 watts for a period of one hour.
Levels of spill	The spillage of water that could potentially have been used for the purposes of energy production but was released for other reasons.
LPG	Liquefied petroleum gas.
Megawatt (MW)	A watt is a unit of measure that tells the rate at which energy is produced or consumed. A megawatt (MW) is a million watts.
Megawatt hour (MWh)	A megawatt hour (MWh) is a measurement of the quantity of electrical energy supplied at a steady rate of l,000,000 watts for a period of one hour. One megawatt hour is equal to 1,000 kilowatt hours. Megawatt hours are the standard unit used for the wholesale market.
Meter	Equipment that measures electricity quantity in kilowatt hours.
Node	A point on the national grid where electricity either enters or exits the grid (a grid injection point or a grid exit point) or flows through (a transfer node).

Oil/distillate stations	A generation plant that runs on oil or distillate, a light fuel oil.
Open-cycle gas turbine (OCGT)	A gas turbine generator that generates electricity. After burning the gas to produce electricity, mostly normal air- is passed through the turbine. This air is transferred to the environment for cooling and is not used for any other purpose, unlike the waste heat from the CCGT described above which is used to make steam to generate additional electricity via a steam turbine.
Over-frequency reserve	An ancillary service that automatically reduces the level of injection from a generating set to stop an unplanned rise in the frequency.
Retail Market Advisory Group (RMAG)	The advisory group that: considers and develops rule change proposals affecting Parts B, D and E of the Rules; and provides comment as necessary to advisory groups whose work impacts on the operation of the retail market.
Spot market	The buying and selling of wholesale electricity is done via a 'pool', where electricity generators offer electricity to the market and retailers bid to buy the electricity. This market is called the spot or physical wholesale market.
Spot price	The half-hour price of wholesale ('spot') market electricity published by the pricing manager.
Switchgear (substations)	The combination of electrical disconnects, fuses and/or circuit breakers used to isolate electrical equipment.
System Operator	Service provider responsible for scheduling and dispatching electricity, in a manner that avoids fluctuations in frequency or disruption of supply. The system operator is currently Transpower.
Time of Use (TOU)	When electricity prices are set for a specific time period on an advance or forward basis.
Transmission	The bulk transfer of electrical power.
Transmission Constraint	A constraint occurs when a transmission line (or lines) reaches its maximum carrying capacity. When this occurs, the regions on either side of the constraint are considered 'islands' in price terms. One 'island' cannot supply any more electricity to the other, meaning demand has to be met by local generation

	plant.
Voltage support	The ancillary service that injects reactive power into the system to boost voltage at the point of injection.
Wholesale market	The buying and selling of wholesale electricity is done via a 'pool', where electricity generators offer electricity to the market and retailers bid to buy the electricity. This market is called the spot or physical wholesale market.
Wholesale Market Advisory Group (WMAG)	The WMAG has been established, in accordance with the Charter on Advisory Groups developed by the Commission, to advise and assist the Electricity Commission with its tasks in the operation of the Rules and other policy matters.

APPENDIX 1 – AN ASSESSMENT OF THE PERFORMANCE OF THE NEW ZEALAND WHOLESALE ELECTRICITY MARKET BY FRANK A. WOLAK (THE WOLAK REPORT)

APPENDIX 2 – PEER REVIEW OF THE WOLAK REPORT BY PROFESSOR NILS-HENRIK VON DER FEHR