Electricity Hedge Market Issues
- A Qualitative and Quantitative Study

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Table of Contents

Table of Contents (Cont.)

I. Introduction

UMR was commissioned by the Electricity Commission to conduct research to provide information that would assist it to determine:

- Whether or not there is a shortage of hedge contracts in the market
- What constitutes an effective contract from a buyer's perspective, particularly the relationship between price, basis risk and force majeure
- Whether generators have the ability to exercise market power in either the wholesale spot market or the wholesale hedge market and, if so, the extent of that power and its implications for the hedge market
- Whether vertical integration adversely affects competition in the retail market, the market for hedges and investment in new generation
- Whether vertical integration is the most efficient market structure given the physical and commercial drivers underlying the New Zealand electricity market
- Whether issues relating to the lodgement of hedges for prudential security are significant.

It should be noted that the research was not designed to provide answers to those questions, but to gather information related to the issues they raise to assist the Commission's determinations which will draw from a variety of other sources.

The methodology comprised of two information gathering phases and this main report should be read in conjunction with the supplementary tables report. The first phase involved the distribution of a survey to 69 potential respondents which was developed by the Commission with input from UMR and the Hedge Market Development Steering Group. Of these, 51 responses were received. 14 respondents did not send in surveys after multiple requests, one said their responses were covered by another respondent, another said they no longer were involved in electricity purchasing and two others participated in depth interviews but never sent in a completed survey. In the following table (Table A) we have included the aggregate consumption and generation respondent groups as an indication of how much of the total electricity market they represent.

The survey was sent to:

TABLE A

Respondent by type	Surveys distributed	Responses	Consumption (if retailer includes retail load) GWh/annum	Annual average generation GWh/annum
Generator/generator-retailers	9	8	35,870	38,750
Large purchasers	11	10	10,152	493
Medium purchasers	15	9	1,268	-
Small purchasers	23	15	733	42
Others (mix distributors, traders, former and potential participants)	11	9	-	-
TOTAL	69 (2 not applicable)	51	-	-

Respondents were advised that their individual responses would be kept confidential to UMR and that only aggregated data would be reported. The survey is attached in the appendix. The response rate among the 67 who could complete the survey (two recipients said the surveys were not applicable to them) was 76%. With the exception of one medium purchaser and one small purchaser who did not provide an answer all respondents confirmed that they had provided their responses to UMR in confidence. More than half of all respondents also said they regarded the information they had provided as commercially prejudicial information.

It should be noted that one Generator-Retailer in responding to question 21, which required respondents to project ahead the amount of hedges purchased and sold, did not provide data for hedges purchased, thus data in the report for this is under-reported and may well explain some discrepancies between the amount of hedges purchased and sold. Caution should be exercised when interpreting the price ranges in response to question 44. The wide price variation can be accounted for by a number of reasons including prices reflecting different locations to those requested, different terms and hedges provided for different time periods.

Where respondents have specified additional comments these have been picked up and are contained in the report. While eight Generator-Retailers took part in the survey, only seven sell hedges while eight purchase them. In one or two instances respondents gave two answers and provided additional comment to explain their position e.g. that reserve generation does reduce spot price risk in the short-term, but does not in the long-term because it distorts long-term investment signals. Such instances account for why responses exceed the number of respondents from time to time.

The second phase of the research involved 35 depth interviews which were designed to better understand the reasons behind the responses given to some key questions in the survey. Requests for interviews were made to all generators and generator-retailers, all large purchasers and a selection of medium purchasers, small purchasers and a selection from the mixed category of distributors, traders and potential and past retailers. Similar assurances with respect to confidentiality were given to those who participated in the depth interviews with the exception of three respondents – Delta, Orion and NGC - whose permission was gained to report their comments as they would otherwise have been identifiable.

II. Executive Summary

Market competition

- 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 (3 unsure) who responded to the survey believed a competitive hedge market did not exist and four of eight generator-retailers were of this view. Only four purchasers believed competitiveness had improved over the past 12 months and two generator-retailers were of this opinion too. Seven purchasers believed competitiveness had gotten worse.

- The principle reasons for believing the market is not competitive revolve around the vertical integration of generator-retailers and perceptions of regional domination. This, it is argued, gives rise to a lack of liquidity and transparency in the hedge market. Other reasons given for the lack of competition were the common ownership of three of the four largest generator-retailers, excessively high prices and the asymmetry of available market information.

- Those who say there is a competitive market for hedges say supply constraints have made the hedge market thinner and pushed prices up, but they argue these factors do not mean there is a lack of competition but they may explain limited liquidity. They say parallels can be drawn with other markets with a similar number of sellers which are competitive and they point to the proportion of unsuccessful seller offers as a reflection of competition.

- It is also argued by those who say competition exists that the short-term hedge market has improved transparency and that the nature of bilateral contracts is confidential which limits the amount of disclosure to other market participants.

Fairness of the process

- There was somewhat less polarisation over whether the process for establishing bilateral hedge contracts was fair. 17 of 34 purchasers (5 unsure) said the process was not fair and two of eight generator-retailers were also of this view.

- While a number of those who said the process was unfair drew on the same reasons they had given for lack of competition, others said they had no way of knowing whether the process was fair. Some argued that evidence for unfairness was shown by the additional margin being built into prices and unfair force majeure and suspension clauses.

- A majority of purchasers (18) do not believe they are offered competitive prices for hedges or the electricity they buy, though 11 believe they are offered competitive prices and four are unsure. Not one of the large purchasers though believes they are offered competitive prices.

- Those who argued the process was fair said contracts were signed between willing sellers and willing buyers adding that bilateral contracts were tailored to the specific needs of each purchaser. It was suggested that a relatively unsophisticated approach to hedging by some purchasers who sought a "silver bullet" contract meant that purchasers' needs could not necessarily be met by one seller in a single contract. Negative reactions to a failure to secure a silver bullet could lead some purchasers to feel the process was unfair.

- Differences in perceptions of fairness may be created to some extent by differences in contracting strategy and in the duration purchasers and generator-retailers seek to contract for. Few small purchasers have staggered maturities, though for larger purchasers and generator-retailers staggered maturities are more the norm. Generator-retailers tend to seek to contract for 1-2 years (though some say they will contract as required) while most purchasers seek to contract for two to three years.

- All respondents say the electricity component of hedge prices will increase over the next three years, but purchasers and Others are more pessimistic than generator-retailers about the rate of increase.

Key issues and solutions

- The least intrusive measures and the ones that would attract the highest level of consensus would be to:

  - Improve disclosure
  - Increase supply
  - Simplify/standardise energy hedges
  - Introduce transmission hedges/financial transmission rights
  - Improve levels of awareness and knowledge of risk management.

- Even so, some large purchasers as well as potential and former market participants argue that a break-up of generation and retail is required to create the type of competitive market they want or would participate in and believe the measures above do not go far enough.

- The most critical issues facing the electricity industry are the lack of investment in generation and transmission which are creating significant uncertainty. Some respondents say the lack of a competitive hedge market is also the most important issue facing the industry. Addressing generation and transmission investment would alleviate concerns about high prices and lack of competition.

- The most critical issues facing the hedge market is in the view of most purchasers and some generator-retailers the vertical integration of generator-retailers. Suggested solutions are to either completely separate or to create a virtual separation of generators and retailers. This however is countered by those who argue this would simply transfer the ability to set price margins to generators and/or increase price volatility as generators would no longer have retail bases to provide security over future investment. On the other hand, it is argued that the pricing of new investment in generation would be clearer with separation from retail operations. It was also argued that regardless of the volume of transactions the same degree of risk, which stemmed primarily from a generation shortage, needed to be managed.

- Other ways of enhancing competitiveness were suggested. These include requiring greater levels of disclosure about settlements, greater simplification of the market and the introduction of some form of compulsory hedge market. While there is general acceptance that greater disclosure will improve transparency, some say this will not necessarily reduce price. It was also noted that the bilateral nature of hedges limited the degree of disclosure. Greater simplification of the market, it was argued, needed to be accompanied by the introduction of financial transmission rights or transmission hedges. A compulsory market would increase volume, but would not necessarily address concerns about price.

- A clear majority of all respondents in the survey said a centralised trading platform that provided standard hedge products would add liquidity and transparency to the hedge market. Follow up questions in the depth interviews showed that support for a centralised platform was conditional on whether the platform would realise competitive prices which in turn would influence how much volume was made available to that market. In the survey, of the 34 purchasers 18 said their company would be interested in using a centralised platform, seven said they would not and six were unsure.

Disclosure

- Half of all purchasers say they do not have sufficient information to develop a reasonable view of the market price for contracts. Of the sources available for forecasting electricity prices, offers and indications are the only source that all respondents consistently regard as useful to some degree, though 11 don't think it is useful. Internal modelling is a useful source for most large purchasers and generator-retailers. Independent forecasts rate as a moderately useful source among all but the generator-retailers.

- While there is strong agreement by most respondents that disclosure of hedge transaction information will provide useful information to establish forward prices, purchasers are closely divided on whether such disclosure would improve the availability of hedges and none of the generator-retailers said it would.

Contract elements

- Price was by far the most important contract element for purchasers in deciding whether to buy hedges. On a 0-10 scale, where 0 means "not important at all" and 10 means "very important", purchasers rated price a mean of 9.4 with the next most highly rated elements being term and force majeure/suspension clauses which recorded means of 6.8 and 6.1 respectively.

- In contrast, while sellers of hedges also rate price as the most important element, it recorded a lower mean sore of 7.9 with term and location the next most important elements both with means of 6.7. Profile (5.9) and credit arrangements (5.7) receive higher mean ratings than force majeure/suspension (mean 4.7) clauses with sellers.

- In the qualitative research, most purchasers said hedge prices were too high. Some respondents said they had chosen to be fully exposed to the spot price because hedges were too expensive and others said they exceeded the long-run marginal cost of new generation.

- A majority of purchasers do not believe they are offered competitive prices for their hedges or electricity purchases including nine of the large purchasers. A majority of generator-retailers as purchasers and medium purchasers believe prices are competitive while small purchasers are split on the issue.

Market experience

- Purchasers are not offered a full range of contracts. Six hedge sellers offer contracts for differences and fixed price variable volume contracts, but only four offer spot based and volume based time-of-use contracts and three offer options (caps, collars and swaptions).

- Some small purchasers state a preference for fixed price variable volume contracts because they are perceived to reduce their risk and enable forward cost planning. These respondents do not demonstrate a good understanding of the risk management tools available. They opt for simplicity and certainty rather than exercising sophisticated risk management decisions and thus show limited interest in other hedge types, such as contracts for differences. Consistent with this, there was also a preference for longer term contracts, so small purchasers could "set it and forget it" which may well reflect that electricity comprises a relatively small part of total input costs or a small part of their responsibilities.

- Generator-retailers as purchasers tend to approach one or two other parties when they seek to buy hedges while most purchasers tend to approach between three and five parties. Response rates to approaches to buy hedges vary between less than 50% and about 75% for small purchasers on the two most recent occasions. For larger purchasers and generator-retailers as purchasers response rates are at least 75%.

- Of those who receive responses to approaches they make for hedges, less than half the responses contain the same terms as they sought and approximately the same amount will have FM or suspension clauses. Slightly more than half of the responses are priced at the grid exit point requested.

- There is an extremely wide range of differences in price contained in responses too. Over the two most recent occasions responses were made to approaches for hedges, the price differential between offers ranged from 50 cents/MW/h to $20/MW/h. However, it is not possible to discern from the survey responses to what extent this variation in price reflects differing location, duration, FM or other factors.

- Some purchasers cite specific generator-retailers which they say do not offer hedges or if they do offer very expensive ones. The reasons why offers are not made appear to be due to major plant refurbishment and location risk.

FM and suspension clauses

- There is a spread of opinion among sellers on whether FM and suspension clauses should be in contracts. One seller said hedges should have neither, another said FM clauses were acceptable, but suspension clauses were not, two others said FM clauses were acceptable and that suspension clauses were acceptable under some circumstances, and two said both types of clauses were acceptable as the contracts were negotiated bilaterally.

- Over one-third of all purchasers say they have FM and/or suspension clauses in over 75% of their contracts. Most generator-retailers as purchasers say their contracts contain such clauses.

- Twelve purchasers considered that less than 10% of their contracts as a percentage of GW/hrs had clauses that were unreasonable, though another 11 were unsure. Seven generator-retailers also said less than 10% of their contracts were unreasonable. Two medium and two large purchasers said over 90% of their contracts had unreasonable clauses, and a further large purchaser said 50-74.9% of contracts were unreasonable.

- More than one-third of purchasers do not consider that FM and/or suspension clauses are acceptable, though only one generator-retailer holds this view. Only three purchasers out of 34 consider FM and/or suspension clauses are acceptable as they are bilaterally negotiated, though three of the seven generator-retailers who sell hedges hold this view.

- Of those who had an opinion, views were reasonably polarised on whether hedge contracts with FM and/or suspension clauses were reasonably priced. Of the purchasers with an opinion (n=12), only one thought they were reasonably priced while all six of the generator-retailers as sellers who had an opinion thought they were reasonably priced. None of the large or medium purchasers thought they were reasonably priced. Two generator-retailers as purchasers said they were not reasonably priced.

Duration, location and credit arrangements

- Two of the seven sellers in the survey have a policy to provide prices only for certain lengths of contract.

- Four sellers said locational risk is a significant problem and of these three said they would price in a premium at nodes they would rather not sell at. A fifth seller who said locational risk was not a significant problem also said they priced in a premium at nodes they would rather not sell at and another who said it was not a problem said they only sold at nodes where locational risk was not an issue. A total of 5 sellers said they also purchased cross-hedges where locational price risk could be an issue.

- Credit arrangements do not rate as an issue for purchasers, but it is given markedly higher attention by sellers. Five sellers say they have encountered problems entering into contracts because of concerns regarding credit arrangements.

Hedges as prudential security

- Sellers are somewhat divided on whether hedges should be lodged as prudential security. If standardised contracts were available, more support is likely to be forthcoming.

Risk management

- Electricity risk management is given a higher priority by generator-retailers and large purchasers. Most purchasers do not have a risk management policy and half of the purchasers use another party as an agent for their energy trading. Of the 16 purchasers who use another agent, 10 of them use a generator-retailer.

- About one-third of purchasers say they do not have sufficient knowledge of the market and its issues and sufficient skills within their organisation to make effective risk management decisions.

- A key reason why there is limited interest in acquiring more knowledge of electricity risk management is that electricity represents less than 10% of input costs for most of those who are purchasers only. Two purchasers said it accounted for more than 50% of their input costs, three said it accounted for 25-50% of input costs.

- Lack of risk management knowledge has evidently led some to take on risks they are unaware of. For instance, one respondent says he is 100% exposed to the spot market because he believes the chances of another dry year occurring so soon after 2001 and 2003 is very low.

Demand-side response to high spot prices

- Demand-side response capability to high spot prices is industry specific, but in most cases would be carried out under duress at a price pain point between $80-150 MW/h. The price pain point is the point at which a purchaser is experiences prices above what they have budgeted for and at which they may reduce load. Duress is experienced because there is reluctance to cut load and lose production. Some respondents, who for instance must meet export deadlines, will continue to run plant regardless of price because they cannot afford to cut production.

Hedge seller performance

- The best rated generator-retailers among those who were rated by a substantial number of all purchasers were in descending order:

    1. Mighty River Power/ Mercury
    2. Trustpower
    3. Contact Energy/ Empower
    4. Genesis/ Energy Online
    5. Meridian Energy.

- The best rated generator-retailers rated by a substantial number of generator-retailers were in descending order:

    1. Contact Energy/ Empower
    2. Trustpower
    3= Mighty River Power/ Mercury
    3= Meridian Energy
    5. Genesis/ Energy Online

III. Quantitative Research

3.1 Respondent profile

A total of 51 respondents returned surveys. The following table (Table 1) breaks down respondents by purchasers (those who may purchase, but do not sell electricity hedges), generator-retailers (generators, retailers and retailers of hedges) and Others (a mix of distributors, energy traders, consultants, former and potential hedge market participants). Total consumption and generation figures are provided to show how much of the total electricity generated in New Zealand (35,795 GWh in 2004 according to the Ministry for Economic Development's Data File January 2005) participants represent.

TABLE 1

		Consumption GWh/annum (if retailer, includes retail load)	Generation GWh/annum
Small purchasers	15	733	42
Medium purchasers	9	1,268	-
Large purchasers	10	10,152	493
Sub-total purchasers	**34**	-	-
Generator-Retailers	8	35,870	38,750
Others	9	n/a	-
Total	**51**	-	-

All large and medium purchasers were publicly listed or private companies as were 11 of the 15 small purchasers, 4 generator-retailers and six of those in the Others group.

Geographically, 22 purchasers operated in the North Island, 10 in the South Island and 11 New Zealand wide. One respondent specified no current purchasing activity in New Zealand.

3.2 Competitive hedge market

■ Existence of competitive hedge market

The overwhelming majority of purchasers and Others do not believe there is a competitive hedge market in New Zealand.

TABLE 2

Do you believe a competitive hedge market currently exists in New Zealand?			
	All Purchasers	**Others**	**Generator-Retailers**
Yes	5	1	4
No	26	7	5*
Unsure	3	-	-
No answer	-	1	-

** One respondent answered both yes and no to the question.*

One of the Others, who did not answer the question as asked, commented that the issue was liquidity and that the New Zealand market was thin. One generator-retailer also said the market was very competitive given that participants were competing for a slice of shrinking available volume.

■ Improvement in competitiveness over past 12 months

A significant majority of purchasers, 25 of 34, do not believe that the competitiveness of the hedge market has improved over the past 12 months (4 said it had improved and 5 were unsure or did not know). No respondent in the Others group believed competitiveness had improved over that time though two generator-retailers believed it had.

3.3 Short and medium term hedge prices

All respondents say the electricity component of hedge prices will increase over the next three years, but purchasers and others are more pessimistic than generator-retailers about the rate of increase.

TABLE 3

FUTURE PRICE PATH									
Price $/MH	**All Purchases to March 06 (n=34)**	**Generator-Retailers to March 06 (n=8)**	**Others to March 06 (n=9)**	**All Purchases to March 07 (n=34)**	**Generator-Retailers to March 07 (n=8)**	**Others to March 07 (n=9)**	**All Purchases to March 08 (n=34)**	**Generator-Retailers to March 08 (n=8)**	**Others to March 08 (n=9)**
> 80	3	-	-	5	1	1	12	1	1
70-80	14	3	4	20	1	4	15	3	4
60-70	14	4	1	6	5	-	4	3	-
50-60	-	1	-	-	1	-	-	1	-
Unsure	2	-	3	2	-	2	2	-	2
No answer	1	-	1	1	-	2	1	-	2

3.4 Process for establishing hedges

■ Confidence in contract process

Purchasers are somewhat more divided over whether they are confident the process for establishing hedge contracts is fair than whether the hedge market is competitive.

TABLE 4

Do you feel confident the process for establishing bilateral electricity contracts is fair?			
	All Purchasers (excluding generator- retailers)	**Others**	**Generator-Retailers**
Yes	12	2	6
No	17	5	2
Unsure	5	1	-
No answer	-	1	-

■ Common process for establishing contracts

The use of tenders is the most common process for establishing bilateral contracts for purchasers with 23 of the 34 purchasers selecting this process compared with 11 who contract potential counterparties directly and 10 who renew contracts with existing counterparties. Only five purchasers said they responded to tenders. Respondents could nominate multiple processes.

There was a more even spread of processes used by generator-retailers – five use tenders, six respond to tenders, seven renew contracts with existing counterparties and eight contact potential counterparties directly.

Other responses given by individual respondents included calling potential counterparties to discover the best price, referring to energyhedge.co.nz and use of a current supplier to advise what is available.

3.5 Electricity hedge prices

■ Forecasting sources

Purchasers and generator-retailers rate offers and indications as the most useful source for forecasting electricity prices and market forums as the least useful. Internal modelling is also a useful source for large purchasers and generator-retailers that have that capacity.

The following (Table 5) shows the net usefulness (Total Very + Fairly Useful less Not that + Not Useful at All) for each information source among those who provided a rating.

TABLE 5

FORECASTING SOURCES						
	All Purchasers (excluding generator-retailers) (n=34)	**Small Purchasers (n=15)**	**Medium Purchasers (n=9)**	**Large Purchasers (n=10)**	**Generator-Retailers (n=8)**	**Others (n=9)**
Offers/indications	15	9	2	4	8	4
Independent forecasts	9	3	4	2	-1	4
Internal modelling	-3	-6	-	3	6	3
Energyhedge.co.nz	5	5	-	-	5	-5
Market commentary	6	3	2	1	-3	-1
M-co hedge index	-3	2	-	-5	-3	-
Market Forums	-7	-1	-3	-3	-2	-4

■ Sufficient information to develop view of market price

Purchasers were evenly divided on whether they had sufficient information to develop a reasonable view of market price for electricity contracts with 16 saying they had sufficient information and 16 that they didn't with two respondents unsure. An even split on this issue characterised small, medium and large purchasers.

TABLE 6

Would you say there is sufficient information available to develop a reasonable view of market price for electricity contracts?						
	All Purchasers (excluding generator-retailers) (n=34)	**Small Purchasers (n=15)**	**Medium Purchasers (n=9)**	**Large Purchasers (n=10)**	**Generator-Retailers (n=8)**	**Others (n=9)**
Yes	16	7	4	5	5	2
No	16	7	4	5	3	5
Unsure	2	1	1	-	-	1
No answer	-	-	-	-	-	1

Additional information

A number of respondents identified additional information that would assist them to make risk management decisions. Many of these related to greater levels of disclosure of hedge market contracts.

They included:

- A forward curve based on more transactions than energyhedge.co.nz
- More retailers offering contracts for differences – not just Mercury and Trustpower
- Benchmarking the industry in a similar way to the property market index
- A proper hedge market
- Inter and intra generator swaps, locations and volumes
- Historical hydro inflow data and other participant wholesale market exposure positions
- Outage and maintenance status of generators and the national grid including the HVDC link
- Fuel price certainty including Kyoto commitments, clear valuation of stored hydro and network operator to be required to pay for constraints not purchasers
- Disclosure of price, term, volume and region either anonymously or both buyer and seller to be disclosed.

One respondent said the process enabled participants to weigh up price, volume and risk exposure and obtain a more tailored product. Another said all a purchaser needed to do was to estimate the risk electricity posed for their business and then make the appropriate price-risk trade-offs.

Competitive prices offered

As price is a critical element for all parties, purchasers were asked whether they believed they were offered competitive prices for their hedges or electricity purchases. A majority of purchasers did not believe this was the case including none of the large purchasers. A majority of generator-retailers as purchasers and medium purchasers believe the prices are competitive while small purchasers are split on the issue.

TABLE 7

COMPETITIVE PRICES OFFERED *Do you believe you are offered competitive prices for your hedges or electricity purchases?*					
	All Purchasers (excluding generator-retailers) (n=34)	**Small Purchasers (n=15)**	**Medium Purchasers (n=9)**	**Large Purchasers (n=10)**	**Generator-Retailers (n=8)**
Yes	11	6	5	-	5
No	18	6	3	9	2
Unsure	4	2	1	1	-
No answer	1	1	-	-	1

3.6 Reserve generation

While very few respondents consider the provision of reserve generation has increased their risk to the spot market, four of the eight generator-retailers consider it has increased their spot market risk. A significant number of respondents consider reserve generation has made no difference to their risk. The qualitative report deals with this issue in more detail with particular reference to the impact on long term investment in generation.

TABLE 8

EFFECT ON RISK *The Electricity Commission, on behalf of the Government, procures reserve generation so that it is available to minimise the risk of supply shortages. Do you consider the provision of reserve generation by the Government …*						
	All Purchasers (excluding generator-retailers) (n=34)	**Small Purchasers (n=15)**	**Medium Purchasers (n=9)**	**Large Purchasers (n=10)**	**Generator-Retailers (n=8)**	**Other (n=9)**
Reduces	17	8	6	3	3	3
Increases	3	1	-	2	4	1
No difference	12	6	2	4	2	5
Unsure	2	-	1	1	-	-

3.7 Disclosure

■ Price transparency

There was a very high level of agreement with at least 75% of all types of purchasers and generator-retailers saying that disclosure of several key contract elements – type of contracts, price, location, duration and volume – would assist price transparency. There were slightly lower levels of agreement with respect to disclosure of profile and FM clauses.

Of the 32 purchasers who provided an answer 24 said disclosure of profile would assist price transparency and 19 said the same of FM clauses. In contrast, of the seven generator-retailers who provided an answer, five said disclosure of profile would assist price transparency and four said the same of FM clauses.

Some respondents provided additional comments. These included a desire to have the existence of FM clauses disclosed as opposed to the detail of the clause itself as long as counterparties could not be identified through any release of information. Another said that in the absence of a standardised product, release of price and volume was acceptable.

■ Hedge availability

None of the generator-retailers thought that disclosure of hedge information would improve the availability of hedges. Purchasers were more divided with 15 saying it would improve availability, 12 said that it would not and seven were unsure.

TABLE 9

HEDGE AVAILABILITY

Do you think disclosures of hedge transaction information will improve the availability of hedges?

	All Purchasers (excluding generator-retailers) (n=34)	Small Purchasers (n=15)	Medium Purchasers (n=9)	Large Purchasers (n=10)	Generator-Retailers (n=8)	Other (n=9)
Yes	15	7	4	4	-	5
No	12	5	2	5	7	3
Unsure	7	3	3	1	1	-
No answer	-	-	-	-	-	1

■ Forward prices

In contrast to whether disclosure would improve the availability of hedges, most respondents considered that disclosure would provide useful information to establish forward prices. Of the 34 purchasers, 29 considered disclosure would be useful for establishing forward prices and six of the eight generator-retailers were of that opinion too. And all of the eight Others who answered this question also considered disclosure would be useful.

TABLE 10

FORWARD PRICES

Do you consider disclosure of hedge transaction information will provide useful information to establish forward prices?

	All Purchasers (excluding generator-retailers) (n=34)	Small Purchasers (n=15)	Medium Purchasers (n=9)	Large Purchasers (n=10)	Generator-Retailers (n=8)	Other (n=9)
Yes	29	13	7	9	6	8
No	2	1	-	1	2	-
Unsure	3	1	2	-	-	-
No answer	-	-	-	-	1	1

One respondent commented that they had said "yes" as long as disclosure was of standardised products.

3.8 Risk management

■ Operational responsibility

Electricity price risk management appears to be given a higher order of priority by generator-retailers. and to a lesser extent by large purchasers, than other respondents judging on where operational responsibility for this function lies.

Of the eight generator-retailers, three assign responsibility to a risk portfolio manager, two to the general manager or chief executive, two to risk manager/wholesale market traders and one to an operational line manager. Four of the large purchasers assign this responsibility to a specialist energy manager.

In contrast, very few small and medium purchasers have a specialist energy manager function and no purchasers assign responsibility to a risk portfolio manager function.

Risk management policy

The differing approaches to risk management are illustrated by the number and type of respondents who have electricity risk management policies (see Table 11). All generator-retailers have a policy, the majority of large purchasers do too, but less than one-third of the small purchasers have one.

TABLE 11

RISK MANAGEMENT POLICY

Do you have a risk management policy that guides your electricity risk management?

	All Purchasers (excluding generator-retailers) (n=34)	Small Purchasers (n=15)	Medium Purchasers (n=9)	Large Purchasers (n=10)	Generator-Retailers (n=8)
Yes	14	4	4	6	8
No	17	9	4	4	-
Unsure	1	-	1	-	-
Don't Know	-	-	-	-	-
No answer	2	2	-	-	-

Use of other parties for trading

Half of all purchasers use other parties as agents for their energy trading, but no generator-retailers use other agents.

TABLE 12

USE OF OTHER PARTIES FOR TRADING

Do you use other parties as agents for your energy trading?

	All Purchasers (excluding generator-retailers) (n=34)	Small Purchasers (n=15)	Medium Purchasers (n=9)	Large Purchasers (n=10)	Generator-Retailers (n=8)
Yes	16	6	5	5	-
No	16	7	4	5	7
No answer	2	2	-	-	1

■ Party used for trading

Of those purchasers who use another party for their spot purchases, most use a generator-retailer as their agent rather than an independent party*.

TABLE 13

PARTY USED FOR TRADING [If yes above] *Is the party a generator-retailer or an independent party?*					
	All Purchasers (excluding generator-retailers) (n=34)	**Small Purchasers (n=15)**	**Medium Purchasers (n=9)**	**Large Purchasers (n=10)**	**Generator-Retailers (n=8)**
Generator-Retailer	10	2	4	4	-
Independent Party	6	4	1	1	-

*It is possible that some respondents may have been answering this question with respect to their use of independent parties for the purchase of hedges and contract negotiations.

■ Skills for effective risk management

About one-third of all purchasers said their organisations lacked sufficient skills to make effective electricity risk management decisions while all generator-retailers said they had sufficient skills.

TABLE 14

SKILLS FOR EFFECTIVE RISK MANAGEMENT *Do you consider you have sufficient knowledge of the market and its issues and sufficient skills within your organisation to make effective electricity risk management decisions?*					
	All Purchasers (excluding generator-retailers) (n=34)	**Small Purchasers (n=15)**	**Medium Purchasers (n=9)**	**Large Purchasers (n=10)**	**Generator-Retailers (n=8)**
Yes	20	7	6	7	8
No	10	5	2	3	-
Unsure	2	1	1	-	-
No answer	2	2	-	-	-

3.9 Contract position

■ Contract profile

The following two tables (Table 15 and Table 16) show first the generator-retailer and then the purchasers contract positions for the March year just ended through to March 2010. All figures are in GW/hrs per annum. The results show that participants in this survey represent a high proportion of the total hedge contract activity in the New Zealand market. The annual average consumption for purchasers that participated in the survey accounts for slightly more than one-third of the total annual average load.

Generator-retailers anticipate that average annual generation will increase by about 10.7% from 39,118 GW/hrs to about 43,291 GW/hrs by March 2010. Purchasers in this survey though expect their average consumption to decrease slightly over that period from 12,237 GW/hrs to 11,961 GW/hrs by March 2010. This also corresponds to an anticipated reduction by purchasers in their average annual generation from 781 GW/hrs to 555 GW/hrs in March 2010.

In terms of hedges purchased by generator-retailers, which are understated because of a nil response by one respondent, these decline from 5206 GW/hrs to 1270 GW/hrs in 2010. The volume of hedges purchased by purchasers over this period shows a smaller reduction from 9,334 GW/hrs to 6,676 GW/hrs in 2010.

In terms of hedges sold by generator-retailers these fall from 11,783 GW/hrs to 6,540 GW/hrs in 2010 while hedges sold by purchasers remains static at a minimal 88 GW/hrs over that period.

■ Generator-Retailers

TABLE 15

	April 04 – March 05 (Actual)	April 05 – March 06	April 06 – March 07	April 07 – March 08	April 08 – March 09	April 09 – March 10
Annual average load	35,388	35,870	35,711	35,561	36,224	36,791
Average annual generation	39,118	38,516	39,348	40,727	42,426	43,291
Volume of hedges purchased*	5,206	3,908	2,685	1,827	1,398	1,270
Volume of hedges sold	11,873	9,955	8,340	7,240	6,640	6,540

* One respondent left this row blank and requested that it remain blank after an approach to provide figures even though it is apparent from other responses that they do in fact purchase hedges. Consequently, the volume of hedges purchased is understated. Some respondents also provided rounded and approximations for out years, so the exact matching f data should not be expected.

All Purchasers

TABLE 16

	April 04 – March 05 (Actual)	April 05 – March 06	April 06 – March 07	April 07 – March 08	April 08 – March 09	April 09 – March 10
Annual average consumption	12,237	12,154	11,931	11,974	11,895	11,962
Average annual generation	782	535	553	564	557	555
Volume of hedges purchased	9,335	8,828	8,179	7,679	7,355	6,676
Volume of hedges sold	85	88	88	88	88	88

Time period seek to contract or re-contract

Most purchasers and generator-retailers seek to contract or re-contract between three months and one year in advance of existing maturity date. One purchaser said they sought a variety of options and one generator-retailer said that realistically all of the options could have been ticked. Another purchaser said they sought a base hedge for between two to three years and for annual peak load they sought a duration of less than six months.

TABLE 17

TIME PERIOD SEEK TO CONTRACT OR RE-CONTRACT

How far in advance of contract expiry do you normally seek to contract or re-contract?

	All Purchasers (excluding generator-retailers) (n=34)	Small Purchasers (n=15)	Medium Purchasers (n=9)	Large Purchasers (n=10)	Generator-Retailers (n=8)
> 1 year	6	2	1	3	2
> 6 months	12	6	2	4	1
> 3 months	12	4	5	3	4
> 1 month	2	-	1	1	-

Proposed duration of contract

Most purchasers seek to contract for between two and three years whereas only one generator-retailer seeks to contract for that duration with five seeking contracts for more than one year and less than two years and three for between 3 and five years. It should be noted in the table below (Table 18) that multiple responses were given by a purchaser which explains why the number of responses do not add to 34 for that category of respondent.

TABLE 18

PROPOSED DURATION OF CONTRACT *For what duration do you normally seek to contract?*					
	All Purchasers (excluding generator-retailers) (n=34)	**Small Purchasers (n=15)**	**Medium Purchasers (n=9)**	**Large Purchasers (n=10)**	**Generator-Retailers (n=8) Multiple answers provided**
6-12 months	5	2	-	3	-
1-2 years	6	-	3	3	5
2-3 years	19	9	6	4	1
3-5 years	2	2	-	-	3
5-10 years	2	-	-	2	-
> 10 years	1	-	-	1	-
No answer	2	2	-	-	-

Overlap of contract periods

A majority of all purchasers have their contracts fall due at the same time though most medium, almost all large purchasers and all generator-retailers have staggered maturities.

TABLE 19

OVERLAP OF CONTRACT PERIODS *The maturity of your electricity contracts could be best described as:*					
	All Purchasers (excluding generator-retailers) (n=34)	**Small Purchasers (n=15)**	**Medium Purchasers (n=9)**	**Large Purchasers (n=10)**	**Generator-Retailers (n=8)**
Fall due at same time	17	11	4	2	-
Staggered maturities	15	2	5	8	8
No answer	2	-	-	-	-

3.10 Use of standard contracts

■ Benefit of centralised trading platform

Most respondents believe that a standard hedge product available through a centralised trading platform to all counterparties would add liquidity and transparency to the hedge market. However, medium and large purchasers and generator-retailers are more divided in their views. One generator-retailer answered that it would increase transparency, but not liquidity, hence the multiple responses registered for generator-retailers in the table below (Table 20). Another generator-retailer said that the majority of hedges were bespoken and that a standardised contract was unlikely to gain liquidity.

TABLE 20

BENEFIT OF CENTRALISED TRADING PLATFORM

Do you believe Standard hedge available to all counterparties through a centralised trading platform would add liquidity and transparency to the hedge market?

	All Purchasers (excluding generator-retailers) (n=34)	Small Purchasers (n=15)	Medium Purchasers (n=9)	Large Purchasers (n=10)	Generator-Retailers (n=8)
Yes	19	10	4	5	5
No	5	1	2	2	4
Unsure	7	2	2	3	-
No answer	3	2	1	-	-

Interest in centralised trading platform

There was reasonably strong interest expressed across all respondents in purchasing standard hedge products from a centralised trading platform. The qualitative report shows that actual use of such a platform will be heavily dependent on outcomes, particularly with respect to price and the ability to meet specific needs.

TABLE 21

INTEREST IN CENTRALISED TRADING PLATFORM

Would your company be interested in using a centralised trading platform to purchase standard hedge products?

	All Purchasers (excluding generator-retailers) (n=34)	Small Purchasers (n=15)	Medium Purchasers (n=9)	Large Purchasers (n=10)	Generator-Retailers (n=8)
Yes	18	8	5	5	6
No	7	3	2	2	2
Unsure	6	2	1	3	-
No answer	3	2	1	-	-

3.11 Contract elements

Price is the most important contract element for all purchasers of electricity hedges and for generator-retailers when they act as purchasers. Although generator-retailers as sellers of hedges rate price as more important than other factors, the mean rating they give for price as a seller is somewhat less than they give price or term when they are a purchaser.

FM clauses are more important for large purchasers than they are for other types of purchasers and sellers. Location is also relatively more important to large and medium purchasers and generator-retailers than it is for small purchasers.

Credit arrangements are significantly more important to generator-retailers in either their seller or purchaser capacity than they are for all other categories of purchaser.

TABLE 22

	All purchasers (excluding generator-retailers) (n=34)	Small Purchasers (n=15)	Medium Purchasers (n=9)	Large Purchasers (n=10)	Generator-Retailers as sellers (n=7)	Generator-Retailers as purchasers (n=8)
Price	9.4	9.0	9.7	9.6	9	9.1
Location	5.4	4.5	6.2	6.7	7.6	7.9
Term	6.8	6.7	7.0	5.7	7.6	8.1
Profile	5.1	4.8	5.0	5.8	6.7	6.9
FM	6.1	5.9	6.3	7.1	5.6	6.2
Credit arrangement	3.3	3.5	3.1	3.2	6.6	6.2
Relationship with counterparty	5.3	5.1	5.0	5.8	4.7	5.0
Other service provided by counterparty	3.4	3.7	3.2	3.1	2.7	2.5

3.12 Market experience

■ Sellers – last six months

The seven sellers of hedges were asked how many times in the last six months they had been asked to provide an offer, how many times they had made an offer and how many offers had been accepted. We have doubts about the accuracy of the figures entered by one respondent and have therefore indicated the range to show this respondent's answers in the maximum column. These doubts are substantiated by the responses to a subsequent question where all purchasers are asked to say how many times in the past 24 months they have sought to purchase hedges (see table 20).

TABLE 23

SELLERS – LAST SIX MONTHS

In the last 6 months how many times?

	Mean	Maximum	Minimum	Total
Were you asked to provide an offer to a purchaser?	186	1000	3	1300
Did you make an offer to a hedge purchaser in response to a request?	170	1000	2	1190
Were the offers accepted by the purchasers	89	480	1	624

Further interrogation of the data showed that the claimed response rate to requests and the success rate to offers made varied widely. Generator-retailers are designated by letters to protect confidentiality. There is quite a range of response and success rates.

TABLE 24

Generator-Retailer	Response rate (% of responses to requests for offers)	Success rate (% of acceptance to offers made)
A	72%	78%
B	100%	100%
C	3.8%	100%
D	75%	83%
E	66.6%	50%
F	100%	33.3%
G	100%	48%

■ Purchasers – last 24 months

Generator-retailers as purchasers engaged in hedge activity three times more frequently on average than other purchasers over the past 24 months. It should be noted among small purchasers that while one has sought hedges 50 times all others have sought them four or less times.

TABLE 25

PURCHASERS – LAST 24 MONTHS

In the last 24 months how many times did you seek to purchase a hedges?

	All Purchasers (excluding generator-retailers) (n=34)	Small Purchasers (n=15)	Medium Purchasers (n=9)	Large Purchasers (n=10)	Generator-Retailers as Purchasers (n=8)
Total	167	67	51	49	119
Mean*	5.39	5.15	6.38	4.9	17
Maximum	50	50	16	12	40
Minimum	-	-	2	1	3
No answer	3	2	1	-	1

* Means are calculated over the number of numeric answers i.e. they exclude no responses, unsure and blank cells.

In reviewing the two most recent occasions when approaches have been made to buy hedges it is evident that not all approaches receive a response. Indeed for small purchases on the second most recent occasion slightly fewer than half of the approaches actually received a response. Response rates tend to be better for large purchasers and generator-retailers.

Of those who received responses, less than half of those responses contained the same terms as the terms sought. Large purchasers got proportionately fewer responses that contain the terms sought than any other group.

A little under half of the responses also contained FM/suspension clauses while only a little more than half of the responses were at the grid exit points specified by the purchaser. Also, less than half the responses contained other clauses that were acceptable to purchasers.

There was also an extremely wide range of differences in prices offered to purchasers. Whilst the lowest price difference between offers experienced by a purchaser was 50 cents/MW/h the largest price differential experienced as $20/MW/h. However, care needs to be taken in interpreting this data as prices will reflect offers made at different times and for different locations.

While all generator-retailers accepted offers on the most recent occasion only 16 of 27 purchasers who approached parties for an offer finally accepted.

TABLE 26

MOST RECENT OCCASION								
	Approaches	**Responses**	**Had Terms sought**	**Had FM/Susp' clauses**	**Had other clauses that were acceptable?**	**Had GXPs requested?**	**Number respondents who accept/ Number who requested**	**Range of differences in prices ($/MW/hr)**
All Purchasers	97	76	39	30	32	42	16/28	0.5-$10
Small Purchasers	48	34	17	10	11	21	10/12	0.5-$9.20
Medium Purchasers	15	12	10	5	9	10	3/7	$3.40-$6.25
Large Purchasers	34	30	12	15	12	11	3/9	$2-$10
Generator-Retailers	17	13	8	9	7	13	6/6	$10-$12

TABLE 27

SECOND MOST RECENT OCCASION								
	Approaches	**Responses**	**Had Terms sought**	**Had FM/Susp' clauses**	**Had other clauses that were acceptable?**	**Had GXPs requested?**	**Number respondents who accept/ Number who requested**	**Range of differences in prices ($/MW/hr)**
All Purchasers	90	57	26	24	28	29	15/22	$1.40-$20
Small Purchasers	37	19	12	8	10	12	7/9	$2-$8
Medium Purchasers	19	13	8	4	8	9	3/6	$1.40-$20
Large Purchasers	34	25	6	12	10	8	5/7	$4.70-$10
Generator-Retailers	16	13	8	10	7	12	5/6	$7-$10

Large Purchasers

The following table (Table 28) aggregates the most recent and second most recent approaches made by purchasers to sellers of hedges. Almost all large purchasers approach at least six sellers generally enjoy high response rates with all but one category of purchaser, the one that approached nine sellers, enjoying at least a 75% response rate. Of the total of 68 requests made, there were 55 responses.

Even so, of the 55 offers made, only 18, fewer than one-third contained the same terms as those requested and less than half (27) contained FM/suspension clauses that were acceptable. Only 19 of the 55 offers had prices specified at the grid exit points requested and about half (27) had acceptable FM/suspension clauses.

TABLE 28

LARGE PURCHASES						
	How many parties did you approach for an offer?	**Of the parties approached, how many responded?**	**How many of the offers contained the same terms as the terms you requested?**	**How many of the offers included FM/suspension clauses that were acceptable?**	**How many of the offers included other clauses that were acceptable?**	**How many offers had prices specified at GXPs that you had requested prices for?**
1	1 approached 1	1	-	1	1	1
6	4 approached 6	18	11	11	8	10
7	2 approached 7	13	1	11	9	4
9	1 approached 9	3	3	2	2	2
10	2 approached 10	20	3	2	2	2
Total	**68 approaches**	**55 responses**	**18 had same conditions as those requested**	**27 had acceptable FM/suspension clauses**	**22 had other clauses that were acceptable**	**19 had prices at GXPs requested**

Data includes Most recent + Second most recent

■ Medium Purchasers

The following table (Table 29) aggregates the most recent and second most recent approaches made by purchasers to sellers of hedges. Four of the medium purchasers approached two or fewer sellers while four approached at least five sellers. As was the case with large purchasers, medium purchasers also experienced a high response rate with 25 offers resulting from 34 requests.

18 of the 25 offers contained the same terms as requested, but only nine of the offers included FM/suspension clauses that were acceptable. A reasonably high number of offers (17 of 25) contained other clauses that were acceptable and prices specified at the grid exit points requested (19 of 25).

TABLE 29

MEDIUM PURCHASES						
	How many parties did you approach for an offer?	**Of the parties approached, how many responded?**	**How many of the offers contained the same terms as the terms you requested?**	**How many of the offers included FM/suspension clauses that were acceptable?**	**How many of the offers included other clauses that were acceptable?**	**How many offers had prices specified at GXPs that you had requested prices for?**
2	4 approached 2	6	6	2	4	4
5	1 approached 5	2	2	2	2	-
6	1 approached 6	6	5	5	6	6
7	1 approached 7	5	5	-	5	5
8	1 approached 8	6	-	-	-	4
Total	**34 approaches**	**25 responses**	**18 had same conditions as those requested**	**9 had acceptable FM/suspension clauses**	**17 had other clauses that were acceptable**	**19 had prices at GXPs requested**
Data includes Most recent + Second most recent						

■ Small Purchasers

The following table (Table 30) aggregates the most recent and second most recent approaches made by purchasers to sellers of hedges. All but one small purchaser approached at least three sellers and of the 85 requests made 53 responses were received which is a lower response rate than that experienced by medium and large purchasers.

A little more than half of the offers (29 of 53) made contained the same terms as requested and about one-third of the offers (18 of 53) included FM/suspension clauses that were acceptable. Less than half of the offers (21 of 53) included other clauses that were acceptable and somewhat more than half (33 of 53) had prices at grid exit points that were requested.

TABLE 30

SMALL PURCHASES						
	How many parties did you approach for an offer?	**Of the parties approached, how many responded?**	**How many of the offers contained the same terms as the terms you requested?**	**How many of the offers included FM/suspension clauses that were acceptable?**	**How many of the offers included other clauses that were acceptable?**	**How many offers had prices specified at GXPs that you had requested prices for?**
2	1 approached 2	2	2	2	2	-
3	2 approached 3	3	1	1	1	2
4	1 approached 4	4	-	-	-	-
7	1 approached 7	4	4	4	2	2
8	1 approached 8	3	-	-	-	2
9	2 approached 9	11	5	4	4	6
10	4 approached 10	26	17	7	12	21
Total	**85 approaches**	**53 responses**	**29 had same conditions as those requested**	**18 had acceptable FM/suspension clauses**	**21 had clauses that were acceptable**	**33 had prices at GXPs requested**

Data includes Most recent + Second most recent

3.13 Sellers only - Contracts

Of the seven generator-retailers who sell hedges, all say they offer contracts for differences and six said they offered fixed price variable volume, though one of these said their fixed price variable volume tariff had a matrix of prices rather than a single tariff.

Four generator-retailers offer spot based contracts, volume based time-of-use and options (e.g. caps, collars and swaptions).

3.14 Purchasers only - Contracts

Fixed price variable volume contracts were the most purchased contracts by small purchasers, but were one of the least purchased by large purchasers and generator-retailers as purchasers. Options were used by large purchasers and generator-retailers as purchasers, but no small purchasers use this contract method. No generator-retailers purchase volume based time-of-use contracts.

TABLE 31

PURCHASERS ONLY - CONTRACTS

What types of electricity contracts do you purchase?

	All Purchasers (excluding generator-retailers) (n=34)	Small Purchasers (n=15)	Medium Purchasers (n=9)	Large Purchasers (n=10)	Generator-Retailers as Purchasers (n=8)
Contracts for differences	21	6	6	9	8
Fixed price variable volume	17	9	6	2	1
Spot price	18	7	6	5	3
Volume based time-of-use	6	4	-	2	-
Options (caps, collars, swaptions)	4	-	1	3	3
No answer	1	1	-	-	-

* As this was a multiple response question the number of responses do not correspond to the number of respondents in each category.

3.15 Sellers only - Contract response times

Five of the seven generator-retailers who sell hedges said they typically took 2-7 days to provide an offer once requested. One said they took less than two days and another said they took 8-14 days. Four of the generator-retailers said it took 7-14 days for parties to respond to an offer they had made, two said it took 15 days to a month for a response and one said it took less than 7 days.

3.16 Purchasers only - Contract response times

■ Suppliers response to hedge requests

The turnaround time for hedge sellers to respond to requests from purchasers is between two and 14 days for almost all purchasers. Three large purchasers say they wait more than 14 days for a response as does one generator retailer when purchasing. Two large purchasers say they respond in less than two days as does one medium purchaser.

TABLE 32

SUPPLIERS RESPONSE TO HEDGE REQUESTS

How long does it typically take hedge suppliers to respond to your request for contract prices?

	All Purchasers (excluding generator-retailers) (n=34)	Small Purchasers (n=15)	Medium Purchasers (n=9)	Large Purchasers (n=10)	Generator-Retailers as Purchasers (n=8)
> 14 days	4	-	1	3	1
8-14 days	15	7	3	5	2
2-7 days	8	4	4	-	7
Less than 2 days	3	-	1	2	-
Unsure	2	2	-	-	-
No answer	2	2	-	-	-

■ Purchasers response to offer

Purchasers tend to take longer to respond to an offer once provided than do generator-retailers when purchasing. All but one of the generator-retailers say they respond within a week, though only 11 other purchasers claim the same response time. Most other purchasers say they take between one and two weeks to respond.

TABLE 33

PURCHASERS RESPONSE TO OFFER *How long does it typically take you to respond to an offer once provided?*					
	All Purchasers (excluding generator-retailers) (n=34)	**Small Purchasers (n=15)**	**Medium Purchasers (n=9)**	**Large Purchasers (n=10)**	**Generator-Retailers as Purchasers (n=8)**
> 1 month	2	2	-	-	-
15 days – 1 month	9	4	1	4	1
7 – 14 days	11	4	3	4	-
< 7 days	11	4	5	2	7
Unsure	-	-	-	-	-
No answer	1	1	-	-	-

3.17 Force majeure and suspension clauses

■ Proportion of contracts with FM clauses – as sellers

Two generator-retailers as sellers of hedges include FM clauses in almost all their hedge contracts while four include them in hardly any of theirs. Suspension clauses are included in a good deal of contracts (75-89.9%) by one generator-retailer and fairly moderately (10-49.9%) by two others. Three generator-retailers include them in hardly any contracts (less than 10%). One generator-retailer, which said less than 10% of its contracts had both FM and suspension clauses, added that was the case if their retail position was counted as a hedge. It appears from the qualitative research that the respondent that filled out "unsure" in their survey does apply FM and suspension clauses in their contracts.

TABLE 34

What proportion of your electricity hedge contracts contain FM clauses?	Generator-retailers as sellers (n=8)	***What proportion of your electricity hedge contracts contain suspension clauses?***	Generator-retailers as sellers (n=8)
> 90%	2	> 90%	-
75-89.9%	-	75-89.9%	1
50-74.9%	-	50-74.9%	-
25-49.9%	-	25-49.9%	1
10-24.9%	-	10-24.9%	1
<10%	4	<10%	3
Unsure	1	Unsure	1
No answer	1	No answer	1

■ Proportion of contracts with FM clauses – as sellers

Although only two generator-retailers said they included FM clauses in over 90% of their contracts and three said they included suspension clauses in over 10% of contracts, over one-third of all purchasers (n=13) said they had FM and/or suspension clauses in over 75% of their contracts. Five of the generator-retailers as purchasers say their contracts contain such clauses.

TABLE 35

PROPORTION OF CONTRACTS WITH FM CLAUSES – AS SELLERS

What proportion of your electricity hedge contracts contain FM and/or suspension clauses?

	All Purchasers (excluding generator-retailers) (n=34)	**Small Purchasers (n=15)**	**Medium Purchasers (n=9)**	**Large Purchasers (n=10)**	**Generator-retailers as purchasers (n=8)**
> 90%	12	3	4	5	3
75-89.9%	1	-	-	1	-
50-74.9%	-	-	-	-	2
25-49.9%	2	1	-	1	1
10-24.9%	2	-	-	2	-
<10%	6	3	2	1	2
Unsure	9	6	3	-	-
No answer	2	2	-	-	-

Proportion of clauses considered unreasonable

Twelve purchasers considered that less than 10% of their contracts as a percentage of GW/hrs had clauses that were unreasonable, though another 11 were unsure. Seven generator-retailers also said less than 10% of their contracts were unreasonable. Two medium and two large purchasers said over 90% of their contracts had unreasonable clauses and further large purchaser said 50-74.9% of contracts were unreasonable.

TABLE 36

PROPORTION OF CLAUSES CONSIDERED UNREASONABLE

What proportion of your hedge contracts purchased containing FM/ suspension clauses do you consider unreasonable? (% of GW/h)

	All purchasers (excluding generator-retailers) (n=34)	Small Purchasers (n=15)	Medium Purchasers (n=9)	Large Purchasers (n=10)	Generator-retailers as purchasers (n=8)
> 90%	4	-	2	2	-
75-89.9%	-	-	-	-	-
50-74.9%	1	-	-	1	-
25-49.9%	-	-	-	-	1
10-24.9%	3	1	-	2	-
<10%	12	4	3	5	7
Unsure	11	8	3	-	-
No answer	3	2	1	-	-

■ FM or suspension clauses acceptable

More than one-third of purchasers (n=12) do not consider that FM and/or suspension clauses are acceptable, though only one generator-retailer holds this view. Only three purchasers out of 34 consider FM and/or suspension clauses are acceptable as they are bilaterally negotiated, though three of the seven generator-retailers who sell hedges hold this view.

TABLE 37

FM OR SUSPENSION CLAUSES ACCEPTABLE

Do you consider that it is acceptable to include FM and/or suspension clauses in hedge contracts?

	All Purchasers (excluding generator-retailers) (n=34)	Small Purchasers (n=15)	Medium Purchasers (n=9)	Large Purchasers (n=10)	Generator-Retailers as purchasers (n=8)	Generator-Retailers as sellers (n=8)
No	12	5	4	3	1	1
Yes FM No suspension clauses	7	4	1	2	2	1
Yes FM Suspension sometimes acceptable	4	-	1	3	1	2
Yes FM Yes suspension as bilaterally negotiated	3	2	-	1	4	3
Unsure	7	3	3	1	-	-
No answer	1	1	-	-	-	1

Types of suspension clauses unreasonable

When asked to specify what types of suspension clauses were considered to be unreasonable several respondents applied a definition that effectively meant anything which was not an "act of God" or pure force majeure. Other comments included:

- Clauses that are applied retrospectively after an event
- Outages not due to acts of God
- Clauses that apply a financial penalty
- Linkages to physical generating capacity, financial stop-losses
- Those that place business or insurable risk on the customer
- Weather in relation to hydro storage levels
- Clauses limited to generators' ability to produce across multiple sites
- When a retailer has purchased a hedge from a nominated generator, that plant goes down and the retailer seeks to achieve any difference in cost to supply from an alternate source.

One respondent said generator-retailers should be forced to cross-hedge to manage not acts of God events. Another respondent said FM was a matter of negotiation and a trade-off versus price. A further respondent said that in-house generation capacity meant FM was not an issue for them.

Pricing of contracts with FM or suspension clauses

Of those who had an opinion, views were reasonably polarised on whether hedge contracts with FM and/or suspension clauses were reasonably priced. Of the purchasers with an opinion (n=12), only one thought they were reasonably priced while all six of the generator-retailers as sellers who had an opinion thought they were reasonably priced. None of the large or medium purchasers thought they were reasonably priced. Two generator-retailers as purchasers said they were not reasonably priced.

TABLE 38

PRICING OF CONTRACTS WITH FM OR SUSPENSION CLAUSES

[Asked of Purchasers] *Do you consider that hedges offered to you with FM and/or suspension clauses are efficiently priced compared to hedges without FM?**

[Asked of Sellers] *Do you consider that hedges you have sold with FM and/or suspension clauses are efficiently priced compared to hedges without FM?***

	All Purchasers (excluding generator-retailers) (n=34)	Small Purchasers (n=15)*	Medium Purchasers (n=9)*	Large Purchasers (n=10)*	Generator-Retailers as purchasers (n=8)*	Generator-Retailers as sellers (n=7)**
Yes	1	1	-	-	4	6
No	11	4	2	5	2	-
Unsure	20	8	7	5	2	-
No answer	2	2	-	-	-	1

3.18 Locational (basis) risk

■ Pricing at differential locations

Two of the seven generator-retailers who sell hedges have a policy not to provide hedges at certain locations while five said they had no such policy. One of the five added that at some locations the risks were less manageable and therefore the price offered made them relatively unattractive.

Even though only two generator-retailers as sellers have a policy not to offer hedges at certain locations, a significant number of respondents including generator-retailers as purchasers of hedges had difficulties getting prices at some locations. This included nine of the 10 large purchasers, three medium purchasers and four of the eight purchasing generator-retailers.

TABLE 39

PRICING AT DIFFERENTIAL LOCATIONS

Have you had difficulties getting prices for hedges at some locations?

	All Purchasers (excluding generator-retailers) (n=34)	Small Purchasers (n=15)	Medium Purchasers (n=9)	Large Purchasers (n=10)	Generator-Retailers as purchasers (n=8)
Yes	22	7	6	9	4
No	10	6	3	1	4
Unsure	1	1	-	-	-
No answer	1	1	-	-	-

■ Locational risk

Consistent with the difficulties encountered in getting prices at some locations, most respondents also perceived locational risk as a significant problem. This included six of the eight generator-retailers as purchasers, four of the generator-retailers as sellers, six large, four medium and eight small purchasers. One of the generator-retailers, who said basis risk was not a significant problem, added that over time price risks associated with location were growing as demand growth outpaced supply and with minimal investment occurring in transmission. The market therefore was signalling as it was deigned to do location factors as growing issues that needed to be addressed.

TABLE 40

LOCATIONAL RISK *Do you perceive locational risk as a significant problem?*						
	All Purchasers (excluding generator-retailers) (n=34)	**Small Purchasers (n=15)**	**Medium Purchasers (n=9)**	**Large Purchasers (n=10)**	**Generator-Retailers as purchasers (n=8)**	**Generator-Retailers as sellers (n=7)**
Yes	18	8	4	6	6	4
No	11	4	3	4	2	2
Unsure	3	1	2	-	-	-
No answer	2	2	-	-	-	2

■ Purchasing at locations other than preferred

More larger purchasers have had to buy hedges at other then their preferred locations than smaller ones. Five of the 10 large purchasers, four of the nine medium purchasers and four of the 8 generator-retailer purchasers have had to do this compared with only 1 of 15 small purchasers.

TABLE 41

PURCHASING AT LOCATIONS OTHER THAN PREFERRED *Have there been situations where a lack of offers has meant that you have had to purchase at locations other than preferred ones?*					
	All Purchasers (excluding generator-retailers) (n=34)	**Small Purchasers (n=15)**	**Medium Purchasers (n=9)**	**Large Purchasers (n=10)**	**Generator-Retailers as purchasers (n=8)**
Yes	10	1	4	5	4
No	20	11	4	5	4
Unsure	3	2	1	-	-
No answer	1	1	-	-	-

■ Management of locational price risk

Six generator-retailers as sellers said basis risk was a significant problem. They manage this risk through a mix of strategies which range from cross-hedging to pricing risk at a premium, avoiding selling at locations where basis risk is an issue, and using multiple strategies, hence the numbers below do not sum to six.

TABLE 42

MANAGEMENT OF LOCATIONAL PRICE RISK *How do you manage locational price risk problems?*	
	Generator-Retailers as sellers (n=6)
Only sell at nodes where price risk is not an issue	2
Price in a premium at nodes you would rather not sell at	3
Purchase cross-hedges from generators with generation at locations where locational price risk could be an issue	4
No answer	1

3.19 Duration

Two generator-retailers as sellers have a policy to only price hedges for certain durations and five have no such policy. Slightly fewer respondents had had problems getting hedges for the durations they wanted compared to those who had had problems getting hedges for locations they wanted. Even so a majority of all respondents had had problems getting hedges for the duration they wanted. Again this appeared to be more of an issue for large and medium purchasers and less so for small purchasers and generator-retailers as purchasers. As was noted in Section 3.12 most purchasers seek to contract for between two and three years whereas only one generator-retailer seeks to contract for that duration with five seeking contracts for more than one year and less than two years and three for between 3 and five years.

TABLE 43

DURATION *Have you had any difficulties getting prices for hedges for the term of contract you want?*					
	All Purchasers (excluding generator-retailers) (n=34)	**Small Purchasers (n=15)**	**Medium Purchasers (n=9)**	**Large Purchasers (n=10)**	**Generator-Retailers as purchasers (n=8)**
Yes	18	6	6	6	2
No	15	8	3	4	6
Unsure	-	-	-	-	-
No answer	1	1	-	-	-

3.20 Credit arrangements

Generator-retailers as sellers have more problems with credit arrangements than purchasers or as generator-retailers as purchasers.

TABLE 44

CREDIT ARRANGEMENTS

[Asked of Purchasers] *Have you ever encountered problems entering into a hedge contract because the counterparty has been unhappy with your credit arrangements?**

[Asked of Sellers] *Have you ever encountered problems entering into a hedge contract because of concerns about credit arrangements?***

	All purchasers (excluding generator-retailers) (n=34)*	Small purchasers (n=15)*	Medium purchasers (n=9)*	Large Purchasers (n=10)*	Generator-retailers as purchasers (n=8)*	Generator-retailers as sellers (n=7)**
Yes	3	-	2	1	1	6
No	30	14	7	9	7	-
Unsure	-	-	-	-	-	-
No answer	1	1	-	-	-	1

3.21 Load management

■ Approached to reduce load

A majority of purchasers have been approached to enter into arrangements to reduce load during a time of crisis, though six large purchasers say they have not been approached.

TABLE 45

APPROACHED TO REDUCE LOAD

Have you ever been approached to enter into an arrangement regarding reducing load during a time of crisis?

	All Purchasers (excluding generator-retailers) (n=34)	Small Purchasers (n=15)	Medium Purchasers (n=9)	Large Purchasers (n=10)	Generator-Retailers (n=8)
Yes	19	8	7	4	-
No	14	6	2	6	6
Unsure	-	-	-	-	-
No answer	1	1	-	-	2*

* Two generator retailers said the question was not applicable to them while six answered "no". While that result may be no surprise, one generator-retailer said they had paid customers and distribution companies to reduce load at times of crisis.

One respondent with in-house generation capacity expressed concern about their inability to extract value from their 100% load generation capability. They did not appear able to gain access to a reserves generation market for 10MW or to gain a retainer for making 10MW available in their location.

Response to high spot prices

In times of high spot prices, respondents adopt a multiple set of strategies (hence responses do not sum to the number of respondents) with reduction in consumption used by most respondents though more than one-third say they maintain consumption. A political response tends to be favoured more by large purchasers and increasing hedge cover is an option that relatively few take.

TABLE 46

RESPONSE TO HIGH SPOT PRICES

In times of high spot prices, your responses are to:

	All Purchasers (excluding generator-retailers) (n=34)	Small Purchasers (n=15)	Medium Purchasers (n=9)	Large Purchasers (n=10)	Generator-Retailers (n=8)
Reduce consumption	24	8	6	10	3
Maintain consumption	12	5	5	2	1
Increase hedge cover	6	2	2	2	2
Political response	5	-	1	4	-
Unsure	-	-	-	-	-
No answer	1	1	-	-	-

Generator–retailers also specified that they sought to increase generation at such times. Other responses from purchasers were to selectively increase the percentage of power that was bought from on-site and some said they were covered by hedge contracts.

3.22 Hedge seller performance

■ Contracts with Generator-Retailers

The following table (Table 47) shows the number of parties that have electricity contracts with generator-retailers.

TABLE 47

	All Purchasers (excluding generator-retailers) (n=34)	Small Purchasers (n=15)	Medium Purchasers (n=9)	Large Purchasers (n=10)	Generator-Retailers as purchasers (n=8)
Contact Energy/ Empower	12	6	3	1	4
Genesis/ Energy Online	15	5	4	4	5
King Country Energy	3	1	-	-	4
Mighty River Power/ Mercury	12	4	3	5	5
Meridian Energy	15	8	1	4	6
Pioneer Generation	3	-	1	-	1
Trustpower	5	1	2	1	5
Todd Energy	2	-	-	-	1
Tuaropaki Trust	2	-	-	-	-
Other	2	-	1	1	-
No answer	3	1	1	1	0

The following table (Table 48) shows the mean percentage of contracts respondents have with generator-retailers with the number of respondents that hold those contracts in parentheses. So, six small purchasers had contracts with Contact Energy and which for these purchasers amounted to an average of 41% of their contracts being placed with Contact.

TABLE 48

	Small Purchasers (n=15)	Medium Purchasers (n=9)	Large Purchasers (n=10)	Generator-Retailers as purchasers (n=8)
Contact Energy/ Empower	41% (6)	49% (3)	40% (1)	14% (4)
Genesis/ Energy Online	76% (5)	38% (4)	62% (4)	14% (4)
King Country Energy	0.5% (1)	-	-	30% (2)
Mighty River Power/ Mercury	64% (4)	87.5% (3)	60% (5)	23% (5)
Meridian Energy	64% (8)	50% (1)	61% (4)	22% (5)
Pioneer Generation	-	74%	-	5% (1)
Trustpower	9.5% (1)	55% (1)	8% (1)	29% (5)
Todd Energy	-	-	-	10% (2)
Tuaropaki Trust	-	-	-	38% (1)
Other	-	1.5% (1)	60% (1)	15% (2)

Rating of generator-retailers as hedge sellers

The following table (Table 49) shows the ratings given to hedge sellers. Respondents were asked to rate each generator-retailer, and no generator-retailers were allowed to rate themselves. We have assigned points for each rating and calculated the rating for each generator-retailer. Very Good (5 points), Good (4 points), Average (3 points) Poor (2 points) and very poor (1 point) and calculated a mean rating for each one. The number of respondents who provided a rating is given in parentheses after the mean.

TABLE 49

	All Purchasers (excluding generator-retailers) (n=34)	Small Purchasers (n=15)	Medium Purchasers (n=9)	Large Purchasers (n=10)	Generator-Retailers as purchasers (n=8)
Contact Energy/ Empower	3.2 (24)	3.2 (8)	3.0 (8)	3.4 (8)	3.9 (7)
Genesis/ Energy Online	3.0 (22)	3.4 (9)	2.3 (6)	3.1 (7)	1.8 (6)
King Country Energy	2.3 (3)	2.5 (2)	2.0 (1)	-	3.5 (2)
Mighty River Power/ Mercury	3.9 (24)	4.0 (9)	4.2 (6)	3.7 (9)	3.7 (6)
Meridian Energy	2.8 (19)	2.7 (8)	2.6 (3)	3.2 (6)	3.7 (6)
Pioneer Generation	1.0 (1)	-	1.0 (1)	-	5.0 (2)
Trustpower	3.5 (17)	3.4 (9)	3.7 (4)	3.5 (4)	3.8 (6)
Todd Energy	1.5 (2)	2.0 (1)	1.0 (1)	-	3.3 (5)
Tuaropaki Trust	-	-	-	-	2.3 (3)

The best rated generator-retailers among those who were rated by a substantial number of all purchasers were in descending order:

1. Mighty River Power/Mercury
2. Trustpower
3. Contact Energy/Empower
4. Genesis/Energy Online
5. Meridian Energy.

The best rated generator-retailers rated by a substantial number of generator-retailers were in descending order:

1. Contact Energy/Empower
2. Trustpower

3= Mighty River Power/Mercury

3= Meridian Energy

5. Genesis/Energy Online.

IV. Qualitative Research

4.1 Competitiveness

A central question for this research project was whether respondents believed the electricity hedge market was competitive. Responses revealed a polarisation of views between the large generator/retailers and other respondents with the former asserting their belief that it was competitive and the latter disagreeing. Subsequent questioning sought to understand the reasons behind this divergence of views. Arguments and counter-arguments on ways to improve competitiveness are covered separately in Section 4.20.

4.1.1 Evidence that there is no competitive market

■ Ownership

At a macro level, State ownership of three of the large generator-retailers has led some to question whether the market is truly competitive and for some has added the risk of non-commercial behaviour occurring.

> *It's very difficult to have a competitive arrangement when there's effectively only two owners supplying us.* [You don't find Government-owned companies seem to act independently?] *I think their structure is independent, but there's some doubt, you know, when you've got the same owner.* (Purchaser)

> *Behind the Government's own intervention and their ownership of power stations which they may flick on and flick off when they choose that is an increased risk to me as a market participant – more so to a generator than a purchaser. You have no idea that the operator has the same commercial incentives to operate as someone who is out there to make a profit out of it. It's a sort of risk and one we could probably do without.* (Generator-Retailer)

> *If you view the SOEs as being one owner in a sense, you've got one owner of a number of companies and then you've got one private company. Trustpower's pretty inactive in terms of retailing. I guess you could argue that the SOEs compete against each other but I think the competition's relatively limited. Most of them basically know what the others offer and price accordingly.* (Other)

One respondent said that State ownership had limited the extent of abuse of market power that had occurred, but nevertheless felt abuse was occurring.

> *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. Just at the moment the ancillary services market has gone very high. There are only two people who can provide into that market. It's Genesis and Mighty River Power. The price for June went up to over $6 million. It's about twice the cost of providing that sort of service.* (Generator-Retailer)

■ Prices

High prices and a shortage of hedges were cited as evidence of the lack of competition.

> *There are obviously very few players who want to offer hedges and they are not at what we perceive at the moment at any rate to be realistic prices. That's the problem.* (Purchaser)

> *The electricity market itself is flawed. What other market can you go in where you buy something on an estimated price and you don't know till tomorrow how much it costs you and it can be a major part of your business costs. It is a very strange market to be in because you are committing yourself to something where you have very little idea what it is going to cost you. I think the way the market works is fundamentally flawed. There is basically insufficient and, effective competition. If there was effective competition I'd expect to be paying up to $20 a MW at the moment. All analysis shows that current price is well above the long-term cost of production.* (Purchaser)

> *I think New Zealand is such a small market, it's difficult to get some competitive arrangements operating and there are so few suppliers and so few participants. There's not a lot of visibility and there's not a lot of liquidity even though we go to the market these days we're often offered a hedge, but there's not a lot of option for us. We need to take what's put forward.* (Purchaser)

> [Why not competitive?] *Because of the response we have got when we have gone out for hedges. By and large we have received a fairly flat response.* (Generator-Retailer)

Liquidity and transparency

Most respondents did not cite high prices alone for their view that the market was not competitive. While tight supply was a factor influencing price, for the most part they said the hedge market was not competitive because it lacked sufficient liquidity and transparency. One or two respondents were not convinced there was competition at the wholesale level either.

> *No. It's an illiquid hedge market and we saw that because three years ago we used to get our hedges by doing an annual tender round and now that just doesn't work. You get ridiculous offers coming, so we have had to change our tactics completely. I think the fact that there is too much vertical integration in the market is part of the reason and there just isn't enough clarity in there either. I think if we had a system where there were a lot more standardised contracts and they were traded a lot more freely with something like an exchange platform, I think it would work.* (Purchaser)

> *As I see it there is a lack of transparency of information for the major electricity users or people who manage their electricity price risk by buying hedge contracts. And the way the market is structured is the major issue. The generators who are vertically integrated have this natural hedge in their retail customer base. And to some extent the hedge contracts offered to users like ourselves tend to be the icing on the cake.* (Purchaser)

Lack of liquidity occurred partly because as generators filled their books they did not offer hedges or because they generally preferred to offer hedges at nodes they injected directly into.

> *They* [generators] *try to keep their books up to their required level for much of the time, so once they have done that it may mean that they may not be in the market for a long period of time, so in those sorts of situations it may be quite hard to get a competitive offer. We went out in* [month] *2004 for a long-term* [x-years] *job and contacted five different generating companies and only two of them were willing to get involved.* [Were they both X-Island ones?] *Yes*. (Purchaser)

> *We would like to get a hedge at* [Grid Exit Point] *because that is where we get our power from – one single load through the one node. No one is prepared to give it to us and they were for five to ten years. They* [generators] *tend to favour a node they inject directly into.* (Purchaser)

> *More often than not we send out tender documents and not everybody responds. Or if they do respond, they say they don't operate in this part of New Zealand or their hedge-book is full or whatever.* (Purchaser)

It was also noted that some types of hedge contracts were unobtainable or if they were available, then only from a narrow choice of potential sellers. Problems were also being encountered with obtaining the desired volume supplied.

> *In Australia they have fixed price variable volume contracts which* [name] *in New Zealand is unable to obtain. And also the prices in New Zealand are also much higher than Australia. We're just too big for a generator to want to take on our load with that kind of risk*. (Purchaser)

Because if you are truly looking for a CFD, contract for differences, or swap you should be able to pick up the phone and call any of the retailers and be able to request a price for a volume and a term. Typically you'll only ever get Mercury who respond They've been an advocate for many years now that customers of ten gig are only offered hedges - CFDs - and therefore you automatically know it's a mind game. If you're doing a tender or if your load is over that level, either single or combined load, then that's it, you are going to get a CFD from Mercury. You won't get anything else. Whereas if you approached Trustpower for example you might get a CFD, that depends a lot on their books at the time. The only retailers that I've ever managed to get CFDs out of have been Mercury on a regular basis and Trustpower on the odd occasion. (Other)

Five years ago big used to be beautiful, we used to go in for the big hedges of 10's of megawatts, now you have difficulty getting hedges with 10's of megawatts. You have to chop it up into 5 megawatt slices or something like that. (Purchaser)

■ Vertical integration

The issue of vertical integration, which has already been referred to, was a recurring theme for those who argued the market was not competitive. This had a number of dimensions to it. Some argued that vertical integration meant that the retail base acted effectively as a large hedge for generator-retailers, thus limiting the amount of generation that was made available for other purchasers.

The main issue we see is with the vertically integrated generator and retailer. We think that the very nature of the vertical integration meant that the generators were going to have a huge percentage of their capacity hedged against the private customer base. So there really isn't the driver, if you like, particularly to offer large industrials hedges that perhaps there was five or six years ago. (Purchaser)

We reckon that the price of the hedge contracts are way above where they should be, so the price is too high. I'll give you my reason why I reckon they're too high. It is that the electricity generators are vertically integrated, which means that they have their own natural hedge of 60%, 70%, 80%, of businesses and domestics. So it means, it's what they have left that they can offer to companies like us, and in some cases they can screw us because it's either take it or leave it. (Purchaser)

The tightness of supply had exacerbated this situation limiting the amount of available hedges and also acted as a significant barrier to entry for potential retailers.

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)

The way vertical integration had developed with generators acquiring retail blocks geographically close to their principal generation sources, it was argued, not only meant that a national market for hedges did not effectively exist, as very few generators offered national hedges, but created regional domination.

> *It's not even a national market. You have two players in the South Island, a couple in the lower North Island and in the upper North Island. The generator-retailers swapped customer bases – that's not an indication of a national market.* (Purchaser)

> *You've got a market that allows players who dominate their own geographic regions. It may have the appearance of a free and open market, but no-one would enter that market without very strong support from a generator and I can't see why a generator would be interested in that because they have their own retailer.* (Other)

> *The second point is that we do have arguably a competitive electricity market, but we do have in my view elements of market power able to be exercised by the generators because they are still regionally based and therefore have regional focus or arguably a regional monopoly though to qualify that a little bit some generators will offer hedge contracts at every node in the country, but not all of them.* (Purchaser)

Geographic domination

Some respondents said the concentration of generator-retailers in certain geographic areas meant problems arose in attempting to get hedges at different locations around the country.

> *By choosing a specific location in the country you rule out some hedge providers and they won't be willing or able to provide a price there that is competitive because they will have to buy the same cover from the generator that I could go straight to. That's a classic example of where the regional dominance comes into play.* (Purchaser)

> *We have run tender processes a couple of times and essentially what we were interested in was term supply and there wasn't a lot of people interested in term supply. And the people who didn't have generation investment in areas where we consume were not interested in supplying. It took a fair bit of coercion to get a national deal and we thought there was a fair bit of inefficiency in that.* [Why was that?] *Because of the regional monopolies that have been formed.* (Purchaser)

> *We do a lot of these tenders for various customers, so we see what people are offering. We have a lot of problems getting pricing for different locations around the country. The retailers or the generators tend to be concentrated in certain parts of the country, so even though there's potentially five retailers within a certain location, there may only be a couple that are actually working in that area.* (Other)

The converse of generator-retailers not offering hedges outside their regions also arose on the demand side. Several examples arose of purchasers based in one Island that did not consider seeking hedges from generators who were based almost exclusively in the other Island.

The geographical location of generators coupled with a perception by purchasers of a lack of preparedness to negotiate at some grid exit points reinforced the view that competitiveness did not exist.

> *How do they compete with each other? Or are there just main players saying "here's our price, if you want to take someone else's price take someone else's price, but this is our price"? They try and assess the risk, but once they say that's where we are at that particular grid exit point, then that's our price. There doesn't seem to be confidence out there that it is a competitive market.* [That's amongst other purchasers?] *We use an energy consultant.* (Purchaser)

> *Because of the response we have got when we have gone out for hedges. By and large we have received a fairly flat response. I must admit it hasn't been for a couple of years since we last went out.* [Generator] *obviously and* [Generator] *showed a bit of interest, but none of the other people we approached showed any interest at all.* (Generator)

Current market conditions

There was also a view that generator-retailers were generally content with their contracted position and were not aggressively competing for customers. In some instances, this led them to make offers at relatively high prices or not to offer them at all.

> *Also a number of them are probably relatively happy with their percentage that they've got contracted, so they're not actively out there trying to get new customers and when they are out there in the market at all, it's at very high prices so they're basically saying "we're comfortable with our position but if you want to pay 10 cents a unit or whatever it is, then we'll take you on". They're actually comfortable with their contracted position.* (Other)

Nodal pricing

In the context of locational issues, respondents also questioned the complexity created by the number of nodes. One respondent said the nodal system had effectively decommoditised electricity as a commodity product.

> *The spot pricing model is about economic dispatch of generation and has nothing to do with how competitive the market is. In fact, it impedes a competitive retail or wholesale market developing because you have differentiated what is a commodity product into 244 slots and 48 half-hours and times 365. You have decommoditised the commodity, so when you add on top of it suspension clauses and all the rest and the different aspects of the hedge contracts, all of which are vital, you are not left with a standard commodity any more.* (Generator-Retailer)

Another reinforced the view that the principal use of nodal pricing was generation dispatch and that this had contributed to generator-retailers adopting the risk averse strategy of seeking retail bases in the same regions as their generation.

> *The primary purpose for the nodal pricing is short-term dispatch. You don't have to hedge against that. You can hedge against a handful of nodes or two or even one. And you are then only exposed to the step-off price from that node to where you are buying the stuff. When we started we thought these retailers would be national retailers and they would be roughly exposed to the same step-off variations. Have a hedge in Hamilton and one in Benmore and that will probably do them. Well, then they started to get terrified about regional separation and decided to ring-fence themselves in the regions. Then they became totally focused on the regional nodal price and they are not interested in the rest of the country. So, maybe we need just one node per region – you don't need 200 nodes.* (Other)

■ Current market structure

One respondent said the optimum market share for sellers to create a competitive market did not exist in the New Zealand electricity market.

> *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)

■ Asymmetrical knowledge

One respondent argued that asymmetry of knowledge prevented an effective, competitive market emerging.

> *The knowledge difference is huge in favour of the big players out there because they have a large amount of information on what is going on in the hedges around. If you only have one or two hedges a year, they have a lot of hedges moving around and that gives them a lot of information about what's going on.* [Is there anything that can be done?] *Disclosure of the actual volume and the price of hedges – you don't need to know participants or anything else – where they are settled and the sort of volume and price information would give a much better feel. It's a bit like the share reports that happen on the sharemarket. It's that thing of which actual trades are being reported – you don't know who the parties are, but you do know the volumes and prices they have gone through at and that's the difference in the information level. That's the thing that would make quite a bit of difference. It reduces the imbalance in information. We just don't do enough trades to have a real idea what's going on out there – we go out a couple of times a year for different things and you get a snapshot idea of what people are doing, but it doesn't really give you an idea of the total hedge market.* (Generator-Retailer)

I think all of the generators know where the market is and they pretty much know what each other is doing as well. They never say they want it. The loads want it. What I think the industrial customers want to know is if they do a deal with someone at $67.00, that that guy's not selling to someone else at $55.00. So, they can't trust the market. The generators who are tendering all the time to everyone – they know where it is– they just shift their price around. If they start getting business they'll move it up a bit, but they know where the market is sitting all the time, so that's unfair. I think you always get a problem too in markets where – and it's true for markets all around the world but the generators – they've got all the intellectual property and the customers have almost none. So there's a huge disparity between understanding. (Generator-Retailer)

■ Barriers to entry

And those that might consider entering the generation market if circumstances allowed said the absence of a level playing field was an obstacle.

If we were to get into generation, we would seek a hedge but we would have no confidence that we were getting a fair hedge price. We have to take what we can get with the market that is there. The market is so thoroughly dominated by vertically integrated generators who want to do the same things as us and there is no way the playing-field would be level. (Other)

Another had considered building a peaking station, but had had difficulty finding anyone prepared to provide a more specialised product than a two-way hedge, a cap.

We have looked at building a peaking generation plant and that would help remove transmission and distribution constraints, but it also has value in terms of the energy market.. But you want to sell a strange energy product – you want to sell a cap, not a normal two-way hedge and I have had trouble getting anyone to really engage with me about us being able to buy or sell a cap. And if I am able to get a price out of somebody I am going to have a great deal of difficulty trying to judge whether it is a good price or a bad price. (Other)

There was also a view that a competitive wholesale market for electricity could not be achieved without significant impact on the electricity industry and that even then the costs of doing so may outweigh the benefits.

The retail market, the sharp end of the business is competitive. That is where I always come back to. There is not always a wholesale market for products when there is a retail market which is competitive. Do suppliers of DVD players have a wholesale market for plasma screens? There was an incident not so long ago with Holcim and Golden Bay cement. They both supply their retail customers, they only trade once every few years when there are supply difficulties which implies to me there is not a wholesale market for cement, but there is a competitive retail market. So I don't think that a wholesale market necessarily delivers a whole lot of benefits specially when the cost of doing it may start to exceed the benefits. We work under the assumption that we must have a competitive wholesale market in all its glory – lots of people trading, buying, selling, deep, liquid – all those sorts of things we might see in Europe or a mature market. I am not sure it can be achieved without significant impacts on the industry in general. (Generator-Retailer)

4.1.2 Evidence that there is a competitive market

■ Availability of hedges

There was one purchaser that belonged to a nationwide buying group who believed there was a competitive hedge market, a sharp contrast to the experience of three years ago.

> *Our buying group has people everywhere from Northland to Invercargill. There were national responses and regional responses and specific responses. It was quite clear there were lots of choices. So the answer is, from a hedge point of view, yes, it appears to be. That's a radical change from three years ago where we basically had people saying "no we're not even bothering to tender".* (Purchaser)

However, this experience was not typical of those with nationwide operations. One purchaser with many outlets around the country said generator-retailers found them a difficult customer to cater for because of locational issues and the need for separate invoicing and network components.

But the view that there was a competitive hedge market was supported only by the large generator retailers who took the view that in the main as it was possible to obtain hedges from counterparties and therefore competition existed. Where problems arose they were likely to result from the absence of major new generation sources, which in times of tightly constrained supply, would also lead to complaints about price. Differences over price themselves were not evidence of a lack of competition, it was argued.

> *For most of the time there is the ability to get hedges off other counterparties. We'll qualify that and say that the New Zealand electricity market in the current state is in a particular tight supply, a constrained market and that is likely to exist until new major sources of generation come on stream, but in the main there is the ability to get hedges. Now people will often ask or question that they don't like the price…. that happens in any market. You might not like the price, but the fact is you can get a price. That's a market.* (Generator-Retailer)

> *The key way that buyers and sellers into those* [financial] *markets determine what an appropriate price is by telephone calls to each of the providers. So, if someone is looking to buy currency or buy bonds they are likely to call three or four participants, so they in effect run a mini-tender. And that is available to all buyers of electricity.* (Generator-Retailer)

> *As demand increases through growth and supply increases do not match that demand growth, the ability to hedge reduces and/or the price for available hedges increases. Given participants are competing for a slice of shrinking available volume, the contracts market is very competitive.* (Generator-Retailer)

Market participants

One respondent compared the number of providers in the electricity industry with other markets which he considered to be competitive to support the argument that competitiveness existed.

> *When you consider the size of the electricity market in New Zealand and when you compare that to other markets in New Zealand, say, petrol and even financial markets, and when you consider the number of participants there, there is an optimum number of providers of a service or products for the size of the market it is serving. So, if you consider we effectively have five major energy companies when I compare that to those other services and products I believe that is sufficient to serve the size of the marketplace.* (Generator-Retailer)

This view was countered by another respondent.

> *I think that there aren't enough generators in New Zealand to create a true market … 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. To be fair though, Contact and Trustpower do try and ensure that the market works so people behave because they want the market to be seen to work. If you look at market theory, you need five to six players and no player being sufficiently large that they have to be in the market. Plainly New Zealand doesn't meet this criteria.* (Generator-Retailer)

It was conceded though that some generator-retailers did not offer hedges when perhaps they should.

> *I think generally it is competitive. There are some providers that probably don't have the same philosophy, certainly I have and our firm has, so there are periods of time when they are not offering contracts from what we understand from our customers and often they probably should in our view…Some of our competitors work the other way and say "no, book shut, door closed – nothing". And I think that's wrong, and that's an example of where I don't think it works properly. In saying that – if you look at the last six months or so it has worked fine.* (Generator-Retailer)

It was suggested that such behaviour should be exposed on a name-and-shame basis.

> *Part of it is publishing the fact that these people hadn't provided hedges.* [Would that be enough to get them to do it?] *Yes, I do – yes.* [You mean publish the actual names?] *Yes, name and shame. It works in other markets. Now, if they don't agree with that, then you can have a rational debate about what the problem is, but you actually have to flush out the problem.* (Generator-Retailer)

Market transparency

Criticisms about the lack of transparency in the hedge market were answered by referring to the introduction of the short-term hedge market.

> *In terms of transparency, I think the introduction of the short-term hedge market has added a significant element to that, that people can see where transactions are trading and get a reasonable idea of relativity. Certainly for their own particular grid exit point the price will be different, but in any hedge what people should be looking to do, if you look from a financial markets perspective is get the actual direction. There are always people bearing basis risk to a degree and if Haywards was the reference node for the short-term hedge market, I think that captures about 97% to 98% of movement in the New Zealand electricity spot market. So, it's not going to capture everything, but it will give you a hedge, and bearing in mind a hedge is not necessarily a perfect instrument but the intention is to, where possible, reduce most of that risk*. (Generator-Retailer).

To some degree issues about lack of transparency arose as a natural result of the confidentiality of bilateral contracts, it was argued.

> *I suppose the other issue is about transparency. Now, when people enter into a contract that by its very nature is commercially, confidential information between those two parties. Should that be in just a straight bilateral arrangement released to everybody? Where else, in a bilateral arrangement, is it that price information is made available to everybody?* (Generator-Retailer)

Questions were also raised about how meaningful comparisons between hedge contracts would be even if they were made available given their customer-specific nature.

> *In the New Zealand electricity market, there's 260-odd nodes so we're never comparing apples with apples. Everybody's profile is different reflecting how they want delivery of that electricity. They're taking it at different times and in different volumes, so you're never comparing apples with apples. At best it's a Braeburn against a Pacific Rose or whatever. We're not comparing the same with the same.* (Generator-Retailer)

> *We generally do things via OTC* [over the counter], *because we may want to have a standard contract, often we don't have standard requirements for energy. There are quite a lot of components to a contract, which means it is very difficult to standardise.* (Generator-Retailer)

4.2 Fairness of contract process

■ Lack of competition

Respondents were somewhat less polarised on whether the contract process for establishing bilateral electricity contract prices was fair. However, some of those who said they believed a competitive market did not exist also argued the process was unfair too for similar reasons, such as, market bias, lack of transparency, skewed market information and limited ability to leverage by approaching other suppliers.

> *The process is biased in favour of the generators. A large part of the lack of confidence in the fairness of the process is because the leverage of approaching others is gone*. (Purchaser)

> *It's difficult to be confident about whether the prices are fair because you don't have all the information the generators have. You can speculate and get all the information you want from outfits like Energylink and those sorts of guys, you can keep your ear to the ground, you can ask your retailer and hope they are telling you the truth and you can talk to energy experts and so on and even then there still isn't enough clarity there – we just don't know*. (Purchaser)

> *There is a lack of transparency in the way the prices are set and there's a skewed level of market information. The people who are selling the hedge contracts have the ability to determine what the spot price is going to be down the track, so for that reason they have the ability to ensure their hedges are not too far out of the money. Now a generator is going to argue that is not the case because of the way we have the prices for electricity on the spot market, but I am going to beg to differ. I believe they still do have some market power that enables them to dictate what the spot price is going to be and therefore to establish the prices which really should reflect the long run marginal cost of generation and I believe there is a risk premium built into those because they can.* (Purchaser)

> *The contracts are basically the generators. The contracts are not ours. We don't have too much ability to change things. Some of the force majeure clauses are not good for the customer. Mind you not all companies have force majeure clauses, but those that do, especially one company, those force majeure clauses are not good at all.* (Purchaser)

■ No competition, but fair process

However, some who had argued that the market was not competitive did feel that the contract process was fair. In this instance, the purchaser approached five generators and received two offers.

> *It's a one-to-one negotiation, so we have the opportunity to take something or not. When we went through negotiations for our latest request there was quite a bit of give and take in it. One was reasonably significantly different to the other reflecting their own individual circumstances. It was a very amicable and fair negotiation process with both companies, but that is not to say we were overly happy with the actual price*. (Purchaser)

Similarly, this respondent distinguished between the fairness of the process and the competitiveness of prices.

> *I answered yes for that one probably because we think the process that we go through makes it reasonably fair, not necessarily the prices that are offered. They're not necessarily competitive*. (Other)

Even so another who had argued that a competitive market did not exist, said the process was fair because prices had been in line with expectations.

> *Prices offered were in the region we were expecting and as time has moved on they have shown a trend upwards ... by and large they were in the ballpark of where we expected them to be*. (Generator-Retailer).

■ Limited offers

Limits to the number of hedge offers from providers was a factor in undermining confidence in the fairness of the process. In this case, a generator-retailer seeking hedges said there might be reluctance to offer a hedge because of the threat of subsequent competition.

> *You can't have confidence – it's as fair as we can do it because we go out to a lot of players and usually in that situation there are some marked differences. There are also some players who never trade with us. It's usually the same players who are out there reasonably regularly who do make an offer.* [Is that an issue – regional based generators?] *Yes and No. Some of the ones who do not offer are regionally constrained, and some of them who would probably be considerably constrained do offer, so it is not just that issue.* [Any other reasons?] *I am not sure why - whether others consider the volumes that we are looking at are immaterial or the fact that they don't want to trade with someone who would then be competing with them in a number of areas because that is certainly a factor.* (Generator-Retailer)

■ Margins due to uncertainty

One respondent said the process was unfair because uncertainty including the size of the pending carbon tax had led generators to build in additional margin.

> *I think there is a fairly thin market for long-term electricity generation and pricing and uncertainty over fuel and carbon. People have no idea what to price future supply at and they struggle to offer contracts and with that uncertainty they tend to add margin for the uncertainty.* (Purchaser)

Fairness a presumption

The few purchasers that said there was competition qualified their view that the process was fair by stating fairness was more a presumption than an informed opinion.

> *Yes. I suppose if we assume there is real competition behind those tenders given that they're mostly state-owned enterprises and why would they compete against each other? You have a presumption that the process appears to be fair, but whether it really is, who knows?* (Purchaser)

Sellers' views

The generator-retailers who had argued that a competitive hedge market existed also argued that the process for establishing contracts was fair too. At one level, any agreement required a willing seller and willing buyer and purchasers had the choice to purchase on the spot market of they wished.

> *I suppose when you conclude any deal presumably it's a willing buy, a willing sell and by the very fact that you've concluded the deal, both parties must have been comfortable. The spot market is an alternative for everybody ... a generator or a retailer all the way through. There is a possibility that people can do that. I think for the most part the pricing reflects the risk associated.* (Generator-Retailer)

> *Yes – fair. It's negotiated with other parties. There is another option. There is another market to buy from – the spot market if you don't think the hedge market is fair. Sure it's more risk – it's just as fair a process as any other. Having an OTC* [over the counter] *market is different to having an exchange trading market, but at the end of the day do you achieve anything different under the two systems. I am not really that sure, but there is an exchange energy hedge market operating in New Zealand as well as OTC.* (Generator-Retailer)

> *Whether that process is fair, because it is bilateral is almost by definition. It, has to be because if it is not then you won't get the deal and therefore it won't be bilateral so we don't do deals that we are not happy with ourselves.* [So it's fair in your eyes?] *Yes. Now if people are doing bilateral contracts when they don't think it's fair then they should ask themselves why are they doing it?* (Generator-Retailer)

Another respondent said the process also gave buyers the opportunity to weigh up risk exposure and to obtain a product closer to their needs.

> *This allows participants to weigh up price volume risk/exposure and get a more tailored product.* (Generator-Retailer)

Further evidence that the process was fair was given by referring to sellers' success rate for offers.

> *The evidence to me as a seller is that there is competition out there. I think as you scroll through the questions there and there is a question on the number of responses you have made and success rate and our success rate is less than 50%. We know there are a variety of products out there and not all products by the same company, so you can purchase products off one company which are not available of another company, so it is up to the purchaser then to decide which products suit their purposes best.* (Generator-Retailer)

> *You'll see in our survey our success rate. I just looked at the large financial product transactions because there are just too many and we have a policy that we price everything and where our success rates range between 20 and 40% I think we said a third of our hedges over the last six months have been accepted. So that strikes me as – there must be somebody else taking some of our business.* [So does that back that up – there must be a competitive market?] *Well there is a degree of – there is some competition.* (Generator-Retailer)

The point was also made that purchasers' unsophisticated approach or lack of expertise may lead them to seek single contracts to manage their risk when a staggered approach involving multiple hedges might better achieve the results sought. In such instance, failure to find the "silver bullet" could influence perceptions about fairness.

> *I also wonder whether some of the purchasers are still looking for the one contract to do the silver bullet. I suspect there's still a desire for that to occur and I suspect that that's also because they don't want to – they can't necessarily afford to have someone who's purely only job is to do electricity. Just the size of their businesses, the margins won't allow it and so that would just mean that they'd be looking for more – the complete answer as opposed to perhaps saying "well okay, we'll do some things in some smaller slices". Just because the admin costs alone would just get too complicated.* (Generator-Retailer)

Certainly between generators at least there appeared to be recognition the seasonal cross-hedging had advantages for managing individual and collective risk.

> *There are a lot more customised deals reflecting specific timing of risks so instead of buying potentially from our perspective a three or four-year deal, we might look to buy a seasonal one because there's other times of the year we're relatively comfortable and that might coincide with other parties which have risks that are potentially complementary. So I think we're seeing parties work together with a better understanding of each other's risks.* (Generator-Retailer)

4.3 Other forecasting sources

Other than the forecasting sources identified in Question 9 of the survey – independent forecasts, offers/indications, energyhedge.co.nz forward curve, market commentary, M-co hedge contract index, market forums and internal modelling – few other sources were cited. The few that were mentioned included market intelligence on what other parties were settling at which were gleaned through informal networks either with energy traders or other purchasers.

> *We more often than not get commentary from people in the business, sort of the Smartpowers or the Energylinks of the world. Sometimes we get them to do the tenders for us and make us a recommendation with a commentary … they can give you sort of market intelligence, for want of a better word, as to where the markets have been, where it is going, how the prices are, what we have got or what they have got for us at this particular time, are they better or worse than what's been in the past. Any special deals that the generators sort of have tend to be known by these people rather than by us.* (Purchaser)

The Ministry of Economic Development's forward looking publication Energy Outlook and forecasts by NIWA were also mentioned. Although one or two purchasers mentioned newsletters published by generator-retailers, these were not regarded as particularly useful by purchasers.

Another source identified by a generator-retailer was the "time-of-use" market.

> *We've got a group of guys who are in what they call the time-of-use market which is the large industrial market and every time you make an offer into that market and you're not successful, then you know that your price was above the price that somebody else offered at so that is a market intelligence error.*
>
> *If I'm getting all of the time-of-use business in the market then I know my price is above. That's the only market that's reasonably liquid in New Zealand in that there are probably – there's more than 10 contracts being traded through that market every month. It generally runs about 200 to 300 every month. This is physically – in a group of schools and there's often an agent to do it for you and I go to this agent and he tenders your desire to buy amongst all of the generators and they all put a price on and then the guy goes through all the numbers and works out which number is the best number. If you have a good relationship with the guy who's doing the tender – generally the contractors – one of them might be say* [name], *so they do this regularly. Then go and ask them and say oh well, how far away is it? … You can say how far off the mark was I and he'd say it was $3.00 so we know the contract went through at $67.00 because we put it in at $69.00. That's market intelligence. Whether you win or lose them, and that wasn't in here, but that's actually really, really useful so generators know what the other players are doing through that mechanism and because it's actually a truly settled contract, it's not made up numbers.* (Generator-Retailer)

> *Now, the M-co Hedge Contract Index was supposed to monitor that but because they never figured out how to normalise the data set that information set is garbage. The generators know how to normalise so if you've got a contract that's trading up here then you benchmark it back against a standard price.* [Why can't they do it?] *I don't know. The problem you've got is if you disclose volume the challenge you've got is that everybody knows who's been out to tender that month.* (Generator-Retailer)

In the context of market intelligence, one respondent purposefully did not respond to Question 13 which asked respondents to tick the type of information, which included type of contract, price, volume, duration and location, should be published to assist price transparency. While most respondents ticked all of those items, this respondent said historical data was irrelevant and that the focus should be on future indicators.

> [You did not tick any source that might assist transparency why?] *I believe that what participants should be looking at to determine price transparency is forward looking indicators. So, at what price can I now buy or sell electricity contracts, to me looking back and seeing what was done yesterday or the week before has very little relevance to a market and again I am drawing on experience from financial markets.* (Generator-Retailer)

4.4 Reserve generation

Respondents were evenly divided on the question of whether reserve generation had an impact on risk to the spot market. The balance of opinion though was that reserve generation only had a limited capacity to cap prices and while that might reduce risk somewhat in the short-term, in the longer term it could increase risk to the extent that it acted to blunt investment signals for new generation. Some concerns were expressed that reserve generation had been activated in circumstances other than in dry year conditions, such as, to cover shortages arising from transmission failures and plant outages. And South Island purchasers said the HVDC link effectively stopped any benefit, if any existed, flowing through to them.

■ Reduced risk

Those who said it had reduced their risk to the spot market cited the capping of prices at 20 cents/KWh.

> *Reduces risk. Well, we're not seeing anything yet, but it's early days. In theory, it should cap the spot price over continued high spot prices. I haven't seen anything in black and white as to what the trigger prices are for what the electricity establishes, but I have heard rumours of about 20 cents or something like that… so if the price is in fact capped at 20 cents by a levy, then we have in fact bought a cap and that probably isn't a bad thing.* (Purchaser)

No it wouldn't be a major reduction. It means that the market is going to cap off a price of that generation for 500 megawatts which was quite a bit, you know? So we know that the price is less likely to go above $200.00 or whatever the price in the market is. It does reduce the exposure. One of the things that the Commission hasn't done is to tender that output. They've got that generator sitting there – 200 meg. They could sell it as an option like a cap to the market and some of the players might buy that quite happily. (Generator-Retailer)

However, there were limitations on the reserve generation's capacity to reduce exposure and its influence was likely to be of a short-term nature.

It partially provides a short-term cap on price. (Generator-Retailer)

I thought that it should reduce the risk to some extent but when the demand goes up, then it kicks in at 20 cents/kW/hour. When the demand goes up, the one or two people I've spoken to about it is that it will just go straight past there. It's a help I suppose. A big help, I don't know. (Purchaser)

We say it reduces our risk to the spot market but I think there's a caveat there. It certainly doesn't eliminate it - there's only limited capacity that the Electricity Commission have. There's another perspective which says the fact that you've got something that's an intervention, it's a slippery slope. You're not providing an incentive to other players to build equivalent plant. So, I think there are two sides of that coin. (Generator-Retailer)

Indeed, some who said reserve generation had a shorter term influence on reducing spot market risk added that it would also blunt signals for investment in new generation.

The way the Whirinaki plant is offered into the market distorts the market signals. From the perspective of someone buying on the spot market it reduces the volatility on the spot market, but it also over the longer term reduces the incentive to invest in new generation. Because what it does is effectively cap the spot price. If you look at the market theory behind marginal pricing and spot pricing, once the average price in the market reaches long-run marginal cost then you get new investment, but if you cap it, the integral under the market curve decreases because you are not getting those peaks. (Purchaser)

■ Increased risk

The longer term impact of reserve generation on future investment was a reason why some decided the risk to the spot market had been increased by Whirinaki.

In the longer term, this may stifle investment in generation and increase risk. (Generator-Retailer)

Others though said the reserve had created a cap which encouraged prices to rise to just below that level or at least left that possibility open.

> *Increased risk – particularly the way this Whirinaki one is set up in isolation on the side there, it really creates a sort of artificial cap which encourages prices to rise to just below the trigger level for it in between time and once that trigger level is capped and it comes on things are likely to jump very significantly above that. It's not going to make enough difference to really settle everything, particularly in that area anyway.* (Generator-Retailer)

> *We believe there's now the ability for people to price up to that cap if you like and so we don't see it as actually a particularly healthy thing. We say it increases our risk.* (Purchaser)

> *If it gets up in the 20 cents area, which is where Whirinaki is supposed to come in, there will be a step at 20 cents which otherwise wouldn't be there but at the generators, no ones there, they may shadow price that and offer a whole swag at 19.9 cents. I'm not saying they do, but that's a risk.* (Purchaser)

There were also those who said the Whirinaki plant had increased uncertainty and thereby had contributed to risk. This view was taken by generators.

> *Yes, it does because just the uncertainty about what they are going to do. It will change the dispatch rules reasonably easily. One of the biggest risks by definition is driven by uncertainty.* (Generator-Retailer)

> *Increased risk to spot market because it's a form of participation in the market which is not governed by the usual commercial incentives. Now risk can go both ways – it's not just the risk of high prices. When you have things done on a commercial basis, there is often a lot of sound rationale behind it. Behind Government's own intervention and their ownership of power stations which they may flick on and flick off when they choose that is an increased risk to me as a market participant – more so to a generator than a purchaser, but to a purchaser you may rely on it, but is it really there. You have no idea that the operator has the same commercial incentives to operate as someone who is out there to make a profit out of it. It's a sort of risk and one we could probably do without.* (Generator-Retailer)

■ Volatility

One generator-retailer said Whirinaki had introduced more volatility and had had some impact on prices.

> *It probably introduces more volatility into how we see things going which has had some impact on prices yes.* (Generator-Retailer)

No difference

Those who took the view that it had made no difference to risk reasoned that they were still left with having to take the prices offered to them or that the reserve generation plant was too small to have any effect one way or the other.

> *Made no difference. Just from our point of view we are a price taker, rather than a price setter because of our size, so from our point of view it hasn't made a hell of a lot of difference.* (Generator-Retailer)

> *We don't believe it's made any difference at all. Total waste of money*. (Purchaser)

> *It pretty much makes no difference because it's not big enough and there's not enough there. In a way it kind of encourages generators to push up their prices to the trigger point, so it kind of has a reverse effect.* (Purchaser).

The size of Whirinaki, it was argued, meant that its capacity to stop prices rising was limited.

> *I've said it makes no difference to risk, but probably rarely reduces risk in the spot market so I'll change that, but I don't think it reduces the risk a hell of a lot, I'll put "but not by much".* [Why not much?] *Because it's a 150 megawatt generator out of 2000-3000 megawatts of generation in the country so - and I guess it can also, because it's there and because its spinning pattern is known to some degree, the generators could probably game that if they want to, they could shadow price that generator.* (Purchaser)

> *I don't believe it makes any difference … it acts as a bit of a price cap but only to the extent that to the level that you do have reserve generation and that's only going to be a finite level and once you go above that, once you go further than that then you still end up with the price potentially going as high as it could go.* (Other)

Another respondent felt any short-term influence on capping price was balanced out by the effect on investment on generation.

> *You could put an argument that says that it actually discourages baseload generation. That could in fact have a detrimental impact on security of supply so on balance I don't think it makes a huge amount of difference.* (Other)

Location was also a factor for some respondents in the South Island who said the HVDC link effectively prevented reserve generation having any influence on them.

Unsure

One or two respondents were unsure about the impact of the reserve generation because of their location with respect to Whirinaki and were more concerned about the reliability of transmission.

> *There's a small volume there I think it's a couple of hundred megawatts. I'm uncertain whether it's position is in the right place because we're facing transmission risk in Auckland and North and that's not going to help us here …* [It's not that it makes no difference, you're just unsure?] *Unsure, yes. And unsure of the impact in the future given the transmission issues*. (Purchaser)

Affect on strategy

The presence of reserve generation had had little or no affect on hedging strategy for almost all respondents. Some had a hedging strategy that totally ignored Whirinaki and for others the size of the reserve generation was too small to influence their strategy.

> *Not changed our hedging strategy because we work as if it wasn't even there because we have a clear strategy in hand for what we need to do and we have been quite public about that. We need to cover ourselves for a dry year situation when our generation is low. So, we try and cover all the differences between what we could expect from our generation in a dry year and our expected demand.* (Generator-Retailer)

> *It has not affected hedging strategy. That's because the reserve generation is not that big. Also, its location probably means it can't be used as much as they would like it to be.* (Generator-Retailer)

For some purchasers the price of reserve generation was simply too much to bear, so hedge arrangements had to be sought regardless. For this reason, the purchaser resented having to pay for Whirinaki through a levy.

> *It makes no difference because with or without Whirinaki - Whirinaki at best will cap the price at $200 MW/h and at $200 MW/h our company will still go out of business if that is what we are paying for electricity. So, we have chosen to manage our risk by hedging contracts to protect us against rising prices during dry years. Whirinaki has come along and we are paying for it in considerable sums of the money at the moment and yet we are still having to manage our price risk by buying the same hedge contracts, so I don't think it has made any difference at all from our point of view.* (Purchaser)

Risk management training

There were mixed views on risk management training. There were courses available to those who wanted to avail themselves of what was on offer.

> *There are attempts to provide risk management training. Some of that is provided by market participants themselves and some is provided by energy industry experts who are not directly involved in the market. Is it useful? Yes, any training in any particular sphere is useful.* (Generator-Retailer)

> *Yes. There are a number of providers of training - EnergyLink and M-co, but whether the Commission itself should be involved I would have thought it would not be part of their core responsibilities. If parties don't have sufficient understanding of risk management there are parties that can provide that in a competitive manner.* (Generator-Retailer)

In-house expertise

Larger purchasers and generator-retailers said they had sufficient in-house expertise to manage risk. Some though felt that others would benefit from attending such training courses.

> *In our situation, there has been training and received by myself. If you want to have the training it is available mainly by private companies I think. Within our company we have sufficient knowledge or engage the right people to run our risk management programme effectively.* (Purchaser)

> *Yes – have sufficient skills internally. Yes to free training courses for the medium size users because many are not aware of the risks involved. Many are just doing it through their retailer contracts and I don't think they are aware of the different kinds of risk management hedging devices that are available out there. For example, we only take a certain level of exposure – we only take fixed price, fixed volume contracts because we are quite happy to have the last 20-30% exposed rather than take retail contracts which are a hell of a lot more expensive.* (Purchaser)

Greater sophistication needed

Some generator-retailers said there was a need for more purchasers to consider electricity on the same level as foreign exchange risk and to allocate responsibility to a treasury function within the organisation.

> *I mean there are a number of courses provided that I get them – one a week, an invite to different ones, so yes they are available. They're not necessarily that cheap to go on. And probably the same principles that would be involved with a corporate. They have a treasury function and I think one of the issues is that most New Zealand corporates tend to leave electricity at the purchasing of stationery and toilet paper end rather than focusing on it. It's the same sort of risk as foreign exchange or interest rate risk. So if they want to move it, in terms of importance, from just a general purchasing to Treasury, yeah maybe they've got the wrong people that are looking at it, would be one potential issue.* [Is that saying that the focus on the courses could be better designed to target the shift of awareness of risk?] *From a sector it's probably in all of our interests that the knowledge is increased.* (Generator-Retailer)

> *We do see the need for further education and I think part of the problem that we've got is that a lot of the talk around hedges is analogous to other markets whether it is foreign exchange or interest rate markets. Unfortunately the people that participate in these markets are procurement type people who are used to buying 100 Daihatsu Charades for their staff or 500.* (Generator-Retailer)

The gap in expertise and understanding of the market between generator-retailers and some purchasers either added stress to relationships or meant unusual latitude was made for purchasers.

> *The understanding is still not very deep and we have a situation where when I arrived three or four years ago I used to take an inordinate amount of time to price reasonable term transactions and it took far longer for us to hear back whether we had won them or not. I come from a financial markets background whereas if somebody was to keep you on the phone over a reasonably sized interest rates or foreign exchange transaction you wouldn't be hanging on for much more than 15 or 20 seconds; these people might keep you waiting for a month. So one of the things we've done is say no, the prices are open for two or three days – that's it. If you want another price call us back. And that has caused some stress.* (Generator-Retailer)

> *One of the really unusual things about when prices go out to end users is the length of time that they're actually able to sit on that before making a response. Basically generator-retailers give them a free option for potentially up to a month to two months where in any other market you give them a price and you want an answer back often on that same day, usually the same week. You wouldn't leave the price hanging out there.* (Generator-Retailer)

An example of a somewhat simple approach employed by purchasers to hedging was the practice of buying hedges in two to three year blocks rather than staggering purchases to better balance risks.

> *The impression I got with a lot of it was that they all came to an end say in September or they all came to an end in June and that was just because someone had gone out and said "right, we need to go and sign some hedges …". They would do a one-year or two-year deal without having a staggered approach. The ideal thing would be for people to have them maturing, some in March this year, some in August next year. A lot of that, I think, is people not understanding that there is a seasonal impact with electricity contracts and depending on how far out you're buying or you're wanting to sign your deal, you'll get different answers. It's not like buying a mortgage contract. Say I want to buy a house tomorrow and I go to the bank and I do a deal today and take that from tomorrow.* (Generator-Retailer)

A respondent who provided risk management training agreed that there was a lack of good risk management knowledge among purchasers.

> *I think a lot of companies lack good risk knowledge. I'm a little conflicted here as well because we offer this to certain small people. But sometimes also a little knowledge is harmful and there's a risk. Sure, I think they need to understand the issues and they need to be able to realise that there is an issue and that they have to be able to deal with it. Whether the training goes to the level of detail that they do it all themselves is, I guess, where I question it. It's where on that scale the training goes to.* [Depends on the size of the enterprise too] *Yes.* (Other)

■ No incentive to invest in training

However, some smaller purchasers, where electricity represented a very small part of their company's total input costs, did not see the need to invest in training.

> *We don't see it as an area where we should skill up because electricity is only a very small input to our business. It doesn't make sense to have skills in that area.* (Purchaser)

> *I guess there's a lot of training courses run by M-co in terms of how the market operates which we've never exposed ourselves to which would be helpful.* [Training helpful but a resource issue in the company to have someone focus on that] *Our risk management strategies across our business are not well developed so I guess it's no use understanding the complexities of electricity futures if you like if we don't apply some more advanced risk management strategies.* (Purchaser)

> *If electricity as a portion of your total operating costs is 1% or 2%, how much effort are you going to put into it? I think there's a pragmatic approach there. If it's 5% or 10% probably they should be making a fair bit of conscious effort to keep updating.* (Generator-Retailer)

In some cases, respondents preferred the services of an external energy consultant to assist them.

> *It comes up only every three years, well only when we go back to market which has happened in multiple years and we follow a process that gives us confidence that we have got a good offer to accept so we used some forecasting. We used a consultant who's in the market. We got feedback from them. We used them to go out and get the offers and then we had a number of internal presentations that I gave to really say "look, this is the process, this is the answer, there's no surprises there".* (Purchaser)

Similarly, those who said they had little control over price saw little need to learn more.

> *From our company's point of view I don't think there is any need for extra training. We're not price setting – we're price taking. I guess if we were heading into the market I'm not sure what sort of training is available, but I am not sure it is something we would get involved with. It's not really an issue as far as we are concerned*. (Generator)

Others were sceptical about what could be learned from the courses that were available.

> *I went to a course on the hedge market put on by Lincoln University and Mighty River Power. It didn't really teach me much. I learned a bit about the perspective from the generation side. There are electricity summits each year, but you wouldn't learn much from that.* (Purchaser)

■ Training topics

It was suggested that one area where more training could be provided was on policy changes, particularly when submissions on those changes were invited.

> *A lot of the policy changes that are happening, there's a lot of working groups out there. There's a lot of invitations to provide your opinion, a whole raft of things from the hedge market to transmission. And even just understanding the details of what you are being invited to submit an opinion on takes a bit of work so I think it's in that area.* (Purchaser)

Another area was the provision of up-to-date information on critical factors that could affect price.

> *Maybe something tailored more to the person who knows something, but wants to know more given that we are not in the industry, we are on the other side of the fence looking at the industry and we're purchasers. The electricity is not our business, we make other things.* [What areas would you particularly like covered in something like that, that you feel would be really useful?] *I guess it's a moving feast to be quite honest. Things change, I guess as the water levels change as plants are available and are not available, as people's supplies are available and not available, as transmission is available and not available.* [So is it more just information, providing an update of what's currently the situation?] *Yes, it's difficult to say because it's quite a wide ranging thing. Water has the main affect on spot price and I guess on hedges, so not an easy thing to answer.* (Purchaser)

One respondent said there was little point attending forums to be taught to use hedges when effectively few competitive hedges existed.

Role of the Electricity Commission

Most respondents said the Electricity Commission should take great care in facilitating the provision of risk management training to the sector. Some were quite clear that this would be an inappropriate role for the Commission and would not like an increase in the levy to pay for such an initiative.

> *I would have thought it would not be part of their core responsibilities. If parties don't have sufficient understanding of risk management there are parties that can provide that in a competitive manner. It's not up to regulatory bodies to oversee training – if they want to put material on their website or facilitate development if what is on offer is not adequate or significantly different to what they believe should be around, but I don't think they should be in the business of providing training.* (Generator-Retailer)

> *I don't think it would be an appropriate role. They could issue guidance if they believed it would be useful for participants to undertake training, but I don't think they should provide that training themselves.* [Likely to lead to conflict for them?] *Yes. Any training or any transfer of knowledge from one party to another it will include a lot of opinion and information based on individual's backgrounds and that may be seen to be bias depending on the individual's history. It's not an appropriate role for a regulator.* (Generator-Retailer)

> *I think they have a role in education but to the extent that they are providing– depending on how it was done, you could end up providing information that gets out of date very quickly so you can provide generic courses but if it's a case of saying* [name] *is long – therefore you might get a good deal from them this month or* [name] *in this position and then you might get a good deal or not. I think that fits. That's not what they ought to be doing*. (Generator-Retailer)

Others said there were sufficient training providers out there already.

> *I think the EC should focus on other things than providing training. There is adequate training available – M-co provides training Energy Link provides good courses.* (Purchaser)

While some envisaged a limited and tightly defined educative role.

> *They should be an advocate for education, generic education*. (Generator-Retailer)

It's skill-based training, not information passing on. Because I think the other thing to remember is that they do play in the market. To the extent that they're currently consulting on whether they should be changing the offer strategy for Whirinaki, that's the reserve plant,– fair trading might be an issue they might need to look at. (Generator-Retailer)

I think it should pitch it at the level that means that companies understand that risk is a problem. Risk management's an issue and that they give some basic training but to the extent that it highlights that there's a problem that they need to be able to get help or whatever. There's a lot of people out there who – I don't know if it's so bad now but there were a lot of people that were out there who were exposed to spot price who got stung and now they've swung the other way where they go fully contracted because they don't want to have any risk at all. I think there's a balance in the middle but I guess they need to understand. I don't know quite where you'd pitch it but I think the Commission needs to probably be careful how it pitches it so that they don't end up being exposed themselves. If they've given some training to somebody and those people used that training and made poor decisions, that could be an issue. (Other)

If there was a role for the Commission, it could be to assess the demand for courses and subsidise them.

Not appropriate role for EC to provide training. They have to be very careful to be independent. They can advise people to go and see such and such for training and they could subsidise that, but they should not offer the services themselves. Also, retailers should be providing more information - Trust Power and Mercury have provided this. (Purchaser)

The job that they could do rather than do that is to do what they're doing with you guys – is to assess what the demand is and then facilitate providers for that. I don't think I want them to get into actually doing it themselves so much. (Generator-Retailer)

One respondent said it would be useful to learn the views other than from a few of the resident experts in the industry.

I think that would be good. I think if they want consumers' opinions then it would be good for consumers to understand what's going on. There are a few experts out there, you know, they are quite dominant in these advisory groups in putting forth submissions, but it would be nice to hear from others. (Purchaser)

4.5 Hedging policy

Only those with significant risks to manage had formal hedging policies and the degree of awareness of risk appeared to be reflected in the complexity of the policy adopted. For some, broad guidelines were deemed to be sufficient.

> *Our hedge policy at the moment is 60% for the year we are in and then stagger forward 45%, 30% and 15% so we have a staggered hedge programme. So, we take another 15% each year across the four years.* (Generator-Retailer)

> *Not a firm policy, but a general policy to hedge around the 60% level and currently it is up around the 80% level. 60% would be the minimum level.* (Purchaser)

> *Basically when I say firm policy, to date we've hedged 50% on our big time-of-use sites. On all our rats and mice sites it's just retail.* (Purchaser)

Others were governed by clear guidelines that covered several aspects of hedging requirements reflecting earnings at risk.

> *We do have a risk management policy which dictates what sort of hedging levels we need to be hedged to. There is nothing as firm as say at what levels we need to be at a certain point in time in the future. That's left to myself to optimise within the broader parameters of the risk management policy. I can't give you those details, they don't speak to hedging levels directly. I am not sure if you are familiar with earnings at risk or cash-flow at risk type terminology, but if we have a mean expected earnings then we have a policy which dictates how far either side of that mean expected earnings we can allow our book to operate within. So, given the natural uncertainty in electricity prices and volumes going forward, we will run multiple simulations to look at what the impact on earnings will be for a wide range of outcomes in the market and those outcomes are not allowed to deviate beyond a certain percentage from the mean. So, it follows that hedging is a very important aspect of that.* (Generator-Retailer)

> *We have an electricity risk management policy which I comply with. It has a number of different requirements one of which is percentage of hedge cover, one is term price, counterparty, credit risk so there are a number of different areas that need to be considered*. (Purchaser)

> *We've got a trading range. We've got a very clear, defined and very well audited set of wholesale trading policies. It has a one year and a three year limit on range. I have about 600 gig of discretion to trade across if it's around 3,000 – so it's about 20%. That's about what I have trading money to trade with.* (Generator-Retailer)

> *The first part of our base load volume we will hedge if the premium is at 30% compared to predicted spot price, for the next quarter. We will hedge if it is 20% and for the remaining quarter we will hedge all of the base load if it is a 10% premium. We also have a staggered hedge portfolio, so we have a different expiry date for our hedges and we are always testing the market all the time. Usually hedge three months before due to expire in the hedging season – spring thaw.* (Purchaser)

In some of these cases, sale or purchase decisions were exercised within certain parameters of delegated authority set by the board.

> *We have risk parameters that are set by the board or agreed by the board. We put our parameters to the board which they then endorse and so to the extent that we then are trading within delegated authorities and to the extent that someone wanted us to go beyond that, then we'd need to see further delegation.* [Are those risk parameters linked to earnings?] *They are financial.* (Generator-Retailer)

But set guidelines did not necessarily preclude the ability to offer hedges even if their generation book was full.

> *Yes we do. We have quite a comprehensive risk management policy and procedures. It is quite sensitive but it is just pretty basic risk management…we tend to try and contract more than three months in advance to maturity. We try and do at least one or two years deals or longer. We don't have them all maturing at the same time, we try and spread our counter party exposures for credit risk management. … We do have what is known as 'value at risk limits' which is pretty standard across the industry but the reality is that we get there through price – if we're not comfortable with the exposure we will price it accordingly. So we have quite a dynamic risk management framework in that regard so it is not like others that clearly say we've reached … We've sold all we can sell therefore we stop. We don't do that – we keep selling, but at higher prices. Because all those are prices you are prepared to sell at, no matter even if you don't have it.* [Because you think you'll be able to?] *Buy it cheaper than what you are selling it at. But that's the traders' way, that's how traders make money.* (Generator-Retailer)

Hedging flexibility for some generator-retailers was critical to take advantage of opportunities offered by a tight market.

> *Yes, we do have a firm policy to hedge to a certain level each year, but it's not fixed in stone – it is something that we will evaluate over time … If there was a tighter supply-demand situation which we are experiencing now you probably aren't going to hedge up to the same extent. So, you are more comfortable that having some generation available to take advantage of the opportunities as they come up. Our bottom end would be 65% hedge while our top end would be sort of 85-90%.* (Generator-Retailer)

One respondent said his company was developing a hedging policy with an eye to investing in generation as an alternative.

> [Do you have any other policies around your hedging?] *Not really. We're just developing a firm hedge strategy at the moment. Up until now we've worked on some guidelines so at the moment the guidelines, we've had five years hedge in front of us and we'll review it every year so we're reviewing it four years before it terminates. And that's really about, you know, if we can't get a hedge our only option is to build our own generation and we're going to need three or four years to do that. So that's why we have the four years in front of us.* (Purchaser)

Others adopted a reactive approach to circumstances as they arose.

> *No. Driven by prices, value and risk at the time.* (Purchaser)

> *No we don't have a firm policy which says that you must be X-percent hedged. I guess it's just, we look at the risks and rewards at the time and how well the company is doing or how well it is not doing and, how well it is able to take a thrashing for a few months on electricity*. (Purchaser)

> [Do you have a firm policy to hedge to a certain level each year?] *No we don't.* (Purchaser)

> [Are you aware that companies tend to have firm policies on how much they'll hedge each year?] *No. Some of our biggest customers do. They've got a hedging policy and they work out, they say in advance this is how much they're going to be, what percentage is at risk or whatever, but the majority of our customers wouldn't.* (Other)

4.6 Centralised trading

■ Support in principle

While there was across the board support in principle for the establishment of a centralised trading platform, the degree to which such a platform would be supported would depend on its design. Similarly, the volume of trade that would be directed through the platform was largely a function of how competitive prices would be.

> *It would depend on price obviously, but in terms of our most recent feelers we put out, we were talking about hedging about 50% of our load – that would be our opening gambit and if the price was right we would go to 100%, but it would have to be a pretty sharp price. 120 GW/Hours annual consumption.* (Purchaser)

> *Oh yes, we'd be interested in that.* [What percentage of your load would you look at possibly purchasing off that platform?] *At least 50%.* [What would that represent in MW hours?] *That's on the table there, about 12-13 gig.* (Purchaser)

> *At certain times we would be a supplier if we felt the price had got to a point that it was attractive enough to lock in a price for short term trading – 1, 3 or 6 months. Longer term we would tend to look at other products because we are also active in the retail markets, so if we want to hedge long-term we would probably look to hedge with a customer who also pays the retail margin*. (Generator-Retailer)

Tool for checking prices

Provision of a centralised platform was also seen as a tool for checking price or balancing the amount of information available across all participants and as such it would be used, but more on an occasional basis.

> *Yes. Probably 5MW/hour of power and would only use occasionally. It would be an incredibly good way of checking on pricing.* (Purchaser)

> *I am not saying we would use it, but I would be interested in seeing what comes out of it. But it's a question of if there is some efficacy in information it would be worthwhile. It's not just the standard platform – it's the information that backs it up*. (Generator-Retailer)

And another saw some attraction if the central platform operated like a futures exchange.

> *I think we've looked at this if it was like a futures exchange. In terms of how much would you look to do, I think it would be a function of a number of issues*. [Can you just give me those kinds of issues?] *We would still want to obviously retain the ability to do over-the-counter transactions and bilateral agreements with people. Potentially if it was a futures exchange, obviously credit risk becomes nominal, it becomes non-effective and it would depend on how that market worked.* [But in principle the answer's yes?] *Yes.* (Generator-Retailer)

Concerns

One generator-retailer said if it were a requirement that hedge contracts be placed on the trading platform it should be limited to about a 5%.

> *It is very hard to have a standard contract – the biggest damage that could be done is if someone says we want all contracts traded through something or rather. Like I said if you had 5% of them having to be traded through to find a price that's different from saying everybody's got to trade through something – that would be horrible for us all.* [So if you did that you'd only want to trade 5%?] *Yes something like that. They only want to be a small percentage of the total throughput and the rest of it … because really it's a way to discover benchmark price. It needs to be enough that people will put the effort into actually buying through it so if there's a sense that people need to – if it's too small then people aren't going to bother. I think 5% will be alright.* (Generator-Retailer)

Another generator-retailer said it would be too impractical to operate a trading platform if parties who both bought and sold hedges at the same time were involved as that would bleed the liquidity out of the market.

> *No, well I mean to some extent we have got one in energy hedge, but this idea that there is a website that people can come and buy energy hedges off and generators and retailers are obligated to put prices on it for people that just, you know, purchase and sell as they see fit. There's no precedent for that ever having worked anywhere else in the world in a market of this type or been worked overseas in financial markets I know for a fact.* [Why won't it work – because it's too small?] *I think the main thing is for a market like that is it needs liquidity. Now at the moment you have people who can come in and just buy or sell depending on how they feel, but if you have got a small club or a small group of people that are obligated to both buy and sell at the same time means that the people that have just come in to do a one-way transaction, bleed the liquidity out of the market. So it's like having a balloon, it's fine as long as it's sealed; the moment you open the escape valve, which would be, and that's why I've underlined the word purchase in there, the moment you do that you open the balloon up then it will deflate. I know for a fact that we would have no show of getting risk limits for a market of that arrangement through our board. I wouldn't recommend it either. In saying that a … yes … no … I mean certainly not to purchase. I suspect that people on the other side of the market will say that it's a fantastic idea.* (Generator-Retailer)

■ Transparency and liquidity

One respondent said a central trading platform would increase transparency, but not liquidity as he did not believe it would increase the volume of trading.

> *Yes. If deemed helpful to transparency. In question 25, the question was do you believe that standard hedge product would add liquidity – and I presume you meant transparency to the hedge market. And I have answered yes to transparency, but no for liquidity because I have different views about the two and that follows on from question 13 because I think you are better off to have a platform like this to provide transparency, but I don't think it will increase the volume of trading. Although I believe there is sufficient transparency in the market at the moment, but if other participants particularly the buy side felt this was more useful, we would be happy to participate in it.* (Generator-Retailer)

In contrast, other respondents said a central platform would be useful if it did increase liquidity.

> *If we could get something that was relatively liquid I think it could be quite useful.* (Other)

> *If that market was a strong market, lots of volume, lots of trading being done, then we would probably look at maybe 20% of our volume.* [How much is that in megawatt hours?] *10-odd megawatt potentially.* (Purchaser)

Simplicity for some

Those who considered electricity as a small input cost saw advantage in a platform as long it did not complicate matters for them.

> *Depends what's offered through the platform relative to what is offered by the generators. Essentially, we don't want to make our electricity purchases too complicated, but without seeing the structure it's hard to say. Electricity is in the order 5-10% of input costs.* (Purchaser)

Some respondents, who had long-term hedges, saw a central platform as a means of topping up supply from time to time on a short-term basis.

> *50MW. But in saying that we do have hedge cover now for the next 12 years up to 60% so we would look at topping up on a more short-term basis.* (Purchaser)

Transmission hedges or FTRs

There were some purchasers who were reluctant to use a centralised platform as they said it would expose them to transmission risks. Their preference would be to take a bilateral hedge at a grid exit point close to their load or possibly to negotiate tailored conditions with a generator.

> *It means we take all of their transmission risk and if there are any risks of constraints that's ours. So we prefer a hedge which is closer to where we physically take the electricity.* (Purchaser)

> *On a centralised trading platform? I interpreted it to mean that there would be a couple of nodes – Haywards or somewhere else where you could just buy a hedge at a standard price and then there would be some add-ons if you wanted location or different force majeure arrangements, so I don't know. We'd like to hedge 80% of our load, we'd have to figure out if this was a better option than dealing directly with a generator.* (Purchaser)

If such a trading platform were created then one respondent said transmission hedges or financial transmission rights would also have to be available as a means of managing basis risk assuming the energy hedges would be vanilla products.

> *Probably no different to what we try to achieve today. It can range from about 40% up to about 90%. I think it would increase the transparency levels if we had a trading platform depending on how it was designed, but if it displayed so participants could see what contracts had been traded and at what prices and terms like that. UK experience a number of online trading platforms which was very useful for price discovery and was very transparent. In terms of a caveat on having something like that in place e.g. vanilla products at Haywards at a certain volume, the issue then is how participants would cover their basis risk. So, something like around financial transmission rights or hedges would probably need to be considered if this was what all that was offered.* (Purchaser)

4.7 Other contract elements

Question 42 asked purchasers to rate various contract elements including price, term, profile and location and any other services provided by counterparties. Most respondents rated other services provided by counterparties as least important relative to issues like price or location and when asked to specify what these other services were they were unable to do so.

However, one or two respondents did attempt to identify services. These included factors such as a generator's relationship with the local distributor, an ability to be provided with accurate information about short-term price increases for those with their own generation capacity, tailored billing and energy efficiency advice. One respondent also touched on the treatment of carbon tax which though not a service that a counterparty would be able to provide nevertheless reflected a key uncertainty for them.

> *Treatment of carbon tax, whether they are a local or national generator, relationship with network company to a certain extent. Any energy efficiency service they can offer and the volume of the hedge relative to consumption they can offer.* (Purchaser)

> *We need our supplier to advise us and to take the risk so we get a minimum of $200 MW/hour. That's on the energy side of it but we also need our network supplier to advise us on when to run, when there are network constraints. We need our generating capacity as back-up anyway as a matter of policy but because they're big and historically there for reasons that are now not justified – you'd never do it again but they're there. We need an opportunity to run them in anger at an economic way whereas if we're buying electricity at 70 cents and it costs us 20 cents to run, we need regular opportunities to run them at a low economic cost so that we can test them. So we need to have that built into our contracts. Now we've done that and it works quite well.* (Purchaser)

> *We sell everything to* [Generator-Retailer] and *we also have a hedge contract with them. It's all part of the agreement.* [Other services provided by counterparty?] [Generator-Retailer] *bid into the market for us. We tend to sit under their wing a bit in that respect and they do some of that market type stuff for us because we don't have 24-hour control rooms, so they do that part of the work for us*. (Generator-Retailer)

4.8 Force majeure/ Suspension clauses

4.8.1 Arguments against FM and suspension clauses

The inclusion or force majeure and more particularly suspension clauses in contracts that were not regarded as "acts of God" found favour with only a very small number of generator-retailers and were almost universally opposed by all purchasers.

■ Only acts of God

Purchasers regarded suspension clauses as a device for passing all the risk onto them including risks that they believe rest with generators to manage, such as, plant failure.

> [Which types of FM causes are unreasonable.] *So I've said the generator's assets. I mean if they're in control of their asset and they have a breakdown it's their responsibility. And basically anything outside the standard FM which is war strikes, earthquakes, that kind of thing.* [Why is that?] *That's what force majeure is historically, something that is outside of your control.* (Purchaser)

> *A true FM is the power company saying "we're not responsible if it's an act of God" or something like that and that's probably reasonable in commercial terms but yeah, from my point of view that's probably all so you might like to say there "hey there must be some reasonable FM clauses", but suspension clauses and things like that, the power company should be able to control, are unreasonable.* (Purchaser)

> *A financial derivative if you go to an international fully liquid market like FX or exchange rates there is no FM clauses. Now there are valid arguments for having FM or suspension clauses in New Zealand, but for non act-of-God events I don't think they should be there.* (Purchaser)

■ Dominance

Respondents linked the ability to transfer what they considered unreasonable risks to purchasers on what they regarded as the dominant position of the generator-retailers.

> [What sort of FM/suspension clauses are unacceptable?] *90% of them. Uncertainty of the carbon charge for any term after the tax starts, strikes and things like that being added. Companies are imposing fairly strict FM clauses because of their dominant position and they can get away with it because people don't have much of a choice and that's a classic symptom of lack of competition. For example, there should never be a FM clause relating to hydrology or fuel supply. Those things are within their control.* (Purchaser)

We are trying to cover our risk at its highest and when generation capacity is at its lowest and that's the time when the price goes through the roof. We have found that suspension clauses begin to operate when a generator's generation goes out the window which is exactly the time we want it. It's very one-sided because what they are saying is that they are not covering that risk when there is a high risk. So, you have to question how good a hedge it is. If the market was more competitive, I wonder if those clauses would be achieved. There is a certain amount of leverage on their side that they can compose those things rather than in a free market. Some of those suspension clauses really reflect the monopoly power some of these people have otherwise they couldn't achieve them. (Purchaser)

There's a number that we find unacceptable and recommend to our customers that they shouldn't ... sometimes because of the lack of competitiveness in the market you're in that position where you might be stuck with the option of accepting this contract with an FM clause that you think is unacceptable or not really having any other option but to accept that, in which case you try and negotiate the clause away but it's very unlikely that you'll get away with that. To me, I think anything that covers anything more than just natural disasters is really unacceptable. A particular example that springs to mind is where someone's turned around and said "if we have any problem with any of our plant– effectively if our plant isn't operating to a certain level and prices go high then we're not going to –" so that sort of thing I think is – it's beyond who can control that. It's not exactly an act of God. (Other)

■ Nullifying the hedge

The transfer of some risks led some to question whether hedge contracts had any value if they could be suspended at the very time they were needed most.

Some generators don't have FM clauses in their contracts which I think is right and others tend to and the time the FM clauses are activated is exactly when we need the hedge cover. So, we aren't really interested in talking to those counterparties because that is exactly why we have a hedge. It is a financial instrument and shouldn't have any link to the physical, but in New Zealand they do and that's because we have an illiquid market. For companies that own thermal generation, if there is a maintenance outage on one of their plants planned and there is a breakdown on a second plant then an FM can be activated which also means if that company was acting in bad faith it could force a hedge contract or take action so they wouldn't have to honour it. But let's assume there are legitimate breakdown reasons of two significant thermal plants that will have an affect on the price which is exactly why you need the cover over and above the dry year hydrology issues. (Purchaser)

As soon as the suspension clause is in there, that moves the risk to us and if the risk gets moved to us, the price should come down and it doesn't seem to me as though the price comes down sufficiently because when suspension clauses get applied, is when the price is high, normally. (Purchaser)

Hedges should not have FM/suspension clauses. Basically, you are buying hedges to get protection against these kinds of events, so when you have FM clauses you are giving the generator money for nothing. They are risk insurance contracts and these clauses make them useless. If they [generators-retailers] *were cross-hedged, it would put the incentive on them to ensure they had decent thermal fuel supplies. A more stabilised profit stream and less volatility might help them to invest. No hedges are ever acceptable and none of mine have them. One had a hedge contract which had FM and suspension clauses during the dry winter of 2003 and were at the same prices as other hedges – and what's the point? Will no longer ask them again.* (Purchaser)

This view was also supported by a generator-retailer.

If you are talking about true force majeure there is some rationale for that as long as it is reflected in the pricing. Suspension clauses I don't really think are viable – you are trying to take all the money and pass off all the risk. Then you are taking away the value. It makes no point in having a hedge in the first place – I've seen ones that reflect a major breakdown. I think you take the risk for your own plant maintenance and safety and things like that. So, those sorts of things I don't think are force majeure. If you got something like that they are just passing off the risk because if the prices are low in the market they certainly wouldn't be abrogating it even if they did have a maintenance breakdown – it's too one-sided. (Generator-Retailer)

4.8.2 Arguments in favour of FM and suspension clauses

■ Price the risk

If risks were to be transferred they should be priced accordingly and one generator-retailer said they were priced fairly.

[The reasons you shouldn't have them?] *It's not appropriate.* [Your risk to manage your responsibility?] *We're the best place to manage it.* [Is that the only reason or anything else?] *No, it's a pretty fundamental reason. We think generally where they are offered into the market they are priced pretty fairly. We certainly price them for what they are worth.* (Generator-Retailer)

Under some circumstances

The same respondent said there was a significant difference in the risk born by a generator with a portfolio of power stations compared with the sole plant operator.

> *So we buy them with FM and sell them without. We don't think the FM clauses, given what we pay for them, are unreasonable though given what we pay for them. Now from an end-user perspective we think if the generator has a portfolio of generation assets then I shouldn't offer FM suspension clauses as part of the deal. We have some sympathy for small single plant people, also if you have spent all your money on a 10 megawatt station then that's it. We think you probably should be able to offer a deal with FM.* (Generator-Retailer)

Another generator-retailer sought to cover risk over a defined, prolonged period of plant outage.

> *We always look to manage our FM risk because in our business we have a lot of generation units of similar size, so we look to cover the loss of one of those for 3-6 months, so in the end we are not exposing the company to extensive risk.* (Generator-Retailer)

Limits to what generators can control

The defence of the inclusion of FM and suspension clauses ranged from the inability of generators to control aspects of the physical distribution, such as, the HVDC link, and the limited ability for some generators to purchase cover.

> *DC link is another one that people could put FM's over. See if you're Meridian you're actually supplying the South Island they probably don't do it, but they could say I'll sell you North Island product but if the DC link goes down I can't cover my risk. You could say well why don't they go to the market and try and buy something to cover the risk off of Contact but the market doesn't – it's our experience that Genesis who are best placed to provide a standard generation plant out of Huntly don't price that sort of product in the market easily because they've not been prepared to price that sort of product - it's hard to get it. So last year Huntly is the one it will come off. If there's a problem everywhere else it's coal fired. New Zealand's not going to build another coal fired plant so the only way you can store energy if you run out is use coal. The problem is, is that the market is too small. We need three coal fired plants – we've only got one. We're not going to get three. If the coal fired guy doesn't actually read the contracts off it you can't ask someone else to take a risk they can't manage.* (Generator-Retailer)

It is acceptable for some to have FM clauses but suspension clauses may be acceptable in some circumstances. I think one of our arguments here is potentially we do so in the North Island and if we're looking at the North Island we use a transport system that we've got no control over and if that falls over we still have obligations to meet but as I said, we've got no ability to get it there. [Is that particularly the HVDC link?] *Yes. We, in general, probably take exception to people having plant risk. Basically that's why they're there, to invest money in their plant. To ensure it's running and operating so in principle we're against people having that in place because they have control over that. We've got no control over the HVDC. It's something completely out of the bounds of our control. We feel that that's something that we can't do anything about.* [So the bounds of acceptability are what you have control over basically.] *Yes, I think, yes.* (Generator-Retailer)

It was also argued that some purchasers were better placed to manage risk than some generators.

If you're Contact then you're a North Island gas fire generator and you lose your gas so you lose 500 megawatts. It's not reasonable to say to Contact you must find a way of covering off that risk because they can't. But industrial customers may be able to shift the load so if Maui Gas goes down who's best to bear the risk of Contact not being able to generate – your Contact charge people generate more or should they just offload that risk? But I think it's reasonable for them under those circumstances to have a suspension event which relates to that because it's better that the industrials take it – there's a good chance if the gas goes down industrial ones aren't going to run anyway. (Generator-Retailer)

The counter to that argument was that generators should price that risk into the hedge rather than seek to avoid it altogether by suspending the hedge.

It just seems to be that not only are the offers aggressive on their basic pricing but they're aggressive on the premiums they're expecting for supply to different grid exits. They're really absolutely totally risk averse in those areas. In fact they're asking for a premium on the risk for grid exit point and force majeure. If they're going to supply you with a hedge then they have got to be – if they're not going to be able to get the gas then that is their problem. That risk should be built into their price I guess. We don't see that the hedge should be suspended. What they're saying is if Stratford combined cycle falls over and they're able to replace that generation with one of their other plants, then they won't suspend the clause, they'll suspend the hedge. So they're now talking about their collective plant rather than a specific plant. But also generators are becoming extremely HVDC risk averse as well and demanding huge premiums for covering that risk. (Purchaser)

■ Negotiation in a competitive market

There was also a view that as hedges were bilateral contracts risk transfer was a matter for negotiation and that as the market was regarded as competitive purchasers could go elsewhere if they felt they could not accept the transfer of risk.

> *Yes. We have FM and suspension clauses in our contracts. I believe that in any contract one of the key points you are negotiating is the transfer of risk. There is a price-risk trade-off for contracts and they will also vary according to circumstances at the time and I think that this leads into a wider point that perhaps doesn't come out in the survey and that is the requirements for people to purchase electricity hedges are largely specific to their business, their location, so you don't get an awful lot of standard hedge contracts which are traded. Now included in that is the ability or inability to manage different types of risk, so I think they are acceptable and they effectively form a negotiable part of the contract.* [If more participants seeking standard hedge contracts would that reduce the need for FM clauses?] *It would reduce some of the need. That is simply because of the mere fact they are taking out the standardised one. They have taken out some of the risk they would try to cover in a more tailored contract.* [All types of suspension clauses acceptable?] *If the clauses are not acceptable, then as I believe we have a competitive market you can go and negotiate with another party that has a different set of clauses or doesn't have any at all. And the thing about FM or suspension clauses, they are not a standard clause in each contract. They do vary as the sellers are trying to manage different types of risk*. (Generator-Retailer)

4.8.3 Price premium for FM and suspension clauses

■ A fair premium?

Some respondents never entertained hedges with FM or suspension clauses and were therefore unaware whether a premium was applied to those contracts without such clauses. Those that did recognise a premium were unsure whether that reflected locational risk or whether the premium was fair.

> [If comparable offers come in and one is without FM and one is with, do you ever think that's the premium you're paying for it?] *Yes there is. We are seeing those contracts come in at the moment. Mighty River Power tends to offer at the location load without FM and then the other parties don't. But again, what has got the premium, is it the location or the FM?* [So they are slightly more expensive?] *Yes.* [What's a fair difference?] *I don't know.* [You've got no feel for that?] *No, no.* (Purchaser)

Generator-retailers that purchased hedges with a premium said they passed that risk on to others. Equally though they were not able to determine the size of the premium if they were unable to get a price from another party.

> *If we are buying off the back of someone else's FM then my guys must place that FM through to the market. If we've bought it without an FM then they would sell it without at the moment.* [Do you have a premium on those with FM?] *If we buy with FM then that's the price we sell through with the margins. Yes, an FM contract – with FM we'd generally sell at a price a little lower than without. Working out the value of that premium is extremely difficult when you can't price from somebody else the cost of buying the FM*. (Generator-Retailer)

In any event, the cost of greater certainty had to come at a price, it was argued.

> *We've had the experience with selling hedges with and without FM or suspension clauses. We see it is an issue for price and for a higher price you can probably pay for more certainty and for a lower price you'll get some certainty, but perhaps not as much certainty.* (Generator-Retailer)

■ Premium not always reflected in price

It was also pointed out that premium did not always come through in price, particularly when contracts were traded between counterparties.

> *Sell contracts both with and without clauses. Yes, if they are sold without they are sold with a premium and premium does not necessarily come through in price, but it may be that you have traded off that contract for another contract, so you have swapped contracts between counterparties. We'll sell something to one counterparty and they'll sell something back to us. They are efficiently priced, and the evidence for that is if they weren't people would not be buying the contracts.* (Generator-Retailer)

4.9 Locational issues

■ Problem areas

Respondents identified a number of common areas around the country where it was often difficult to obtain hedges. Difficulties tended to arise either because of transmission constraints or the lack of generation in some areas.

> [What locations do you not put in at?] *Nelson*. [Why?] *There are just large and quite well known physical problems into Nelson. There's just not enough generation, enough transmission lines aren't big enough to take the power up. The other piece that we tend to avoid situations where large pieces of machinery are located at a node so you've got some particular transmission characteristics but a plant, sort of 60 or 100 megawatts of plant, is located on a single node, to avoid the situation where them coming off or them doing something materially affects the price.* (Generator-Retailer)
>
> *Some generators will offer a price anywhere, but the risk premium mainly around transmission constraints I can't justify the decision to accept it. Top of the South Island is one area where hedge contracts are difficult to get, Bay of Plenty because of traditional transmission constraints, central North Island is pretty good.* (Purchaser)
>
> [Any particular locations or areas of the country where that predominates more?] *They tend to be often out-of-the-way type places like the West Coast of the South Island or up in Hawkes Bay, Poverty Bay, up in Gisborne. Often where there are transmission issues. Where if you don't have generation within the constraint area, then you could potentially get caught with the locational risk.* (Other)
>
> *We tend to prefer zones close to our generation – we are not really that interested in taking transmission risk wherever possible. Specially we don't like to sell hedges in regions that have a history of quite volatile transmission issues – Hawkes Bay comes to mind, Bay of Plenty and even Auckland. There have been some improvements to transmission in recent times, but you suspect that something may go wrong at any time or the gains from marginal improvements in transmission capacity will be eaten up over time and that transmission constraints will come back.* (Generator-Retailer)
>
> *West Coast was tricky*. (Purchaser)

Limited choices

And some generators chose only to price at certain locations or from the purchasers' perspective priced too highly at a purchasers' preferred location.

> *One of the companies only price some of the sites so you could say that not all companies priced all sites and one of the main players didn't offer hedges at all. It was just purely spot, so of the five main players, three offered hedges for all sites, one offered for part and one offered none, they didn't even respond and that's a little bit to do with the North/South Island thing. One of our main suppliers told us direct, said "if you weren't an existing customer, if you came to us we would not offer you prices in these areas".* (Purchaser)

> *If you have only got two offers and only one is offering where you want but the price is so high so you go to another location – yeah it has happened.* (Purchaser)

> [Which locations do you have a problem?] *Top of the North Island and we're actually having a little bit of difficulty buying some out at around by* [Waikaremoana?] *because only Genesis supplies there and they seem to not be all that keen to price to us. Genesis almost seem scared that they're going to lose money by writing a contract so they don't write contracts and try and make money – I suppose you can't get yelled at if you don't write a contract because no one knew what it didn't make you.* (Generator-Retailer)

One purchaser was sympathetic to the risks generators faced.

> *We have sought new hedges at* [grid exit point, Upper South Island], *but it is easier to get a price at Benmore or Clyde because obviously from the generator's perspective it's far easier for them because they don't have to worry about the transmission risk. It's also partly because Trustpower has all the generation sown up from north of Christchurch, so from a competitor's perspective like Meridian they are taking quite a bit of risk in not having any generation in the area to constrain the price.* (Purchaser)

But equally there were those who felt obliged to accept locational risk, but were concerned that their only basis for valuing that risk was historical and not necessarily indicative of future outcomes.

> *Well we've had to buy in Stratford and we had no plants in Stratford. We've had to buy in Huntly and we don't have any plants in Huntly. But again it's a cost thing. So if it means we take on the locational risk - how we tend to value that is just looking at the last five years historical average and I don't think that's a good reflection of how it's going to be valued going forward.* (Purchaser)

One generator-retailer said that due to their size they did not sell outside their area of interest, but by the same token they did purchase outside their area.

> *As a small player, we don't sell outside our area of interest which is not just our incumbency, but we look at things in relation to our area of interest.* [How about purchasing?] *We will quite often say we are happy to take a Haywards reference hedge or Whakamaru area and we have said we will look at other areas, but generally people work on those two areas for us. We know from our monitoring what are usual location factors are and what the impact will be.* (Generator-Retailer)

Another generator-retailer said they had no specific policy not to price at certain locations, but tried to persuade purchasers to accept better deals at other grid exit points.

> *We provide – we don't have a policy of not providing hedges at some locations but we dissuade people from doing transactions at some locations and offer them better deals at others. Again, mainly where they are in a better position to cover that risk than us.* (Generator-Retailer)

■ Whirinaki

The establishment of reserve generation at Whirinaki had placed a limitation on preferred location for those who were more closely located to it.

> *Whirinaki did have a fixed price variable volume contract 10 years ago from there but since then we've not been able to get a hedge at Whirinaki because it's not close to any generation. I say that even though we have a power station right on the node but that's putting in at $200 MW/hr.* (Purchaser)

4.10 Duration

There were relatively fewer comments made in relation to problems getting hedges for specific durations compared with those linked to price, force majeure and location.

■ Shorter term offered

Some purchasers felt that generator-retailers tended to offer only shorter term hedges to avoid the perceived risk of longer term contracts.

> *If you look at the national hedge market the gentailers are actually not offering anything different. They have taken a step back and said to their customers that you as a customer will take the risk of price and we as gentailers will not take the risk and the way they do that is only offering short-term hedges and not providing hedges for full volume and by only hedging up to their generation portfolios or inter-generational hedges that they own. We went for 2-3 years, we found flat prices for two years and the three year price was significantly more expensive.* (Purchaser)

> *The short term of the hedges available – it would be useful to have longer hedges available beyond two to three years.* (Purchaser)

This view was supported by a purchaser that had obtained a long-term contract because they had sought its commencement after 2007.

> *I think the reason we managed to get people interested in a 10 year hedge is that we asked for a commencement point after April 2007. So we moved out three years when the generators book were pretty clear and they had the capacity to build for that period – if we had gone out with a six month lead time I doubt whether we would have got that.* (Purchaser)

■ Kyoto uncertainty

There was some support for this view from a generator-retailer, but as four generator-retailers are named in this quote we have had to delete the names to preserve the anonymity of the respondent. This respondent also raised uncertainties attached to the Kyoto agreement, a point that was picked up by others in reference to carbon charges.

> [What sort of durations?] *We've been looking for three to five years and* [name] *for example won't price at the moment. I think they've priced very short, but we're asking them for stuff 2007 to 2009 and they just said they're not ready to make numbers in that area.* [name] *will price too expensively.* [name] *and* [name] *are okay. They've got numbers for us – we mightn't like them but they make them up. I think the Kyoto thing is a big no-no as well.* (Generator-Retailer)

> [Any others that pop up?] *Length of contract sometimes potentially. If the person offering the contract insists that it's three years when the customer only wants two or whatever, that can happen.* (Other)

One generator-retailer said they had no policy not to offer hedges for certain durations up to 10 years.

> *We don't offer anything more than 10 years. That's pretty much – like that's a board limit.* (Generator-Retailer)

4.11 Credit arrangements

Generator-retailers do consider credit risk a key issue for consideration, but say that if problems do arise they are reasonably infrequent.

> *Credit arrangements can be very significant and we have quite a bit of argument and discussion about those. We have managed to resolve them in general, but the sort of credit ratings we get are never going to be economic for a player our size and it is not always easy to set things up in a way that can then be off-set against your market credit requirements as well, so often you are having to duplicate some of these things. And some of the players - even if they are selling you a base load hedge at a fixed price, where you are a fixed price payer, you don't really carry much risk at all anyway because it is part of what you are purchasing and what you are working on and yet a lot of people are still demanding that you have those things. So, we have put a cap on what the potential credit level they could seek to cover those and that's usually been accepted.* (Generator-Retailer)

> *If we take on a five-year deal with somebody we want to be sure that they're around in five years and I think if you look back over New Zealand's corporate history, it's probably fairly chequered and for us to be taking on a 5–10-year deal – I mean no disrespect - I don't know who these parties are but you want to make sure that the guy's around.* (Generator-Retailer)

> *Yes. Like any business we have a credit policy that's industry-based and then a particular assessment of a particular company within that industry. If we feel that conditions have changed or are very poor when responding to a request we may seek some level of security over the contract we are about to enter into and at times that has created some difficulties with counterparties. They are fairly infrequent. I think the key point to get across is that yes we consider credit being an important part of the contractual arrangements.* (Generator-Retailer)

For smaller companies compliance with credit requirements can be onerous, but it appeared that letters of credit and other arrangements have been successfully used to surmount problems.

> *Just the usual when you think you've got a deal and you find it is subject to some onerous credit requirement which may be quite expensive to maintain. It's not a problem that cannot be surmounted. It's reasonably infrequent. The smaller the player the harder it gets. If you are a large company with an investment grade credit rating that is not an issue but as a small participant we don't have one of those. We have very good prudentials and I can see if I was on the other side of the table I wouldn't necessarily take them by their word either and generally we have dealt with things through letters of credit and things like that.* (Generator-Retailer)

Lodging hedges as prudential security

Two generator-retailers were quite relaxed about hedge contracts being lodged as prudential securities.

> [Are you prepared to have contracts lodged as prudential security?] *We are and we have.* (Generator-Retailer)

> [Are you prepared to have hedges lodged as the potential security?] *Yes.* [So you're just totally comfortable with that as a form of collateral as such?] *Yes, we're happy with that.* (Generator-Retailer)

But it was not a straightforward matter for others who raised questions about prudential supervision and late requests to lodge hedges as security.

> *The cash flow streams that come from hedge arrangements go both ways – when prices are low you are not actually receiving and you have to give credit. It is something that cuts both ways – if you want to use their hedges as security it's not like it's just all one way. If prices are very high then they use the fact that they have got a hedge to reduce security concerns, but when prices are low and they are paying out on these hedges they should have to provide security as well. There is a degree of assignment I suppose. But you might disclose the one group of hedges that are all in the direction you want it to go, but not disclose the ones that are in the opposite direction. So, I think it raises interesting prudential supervision questions when you start assigning hedges or a group of hedges as security specially when it is against purchases for the spot market or things.* (Generator)

> [Are you prepared to have hedges lodged as a prudential security?] *That's a hard question that one. Yes, where it's explicitly priced at the outset. So basically that is a deal where somebody says we want you to use that hedge, place it with a trustee or a settlement agent so that we can reduce the amount of credit we have to provide, which as a result rightly or wrongly increases the amount of credit we have to provide. So long as we both go into that with our eyes wide open there is no problem if that is what they are going to use it for. Where I do have a problem is when they say nothing about that and then after the fact when the market gets tight they say we'll just lodge this hedge please.* (Generator-Retailer)

There was also a strong feeling that as a seller of hedges the arrangements were particular to one counterparty and their creditworthiness.

> *As a seller of hedges - no. We are not prepared to have hedges lodged as security - our hedge is with that counterparty and reflects our view of credit worthiness of them - we do not want a potential erosion of our deal by it used in the market. As a purchaser of hedges, we would only deal if we were comfortable with the terms*. (Generator-Retailer)

However, if more standard hedges were traded, it might be more acceptable.

> [What are your views on lodging hedges as prudential security?] *It's not always easy. Some of those things are not all that acceptable to be set over, so we haven't done much in that way. I think that's something we are going to have to work on more. That's one of the things that a standard hedge could allow you to do that much easier because that would be obviously part of a central hedge structure and would make it very simple. It could off-set some of the risk we have in the market place.* (Generator-Retailer)

4.12 Influence of the 2001/2003 dry years

■ Major changes

The dry years of 2001 and 2003 were a wake-up call for the industry and had a significant influence on risk management for all respondents.

> *I think 2001 was a learning curve in the industry. It made the industry, I think, stand up and take a bit more note of how it manages things. 2003 wasn't as dramatic. I think they, particularly 2001, demonstrated you can be, as a company, in serious trouble.* (Purchaser)

> *Makes you appreciate the value of a hedge if you had one or the consequences if you didn't – the financial implications. We see more value in hedges as a result.* (Purchaser)

> *The answer is probably yes. We now understand the risk. We certainly didn't understand the risk before.* (Purchaser)

And the impact on hedging was not confined solely to purchasers.

> *Yes, we have reduced the quantity we had hedged. We were sitting up at 80% for year one and then 60, 40 and 20%. We found in the dry year 2003 our generation was so far down we were actually having to buy off the market to meet our hedge commitments. And over the last couple of years the directors have got more relaxed about the situation. They went down to 70% and now down to 60%.* (Generator)

> *Most definitely it affected us hugely. We had a business unit that resulted us in being a purchaser in 2001 and the business units sales peaked in 2001 and we lost a lot of money and that had big ramifications for the way our business viewed retailing, generating and the whole risk management issue. Clearly the risk is asymmetric – prices can only go to zero, but at the other end they are unlimited. If you are going to expose your company to risk, you are better off being exposed to lower prices on the generation side than higher prices on the retail side. Certainly the experience of NGC taught everyone a lesson.* (Generator-Retailer)

Others rewrote their policies as a result of the dry years and beefed up their monitoring of electricity prices.

> *We rewrote our policies and procedures completely and reassessed the way we were measuring the unit risk. We had value at risk. We had a basically simple value at risk model we used to run prior to that and because the forecasts of price were inadequate then the value at risk model was understating the amount of risk which we had. We've changed that around and we run quite a different assessment technique now.* (Generator-Retailer)

> *Prior to the 2001 debacle we sat back and watched and it really brought home to us what the risk was of a very dry year and at that time we put in place some systems to give us more information at the operational end so the people who control the plant can see what the electricity prices are doing on a dispatch and final price basis updated very 10 minutes. So our monitoring became hugely more intensive and our management a lot shorter term.* (Purchaser)

And some said the dry years had reversed the pattern of tendering from purchasers to sellers.

> *There was a big shift from our point of view. It was typically consumers or large baseload customers who would tender their volume to generators and what happened we saw after 2001 it changed completely with the generators tendering hedges to major users. So our experience I'm referring to in this section is really only – in terms of when we're seeking contracts anyway – is only really involving two periods which was 2001 and 2004 and predominantly when I'm talking about these types of things, it's with two of the generators.* (Purchaser)

■ Higher prices subsequently

This reversal in the tendering pattern was now being reflected in higher prices.

> *Predominantly the main overriding thing is that we feel that we now have to pay an unreasonable price for managing that electricity risk and therefore we have to absorb it into our own business which is just a very tough thing to do in a company that really relies on continuity of production and sales and cashflow I guess. We're not well set up to absorb spikes which is the predominant reason we seek hedges.* (Purchaser)

> *Yes. Tremendously. We used to do open tender every two years and the retailer on our behalf would go out to the market and we would get energy links to analyse those hedges and see what they were like. And they have become a back-to back hedging arrangement with Trustpower and have become a fixed price variable volume contract by Trustpower. Now, we have a staggered portfolio against those 3 nodes and only at certain premium rates and we accept a certain exposure on the spot. With prices back then you could get a $55 MW/h for retail contract but the same now is about $100.* (Purchaser)

While the dry years had had a significant impact on electricity prices over the short-term, the longer-term price of fuel had also influenced hedging strategy.

> *That we would have 80% of our load on hedge.* [What was it prior?] *It was 80% but we hadn't been able to get hedges to secure the 80% and we were only buying I think one year in advance for two year hedges. So that changed to buying four years in advance, five year hedges, and that we would have a partnership arrangement with the predominant – the bulk of the 80% with one party. If you look back, coal has doubled in price, gas has tripled in price, electricity has doubled in price, oil has doubled in price since May '99, so there is a step change happening as well as that dry year thing. And I think the dry year hid where things were going in some respects.* [So it's a natural rise in price as well?] *Yes.* (Purchaser)

■ A few unaffected

There were a few purchasers who were unaffected. One purchaser had systems in place prior to 2001 to deal with those risks. This respondent also noted that the dry years had added to the cost of hedges because generators were now more aware of the risks.

> *Not much. The programme we had in place worked during those dry years and the policy we worked to was in effect during those two dry years. Sure things have changed since and not just for hydrology reasons. The dry years have made hedges more costly because the risk premium generators are choosing to add to these contracts is higher because they were caught out a number of times.* (Purchaser)

One purchaser though has since operated on the basis that it was unlikely that there would be a dry year in the short-term as a result of having had two dry years in 2001 and 2003. As a result, they were purchasing entirely off the spot market and if prices did not fall they would consider acquiring their own generation.

> *Without any analysis, but intuitively we have adopted the approach that if 2001 was a dry year and 2003 was a dry year, it reduces the risk of 2004, 2005, 2006 and 2007 being dry years. So, it hasn't gone into our decision-making mix to any extent. We'll just sit in the fox hole and wait for prices to come back a bit. What we have told generators that unless it's less than 6 cents there is no point in offering it to us because we won't be taking it. Obviously we do have an alternative which is to buy or build a power station – we have looked at that in the past and we may look at that in the future – that buys your hedges in perpetuity, doesn't it?* (Purchaser)

4.13 Demand-side responses to high spot prices

■ Limited response capacity

While purchasers said they had some ability to drop load in response to high spot prices, larger ones said that the duration of any reduction was highly dependent upon production runs at the time. Some plants had to run 24/7 and some had no ability to catch up on production if they cut-back for more than a few hours. In such cases, forward orders were contracted several months in advance, so the ability to respond to high spot prices was largely dependent on prior commitments. As a result, it was pointed out that efforts by the Electricity Commission to seek automatic load reduction responses when prices reached a certain point would not work for some industries.

> [What's the longest time you've prepared to cut load?] *Well we probably wouldn't do it for more than 3-4 hours per time and that's not to drop load completely, it's to manage the load down a bit.* [And for extended periods, like if you're willing to cut load over a couple of months or no?] *No.* [So that's more a one off 3-4 hours?] *Yes, this is a 24/7 place so no, we would probably just grin and bear it. The other thing is, is that we sell our product months and months in advance or we contract to make it months in advance so if you all of a sudden didn't make it you would have some grumpy customers out there who would go elsewhere.* (Purchaser)

> [Would you be cutting back under duress or would you be quite relaxed about cutting back?] *Oh no, we'd be cutting back under duress. Our production mentality is that we have to produce 110% a day to try and really recover as much of our fixed costs as we can.* (Purchaser)

> *With some of our sites it varies a lot on the price we are making at the time or whether we are on a 24/7 operation. So for an* [industry] *that operates 24/7 we don't have any capacity to catch up, so if that is the case we would need to ensure we can meet our customer orders by some other means and that we could get the plant running again up to full speed. We say the demand is very inelastic and we can't drop load or we wouldn't drop load unless the price got quite high. Looking at our company wide I have a guess at about 20MW cut and we could not do that without affecting our production and in some markets that wouldn't matter, so in some cases if the price got to a certain point or we were going to be paid for curtailing load we could make money by doing so.* (Purchaser)

> *Pretty small amount. 2-3 MW for a very short period. And we'd be cutting under duress. Price pain point – our business is largely fixed cost whether we produce* [item] *or not for electricity to be a factor. For us not to produce* [item] *it would have to be very high for a long time.* (Purchaser)

Some purchasers had no ability to cut back under any circumstances because of the nature of their business.

> [How much load could you easily cut for a short period when spot prices are high?] *None.* (Purchaser)

These industries all had their own generating capacity to respond to exceptionally high prices. In most cases, this generating capacity was diesel fuelled and for that to be economic spot prices would need to be in excess of $3.50 KW/h. For some of these businesses, generators had to be started manually and were either remotely located or located in urban areas. Not only did this present an additional start-up cost, but also delayed the ability to respond quickly. In some circumstances consents from local authorities needed to be sought prior to start-up.

> [Can more be done to assist demand-side reduction?] *Yes, if there was a contract in place for us to do it. EECA have looked at long-term site reduction. If the government gave us tax relief on diesel for our EAs* [electric alternators] *and also made it easier for us to get resource consent for them and cheaper to do. If we had fixed back-up contracts for using our EAs and a stand-by price per year for doing that, then we could use that money to automate our switchboards. It's a $75 call out fee to switch an EA on.* (Purchaser)

Some respondents did have the ability to respond to long periods of high spot prices by radically changing production patterns, such as, by producing at night when demand was less.

> *But in 2003 when we were fully exposed to the spot market, the* [industry] *plant worked nights and weekends and I think they closed Mondays and Tuesdays during the day so they will change shift patterns if they're fully exposed to the spot market and the prices are high. Because the thing is with the plants they've got forward orders for their customers which they need to deliver on and if it means taking a bath for a number of months to keep the customer, sometimes you have to do that.* (Purchaser)

While some could cut back load for short periods, they stressed that even significant cuts in production did not translate into significant cuts in power consumption or on occasions it was not worth cutting back.

> *It depends on production circumstances but an average two blocks of 10 MW.* [For what length of time would that be?] *We could do that from 5–10 minutes to periods of days. A very high percentage of our plant will continue to run whether it's operating at 450 tonnes a day or 350 or 250 tonnes a day. It's really only when we stop the whole process that it becomes a very difficult process to restart.* (Purchaser)

> *But the problem is if the price spikes at $85 for three hours during the afternoon by curtailing load for those 3 hours on a chemical process type operation it may take us the rest of the night to get everything back in balance so we would wear the high costs and prices for those 2-3 hours. At* [name] *it would be unlikely for us to curtail load at $200 MW/hr but varies for other plants.* (Purchaser)

Financial incentives

One generator-retailer said financial incentives were necessary to encourage demand-side responses.

> *Our view is that as part of a demand response it is actually quite important that industrials are able to do that but more so that they are financially incentivised to do so, so that the types of contracts enables them to participate in any financial gain that is had when they are asked to curtail load.* (Generator-Retailer)

Some industries did have the capacity to respond to high prices by exporting power back into the grid.

> *65MW which we can switch off and bid into the reserve market. We can stay off as long as we want, but we have still got to produce our production and sell it, so it doesn't take too long before it bites into our productivity.* (Purchaser)

> *100%. We can generate to break even at about $200 a MW and we can export into the spot market too so if we can get more than $200 a MW.* (Purchaser)

However, this was not the experience for most purchasers who were unsure how much they would get paid for their demand-side response.

> *In my experience most of our customers don't want to do demand-side response. One of the big issues to me is that they're not sure or they're not certain how much they're going to get paid for the response because of spot, because of prices because obviously they are after the events.* (Other)

> *As a company we were focusing on energy efficiency when the prices hit $60 MW/hr. We have been trying to do everything we can for a number of years. Even though the mechanisms for being paid for curtailing load have not been effective to date. I haven't got any suggestions which would mean we could do a lot more. At the moment there is no payment made unless you do a special arrangement and the time you have to make those arrangements on an ad hoc basis we are not really all set up to do, so that is something we could probably improve. But once again most of our businesses that it would be worth curtailing load on - other than 3 of our larger businesses - don't have the information to hand for them to know what the prices are going to be doing*. (Purchaser)

> *Another thing which the Electricity Commission are consulting on at the moment is if the price goes up to X will you drop so many megawatts? That approach is not too good for us because, when the price gets at 50c I ring around and see what the story is. At the time there is no way that I can predict or anyone can predict in what situation we're going to be, whenever the price reaches 50c so there is no way that we can contract to say right price vectors 50c will you drop 20 megawatts worth of load?* (Purchaser)

Other responses

It was also felt that more could be achieved if all the elements of the industry worked together more closely in times of very high prices.

> [Do you think there's anything more that can be done to assist companies like yourselves with demand-side reductions?] *I do, yes. There's two things. Periods where prices or where the system is under stress, if you like. Firstly supply demand. We actually rely in our own business on periods of short supply to improve our profitability. To a certain extent if our customers had in place some demand-side strategies to reduce that basic tightness of the market, then we wouldn't be too happy with that. Secondly I think the system operator, there's certainly been a marked improvement, just absolutely huge, in the amount of information that's coming out nowadays. We've gone from the position where there was absolutely none, absolutely impossible to find out what's going on to a situation where there is some information coming out and to me that seems huge, but the reality is there's just so much more that a generator, a system operator, a customer could do if we're all pulling in the same direction and not trying to protect our own interests.* (Purchaser)

> *If there could be some synergy amongst all those requirements for sure that's something that industry, Transpower, the generator could do to offset some periods of constraint in one form or another. There must be a number of other things. If we had a co-generation plant on site and we were generating electricity and maintaining the lines between the plant and this* [name], *we would absolutely make sure the system ran in harmony. It would be just madness for the co-gen plant to be scheduling some outage without taking into account what's happening in the* [industry] *and yet that's the situation we end up in New Zealand to a large degree but that's only one example. I'm sure there's many, many more.* (Purchaser)

Other suggestions included greater use of energy efficiency audits by the Energy Efficiency and Conservation Authority, legislating the use of "ice banks" for air conditioning over a certain size, adopting arrangements developed by Christchurch distributor Orion which involved day/night tariffs and financial incentives for those with their own generation to operate under times of duress. However, the cost of installing energy efficient systems was a barrier for some.

> *Some of the ECCA audits have come up with the cost of changing machinery to get the energy reduction has been high, and when you're looking for a payback within two years it just doesn't stack up to get priority to achieve.* (Purchaser)

But unless some form of financial incentive was in place through contracts for differences exploring energy management options was a waste of time, it was argued.

> *Some customers spend a tremendous amount of effort looking at the market, looking at their electrical load, looking at their own propensity for risk and their ability to actually manage it. Can they switch load off, do they have a generator? Can they self hedge? Or can they not do anything? And they spend a lot of time doing that, and then they approach the retailers and find all that is a waste of time. Energy management – absolute waste of time. If there is no financial encouragement through the likes of the CFD, what is the point in them doing anything?* (Other)

It was also felt that more effort could be made by focusing on the retail customer response.

> *More use of distributed generation and low emission home heating sources in residential sector. More direct use of fuel in homes and businesses than transporting fuels with inherent losses.* (Purchaser)

> *Demand-side response? The problem is that the majority of the load is unaware of the situation, so there are no signals other than buyers like us or people directly on spot to change their behaviour – some people are not going to turn off their TVs even at $1000/MWhr. If there was some way of getting through to retail customers, every additional form of generation that is being suggested and being pulled apart and being found to be non-acceptable without any attempt to at all to suggest an alternative. It means people are not reacting to it.* (Purchaser)

■ Pain point

The pain point for spot prices for most purchasers fell in a range of between $80-$1.50 a MW/h, though some respondents complain that current spot prices are too high..

> *When we were fully exposed to the spot market, I think 2003 is a good example, it's a higher price so it's say, you know, $150.00MW/hr over a month.* (Purchaser)

> [Is there a price point where the pain hits?] *Yes.* [What is that price point?] *That depends on a whole lot of things. It depends on what our market price is doing and what the exchange rate is doing. Not really on much else. They're the three main factors.* [Average.] *Two years ago it was probably somewhere around $200 a megawatt and now it is somewhere between $100 and $150*. (Purchaser)

> *Price pain point – not too far off it now. $80MW/hr.* (Purchaser)

> *Price pain point - It's hard to say depending on the circumstances - some businesses won't be making money if the price is $85 long-term.* (Purchaser)

The pain price point varied for those with their own capacity to generate and possibly to export back into the grid.

> *If you're generating your own at $200 that's fine but if the price is $150 - it's painful.* [What's the point at which it starts to get painful for you?] *Anything over $100.* (Purchaser)

And for those with a high hedge component price was immaterial.

> [Is there a price pain point where it's getting particularly uncomfortable, when the spot gets to a certain level?] *The way we've structured the current offer, no because we're essentially 100% hedged. The previous contract we did had some spot exposure. It was only a small amount. So certainly when the spot starts averaging above – I don't know, really more than 10 cents, 20 cents, it starts getting really bad. We do have our own generation plant on a fair number of the sites but to switch that on is quite invasive on our operation.* [Is it diesel or something like that?] *It's diesel, yes.* [Quite expensive?] *Yes, I worked it out at about 40 cents a unit.* (Purchaser)

4.14 Recent hedge experiences

Although respondents were asked in the survey to provide details of their most recent and second most recent experience in seeking hedges, it was evident that responses covered a wide range of time in some instances with the second most recent experience dating back to the 2001 dry year experience.

> *Well, in 2001 it was impossible. We tendered our volume and we had no response. We then picked up the telephone and went knocking on people's doors and asking what they had available and we were simply told what the situation was going to be. We were signing their contracts instead of them signing our contracts, if you like, that had been in the past. Now 2004/2005 I guess we're pretty well resigned to operating under the new conditions, if you like. I guess we're going to talk about force majeure and suspension a bit later potentially but I guess the only thing we ask for now is some flexibility. We're typically after longer term stuff and flexibility inside those terms in terms of volume and in 2004/2005 the requirements that we had were easily negotiated and met.* [If you were to rate that on a scale of meeting your expectations and not meeting them, where would the 2004/2005 hedges rate?] *Probably a 7.* (Purchaser)

There was also a range of experiences to the types of clauses contained in contracts from sellers who responded.

> *Both parties had FM clauses, but one party had suspension clauses that were quite intensive and allowed them to get out of the hedge reasonably easily just when you needed it. The other party did not have any suspension clauses at all now that was quite interesting between two parties who are in the same market doing the same job that there should be such a difference between them. No premium attached to the party with no suspension clauses.* (Purchaser)

Respondents also described difficulties getting responses from some generator-retailers due to factors such as plant refurbishment or location risk.

> *Genesis has been out of the picture for 12 months as they say they are refurbishing Huntly. Contact and Meridian will indicate product and Mighty River power are expensive*. (Purchaser)

> *Meridian don't respond. I believe it's because there's too much transmission risk.* (Purchaser)

4.15 Competitive prices

Most purchasers said they did not believe prices were competitive. Many of their reasons were borne out of the previously expressed views that the market was not competitive, but equally they were unable to gauge whether prices were fair because of the lack of transparency and were unable to quantify the risk that might be built into price due to location or other factors. Purchasers sought other benchmarks, such as comparisons with prices in Australia which they said were well below those in New Zealand. They also made comparisons between the long-run marginal cost of new generation and current prices with the latter being in excess of that marginal cost.

> *The prices offered are well above the forward curve offered by Energy Link and their spot price forecast so the premium looks to be significant. The price, the force majeure, the location, the profile hasn't been what we would really desire, but given the options available, we've accepted the hedges. The other thing that's visible to us is electricity prices in Australia and they don't look competitive to that. The other thing that's visible is our historic costs, and they don't look competitive compared to that. But we don't have a lot of other things to give us information on whether it's competitive or not. I mean there is the energy hedge market on the website but that's more tranches, a very thin market and it only goes out two years.* (Purchaser)

> *There are other reasons why hedge prices are more expensive. It's the same reason why the wholesale market prices are going up – the supply-demand balance is tightening. New generation is being developed in the form of wind, a new thermal plant at Huntley and they have higher long term marginal prices than we have seen in the past therefore hedge contracts tend to be priced on the long run marginal cost of new generation and these are getting up to the mid $70 MW/hour range.* (Purchaser)

Others though made straightforward comparisons with historic prices and did not believe the rises of recent years were justified. While it was conceded that different price offers had been received which indicated competition, some felt that these prices were excessive and therefore not competitive.

> *In terms of generators' expectations now of what they value their product at, I guess in our latest tender round we did see some competition. People were able to bring different products or different levels of flexibility to it … $4.50 or $3.50 and $4.20 a megawatt different is nothing to be sneezed at so it depends on what you rate competitiveness. I guess in terms of generators' expectations there was some competition for these very highly priced offers. The offers were competitive but we don't think they were* – [Were different prices and different levels of flexibility but did you think that was fair, that that was competitive?] *No because the prices were regarded as excessively high.* (Purchaser)

> *Well all the prices are too high. They might be competitive but they aren't low enough for us to consider to take one up.* [Why aren't they low enough?] *Because I guess to some degree it's take it or leave it on their part, that's the residual bit.* (Purchaser)

One generator-retailer said they were unable to get prices from one of the state-owned generators and found another to be very expensive. They put the situation down to a shortage of generation.

> *It's actually hard for us to get people to put product on the table. We've been trying for example with Genesis for 18 months to get to put some product on the table and they have not been able to do that. They've said to us at the moment they've been waiting until they've refurbished the Huntly plants after* [EP3?] *comes on. But Contact, Meridian will indicate product at a price we decide of course. Mighty River is always to us very expensive. We do price from all three sources when we need to*. [Is that because there isn't generation around?] *Yes*. (Generator-Retailer)

Another respondent supported the limited ability to gain offers from Genesis, but in this case pointed to Contact as the generator retailer with the higher prices. Variation in price may well reflect location factors for generator-retailers as some were only prepared to sell in certain areas.

> *On their hedge seller performance, well of those basically the ones that we regularly get – the only ones we get anything from really are Contact, Genesis, Mercury, Meridian and sometimes Trustpower. The Todds and the King Country are sort of one and the same. Tuaropaki Trust ... generation well, not in our experience -, are not in the market at all for hedges. So we would only be able to rate four or five of them anyway. From the big four: Contact, Genesis, Mercury, Meridian, they're all generally prepared to provide a price if it's in the area that they prefer to sell in. Contact's price is almost always high.* (Other)

> *As far as pricing is concerned we are never going to be satisfied with the price we get and they are probably not very satisfied either and that is where a lot of the negotiation went.* (Purchaser)

4.16 Responses to high spot prices

Question 62 asked respondents to select their general response in times of high spot prices from a list which included reducing consumption, maintaining consumption, increasing hedge cover and a political response. These responses are tabulated in the survey analysis, but those who identified other responses than those listed were asked to explain what these were. In most cases this amounted to increasing or investing in generation, though some industrials evidently will continue to operate regardless of price to meet export production deadlines. Thus responses are industry specific.

> *Putting in our own generation which is a response to high spot prices*. (Purchaser)

> *Over the term of a contract we could consider our own generation particularly at remote locations.* (Purchaser)

> *Try and increase generation if possible and try and work with lines company to do something with load.* (Generator-Retailer)

> *Generate for ourselves*. (Purchaser)

Another respondent mentioned was to abandon hedges for a form of self-insurance mechanism while remaining exposed to the spot market.

> *Only qualification we do have is that we are looking at potentially going back to the spot markets and forget hedges altogether and effectively setting up some internal hedge mechanism through our self-insurance subsidiary because in the long term over 10 years we are big enough to absorb the occasional blip because electricity only makes up 2-4% of our operating costs.* (Purchaser)

4.17 Past/ Potential retailers

None of the past retailers had any interest in retailing in New Zealand again under current market structures. They would require significant changes to be made including splitting generation from retail. Many of the points they raise are included in Section 4.20.

> [So what needs to happen for [name] to contemplate entering hedge market?] *Retail has to be ring-fenced away from generation. One of the SOEs had bought up all the retail and effectively snuffled the life out of independent retail … those vertically integrated guys see retail as a hedge to their generation, so there is no competitive retail. The generators are not held to ransom by anybody. They sold retail customers to each other they were just lining up their regional monopolies and they just said it has got nothing to do with that we are just reducing risk.* (Other)

Those who had not retailed before, had the capacity to retail and had considered retailing at one point had no inclination to do so. Either they had concluded that retailing was not core business or the risks were perceived to be too high.

> [Ever considered retailing?] *My predecessor may have, a couple of people have suggested we should but I don't want to get into that. The administrative issues are just enormous - as a retailer you get hit with more regulatory costs which are crazy at the moment in New Zealand and we don't have the resources to do what we need to now in energy. We believe there are other answers to the competition issues.* (Purchaser)

Only one respondent said they might still consider retailing, but only in a localised way in some arrangement with local distribution to utilise their own generation capacity.

> *Yeah – using local distribution control and own generation.* (Purchaser)

4.18 Distributors and generation

Only two of the three distributors approached agreed to be interviewed. They were Orion and Delta though Delta described themselves as more than a distribution company. Both gave permission for their comments to be attributed.

■ Restrictions not needed

Orion said there should be no restrictions placed on distributors from generating.

> [Should there be limits on distributors generating?] *They are unnecessary. They were put in place when there were serious concerns about cross-subsidies between businesses and I think they are much harder to do now with the new Commerce Commission rules. I would be relaxed about removing all restrictions. The argument against it that will distributors get out there and build a whole lot of pet projects and the governance of those organisations and the costs get lumped back on top local stakeholders, but that is a problems with the governance of those organisations than anything else.* (Orion)

Delta was more guarded saying that possibly only one distribution company was large enough to provide competition for the generator-retailers.

> *It's the right approach if you believe you can clinically keep distributors out of generation. If you think you are missing a great opportunity, then you should no longer do that. There's a philosophical watershed you have to cross first. There's a view that is being sold very heavily by a number of distributors is that the only way you are going to keep the vertically integrated generators honest is to allow then to become the same as them. It's a seductive argument. Vector is on a scale to take those guys on and with a little bit of barrier of its own will beat one or two of them. Nobody else is.* [So what needs to happen for Delta to contemplate entering hedge market?] *Retail has to be ring-fenced away from generation.* (Delta)

■ Scale versus lines monopoly

As several suggestions had been made by other respondents that there should be some form of separation between generation and retail, the question was put whether this would make any difference if generation restrictions were also lifted off distributors. This produced an uncertain response.

> [If some form of virtual separation between generation and retail are there any negative aspects to that?] *Well, the issue then is that you might have quite effective retail competition, but you have got two kinds of generators – the really large ones who have scale on their side and then the small ones who have a lines monopoly on their side. Well, is that a better environment than we have today? I'll leave the boffins in Treasury to decide that.* (Delta)

> [What do you think of virtual generation/retail separation to increase liquidity if distributors were allowed to generate?] *I don't have any strong views on that. It may be something that is necessary to do to get that real liquidity in hedges and so it may be something that is worthwhile to do*. (Orion)

Orion's concern was that without a liquid hedge market a distributor would need to have the ability to retail energy, something that Orion would not be interested in doing without a large customer base.

> *But I think if you are going to own generation then without a really liquid hedge market, you really do need the ability to retail that energy. Would I retail again? No. I think you need scale and I would have to be reassured that there was a very liquid and very well operating hedge market before I would participate and I also think we are going to continue to be in a period of volatility and volatility in a retail market means you are willing to aggressively adjust prices and I think my ownership makes it difficult for me to aggressively adjust prices. But even if it wasn't for my ownership I think the risks of being in the energy game are high for me as a distributor.* (Orion)

■ A new hegemony?

However, opening up retail to generator-distributors also opened up the opportunity for generator-retailers to acquire distribution companies and for distributors to leverage their monopoly positions.

> *Go down that path that separating line from energy was a crazy idea let's get them mixed back in. Well, if you are not going to separate lines and energy why the hell wouldn't you let the six big generators buy up the lines companies? So, you end up down that path. Now, if we haven't already learned that what the first thing the generators want is regional hegemony, then they are just going to strengthen that with lines hegemony and then we are back in classic American style regulation of the 30s. Maybe I am wrong. Maybe that is where we should be.* (Delta)

> *Distributors retailing? No, bit dangerous because they are monopolies in their own little areas. I can't see them being generators on their lines though.* (Purchaser)

This view was supported by a generator-retailer that had no qualms about lifting generation restrictions off distributors. They too warned that if retail restrictions were lifted as well then generator-retailers would move quickly acquire distribution companies.

> [What about removing restrictions of generation off distributors?] *I have no worries about anyone building generation. I am quite happy for them to build any size of generation. If you take the trading restrictions off them and allow them to sell their electricity direct to customers, then you've ruled against the whole thing that broke the whole thing up in the first place and then you'd have to allow the current generators and retailers to buy lines as well. Then you'd have another slather of little players that would get gobbled up fairly quickly.* (Generator-Retailer)

Nevertheless, Orion said there were synergies that could be achieved in opening up generation opportunities for distributors.

> [Advantages of allowing distributors to generate?] *I think there are synergies between the distribution and generation businesses that can be taken advantage of by allowing them to invest. And while you should be able to pass on those synergies through pricing, but with other parties involved in generation there are sometimes limits to what can be done*. (Orion)

One respondent was concerned that allowing distributors to generate without restrictions could introduce new distortions to the industry.

> *If distributors were allowed to generate you may introduce a new set of cross-subsidies using the distribution assets and another set of distortions*. (Other)

NGC, a former retailer and now an infrastructural investor which also gave permission for its comments to be attributed, said it would also be interested in generation if the market's structure was altered.

> *We're very interested in appropriate investment. Generation investment, I would suspect, included but there's a key question about whether the market's circumstances can be created to create the right drivers and frankly you're either going to sit with the existing players and work within the existing scrum which, for all the reasons we've discussed, is not satisfactory. Give government leg-ups to existing government-owned entities to make investment, or you're going to get back towards creating a market environment where private sector investment can occur on a fair basis because the right drivers are put in place, and in simple terms, certainly around generation, there is a need for generation. Investment should be able to flow if you create the right market circumstances and as an investor certainly NGC would be interested in doing that and removing barriers like you can't be a distributor and a generator would be one small way of doing it.* (NGC)

4.19 Most critical issues – Hedge market

As outlined in Section 4.1, there was a high degree of polarisation between purchasers and generator-retailers over whether the hedge market was competitive. Purchasers and predominantly large purchasers favour either a virtual or a complete split of generation from retail. Not surprisingly this is opposed by the generator-retailers, though some generator-retailers say the state owned generators could be further divided as a means of increasing competition. Others prefer to see measures taken to improve market transparency and to reduce the complexity of the market by reducing the number of nodes, while others said the availability of transmission hedges or similar instruments would be useful.

■ Lack of competitiveness

The perceived lack of competitiveness is the kernel of the issue over hedge contracts.

> *In terms of the hedge market, the absolute top issue, we believe we're now dealing with a monopoly situation. So the market has lost, has probably never had a situation of true competitiveness. We all benefited when the market was deregulated. The hedges were up again. They were just absolutely unrealistic in the longer term obviously, but we had people lining up at the gate trying to contract baseload. Now, of course the baseload has moved, we think, to the residential customer base. That's certainly the number one issue in terms of the hedge market. I guess the second biggest issue is the move for customers to, in one way or another, to carry the risk whereas the generators we feel carry much more risk, or the premium that they're expecting for the risk has changed hugely*. (Purchaser)

> [If you had to identify the single-biggest or the single two biggest issues around the hedge market, what would they be?] *Obviously the competitiveness. That would be the biggest and I don't know if there's lots of options out there. Lots of people have talked about ways to improve it and I guess I'm not convinced in my own mind about the pros and cons of them all but certainly the competitiveness which is linked – within that is the number of retailers and are they genuinely out there trying to get new customers? Do they want, do they need more contracts or is it a token effort? Again linked with competitiveness still is the locational issues which impact on competitiveness as well. Do we need to have 200 and something nodes or whatever it is that we've got?* (Other)

> *Gentailers and lack of liquidity – vertical integration.* (Purchaser)

> *Lack of competition and regional dominance by generator-retailers. Even though we were able to get a 10 year hedge that was exceptional and in the past we could not get that – normally it was only for 1 -2 years.* (Purchaser)

Splitting generation and retail

The answer to the lack of competitiveness for some is to split generation and retail. Some argue that this did not necessarily imply a complete separation of ownership, but a virtual split.

> *There is no separation of the generators and retailers – it could be virtual separation. There is a lack of liquidity in the market and a lack of transparency of pricing. By the fact the generators have their natural hedge through their retail arm, there is no need for a competitive hedge market, so we need that virtual separation I believe.* (Purchaser)

> *Whether the market was changed to ensure there was this virtual separation of generation and retailer which would mean big consumers could get in and bid for the volume of output that is currently being assigned to the retailers that would improve the competition for hedges.* (Purchaser)

> *Structure of the market has driven normal market behaviour toward regionally vertically integrated monopolies or duopolies reducing hedge market competition. Most have their retail markets around their generation and that is not a criticism of them but it is a natural outcome of the market to a least risk position.* (Purchaser)

Virtual separation was not regarded by some as sufficiently effective.

> *Too much monopolistic power and could possibly break up the generators and retailers so you could have more players in the market. Virtual break up? No – chinese walls don't work.* (Purchaser)

> *Basically, if you introduce transmission hedges it is going to be even more complicated specially since we have so many nodes. If you had fewer nodes it might work. But if you had more hedging in place there would be need*. (Purchaser)

NGC, formerly New Zealand's largest retailer of electricity which has since exited the market, said virtual separation would make no difference to the ultimate owner.

> *So if you had like Contact Generation offering hedges into the market and Contact Retail had to buy it from that market, then it's offered hedges at a very high price and Contact Retail had to buy them, all that's happening is that Contact Retail are making a loss and Contact Generation are making a huge profit, but overall the company's still in the same position.* (NGC)

NGC went on to argue that not only did generator-retailers need to be disaggregated to address issues about market power, but that bids into the market need to be made on an ex-ante basis.

> *What happened in '96 was that they created two markets: a forward market and an ex-post market, and of course because there were no willing sellers who were prepared to put up prices for next week, there was no market. That fell by the wayside. Of course all the willing sellers concentrated their efforts in putting up sale options to purchasers on an ex-post basis (i.e., you pay after you've used) and I think if the market was rearranged to force people to have to put prices up before people consume, that would make a difference in the efficiency of the market. It would be more difficult for generators and you would have to look at that in the context of vertical integration. If you wanted, even with the existing constraints, that a distribution company could build a small amount of plant, if you increase that what confidence can they have that they can get that capacity away into a market if they're selling only to a small group of players who in themselves are substantial generators. Those guys have the market power. So you've got to disaggregate in a fashion that removes the market power.* (NGC)

A potential entrant to the market said that if generation and retail were split they would enter the market in New Zealand otherwise entry would be dependent upon entering under a generator's discretion.

> *If there were a separation of generation and retailing – absolutely we'd be interested because the fundamental question is whether the generators can set the prices in the market. You've got a market that allows players who dominate their own geographic regions. It may have the appearance of a free and open market, but no-one would enter that market without very strong support from a generator and I can't see why a generator would be interested in that because they have their own retailer. It's such a loaded dice, because you are not surviving on your skill as a retailer, but on your ability to negotiate a good deal with a generator. So, either you have a very cosy relationship with a generator but it would have to be at the generator's discretion or alternatively you would have to do three things:*
>
> - *Get new generation into the country*
> - *Break up the generator-retailers - why would anyone go to New Zealand when there are bigger opportunities in Australia? Why struggle in New Zealand where there is a questionable business proposition?*
> - *Have an adequately resourced regulator because they can be out-muscled by well resourced companies with a vested interest.*
>
> *I would be surprised whether people would leap into the market and I would not rely upon a liquid market to manage your wholesale risk in New Zealand – you would have to enter with some bilateral arrangement with a generator.* (Other)

Another respondent argued separation would make any uneconomic investment in generation explicitly reflected in prices to retailers.

> *The generators are managing their risk by having a whole lot of retail customers they know are only going to change slowly if wholesale market prices change therefore they have bankable generation projects. Then if their generation projects end up being uneconomic they can still make money on the fact they will still be selling energy at high prices to their retail bases. If you split them up it becomes quite explicit that's what they have done because when they build that uneconomic power station they will make retailer sign up at 12 cents/kWh or other purchasers – so what's the problem with that?* (Other)

Although the counter to this was also argued, that is, separating generation and retail could lead to less investment in generation.

> *The advantage of a split is that you get these big retailers and retailers don't want to sign up long-term contracts unless they can pass them onto customers. Only using those long-term contracts do you get new capacity built. So, if you split up the generator-retailers, we may have more trouble getting new generation capacity built because the builder of that generation doesn't have as much security about future price and it is future price that underpins the building of his future power stations or investment.* (Other)

Even so, others said that the market now was not delivering new generation despite high prices.

> *The market isn't really delivering at the moment. We had a centrally planned electricity market in the past – it was deregulated and split up into the SOEs, Trustpower and Contact and the decisions to invest were left to the individual companies, i.e. when the prices rose enough to incentivise companies to invest in new generation they will do so. But that hasn't really worked – we are heading for a train smash some would say. We are only seeing one significant new generation project on the books at the moment.* (Purchaser)

One generator-retailer agreed vertical integration was a major issue, but argued that this was not necessarily a good or a bad thing. A split would increase the amount of wholesale competition, but could also increase transaction costs and decrease efficiency which were internally managed by generator-retailers now. What happened in the wholesale market was not as relevant as ensuring effective retail competition for consumers.

> *The biggest issue for the hedge market is vertical integration and that is not to say it is a bad thing or a good thing, but it is probably one of the reasons why there isn't more liquidity or depth in the hedge market it's just that participants tend to be vertically integrated through their wholesale region so to speak. If you had a whole lot of generator only companies and whole lot of purchaser only companies on the other side, then regardless of the supply-demand balance there would be competition and we don't have that. That's not to say just removing vertical integration will result in a good outcome. Sure it will increase wholesale activity, but at the end of the day it may improve the end result which is retail prices or retail product. It may actually mean there are higher transaction costs, there are other risks and things like that that the customer is forced to bear that sells directly rather than vertically integrated companies can absorb and mange internally. At the end of the day the wholesale market is not necessarily a significantly issue for the electricity market overall, so long as you have a enough parties competing at the retail end of the business.*
>
> *Now there is a group of customer who may feel left out from that – the very large major electricity users who tend to view themselves as participants in the wholesale market and they are not someone who really buys from a retailer so that puts them in a very difficult position, but in terms of most New Zealand companies and customers their contact with electricity is via a retailer and that is where they should be ensuring there is adequate choice and competition. If there was to be a significant wholesale market I don't think that would deliver any significant benefits to them so long as electricity priced fairly, so long as no-one was to ring up and say someone's units have fallen off and you'd better turn off your power because now you are buying at the spot rate because that is what could potentially happen if you were to break things down into full market segments. But that is where some of those major users may feel a bit unloved.* (Generator-Retailer)

And one respondent said splitting generation from retail might only shift the margins to a handful of generators.

> *There's a generator margin and there's a retail margin. I would have thought that if you somehow separated out the retail – or forced any separation of retail and generation, what those companies would do is shift all of their margin from their retail business into their generation business and effectively sell – make all the margin on the generation and you'll just be shifting the problem down, back to the generator. It may work, I don't know. I haven't gone into it to the same degree as a lot of the academics have so I don't know but it just – that's one of my concerns is that you could have a very competitive retail business that's running off no margin at all and everybody would look at it and say "hey that's great" but if all it's done is shifted the margin back to the generation and there's only three or four generators and they sell all the hedges to the retailers, then have you actually solved the problem?* (Other)

Ring-fencing

An alternative to splitting generator–retailers was to ring-fence the state owned generator-retailers operations.

> *As a starting point – I don't know if it's a complete answer but the other underlying factor is we've got to get more generation into the country which is right next to that we need more depth in the hedge market. The obvious place to look – the first place to look is to get rid of the vertical integration. For political and other reasons you can't do it. The second place to look has got to be there so in principle you've got to say yes and try that. The first obvious solution is not able to be applied for whatever reason. Look there and try and fix the problems even if you have to put some sort of ring-fences frankly only around two or three existing state-owned organisations to stop them doing that countervailing action.* (Other)

Price volatility

The counter to a split in generation and retail was led by the generator-retailers. Splitting generation and retail, it was argued, would lead to greater price volatility in the market.

> [Should there be some separation of generators and retailers?] *I don't really see that as a viable option in itself. It does break it up. It's a little irrational in the sense that sure you might get more players, but you would get more volatility in the prices if you did that and that would be a downside.* [What would be the reason for that?] *Basically, you run the generators and retailers now as a natural hedge against that for much of their load anyway and if you split that up completely you'll release that natural hedge, so you are putting a lot more countervailing pressures, so you'll see a lot more volatility both up and down*. (Generator-Retailer)

One argued that the shortage of generation was central to the issue of risk and hence hedges.

> [Why do you disagree with a split of generation and retail?] *Whether there are more retailers or more generators, the same amount of risk has to be managed and the current risk at the moment is the shortage of supply. I don't think having a lot more retailers will lead to greater liquidity because although you might start up with more retailers, the experience elsewhere is to end up with fewer retailers as the market seeks the most efficient means of dealing with risk. Over time, there will be a strong drive to manage risk by drawing retailers and generators closer together either structurally or contractually*. (Generator/Retailer)

New investment in generation

Another argued that the existence of retail customer bases helped manage the risk of major investment in generation which was not possible with most large purchasers. The drive for a split of generation and retail came from large purchasers who were interested in gaining access to electricity at prices that were competitive with what was on offer in the retail market.

> [Some users have suggested splitting retail from generation. What do you think of that?] *I don't that would improve the long term outcomes. I know that that's been spoken of by some of the larger industrial customers, however a retailer will buy at whatever price a generator is prepared to sell for to cover off his domestic customer risk and so the industrial customers will never see their prices increase. They would have improved their access to product at cheap prices which is really what they want. This isn't about them not getting access to product, this is about them getting access to product at a price they believe is competitive with what it's been offered to the domestic market. The problem is that a domestic customer base is a long term customer base so if you're going to invest in a generation asset, then you can invest in that asset and know that for the next 50 years you can sell that to retail customers because you can gain and lose them. But you couldn't build a generation station on a two year contract with say Carter Holt Harvey because what you then do with the output of the generation after that. … The way to get more competition into the hedge market is for New Zealand to make it easier to build new generation assets and the Resource Management Act is playing a major challenge for a generation station developer.* (Generator-Retailer)

> *The market has been undergoing a significant price change over the past two to three years and a number of participants who have come off traditionally very low priced hedges are having to re-contract at prices which are significantly higher and I believe that has been a major issue for them. So, whenever you look at information or issues that are noted by MEUG in the media in particular it always talks about issues around issues of transparency and liquidity and when you boil it down to it they will say the ability to contract reasonable volumes and it is always countered with at a reasonable price, it is the reasonable price part which I believe is at the heart of concerns about the hedge market.* (Generator-Retailer)

Vertical integration – a red herring

Another said that vertical integration was a red herring as he was indifferent as to whether he would forward sell to retail or large wholesale customers.

> [Vertical integration – generators committed to their own base and if you are a location dependent purchaser, realistically dealing with only dominant gentailer?] *The issue of vertical integration is a red herring. We are effectively indifferent which channel we would forward sell our generation through. We would be commercially irresponsible if we were subsidising a set of retail customers at the exclusion of industrial counterparties. I spend an awful lot of time ensuring we are optimising our revenue by directing our sales to the most profitable channel and we are effectively indifferent as to which channel we sell it through. If we were able to sell long-term contacts at prices that gave us a better return to large industrial customers rather than a retail customer base, we would have no hesitation doing that. So, I don't buy into the market that vertical integration has reduced the ability of buyers to get hedge contracts. What is interesting is that prior to vertical integration we went through a period of years where there was a significant surplus of supply over demand. Now that has tightened up considerably and doesn't really exist and that is the underlying reason behind the perception that it is more difficult to get hedges now. There is certainly less surplus generation in a gross sense over demand.* (Generator-Retailer)

There was also concern expressed that any changes to the regulatory environment might only increase levels of uncertainty for those contemplating investment in generation.

> *You need a five year lead time to get a generation scheme away. You've got to trust that you can sell the output of it in a way that you know to be robust. If the Commission starts changing the rules, then people are going to stop building generation schemes because they don't know what the rules are going to be like. If you are given confidence the rules won't change. Otherwise we're not going to do anything. So the worst thing the Commission would do is change all the rules dramatically because that mean that we wouldn't be able to keep on knowing that yes, we can invest in the generation schemes.* (Generator-Retailer)

Another generator-retailer argued that the solution to competition issues and high prices was to increase the amount of generation available. They also said that the bankability of new generation was very much dependent upon an established customer base.

> *I actually personally believe that we need to enhance generation development opportunities. There's not a problem with money to be invested in generation development in New Zealand. That would be the best way to get competition.* [So there's more electricity available so you've got to put your prices down.] *That's right because you're not selling it. That will get over the liquidity issues and the other problems. Doesn't want to get a bit short. It's never going to get very over supplied either because nobody can borrow money from a bank without the banker's sense that yes you've got a market for your product. It's too expensive. They're not going to gamble because these are so expensive to do.* (Generator-Retailer)

Smaller generator-retailers

Another solution that was advanced was to split the generator-retailers up into smaller companies. As this was not regarded as practical it was suggested that generator-retailers be required to offer hedges out on an open-tender basis.

> *I think the way to improve it would be to have more players – that's to see some of the bigger state enterprises further divided up. That would give us a better market but whether overall that would be in the New Zealand's economic interests because then you would have more players and whether that's more efficient or not, I'm not sure. I don't think I've got enough background to say that.* (Generator-Retailer)

> [What's your solution, can you see ways around this?] *You could say I guess a couple of things: One is, chop some of the generators up into smaller businesses but that's not easy. You could ensure that all the hedges that the generating companies go out - for open tender rather than from our point of view, seemingly closed nature of them sorting out the hedges or the cover of their own loads and because we don't have any access to those.* [To their figures] *We just have access to the balance.* [So you don't know what they're paying internally?] *No and we don't know what they're paying between each other either.* [Anything else do you see that could help there?] *No that's mainly it.* (Purchaser)

> *I think the way to improve it would be to have more players – that's to see some of the bigger state enterprises further divided up.* (Generator-Retailer)

Market information

Some respondents took another tack to the issue of competitiveness and said the focus should be on ensuring greater transparency of market information as achieved by other markets.

> *It's mostly information more than anything else. There is a huge weighting depending on your size on how much information you have access to*. (Generator-Retailer)

> *A more open market for hedges operating. If you want to buy shares these days – you don't even need a stockbroker these days and there is no reason why electricity hedges could not be treated and offered as simply as that.* (Purchaser)

More disclosure

One suggestion to achieve this was seen as analogous to the Reserve Bank's prudential supervision of the trading banks.

> *In the tool bag for getting a competitive hedge market going is something like what the Reserve Bank operates with the trading banks. It requires of trading banks that they maintain certain portfolios and I can't tell you what they are, but my understanding is that so much of their deposits have to be lodged in certain forms of securities and this would ensure that banks would not collapse. A similar approach is the way I think the generators have to be managed. That they had to hold certain forms of hedges which were externally procured not internally. Now x % of certain hedges may have to be held from M-co or from the Electricity Commission and then another tranche may be from other parties that meet certain prudential requirements. Now that's a form of ring-fencing - pushing the hedging out into the public arena where the playing field is more level. I don't have a lot of comfort of mere ring-fencing within a single corporate entity because too many games can be played. Corporate separation is the next step*. (Other)

And at least one generator-retailer was not averse to greater disclosure of information as long as transparency worked both ways between sellers and buyers.

> *I actually think people have just got to get over it and start publishing this stuff. If that means people find out about pricing, well too bad, that's what we are supposed to be doing here. I'm not that concerned about it. In fairness I'd be happy to disclose all of our hedges both buy and sell*. [Do you think users would be happy?] *No, well I've done ten year deals with large industrials and said look we should put something out – a press release saying how wonderful this is for both of us and they've said you put anything out we'll sue you*. But they definitely want a transparent market?] *Which is impossible if they say it's transparent from them, but not from us. It can't be one way, it has to be two ways because otherwise how can it be transparent or it's not. Either you leave both names off or you put both names on, and then they'll say no, just have yours on.* (Generator-Retailer)

Compulsory hedge market

One means for achieving greater transparency was to establish a compulsory hedge market.

> [What about if they had to compulsorily sell a certain amount of hedges for part of degeneration on that?] *You mean compulsorily offer all their hedges to everybody?* [Yes.] *One would think that that would make it more competitive*. *Wouldn't want it.* [Would that work or are there other issues with that?] *I think it would make it better than what it is at the moment, but whether it would solve all the issues?* (Purchaser)

However, it was argued that a compulsory market would only increase the volume of product offered; it would not deal to excessive prices unless there was some form of price control.

> *It's fine if you're going to force people to put volume out there but what are you going to do about the price? Making a compulsory market is one thing. Telling people they have to offer a certain amount. What are you going to do about a price. If they offer the market at $1000 a kilowatt hour but they've satisfied their conditions for volume but they've made extraordinary price requests then they've obeyed the rules but realistically there's still no market because the price is –* [*So presumably you can't do it unless you effectively introduce price controls as well.* (Interjection.)] *That's right so it's effectively what they're talking about. A compulsory hedge market needs to be price controlled.* (NGC)

While compulsion had its disadvantages, the costs of compulsion it was argued may be worth it if it addressed existing economic inefficiencies.

> *You get the normal issue when you try and make markets compulsory. You may decrease the amount of innovation. There is the cost of regulation, but overall my gut reaction is those costs are worth it. Definitely as I observe major customers who say they won't sign up an energy contract because they think the prices are too high. The fact they can't transparently see what all the other prices going on out there I am sure is leading to unnecessary costs to the economy because a lot of these major customers are not signing energy contracts and are going on spot without realising the prices they have been offered is actually the market price and is comparable to what other players have accepted and may have been comparable to what the retailer has agreed to pay a retailer for his energy.* (Other)

As noted earlier in this report, some generator-retailers noted that the very nature of bilateral hedge contracts was that they were tailored to individual requirements which made it very difficult for meaningful comparisons to be made even if there was full disclosure.

> *I suppose the other issue is about transparency. When people enter into a contract that by its very nature is commercially confidential information between those two parties. Should that in a straight bilateral arrangement be released to everybody?* (Generator-Retailer)

> *The New Zealand electricity market, there's 260-odd nodes so we're never comparing apples with apples. Everybody's profile is different. How they want delivering of that electricity. They're taking it at different times and in different volumes so you're never comparing apples with apples. At best it's a Braeburn against a Pacific Rose or whatever. We're not comparing the same with the same.* (Generator-Retailer)

Transmission issues and greater simplicity

One approach that enabled more meaningful comparisons to be made between hedges was to take some of the uncertainty out of energy hedges by creating transmission hedges or financial transmission rights. It was argued their introduction might address issues of lack of liquidity at some grid exit points.

> *A hedge contract can only attempt to replicate the underlying physical market behind it, so we believe there are some market design issues in the physical market that don't lend themselves to add transparency and liquidity in the associated hedging market.* [What are those issues?] *The easiest example is that in the physical market there are prices set at 244 different geographical locations called nodes. Now, for people who are purchasing electricity, they may be purchasing off any one of those 244 nodes. So, to get a perfect hedge, they need to buy their hedge at the same node and that introduces an enormous amount of basis risk – the difference between where we generate and where purchasers may need to purchase their hedge requirements and there is no risk management capability to manage that basis risk. So, lack of transmission hedges is really the key issue. So that creates the difficulty in managing the risk for the purchaser. But also because you have this wide spread of effectively different markets, so you can't compare a hedge contract written in the middle of the South island with one written in the top of the North Island, so that diffuses any liquidity that is there.* (Generator-Retailer)

> *So really the other question then I guess is should we be aware of the Transpower component of the electricity? Is there a place for a competitive market there?* (Purchaser)

In the context of achieving greater market transparency of hedges there was also support for simplifying the market, particularly with respect to nodal pricing. It was argued that the nodal model had effectively decommoditised electricity.

> *The spot pricing model is about economic dispatch of generation and has nothing to do with how competitive the market is. In fact it impedes a competitive retail or wholesale market developing because you have differentiated what is a commodity product into 244 slots and 48 half hours and times 365 you have decommoditised the commodity, so when you add on top of it suspension clauses and all the rest and the different aspects of the hedge contracts all of which are vital you are not left with a standard commodity anymore.* (Generator-Retailer)

One generator retailer said the short-term hedge market had improved transparency by simplifying the number of reference nodes to one or two.

> *In terms of transparency I think the introduction of the short-term hedge market has added a significant element to that, that people can see where transactions are trading and get a reasonable idea of relativity. Certainly for their own particular point the price will be different but in any hedge what people should be looking to do, if you look from a financial markets perspective, is get the actual direction. There are always people bearing basis risk to a degree and if Haywards was the reference node for the short-term hedge market, I think that captures about 97% to 98% of movement in the New Zealand electricity spot market.* (Generator-Retailer)

The primary purpose for the nodal pricing is short-term dispatch. You don't have to hedge against that. You can hedge against a handful of nodes or two or even one. And you are then only exposed to the step-off price from that node to where you are buying the stuff. When we started we thought these retailers would be national retailers and they would be roughly exposed to the same step-off variations. Have a hedge in Hamilton and one in Benmore and that will probably do them. Well, then they started to get terrified about regional separation and decided to ring-fence themselves in the regions, well then they became totally focused on the regional nodal price and they are not interest in the rest of the country. So, may be we need just one node per region – you don't need 200 nodes. (Other)

An alternative tack was to resolve issues around the efficient pricing of transmission.

I think transmission pricing needs to be resolved both in terms of how the pricing of sunk investment is going to work and the pricing for new investment is going to work. I think having a liquid hedge market is really important as well. (Other)

If you have the right sort of location pricing in transmission, that is the transmission guy is truly reflecting what that new lines is going to cost, then nodal pricing becomes less important. That may make it an awful lot easier to have a single energy price. (Other)

4.20 Most critical issues – Electricity industry

■ Generation and transmission investment

Lack of investment in generation and transmission were the two most frequently cited big issues for the electricity industry.

[Electricity in general – what is the key issue?] *I think investment in infrastructure is probably the main one. One of the biggest problems we have is actually building kit.* [Is it generation or transmission?] *Both.* [Which is more a priority?] *Both.* [Equal?] *Yes, well I mean building plants north of Auckland won't stop the requirement for that large transmission chain to come from the middle of the North Island up to Auckland. It's just going to delay it slightly – it is required.* (Generator-Retailer)

The fact that we are short of generation capacity. Same with transmission no investment in that since Transpower took over. (Purchaser)

I think the most important thing to be honest is security of supply. We are seeing from multiple commentators, within the industry and outside, concerns about transmission and about investment in transmission and continual delays either in approvals or commencing the approval processes for transmission investment and in ways that can seriously impact this industry ultimately. (Generator-Retailer)

Transmission constraints that are arising because of load growth and the difficulty of establishing new generation mostly around environmental reasons – the fuel is there and the companies want to build it. (Purchaser)

Both these issues raised other concerns, such as a desire for changes to the Resource Management Act (RMA) to facilitate generation development.

[Key solution for the electricity industry?] *I think sorting out the transmission issues into Auckland and north of Auckland. Streamlining the RMA process so that there's more certainty around whether generations are going operate in certain areas. Getting some visibility around the hedge market and some controls to make sure it is fair.* [What sort of controls?] *Some sort of watch body or investigations, so a body like the Electricity Commission can investigate those mechanisms and let the consumer know that it is fair or it isn't, if there are issues.* (Purchaser)

There's issues around transmission, issues around fuel, both in terms of gas issues. Issues like carbon tax. The election's coming up. You've got some parties saying they're going to pull the carbon tax. Some big parties are saying they're keeping it. Uncertainty around the level of the carbon tax. $15 is not what the international price of carbon is at the moment so is it going to go up closer to $25, the cap. All these things are paramount in terms of making decisions about building. And regulatory uncertainty is top basically. (Generator-Retailer)

Security of fuel supply, political interference over pricing of carbon and lack of a robust transmission system so the efficiency of the market suffers. RMA in respect of development of generation and transmission. The regulatory environment and the way regulations are being developed in a manner that has got more to do with expediency of timing than getting appropriate and well integrated regulation. (Purchaser)

To get the right mix of demand and supply, the way it looks that there's going to be a lack of supply for years to come and that's not anything to do with money or wanting to do something. It's really how do you actually get RMA approval for projects. (Purchaser)

It was felt that additional generation would alleviate some of the concerns about competitiveness and prices.

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)

There's no doubt that if generation development were easier then the market wouldn't have the problems it has because technically the market actually works – like we all offer around and we do things. The process of change of rules works enough. The market works enough. We're just working through with the market at the moment you know how everyone buys energy for their customers within a GXP, we've got a process that works so we're just looking to some significant changes in the way that works. (Generator-Retailer)

Uncertainties

One respondent focused on the uncertainty about future generation supplies was creating premiums to be built into prices and were fuelling concerns about the market and its competitiveness. It was seen as critically important for New Zealand to use its own generation resources to avoid any linkage with international energy prices.

The whole issue of energy in New Zealand is a cause of considerable concern because the Maui re-determination has caused a step function. There are two things: the Maui re-determination and 2001. They've just really increased the amount of uncertainty enormously. We have to believe that the price of hedges has a huge amount of uncertainty built into it to cover the fuel risk especially when you see that we're actually starting to import fuel. As soon as you start to import fuel then you're paying the international price for energy. While we have Maui and unlimited gas, we could decide whatever price we could deal. It was entirely an internal issue but that's not the case any more so the uncertainty of pricing going forward must be reflected in the hedges. If I was an electricity company or a fuel purchaser for Genesis and people were wanting to give them three- and five-year contracts, I would be building in a margin for fuel risk. Now we're paying for that, we must be paying for that. The sooner we can get a dealing of New Zealand's fuel from the international market the better really. Whether that's putting wind farms up or burning coal, New Zealand coal or New Zealand natural gas, the better because that volatility risk is definitely built into the hedge prices. (Purchaser)

Concerns were also expressed about regulatory uncertainties and whether there would be carbon tax and how much it would be, as well as the role of the Electricity Commission (EC).

You've got that and this big question mark about where regulation is now because with the EC, they're neither one or the other. They're certainly a regulator but where that came from or where it's going to go, I don't think anybody knows so all this is about – Kyoto was looking a lot more certain but there's just too many question marks about where the supply is going to come from in the future. That would be our single biggest concern. Normally in a healthy market people would be falling over themselves to put in capacity at the moment. We absolutely see in our market as soon as there's any – if there's growth happening and the prices are reasonable then people are out there building capacity all over the world normally ahead of demand and we just don't see that happening. We understand why it's not happening, but that needs to be fixed. (Purchaser)

Market complexity

Some respondents felt that the biggest problem facing the industry was the lack of competitiveness in the market and reverted to the issues identified in Section 4.19.

> *It's getting people's confidence back really to a certain extent. The biggest issue, I think is in the markets. That's one of my concerns with the emphasis that the Commission's had to date has been – to me it seems to have been focused very much on the things that it's been having to do and I can see why it has done it so that all of the transmission issues that have been boiling for a long time that it's had to deal with quickly and also security of supply because it's a new area in that whole policies have had to be developed but the market issues just seem to have been allowed to just continue on rather than – there doesn't seem to have been any serious – or from where I'm sitting anyway, there doesn't seem to have been a lot of serious looking at what needs to be done in the market if anything and I think it does because I think there is a real problem with competitiveness.* (Other)

And with respect to the market, some said the complexity, particularly represented by nodal pricing, had made some fundamental changes to electricity as a commodity.

> *Limiting it to issues that link into the hedge market, I believe the market design has been set up in a far too complex a way and while it may be economically pure it lacks the required pragmatism to allow people to operate in it in a commercially sound manner. So there are a large number of risks which are difficult to manage and we have touched on the number of nodes, the pricing algorithm in the underlying market can lead to an enormous amount of volatility caused by the number of nodes that we have and that makes it a very difficult market to hedge in. So, boiling it down, the market design of the underlying spot market.* (Generator-Retailer)

The complexity of the industry as a whole was simply the biggest problem for one respondent.

> *The complexity of the whole thing. From a small company's point of view it's just a nightmare to be honest. Just the volume of paper and the sheer thickness of the books and just from a small company just trying to assimilate it all – it doesn't make riveting reading. The big companies can put a team on it and take a few chapters each, but when you've got to try and cope with the whole lot it's a pretty daunting exercise to be honest. There are perhaps some fishhooks in there. It's being driven largely by the major generators – the smaller ones have got some issues and just try to identify those and make some comments on them is quite a logistical exercise.* [What documents are you referring to?] *The rule book when you are developing those. And also the ongoing rule changes. Just trying to keep an eye on those to make sure there is nothing going to have an adverse affect on you. When you are just one person trying to operate and maintain and do everything it's a major exercise*. (Generator)

4.21 The NGC experience

NGC's comments are reported separately as it has not been involved in the electricity market since 2001 and because it presented the unique perspective of having been a generator-retailer but was forced out of the market in the main because it could not acquire hedge contracts. It believes little has changed in New Zealand since it exited the market.

■ Competitiveness

As was the case with most purchasers, NGC believed the hedge market was not competitive and lacked depth.

> *We exited that market in the winter of 2001. A substantial if not the substantial reason was that we couldn't get hedges that we needed to match off the customer load which we didn't have covered by our own generation. Part of that was due to dry year issues. The subsequent analysis which saw this company exit the industry was substantially based on a view endorsed by the board that the risks around lack of depth in the electricity market. A hedge market didn't allow this company to continue to invest its shareholders' money in that market. Most particularly that led us, in terms of the question – it wasn't just the hedge market, it was the wider market so we chose not only to exit the electricity retail parts of the business but also generation so the other side of the coin is that the risks were there. The answer to your question is no we don't think there's sufficient depth or competitiveness in that market. That was a couple of years ago. Broadly speaking it doesn't look like there's change. We're no longer in the market but a whole bunch of the elements of the market which caused us such concern at that time have continued so the development of regional monopolies has become exacerbated and the gentailers are continuing to basically use retail as a hedge for their own generation basis so they're still primarily generators and retail is the second element. Accordingly the hedge market will continue to be thin whilst they cover their own customer bases.* (NGC)

■ Holistic analysis

NGC said any analysis of generator-retailers had to be based on a holistic approach.

> *If you look at retail in isolation they can shift their money around to make retail look competitive and extract their money through generation and then when you look at generation, they can make that look thin on the ground and push the money into retail. You cannot look at these things in isolation. You cannot look at retail in isolation from generation*. (NGC)

It said the New Zealand market failed the basic tests of competitiveness.

> *If you think about the extent of competition in any market, there's basic tests: Porter's Five Forces, there's the threat of new entry, there's the threat of substitution, there's the threat from buyers and a threat from sellers. Because you're vertically integrated, the threat from people up the chain is non-existent. Customers who are consumers have very little market power because you're controlling that chain. The new entry is not there because you have to act simultaneously to build generation and accumulate retail customers at exactly the same time in order to enter the market and nobody's going to do that. The only other option is substitutability and the only substitute for electricity really is gas. We talked about efficiency and that's great. It's a wonderful thing but at the end of the day the only real substitute for electricity is gas.* [*The Commerce Commission see it as a weak substitute.* (Interjection.)] *A very weak substitute and it doesn't cover all but it's even weaker now because the government's just tied its hands.* (NGC)

It also believed the Electricity Commission needed to take a more holistic approach to the energy market as a whole and not focus solely on electricity.

> *I know too the Electricity Commission, is grappling majorly with how do we deal with transmission into Auckland. There doesn't seem to be any coherent platform to say that part of the answer could be around gas. We're quietly fighting our own RMA battles to get a gas pipeline route into Auckland so we're prepared but under current arrangements there isn't anybody at Transpower who's going to even spare a moment's thought for that, the easier solution may be to get a gas pipeline in and build a power plant up in Auckland*. (NGC)

■ Market operation

NGC said it was important for the market rules to be clear and to ensure they were enforced quickly and effectively.

> *I'm here talking about the M-co operators, two things: firstly they tried to remove themselves from all involvement in liability in a number of key issues, and secondly where they did play a role publicly in significant issues and disputes, it tended to be self-serving. So effectively the views of M-co were expressed through the market operator on key issues and we were thunderstruck by some of the views which were certainly contra to this company's interests where we thought the market operator, having dodged all liability and involvement, should then express a view. So I think one of the things for the Commission which I'm sure you're already improving on is to get the rules clear, make them quick and effective but be prepared to stand up and deal with issues when they need to be dealt with and not palm them off, for example, to participants saying "yes there's probably a case here to go to the High Court or whatever but we're not going to do anything". The classics were "yes there's a breach of the rules by another market participant, yes we should take enforcement action within the rules with the High Court but we're not prepared to do it; would you as the wronged market participant mind doing it for us".* (NGC)

Demand-side management

They also said demand-side management could be improved by ensuring the introduction of ex-ante pricing, so purchasers could plan their responses to high prices in advance though from these comments. Such a move would require enhancing purchaser education.

> *I was close to putting together about 400 MW worth of what I called virtual generation for a dry year which was a demand response capability but the major thing stopping me was the fact that there were retail contracts that did not allow me to create this sort of physical hedge market that was required which is day-ahead and week-ahead pricing, that sort of thing, so that people could plan their operations of their manufacturing around what the price was going to be. I've talked to most of the guys who run major plant in New Zealand who are major consumers of electricity in New Zealand. Most of them are prepared and really liked what I was saying, but their first priority was to go back to the good old days when we had ECNZ and they didn't have to even think about electricity, they just organised a five-year contract and everybody was sweet. They hated this market because they had to think about things that they never had to think about before. They liked my concept, but my concept was second to just going back to the good old days. It was certainly an improvement on today but they just – unfortunately when I was talking to … they were hurting so badly that they just wanted to crawl up into their shells and go back to ECNZ days.* (NGC)

Another suggestion to improve demand-side management was the use of advanced metering technology.

> *We'd really like the Commission to get its head around gas transmission and some alternative opportunities to electricity transmission – that would help the Commission in its bag of tricks, we'd also like the Commission to really get its head around the opportunities that metering offers. In both those circumstances we think NGC would be a willing partner in discussions saying we think we can help the overall energy equation and what we're offering in both cases is a quite creative and positive role.* (NGC)

APPENDIX 1

Hedge Market Survey

Hedge Market Survey Questions

This survey is divided into 4 sections:

- Section A is for all respondents to answer
- Section B is for both purchasers and sellers of electricity contracts (hedges)
- Section C is for sellers of electricity contracts
- Section D is for purchasers of electricity contracts

Notes:

- If respondents both purchase and sell electricity contracts they should complete all sections.
- Agents who act on behalf of purchasers should complete sections A and D.
- The sale and purchase of electricity hedges refers to the sale and purchase of electricity contracts in New Zealand only.

Section A – All respondents

■ Demographics

1. What is your type of business? [Tick all relevant boxes].

☐	Consumer
☐	Generator
☐	Retailer
☐	Distributor
☐	Hedge market agent
☐	Other (please specify) _____

2. What is the ownership structure of your business? [Tick one box only].

☐	Publicly listed or private company
☐	State owned enterprise
☐	Trust
☐	Other

3. Your electricity consumption/ retail business and/or generation could be predominantly described as: [Tick all relevant boxes].

Location	Consumption/ Sales	Generation
Upper North Island (Taupo North)		
Lower North Island (Turangi south, including Taranaki and Hawkes Bay)		
Upper South Island (Christchurch North, including the West Coast)		
Lower South Island (Ashburton South)		
New Zealand wide		
Unsure/ Don't know		
Not applicable		

■ Market perception

4. Many organisations enter into electricity hedge contracts (typically either contracts for differences or fixed-price variable-volume contracts) in order to manage exposure to electricity spot prices. Do you believe a competitive electricity contracts market (hedge market) currently exists in New Zealand?

- ☐ Yes
- ☐ No
- ☐ Unsure/ Don't know

5. Do you believe the competitiveness of the electricity contracts market (hedge market) has improved over the past 12 months? [Tic one box only].

- ☐ Yes, the competitiveness has improved
- ☐ The competitiveness is about the same as 12 months ago
- ☐ No, the competitiveness has gotten worse
- ☐ Unsure/ Don't know

6. Please tick the box that best reflects your current estimation of the energy component of electricity contract prices for the next three years (for year ending 31 March, base load with no force majeure (FM) at the Haywards node[1]) given current market conditions.

	1 April 05 – 31 March 06	**1 April 06 – 31 March 07**	**1 April 07 – 31 March 08**
> $80 /MWh			
$70 - $80 /MWh			
$60 - $70 /MWh			
$50 - $60 /MWh			
< $50 /MWh			
Unsure/ Don't know			

7. What processes do you use for negotiating electricity contracts? [Tick all relevant boxes].

- ☐ Tenders
- ☐ Respond to tenders
- ☐ Renew contracts with existing counterparties
- ☐ Contract potential counterparties directly
- ☐ Other (please specify)
- ☐ Unsure/ Don't know

8 Do you feel confident that the processes for establishing bilateral electricity contract prices is fair?

- ☐ Yes
- ☐ No
- ☐ Unsure/ Don't know

[1] The Haywards node is the major wholesale reference node located in Wellington.

Market information

9. Please rate each of the methods listed below in terms of their usefulness in forecasting electricity prices.

	Very useful	Fairly useful	Not that useful	Not useful at all	Not applicable
a. Independent forecasts					
b. Offers/ indications					
c. energyhedge.co.nz forward curve					
d. Market commentary					
e. M-co hedge contract index					
f. Market forums					
g. Internal modelling					

10. Would you say there is sufficient information available to develop a reasonable view of market price for electricity contracts?

- ☐ Yes
- ☐ No
- ☐ Unsure/ Don't know

11. What additional information do you believe would assist you in making electricity risk management decisions?

_____
_____
_____

Government intervention/ Reserve generation

12. The Electricity Commission, on behalf of the Government, procures reserve generation so that it is available to minimise the risk of supply shortages. Do you consider the provision of reserve generation by the Government:

- ☐ Reduces your risk to the spot market?
- ☐ Increases your risk to the spot market?
- ☐ Makes no difference to your risk to the spot market?
- ☐ Unsure/ Don't know

■ Disclosure/ Future involvement

13. Which of the following information relating to hedge transactions do you think should be published to assist in price transparency? [Tick all relevant boxes].

- ☐ Type of contract
- ☐ Price
- ☐ Location
- ☐ Duration
- ☐ Volume
- ☐ Profile
- ☐ FM clauses
- ☐ Other terms
- ☐ Counterparty names
- ☐ Other (please specify)

14. Do you think that disclosure of hedge transaction information will improve the availability of hedges?

- ☐ Yes
- ☐ No
- ☐ Unsure/ Don't know

15. Do you consider that disclosure of hedge transaction information will provide useful information to establish forward prices?

- ☐ Yes
- ☐ No
- ☐ Unsure/ Don't know

16. Are you happy to be involved in future surveys on hedge and risk management issues?

- ☐ Yes
- ☐ No
- ☐ Unsure/ Don't know

Section B – Purchasers and Sellers of Electricity Hedges

■ Risk management infrastructure

17. In what part of your organisation is the primary operational responsibility for electricity price risk management. [Tick one box only].

- ☐ Specialist energy manager function
- ☐ Risk/ portfolio manager function
- ☐ Finance/ Treasury function
- ☐ Operational line manager function
- ☐ Procurement manager function
- ☐ Other (please specify)
- ☐ Unsure/ Don't know

18. Do you use other parties as agents for your energy trading?

- ☐ Yes
- ☐ No
- ☐ Unsure/ Don't know

18(a). If **YES** above, is the party a generator/ retailer or an independent party?

- ☐ Generator/ Retailer
- ☐ Independent party

19. Do you have a risk management policy that guides your electricity price risk management?

- ☐ Yes
- ☐ No
- ☐ Unsure/ Don't know

20. Do you consider you have sufficient knowledge of the market and its issues, and sufficient skills within your organisation, to make effective electricity risk management decisions?

- ☐ Yes
- ☐ No
- ☐ Unsure/ Don't know

■ Contract position/ Strategy

21. Please describe your current contract position for the previous year and each of the next fives years (for future years based on your most up-to-date forecasts of expected load and generation).[2] (All values in GWh/annum). [Please write 'na' if not applicable to your organisation].

	Apr 04 – Mar 05 (Actual)	Apr 05 – Mar 06	Apr 06 – Mar 07	Apr 07 – Mar 08	Apr 08 – Mar 09	Apr 09 – Mar 10
What is your annual average consumption of electricity (if you are a retailer, include retail load)?						
What is your average annual generation?						
What volume of electricity hedges have you purchased?						
What volume of electricity hedges have you sold?						

22. How far in advance of contract expiry do you normally seek to contract (or re-contract)? [Tick one box only].

- ☐ More than 1 year in advance of existing maturity date
- ☐ More than 6 months in advance of existing maturity date
- ☐ More than 3 months in advance of exiting maturity date
- ☐ More than 1 month in advance of existing maturity date
- ☐ Within 1 month in advance of existing maturity date
- ☐ Upon maturity of existing hedge contract
- ☐ Unsure/ Don't know

23. For what duration do you normally seek to contract? [Tick one box only].

- ☐ Less than six months
- ☐ Between six months to one year
- ☐ Greater than one year to two years
- ☐ Greater than two years to three years
- ☐ Greater than three years to five years
- ☐ Greater than five years to ten years
- ☐ Greater than ten years
- ☐ Unsure/ Don't know

[2] Not that all information provide in this survey will remain confidential in un-aggregated form.

24. The maturity of your electricity contracts could be best described as: [Tick one box only].

- [ ] Fall due at the same time
- [ ] Staggered maturities
- [ ] Unsure/ Don't know

■ Use of standard contracts

25. Do you believe having a standard hedge product (e.g. base load hedge at Haywards) available to all potential counterparties through a centralised trading platform would add liquidity and transparent to the hedge market?

- [ ] Yes
- [ ] No
- [ ] Unsure/ Don't know

26. Would your company be interested in using a centralised trading platform to purchase standard hedge products?

- [ ] Yes
- [ ] No
- [ ] Unsure/ Don't know

Section C – Sellers of Electricity Hedges

Relevant questions relate to the sale of hedges (floating price payer) only

■ Market experience

27. On a 0-10 scale, where 0 means not important at all and 10 means very important, please rate the importance of each of the following elements relating to electricity hedges to be sold:

Contract element	Rating (0-10)
Price	
Term	
Profile	
Location	
Force majeure/ Suspension clauses[3]	
Credit arrangements	
Relationship with counterparty	
Other service provided by counterparty	

28. In the last 6 months how many times:

	Please specify number of times
Were you asked to provide an offer to a purchaser?	
Did you make an offer to a hedge purchaser in response to a request?	
Were the offers accepted by the purchasers?	

29. What types of electricity hedges do you sell? [Tick all relevant boxes].

- ☐ Contracts for differences (hedge contracts)
- ☐ Fixed price variable volume (i.e. single price tariff)
- ☐ Spot based contracts
- ☐ Volume based time-of-use
- ☐ Options (e.g. caps, collars, swaptions)
- ☐ Other (please specify)

30. How long do you typically take to provide offers once requested? [Tick one box only].

- ☐ More than 14 days
- ☐ 8 – 14 days
- ☐ 2 – 7 days
- ☐ Less than 2 days
- ☐ Unsure/ Don't know

[3] Fore majeure clauses are "Acts of God", whereas suspension clauses are those which enable the seller of the hedge to suspend the hedge if certain pre-defined events occur.

31. How long does it typically take for parties to respond to an offer you have made? [Tick one box only].

- ☐ Over 1 month
- ☐ 15 days – 1 month
- ☐ 7 – 14 days
- ☐ Less than 7 days
- ☐ Unsure/ Don't know

32. What proportion of your electricity hedge contracts contain Force Majeure (genuine Acts of God only, not including suspension clauses)? (in % of GWh) [Tick one box only].

- ☐ >90%
- ☐ 75%–89.9%
- ☐ 50%-74.9%
- ☐ 25%-49.9%
- ☐ 10%-24.9%
- ☐ <10%
- ☐ Unsure/ Don't know

33. What proportion of your electricity hedges contracts contain suspension clauses? (in % of GWh) [Tick one box only].

- ☐ >90%
- ☐ 75%–89.9%
- ☐ 50%-74.9%
- ☐ 25%-49.9%
- ☐ 10%-24.9%
- ☐ <10%
- ☐ Unsure/ Don't know
- ☐ Over 1 month

34. Do you consider that it is acceptable to include FM and/or suspension clauses in hedge contracts? [Tick one box only].

- ☐ No, hedges should not have FM or suspension clauses
- ☐ It is acceptable for hedges to have FM clauses, but not suspension clauses
- ☐ It is acceptable for hedges to have FM clauses, but suspension clauses may be acceptable in some circumstances
- ☐ Yes, all FM and/or suspension clauses are acceptable as hedges are negotiated bilaterally
- ☐ Unsure/ Don't know

35. Do you consider that hedges you have sold with FM and/or suspension clauses are efficiently priced compared to hedges without FM?

- [ ] Yes
- [ ] No
- [ ] Unsure/ Don't know

36. Do you have a policy not to provide prices for hedges at some locations?

- [ ] Yes
- [ ] No
- [ ] Unsure/ Don't know

37. Do you have a policy to only provide prices for hedges for certain durations (length of contract)?

- [ ] Yes
- [ ] No
- [ ] Unsure/ Don't know

38. Have you ever encountered problems entering into a hedge contract because of concerns regarding credit arrangements?

- [ ] Yes
- [ ] No
- [ ] Unsure/ Don't know

39. Do you perceive locational price risk (basis risk) as a significant problem?

- [ ] Yes
- [ ] No
- [ ] Unsure/ Don't know

39(a). If **YES** above, how do you manage it? [Tick all relevant boxes].

- [ ] Only sell at nodes for which locational price risk is not an issue for you
- [ ] Price in a premium at nodes that you would rather not sell at
- [ ] Purchase cross-hedges from generators with generation at locations where locational price risk could be an issue
- [ ] Other (please specify)

Section D – Purchasers of Electricity Hedges

Relevant questions relate to the sale of hedges (fixed price payer) only

■ Nature of consumption

40. How material (approximately) is the purchase (excluding interest, depreciation and tax) of physical electricity for your own consumption to your business/ organisation? [Tick one box only].

☐	More than 50% of input costs
☐	25% - 50% of input costs
☐	10% - 24.9% of input costs
☐	Less than 10% of input costs
☐	Unsure/ Don't know

41. Does your organisation: [Tick one box only].

☐	Purchase electricity on the spot market via the clearing manager
☐	Purchase electricity on the spot market via an agent
☐	Purchase electricity from a retailer
☐	Unsure/ Don't know
☐	Other (please specify)

■ Market experience

42. On a scale of 0-10, where 0 means not important at all and 10 means very important, please rate the importance of each of the following elements relating to your decision when purchasing electricity hedges.

Contract element	Rating (0-10)
Price	
Term	
Profile	
Location	
Force majeure/ Suspension clauses[4]	
Credit arrangements	
Relationship with counterparty	
Other service provided by counterparty	

43. In the last 24 months how many times did you seek to purchase hedges?

[4] Fore majeure clauses are "Acts of God", whereas suspension clauses are those which enable the seller of the hedge to suspend the hedge if certain pre-defined events occur.

44. For each of the 2 most recent occasions you sought to purchase hedges:

	Example	Most recent occasion	Second most recent
a) How many parties did you approach for an offer?	**4**		
b) Of the parties approached, how many responded?	**2**		
c) How many of the offers contained the same terms as the terms you requested?	**1**		
d) What was the difference in price (i.e. highest priced offer less lowest priced offer in $.MWh)?	**$4.20**		
e) How many of the offers included FM/ suspension clauses that were acceptable?	**14**		
f) How many of the offers included other clauses that were acceptable?	**1**		
g) How many offers had prices specified at GXPs (Gride Exit Points) that you had requested prices for?	**1**		
h) Did you accept an offer?	**Yes**		

45. What types of electricity contracts do you purchase? [Tick all relevant boxes].

- ☐ Contracts for differences (hedge contracts)
- ☐ Fixed price variable volume (i.e. single price tariff)
- ☐ Spot price
- ☐ Volume based time-of-use
- ☐ Options (e.g. caps, collars, swaptions
- ☐ Other (please specify)
  _____

46. How long does it typically take hedge suppliers to respond to your request for contract prices? [Tick one box only].

- ☐ More than 14 days
- ☐ 8 – 14 days
- ☐ 2 – 7 days
- ☐ Less than 2 days
- ☐ Unsure/ Don't know

47. How long does it typically take you to respond to an offer once provided? [Tick one box only].

- [ ] Over 1 month
- [ ] 15 days – 1 month
- [ ] 7 – 14 days
- [ ] Less than 7 days
- [ ] Unsure/ Don't know

48. Do you believe you are offered competitive prices for your hedges or electricity purchases?

- [ ] Yes
- [ ] No
- [ ] Unsure/ Don't know

49. What proportion of your electricity hedges purchased contain FM and/or suspension clauses? (in % of GWh) [Tick one box only].

- [ ] > 90%
- [ ] 75% - 89.9%
- [ ] 50% - 74.9%
- [ ] 25% - 49.9%
- [ ] 10% - 24.9%
- [ ] < 10%
- [ ] Unsure/ Don't know

50. What proportion of your electricity hedges purchased contain FM and/or suspension clauses that you consider are unreasonable? (in % of GWh) [Tick one box only].

- [ ] > 90%
- [ ] 75% - 89.9%
- [ ] 50% - 74.9%
- [ ] 25% - 49.9%
- [ ] 10% - 24.9%
- [ ] < 10%
- [ ] Unsure/ Don't know

51. What types of FM/ suspension clauses do you consider to be unreasonable?

52. How much load could you easily cut for a short period when spot prices are high? (in MW)

53. Do you consider that it is acceptable to include FM and/or suspension clauses in hedge contracts? [Tick one box only].

- ☐ No, hedges should not have FM or suspension clauses
- ☐ It is acceptable for hedges to have FM clauses, but not suspension clauses
- ☐ It is acceptable for hedges to have FM clauses, but suspension clauses may be acceptable in some circumstances
- ☐ Yes, all FM and/or suspension clauses are acceptable as hedges are negotiated bilaterally
- ☐ Unsure/ Don't know

54. Do you consider that hedges offered to you with FM and/or suspension clauses are efficiently priced compared to hedges without FM?

- ☐ Yes
- ☐ No
- ☐ Unsure/ Don't know

55. Have you had difficulties getting prices for hedges at some locations?

- ☐ Yes
- ☐ No
- ☐ Unsure/ Don't know

56. Do you perceive locational price risk as a significant problem?

- ☐ Yes
- ☐ No
- ☐ Unsure/ Don't know

57. Have there been situations where a lack of offers has meant that you had to purchase hedges at locations other than your preferred locations?

- ☐ Yes
- ☐ No
- ☐ Unsure/ Don't know

58. Have you had difficulties getting prices for hedges for the term (length of contract) you want?

- ☐ Yes
- ☐ No
- ☐ Unsure/ Don't know

59. Have you ever encountered problems entering into a hedge contract because the counterparty has been unhappy with your credit arrangements?

- [ ] Yes
- [ ] No
- [ ] Unsure/ Don't know

60. Have you ever been approached to enter into an arrangement regarding reducing load during a time of crisis?

- [ ] Yes
- [ ] No
- [ ] Unsure/ Don't know

61. Please describe the proportion of electricity contracts you currently have with each of the following generators/ retailers (in % terms).[5]

Generator/ Retailer	Proportion of contracts
Contact Energy/ Empower	
Genesis Energy/ Energy Online	
King Country Energy	
Mercury Energy/ Mighty River Power	
Meridian Energy	
Pioneer Generation	
Trustpower	
Todd Energy	
Tuaropaki Trust	
Other (please specify)	
TOTAL	**100%**

[5] These should sum to 100%. If you are one of the listed generators/ retailers, please include all internal contracts.

62. During periods of high spot prices, your responses are to: [Tick all relevant boxes].

- [ ] Reduce consumption
- [ ] Maintain consumption
- [ ] Increase hedge cover
- [ ] Political response (lobby Government/ media)
- [ ] Other (please specify)
- [ ] Unsure/ Don't know

■ Hedge seller performance

63. In your personal experience please rate the following generators/ retailers on their hedge seller performance. If you are one of the listed generators/ retailers, please **DO NOT** rate yourself.

	Very good	Good	Average	Poor	Very poor	No opinion
Contact Energy/ Empower						
Genesis Energy/ Energy Online						
King Country Energy						
Mercury Energy/ Might River Power						
Meridian Energy						
Pioneer Generation						
Trustpower						
Todd Energy						
Tuaropaki Trust						
Other (please specify)						

■ Confidentiality

(a) Do you consider the information that you have provided in this survey contains commercially prejudicial information?

- [ ] Yes
- [ ] No
- [ ] Unsure

(b) Do you confirm that you have provided this information to UMR in confidence?

- [ ] Yes
- [ ] No
- [ ] Unsure

Thank you very much for participating in this survey.