Electricity Hedge Market Issues

A Qualitative and Quantitative Study

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1. Introduction

In 2005, 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, and;
- Whether issues relating to the lodgement of hedges for prudential security are significant.

The research was not designed to provide answers to those questions, but to gather information related to the issues it raised to assist the Commission's determinations which will draw from a variety of other sources.

In 2007, the Commission approached UMR to conduct a follow-up research using the 2005 study for benchmark comparison purposes. As with the benchmark, 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 72 potential respondents. The survey largely replicated the benchmark though a very small number of questions were adjusted on the basis of earlier experience in order to clarify matters for respondents and an additional final section was included to cover initiatives being undertaken by the Commission. In the following table (Table A) we have included the aggregate consumption and generation of each of the respondent groups as an indication of how much of the total electricity market they represent. The figures are for the year ending March 2008.

TABLE A

RESPONDENT BY TYPE	SURVEYS DISTRIBUTED	RESPONSES	CONSUMPTION (IF RETAILER INCLUDES RETAIL LOAD) GWH/ANNUM	ANNUAL AVERAGE GENERATION GWH/ANNUM
Small purchasers	23	10	368	20
Medium purchasers	16	8	1,217	-
Large purchasers	10	7	10,225	1,281
Sub-total purchasers	**49**	**25**	**11,810**	**1,301**
Generator/generator-retailers	14	9	36,730	42,022
Others	9	9	61	12
Total	**72**	**43**	**48,601**	**43,335**

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 72 respondents that received surveys was 60% compared to 76% in the 2005 survey. 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.

The research also involved 29 depth interviews (36 respondents were approached) which were designed to better understand the reasons behind the responses given to some key questions in the survey. Those who declined to be interviewed did so largely because they said they did not have enough time or felt they would not be able to contribute much through their participation. 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 and traders. Similar assurances with respect to confidentiality were given to those who participated in the depth interviews with the exception of Powerco which gave permission to report their comments in providing the perspective of a distributor.

In order to preserve the confidentiality of all generators, we have aggregated the data for generators and generator-retailers and described this group through the report as gentailers.

42 of the 43 respondents said they had provided their answers to UMR in confidence and twenty said their answers contained commercially confidential information.

This report comprises an executive summary which captures the main findings arising from both the survey and the depth interviews. This is followed by tables showing the responses to the survey questions and then the report on the depth interviews which includes extensive verbatim quotes.

2. Executive Summary

2.1 Overview

There is a high degree of polarisation between the demand and supply sides of the market over whether a competitive hedge market exists. The supply-side is critical of the lack of liquidity in the hedge market which is linked to the vertical integration of gentailers who enjoy a natural hedge for much of their generation through their retail arms, thus limiting the volume of hedges. The degree of sophistication and knowledge of managing risk in the market resides strongly with gentailers and large purchasers. While greater disclosure of contract details is desired, the perception is that this will assist transparency but not liquidity.

The critical issues for the hedge market are primarily:

- Liquidity;
- Vertical integration;
- Disclosure including long-term pricing indications;
- Nodal pricing and its complexity.

The critical issues for the wider electricity industry obtained from the depth interviews were:

- Lack of competition;
- The emphasis being placed on renewable energy over the medium to long term;
- Political interference;
- Barriers to entry for new generators;
- Competing regulatory regimes (the Electricity Commission and the Commerce Commission);
- Transmission issues.

2.2 Market competition

2.2.1 Polarisation remains

- Perceptions of competitiveness remain more or less as polarised as they were in 2005 between gentailers, the majority of whom believe a competitive hedge market exists, and purchasers, the majority of whom believe that one does not exist.

- Opinions were similarly divided over whether competitiveness had improved over the past year. Only 1 purchaser thought it had become more competitive and only 1 gentailer thought it had not improved. Large and medium purchasers are also less likely to believe they are offered competitive prices for hedges while gentailers and small purchasers are more likely to believe they are.

- In the depth interviews, the emergence of a formalised market structure for hedges, *energyhedge*, marked a positive initiative to improve competitiveness since 2005. The development of *energyhedge* was rated the highest of all initiatives being undertaken to promote hedge market liquidity, but it rated only weakly to moderately well as a useful source for forecasting electricity prices. Awareness of *energyhedge* is high among large purchasers, gentailers and other respondents, but low among medium and small purchasers.

2.2.2 *Energyhedge* and its limitations

- However, *energyhedge* has significant issues to address if it is to be regarded as an open competitive market meeting the needs of a broad range of pure purchasers and sellers alike.

- The principal areas that attracted criticism in the depth interviews are that:

  - Its liquidity is low;
  - There are barriers to entry for small purchasers and traders with respect to credit arrangements and clarity around governance, process and rules;
  - It is dominated by gentailers (comments from large purchasers);
  - Hedges are limited to 3-years;
  - Traded hedges are flat and take no account of the variable demand profile that some purchasers require.

- Entry of the ANZ-National Bank as a trader on *energyhedge* is regarded as a positive though somewhat untested development. Its arrival may reassure those who are uncomfortable dealing directly with a competing gentailer and has raised expectations that innovations might be developed that could lead to greater choice of product for purchasers.

2.2.3 Location and nodal pricing

- In the depth interviews, it was evident that location continues to play a role in limiting competition for large, single site industrial purchasers. Basis risk limits the number of competitive bids offered at their preferred grid exit point.

- However, the survey results showed that location was more of an issue for large purchasers and gentailers. 5 of 7 large purchasers and 3 of 6 gentailers said they had had difficulties getting prices for hedges at some locations. Further, 5 of 6 gentailers perceived locational risk as a significant problem as did 4 of 7 large purchasers.

- Also, 3 of 5 gentailers who sell hedges said they only sold at nodes for which locational price risk was not an issue for them. 2 gentailers have specific policies not to provide hedges at some locations.

- Sellers, traders and pure purchasers were critical of what was regarded as a purist and overly complex nodal pricing system which limited the ability to provide more competitive bids.

- There is a view that competitiveness could be improved by replacing nodal pricing at all grid exit points for financial transactions with average, regionalised pricing similar to the system that operates in Australia. One respondent gave a counter to this saying that regional pricing could lead to generators gaming the system in order to be paid exorbitant amounts to generate to relieve constraints.

- It was conceded by some that a more sophisticated form of nodal pricing might be required for despatch purposes.

- Some said that economic efficiencies that were supposed to be derived from the current nodal pricing system, principally the location of new generation, had not eventuated. The primary determinants of new generation location had appeared to be the location of a power source and consumer demand.

2.2.4 Duration

- In the survey, none of the 6 gentailers as purchasers of hedges had had difficulty getting prices for the term of contract they wanted, but 9 of 21 purchasers had had difficulty.

- None of the gentailers had a policy to only offer hedges for certain durations.

2.2.5 Profile

- Some pure purchasers, for example, those involved in seasonal production peaks in the export sector are unable to obtain hedges to match their profile use.

2.2.6 Asymmetry of information and uncertainty

- Asymmetry of information is also a factor that appears to affect the degree of understanding and confidence in the hedge market. Few on the demand side have electricity risk management as a core function of their business and so do not invest what some on the supply-side might argue is enough resource into acquiring market knowledge. Greater disclosure could provide more confidence for purchasers that prices are fair and may constrain those who have been able to extract margins due to customer apathy.

- Most respondents said that the publication of the main contract elements – price, type of contract, volume, duration, location and profile – would assist in price transparency.

- Several respondents said the availability of hydrology information would be useful for developing a view of market prices.

- The depth interviews showed that uncertainty driven by factors such as a lack of sophisticated knowledge about managing hedges, the reliability of supply with the shift to renewables and unpredictable demand by pure purchasers has influenced some to seek long-term contracts typically on a fixed price, variable volume basis.

2.3 Fairness of the process

- Views on the fairness of the negotiating process for hedges were a little less polarised. 12 of 25 purchasers said the process was fair, 9 said it was not and 4 were unsure.

2.4 Size of the market

- Gentailer respondents in this survey had an aggregated total average load of 36, 730 GW/h and a total annual generation of 42,022 GW/h for the year ending March 2008. Of this, the combined total volume of hedges sold for the year to March 2008 was 10,311 GW/h.

- By contrast, purchasers in this survey had an annual average load of 11,810 MW/h and had purchased 1,809 GW/h of hedges for the year to March 2008. These purchasers had a combined generation capacity of 1,301 GW/h per annum. The volume of hedges purchased is significantly down on the 2005 survey because two large purchasers either reclassified how they determined their hedge purchases or did not provide a response. Had they provided responses similar to what had been provided in 2005, the amount of hedges purchased would be at least 8,100 GW/h for the year to March 2008.

2.5 Disclosure

- Although there is support for greater disclosure to improve understanding of pricing, there are concerns as to how this could be achieved while still preserving confidentiality and most doubt whether this would improve competitiveness.

- There was only weak support for the view that greater disclosure would improve the availability of hedges. Only 8 of 25 purchasers and 3 of 9 gentailers said it would improve their availability.

- However, there was a high level of agreement among both purchasers (19 of 25) and gentailers (6 of 9) that disclosure of hedge transaction information would provide useful information to establish forward prices.

2.6 Future contract prices

- Gentailers estimation of future contract prices through to 2010 are generally lower than the estimations of purchasers though all respondents see prices tracking upwards over that time.

2.7 Process used for negotiating contracts

- Tendering is the most used process for negotiating hedge contracts, particularly among purchasers.

2.8 Forecasting sources

- Offers and indications are by far the most usefully rated source for forecasting electricity prices followed by independent forecasts and internal modelling both of which are rated significantly above *energyhedge.co.nz* forward curve. Internal modelling though is used mainly by gentailers and large purchasers.

- Market commentary, market forums and M-co hedge contract index rate poorly for their usefulness.

- Most gentailers (7 of 9) say there is sufficient information available to develop a reasonable view of market prices for electricity contracts, but purchasers are more evenly divided with 11 saying there is and 11 saying there isn't sufficient information available.

2.9 Reserve generation

- A minority of purchasers (8 of 25) say the procurement of reserve generation reduces their risk to the spot market. This included only 1 of 7 large purchasers and 1 of 9 generators. A large number of purchasers (11) said it made no difference to their risk.

- In the depth interviews, several respondents were critical of the $200 MW/h trigger point for the activation of reserve generation. In times of high spot prices, this was considered an ineffective barrier to arrest rising prices and when supply shortages were not that acute it resulted in pricing up to just below the $200 MW/h threshold.

2.10 FM and suspension clauses

- In the depth interviews there was anecdotal evidence to suggest that some of the more unacceptable FM and or suspension clauses were less prevalent in contracts today than they had been a few years ago. There was virtually no support nor acknowledgement of any justification for suspension clauses. The prevailing view was that only Acts of God beyond the control of the gentailer should be included in FM and or suspension clauses though in the survey 7 of 21 purchasers said suspension clauses may be acceptable in some circumstances.

- In the survey, most purchasers (13 of 21) said that less than 10% of their hedges contained FM and or suspension clauses that they considered to be unreasonable. However, 1 medium and 1 large purchaser said that 90% of their hedges fell into that category.

- The kinds of clauses that are considered unreasonable are typically those that cover:

  - Planned maintenance;
  - The loss of thermal generators;
  - Dry spells;
  - Breakdown of the suppliers' machinery;
  - Anything in the control of the generator.

- A large number of purchasers (15 of 21) were unsure or did not know whether contracts with FM and or suspension clauses were efficiently priced. 5 said they were not and only 1 said they were. In contrast, 6 of 7 gentailers as sellers of hedges said they were efficiently priced.

2.11 Credit arrangements

- In the depth interviews, credit arrangements did not emerge as a significant issue though suggestions were made that separate provision could be made for low and high volume purchasers. A suggestion was also made that the ANZ, as a bank used to assessing credit risk and involved in *energyhedge,* could perform a role in managing prudential guarantees.

- In the survey, only 4 purchasers, including 3 of 7 large purchasers had encountered problems entering into hedge contracts due to credit arrangements. 5 of 7 generators as sellers of hedges had encountered such problems.

2.12 Risk management

- All 9 gentailers have risk management policies to guide their price risk as do 5 of the 7 large purchasers. 3 of 8 medium purchasers have a policy as do 4 of the 7 small purchasers.

- Gentailers and large purchasers have a more sophisticated approach to risk management appointing specialist risk management or energy sector functions to the management of their risk. Other purchasers are more likely to assign risk management to a general procurement function. This may be partly because electricity amounts to less than 10% of the input costs for 11 of 14 small and medium purchasers.

- Almost all gentailers and a majority of large purchasers do not use other parties for their energy trading.

- Slightly more than one-third of purchasers (8) either said they did not have sufficient knowledge of the market or the skills or were unsure whether they had sufficient knowledge of the market or the skills to make effective electricity risk management decisions.

- Gentailers tend to use a longer planning window than purchasers for assessing their contract positions and all have adopted a practise of staggering maturities. In contrast, 9 of 21 purchasers, almost all of which are small and medium purchasers, allow their contracts to fall due at the same time.

2.13 Demand-side response to high spot prices

- Gentailers principally reduce consumption and increase hedge cover during periods of high spot prices while 10 of 21 purchasers maintain consumption and 9 reduce it. Most purchasers (13 of 21) had been approached to reduce load during a crisis including 6 of 7 large purchasers.

- Large purchasers are also more likely to resort to a political response to high spot prices.

■ Hedge seller performance

- Hedge sellers that were rated the best by 12 or more purchasers were:

  1. Contact Energy
  2= Meridian Energy and Mighty River Power
  4. Trustpower
  5. Genesis

- Gentailers rated the best sellers of hedges in the following order:

  1. Contact Energy
  2. Meridian Energy
  3. Mighty River Power
  4. Trustpower
  5. Genesis

■ Electricity Commission initiatives

- Small and medium purchasers have much lower awareness of initiatives by the Electricity Commission to improve hedge market liquidity while almost all large purchasers and gentailers are aware of most initiatives.

- The development of *energyhedge* was rated as the most useful initiative followed by publication of contract details, support for model master agreement and locational rental allocation.

3. Quantitative Research

3.1 Respondent profile

RESPONDENT PROFILE			
		Consumption GWh/annum (if retailer, includes retail load)	**Generation GWh/annum**
Small purchasers	10	368	20
Medium purchasers	8	1,217	-
Large purchasers	7	10,225	1,281
Sub-total purchasers	**25**	**11,810**	**1,301**
Generator-Retailers	9	36,730	42,022
Others	9	61	12
Total	**43**	**48,601**	**43,335**

3.2 Competitive hedge market

Opinions on whether there is a competitive hedge market are reasonably polarised. A majority of gentailers (7) say it is competitive while a majority of purchasers (15) say it is not. Others who responded were more or less evenly divided on the question.

COMPETITIVE HEDGE MARKET *Many organisations enter into electricity hedge 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?*			
	Total Purchasers (n=25)	**Generators/ Retailers (n=9)**	**Other (n=9)**
Yes	5	7	4
No	15	2	5
Unsure/Don't know	5	-	-

Opinions were similarly divided on whether the competitiveness of the hedge market had improved over the past 12 months. Only 1 purchaser thought it had become more competitive and only 1 gentailer thought it had not. Most purchasers (12) said competitiveness was about the same as it was 12 months ago, though 10 were unsure. In contrast 7 of the 9 gentailers said competitiveness had improved and only 1 said it was the same. Other respondents were more or less evenly divided with 4 saying it had improved, 3 saying it had not and with 2 unsure.

IMPROVED COMPETITIVENESS

Do you believe the competitiveness of the electricity contracts market (hedge market) has improved over the past 12 months?

	Total Purchasers (n=25)	Generators/ Retailers (n=9)	Other (n=9)
Yes, the competitiveness has improved	1	7	4
The competitiveness is about the same as 12 months ago	12	1	3
No, the competitiveness has gotten worse	2	1	-
Unsure/ Don't know	10	-	2

3.3 Fairness of process

Polarisation was somewhat less marked over confidence in the fairness of establishing bilateral hedge contracts. Even so, 9 of the 25 purchasers felt the process was unfair, a view that none of the gentailers shared. Indeed all but 1 gentailer felt the process was fair, a view shared by slightly less than half the purchasers (12). Most of the other respondents (5) felt the process was fair, though 2 felt it wasn't and 2 were unsure.

CONFIDENCE IN CONTRACT PROCESS

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

	Total Purchasers (n=25)	Generators/ Retailers (n=9)	Other (n=9)
Yes	12	8	5
No	9	-	2
Unsure/Don't know	4	1	2

3.4 Short and medium term hedge prices

Gentailer estimations of future contract prices for the year to March 2008 and the subsequent 2 years were generally lower than the estimations of purchasers. For instance 10 of the 25 purchasers saw the prices to the end of March 2008 at over $70/MWh compared with only 2 of the 9 gentailers. There was somewhat closer alignment of expectations for the year ending March 2010 with 18 purchasers estimating prices would be above $70 MW/h and 6 gentailers of the same view. However, of those 18 purchasers, 8 estimated the 2010 price would be above $80 MW/h compared with only 1 gentailer. Other respondents' estimations also tracked above the estimations of gentailers with 5 of the 9 others estimating prices would exceed $80MW/h in 2010.

FUTURE PRICE PATH

What is your current estimation of the energy component of electricity contract prices for the next 3 years given current market conditions?

Price $/MH	Total Purchasers to March 08 (n=25)	Generator-Retailers to March 08 (n=9)	Other to March 08 (n=9)	Total Purchasers to March 09 (n=25)	Generator-Retailers to March 09 (n=9)	Other to March 09 (n=9)	Total Purchasers to March 10 (n=25)	Generator-Retailers to March 10 (n=9)	Other to March 10 (n=9)
Over $80/MWh	2	-	-	3	1	-	8	1	5
$70 - $80 /MWh	8	2	5	11	2	6	10	5	2
$60 - $70 /MWh	10	6	2	7	6	1	3	3	-
$50 - $60 /MWh	1	1	-	-	-	-	-	-	-
Less than $50 /MWh	1	-	-	1	-	-	1	-	-
Unsure/ Don't know	3	-	2	3	-	2	3	-	2

3.5 Process for establishing hedges

Tendering is the most used process for negotiating electricity contracts for purchasers either in the form of issuing them (16) or responding to them (5). 10 purchasers renew contracts with counterparties and 8 contract counterparties directly. Most gentailers use all processes.

PROCESS USED FOR NEGOTIATING ELECTRICITY CONTRACTS

What processes do you use for negotiating electricity contracts?

	Total Purchasers (n=25)	Generators/ Retailers (n=9)	Other (n=9)
Tenders	16	4	4
Renew contracts with existing counterparties	10	5	2
Contract potential counterparties directly	8	6	3
Respond to tenders	5	5	2
Other	2	2	2
Unsure	-	-	-
Not applicable	-	-	-

Offers and indications are by far the most useful source for forecasting electricity prices followed by independent forecasts and internal modelling which are regarded as more or less as useful as each other thought the latter is only carried out by gentailers and large purchasers. Energyhedge.co.nz forward curve was the next most useful source, but its usefulness was more valued by gentailers. Other sources – market commentary, market forums and the M-co hedge contract index were not rated as useful.

FORECASTING SOURCES (NET USEFULNESS)

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)						
	TOTAL NET USEFULNESS (n=43)	**Total Purchasers (excluding generator-retailers) (n=25)**	**Small Purchasers (n=10)**	**Medium Purchasers (n=8)**	**Large Purchasers (n=7)**	**Generator-Retailers (n=9)**	**Other (n=9)**
Offers/ indications	**21**	12	5	2	5	7	2
Independent forecasts	**14**	11	4	5	2	3	-
Internal modelling	**13**	5	-	2	3	4	4
Energyhedge.co.nz forward curve	**6**	-	3	-1	-2	5	1
Market commentary	**-9**	-1	-	3	-4	-7	-1
Market forums	**-16**	-6	-4	1	-3	-5	-5
M-co hedge contract index	**-17**	-7	-3	-	-4	-9	-1

While most gentailers (7) said there was sufficient information available to develop a reasonable view of market prices for electricity contracts, purchasers were evenly divided with 11 saying there was sufficient information and 11 said there wasn't with 3 unsure. Other respondents were also divided with 4 saying there was sufficient information, 3 saying there wasn't and 2 unsure.

SUFFICIENT INFORMATION TO DEVELOP VIEW OF MARKET PRICE

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

	Total Purchasers (excluding generator-retailers) (n=25)	Small Purchasers (n=10)	Medium Purchasers (n=8)	Large Purchasers (n=7)	Generator-Retailers (n=9)	Other (n=9)
Yes	11	5	3	3	7	4
No	11	4	3	4	2	3
Unsure/Don't know	3	1	2	-	-	2

Large and medium purchasers were less likely to believe they were offered competitive prices for hedges while gentailers and small purchasers were more likely to believe they were. 5 of the 6 gentailers who answered said they believed they were offered competitive prices and 1 was unsure. However, 4 of the 7 large purchasers who answered said they did not believe they were offered competitive prices, 2 were unsure and only 1 believed they were.

COMPETITIVE PRICES OFFERED

Do you believe you are offered competitive prices for your hedges or electricity purchases?

	Total Purchasers (excluding generator-retailers) (n=21)	Small Purchasers (n=7)	Medium Purchasers (n=7)	Large Purchasers (n=7)	Generator-Retailers as Purchasers (n=6)
Yes	9	6	2	1	5
No	7	1	2	4	-
Unsure/Don't know	5	-	3	2	1

3.6 Reserve generation

Views were quite mixed about the risk impact of the Government's reserve generation. A minority of purchasers (8) considered it reduced their risk while 11 said it made no difference, 2 said it increased their risk, 2 said it sometimes increased and sometimes reduced risk and 2 were unsure. Only 1 gentailer said it reduced their risk, 1 said it increased risk, 6 said it sometimes increased and sometimes reduced risk and 1 was unsure. Only the other respondents were more likely to consider it reduced risk with 4 of the 9 saying this.

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:

	Total Purchasers (excluding generator-retailers) (n=25)	Small Purchasers (n=10)	Medium Purchasers (n=8)	Large Purchasers (n=7)	Generator-Retailers (n=9)	Other (n=9)
Reduces your risk to the spot market?	8	5	2	1	1	4
Increases your risk to the spot market?	2	-	-	2	1	1
Sometimes reduces and sometimes increases your risk to the spot market?	2	1	-	1	6	1
Makes no difference to your risk to the spot market?	11	3	6	2	-	2
Unsure/ Don't know	2	1	-	1	1	1

3.7 Disclosure

Most respondents think that the key elements of a contract – price, type of contract, volume, duration, location and profile should be published to assist price transparency. Slightly less than half (20) think FM clauses should be published too. However, very few (6) thought counterparty names should be published.

INFORMATION TO ASSIST PRICE TRANSPARENCY

Which of the following information relating to hedge transactions do you think should be published to assist in price transparency?

	TOTAL (n=43)	Total Purchasers (excluding generator-retailers) (n=25)	Small Purchasers (n=10)	Medium Purchasers (n=8)	Large Purchasers (n=7)	Generator-Retailers (n=9)	Other (n=9)
Price	**34**	20	9	7	4	7	7
Type of contract	**33**	18	8	6	4	7	8
Volume	**31**	19	7	7	5	7	5
Duration	**29**	15	7	5	3	7	7
Location	**28**	16	7	5	4	6	6
Profile	**24**	14	6	3	5	6	4
FM clauses	**20**	10	3	3	4	5	5
Other terms	**7**	3	1	1	1	2	2
Counterparty names	**6**	5	1	3	1	-	1
Other	**6**	2	1	-	1	2	2
None	**2**	2	-	-	2	-	-
Unsure/Don't know	**3**	2	1	1	-	1	-

Most gentailers and large purchasers do not think that disclosure of hedge transaction information will improve the availability of hedges. Only 3 of the gentailers and 1 of the large purchasers thought disclosure would improve availability. Most medium purchasers (5) were unsure and 5 of the 10 small purchasers thought it would increase their availability.

HEDGE AVAILABILITY

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

	Total Purchasers (excluding generator-retailers) (n=25)	Small Purchasers (n=10)	Medium Purchasers (n=8)	Large Purchasers (n=7)	Generator-Retailers (n=9)	Other (n=9)
Yes	8	5	2	1	3	2
No	8	3	1	4	5	4
Unsure/Don't know	9	2	5	2	1	3

However, a strong majority of all respondents (33) considered that disclosure of hedge information would provide useful information to establish forward prices. 7 respondents did not think it would provide useful information, including 3 gentailers.

FORWARD PRICES

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

	Total Purchasers (excluding generator-retailers) (n=25)	Small Purchasers (n=10)	Medium Purchasers (n=8)	Large Purchasers (n=7)	Generator-Retailers (n=9)	Other (n=9)
Yes	19	8	6	5	6	8
No	4	2	1	1	3	-
Unsure/Don't know	2	-	1	1	-	1

3.8 Risk management

While all 9 gentailers have a risk management strategy and most (5) of the 7 large purchasers do, most medium purchasers (5) did not have one. 4 of the 7 small purchasers said they had one also.

RISK MANAGEMENT POLICY

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

	Total Purchasers (excluding generator-retailers) (n=22)	Small Purchasers (n=7)	Medium Purchasers (n=8)	Large Purchasers (n=7)	Generator-Retailers (n=9)
Yes	12	4	3	5	9
No	9	2	5	2	-
Unsure/Don't know	1	1	-	-	-

More than half of the purchasers assign electricity price risk management to either a procurement manager (9) or an operational line manager (5). In contrast, most gentailers (7) assign the responsibility either to a risk management function (6) or a specialist energy manager function (1). 3 of 7 large purchasers assigned responsibility to a specialist energy manager.

RISK MANAGEMENT INFRASTRUCTURE

Risk management infrastructure - In what part of your organisation is the primary operational responsibility for electricity price risk management?

	Total Purchasers (excluding generator-retailers) (n=22)	Small Purchasers (n=7)	Medium Purchasers (n=8)	Large Purchasers (n=7)	Generator-Retailers (n=9)
Procurement manager function	9	2	5	2	-
Risk/ Portfolio manager function	3	2	1	-	6
Operational line manager function	5	2	1	2	2
Specialist energy manager function	3	-	-	3	1
Finance/ Treasury function	2	1	1	-	-

3.9 Use of other parties for trading

Only 1 of the 9 gentailers uses other parties as agents for energy trading while almost half (10) of the purchasers use them.

USE OF OTHER PARTIES FOR TRADING *Do you use other parties as agents for your energy trading?*					
	Total Purchasers (excluding generator-retailers) (n=22)	**Small Purchasers (n=7)**	**Medium Purchasers (n=8)**	**Large Purchasers (n=7)**	**Generator-Retailers (n=9)**
Yes	10	3	3	4	1
No	12	4	5	3	8

Of those purchasers who do use other parties as agents for trading, most (6) use a gentailer and 4 use an independent party.

PARTY USED FOR TRADING *If you have answered yes above, please complete this next question. Is the party a generator/ retailer or an independent party?*					
	Total Purchasers (excluding generator-retailers) (n=10)	**Small Purchasers (n=3)**	**Medium Purchasers (n=3)**	**Large Purchasers (n=4)**	**Generator-Retailers (n=1)**
Generator/ Retailer	6	-	3	3	1
Independent party	4	3	-	1	-

3.10 Declared knowledge and skills

Slightly more than one-third of purchasers (8) either said they did not have sufficient knowledge of the market and skills or were unsure whether they had sufficient knowledge or skills to make effective electricity risk management decisions. This included 1 large purchaser. None of the gentailers said they had insufficient knowledge or skills.

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?

	Total Purchasers (excluding generator-retailers) (n=22)	Small Purchasers (n=7)	Medium Purchasers (n=8)	Large Purchasers (n=7)	Generator-Retailers (n=9)
Yes	14	4	4	6	9
No	6	3	2	1	-
Unsure/Don't know	2	-	2	-	-

3.11 Contract position

■ Generator-Retailers

Gentailers see their estimated annual generation growing faster than their estimated load over the next few years to March 2010.

TABLE B

	April 06 – March 07 (Actual)	April 07 – March 08	April 08 – March 09	April 09 – March 10
Total average load	36,242	36,730	37,028	37,281
Total annual generation	40,756	42,022	43,555	44,234
Total Volume of hedges purchased	2,910	3,156	2,858	2,596
Total Volume of hedges sold	10,244	10,311	9,925	9,852

■ All purchasers

The volume of hedges purchased is significantly below that registered in the 2005 hedge survey. The reason for this is that two large purchasers either reclassified how they determined their hedge purchases or did not provide a response. Had they provided responses similar to what had been provided in 2005, the amount of hedges purchased would be at least 8,100 GW/h for the year to March 2008.

TABLE C

	April 06 – March 07 (Actual)	April 07 – March 08	April 08 – March 09	April 09 – March 10
Total Annual average load	10,475	11,810	11,978	12,063
Total Average annual generation	1,223	1,301	1,301	1,301
Total Volume of hedges purchased	1,505	1,809	1,510	1,250

3.12 Contract planning

Gentailers tend to use a longer planning window than purchasers for assessing their contract positions with all gentailers using a planning window of more than 2 years compared to 13 of the 21 purchasers who do the same. 7 of the 9 gentailers use a window 2-3 years out. In contrast, 4 of the 7 large purchasers use a planning window of less than 2 years.

TIME PERIOD FOR ASSESSING CONTRACT POSITION

How far ahead is your usual planning window for assessing your contract position?

	Total Purchasers (excluding generator-retailers) (n=21)	Small Purchasers (n=7)	Medium Purchasers (n=7)	Large Purchasers (n=7)	Generator-Retailers (n=9)
Less than 6 months	-	-	-	-	-
Between 6 months and 1 year	4	2	1	1	-
Over 1 year up to 2 years	4	1	-	3	-
Over 2 years up to 3 years	5	1	4	-	7
Over 3 years up to 5 years	6	3	2	1	1
Over 5 years up to 10 years	1	-	-	1	-
Over 10 years	1	-	-	1	1
Unsure/ Don't know	-	-	-	-	-

Almost all respondents seek to contract or re-contract more than 3 months out from expiry of contracts though 1 medium purchaser seeks to contract on expiry. The most common practise is to seek to contract between 6-12 months of expiry.

TIME PERIOD SEEK TO CONTRACT OR RE-CONTRACT

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

	Total Purchasers (excluding generator-retailers) (n=21)	Small Purchasers (n=7)	Medium Purchasers (n=7)	Large Purchasers (n=7)	Generator-Retailers (n=9)
More than 1 year in advance of existing maturity date	4	2	1	1	2
More than 6 months in advance of existing maturity date	10	1	4	5	4
More than 3 months in advance of exiting maturity date	5	3	1	1	2
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	1	-	1	-	-
Unsure/ Don't know	1	1	-	-	1

Almost all respondents seek to contract either for 2 to 3 years (15) or between 3 and 5 years (11).

PROPOSED DURATION OF CONTRACT

For what duration do you normally seek to contract?

	Total Purchasers (excluding generator-retailers) (n=21)	Small Purchasers (n=7)	Medium Purchasers (n=7)	Large Purchasers (n=7)	Generator-Retailers (n=9)
Less than 6 months	-	-	-	-	-
Between 6 months and 1 year	-	-	-	-	-
Over 1 year up to 2 years	1	-	-	1	-
Over 2 years up to 3 years	11	3	5	3	4
Over 3 years up to 5 years	8	4	2	2	3
Over 5 years up to 10 years	-	-	-	-	1
Over 10 years	-	-	-	-	-
Unsure/ Don't know	1	-	-	1	1

All gentailers have adopted the practise of staggering the maturity of their contracts, but 9 of the 21 purchasers allow contracts to fall due at the same time.

OVERLAP OF CONTRACT PERIODS

The maturity of your electricity contracts could be best described as:

	Total Purchasers (excluding generator-retailers) (n=21)	Small Purchasers (n=7)	Medium Purchasers (n=7)	Large Purchasers (n=7)	Generator-Retailers (n=9)
Fall due at the same time	9	4	4	1	-
Staggered maturities	12	3	3	6	9
Unsure/Don't know	-	-	-	-	-

3.13 Standard contracts and a centralised trading platform

Most purchasers (13) believe a centralised trading platform would add liquidity to the market, but only 3 of the 7 large purchasers and only 3 of the 9 gentailers believe this.

BENEFIT OF CENTRALISED TRADING PLATFORM

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 transparency to the hedge market?

	Total Purchasers (excluding generator-retailers) (n=22)	Small Purchasers (n=7)	Medium Purchasers (n=8)	Large Purchasers (n=7)	Generator-Retailers (n=9)
Yes	13	4	6	3	3
No	4	2	1	1	5
Unsure/Don't know	5	1	1	3	1

Interest in a centralised trading platform is more or less evenly divided with 8 of 22 purchasers expressing interest, 8 not expressing interest and 6 unsure. Among the 9 gentailers, 4 are interested, 3 are not and 2 are unsure.

INTEREST IN CENTRALISED TRADING PLATFORM

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

	Total Purchasers (excluding generator-retailers) (n=22)	Small Purchasers (n=7)	Medium Purchasers (n=8)	Large Purchasers (n=7)	Generator-Retailers (n=9)
Yes	8	1	4	3	4
No	8	4	2	2	3
Unsure/Don't know	6	2	2	2	2

3.14 Contract elements

Price is rated significantly more important than any other contract element by all types of respondent. FM clauses are rated second most important by large and medium purchasers with mean ratings of 8.0 and 7.6 respectively, but are rated low by gentailers as sellers of hedges with a mean of 4.7. Gentailers as purchasers rate FM clauses more highly at 6.8. Gentailers as either sellers or purchasers rate credit arrangements far higher than any purchasers. Location, term and profile tend to be rated more or less the same by all respondents, though term tends to be more important for gentailers than location or profile.

IMPORTANCE OF CONTRACT ELEMENTS (MEAN RATING)

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:

	All purchasers (excluding generator-retailers)		Small Purchasers		Medium Purchasers		Large Purchasers		Generator-Retailers as sellers		Generator-Retailers as purchasers	
	n=	mean	*n*=	mean	*n*=	mean	*n*=	mean	*n*=	mean	*n*=	mean
Price	21	9.8	7	10.0	7	9.3	7	10.0	7	9.3	6	9.7
Location	21	6.6	7	7.9	7	4.9	7	7.1	7	7.0	6	6.7
Term	21	6.8	7	7.9	7	5.6	7	6.9	7	7.6	6	7.8
Profile	20	6.6	6	7.8	7	5.0	7	7.1	7	6.3	6	6.3
FM	21	7.2	7	6.1	7	7.6	7	8.0	7	4.7	6	6.8
Credit arrangement	21	3.1	7	1.7	7	2.4	7	5.1	7	7.4	6	6.5
Relationship with counterparty	21	5.6	7	6.7	7	5.0	7	5.1	7	5.7	6	5.3
Other service provided by counterparty	21	4.4	7	4.3	7	4.9	7	4.0	6	3.0	5	3.0

*Note: Not all respondents provided a rating for all elements; the number to the left is the number of respondents who provided ratings

3.15 Market experience

■ Sellers – last six months

In all but 7 cases gentailers made an offer to a purchaser in response to a request. It is clear from the data that gentailers are not always successful. On average, gentailers' offers were accepted 46 times for every 108 offers they made.

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?	108.9	700	1	980
Did you make an offer to a hedge purchaser in response to a request?	108.11	700	0	973
Were the offers accepted by the purchasers	46.3	315	0	417

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.

Generator-Retailer (n=7)/ Other (n=2)	**Response rate (% of responses to requests for offers)**	**Success rate (% of acceptance to offers made)**
A	100	45
B	87.5	37.5
C	100	85.7
D	100	38.2
E	0	0
F	100	100
G	100	25
H	75	0
I	100	100

Purchasers – last 24 months

Gentailers are far more active than other respondents in seeking to purchase hedges with 6 gentailers on average seeking hedges 10.3 times in the past 24 months compared with 3.4 times for large purchasers, 1.6 for medium purchasers and 1.2 times for small purchasers.

PURCHASERS – LAST 24 MONTHS

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

	Total Purchasers (excluding generator-retailers) (n=25)	Small Purchasers (n=10)	Medium Purchasers (n=8)	Large Purchasers (n=7)	Generator-Retailers as Purchasers (n=6)
Total	42	7	11	24	62
Mean*	2.1	1.2	1.6	3.4	10.3
Maximum	10	3	4	10	24
Minimum	-	-	-	1	-
No answer	5	4	1	-	3
Total	42	7	11	24	62

Experience of most recent occasions seeking a hedge

71% (44 responses from 66 approaches) of all approaches for a hedge received a response, though this is highest for gentailers (88%) and lowest for large purchasers (65%). Of all responses, 68% had the terms sought (30 of 44), 66% had FM or suspension clauses (29 of 44), 68% had other clauses that were acceptable (30 of 44), 82% had responses at the grid exit points requested (36 of 44) and 36% accepted an offer (16 of 44). For all purchasers there was a very wide range of up to $30 in the prices offered.

MOST RECENT OCCASION								
	Approaches	**Responses**	**Had Terms sought**	**Had FM/ Susp' clauses**	**Had other clauses that were acceptable?**	**Had GXPs requested?**	**Percentage respondents who accept response %**	**Range of differences in prices ($/MW/hr)**
All Purchasers	62	44	30	29	30	36	36 (16 of 44)	$0 - $30
Small Purchasers	16	12	10	6	9	11	33 (4 of 12)	$0.71 - $30
Medium Purchasers	17	13	8	8	7	12	38 (5 of 13)	$0 - $10
Large Purchasers	29	19	12	15	14	13	37 (7 of 9)	$0 - $23
Generator-Retailers	17	15	14	8	10	14	27 (4 of 15)	$1 - $10

Large purchasers

Of 29 approaches, large purchasers received 19 responses representing a 66% response rate. Of those responses, 63% had the same conditions as those requested (12 of 19), 79% had acceptable FM or suspension clauses (15 of 19), 74% had other clauses that were acceptable (14 of 19) and 68% had prices at grid exit points requested (13 of 19).

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?**
	2 approached 3	3	3	3	3	3
	3 approached 4	11	8	10	11	8
	1 approached 5	3	-	-	-	2
	1 approached 6	2	1	2	-	-
Total	**29 approaches**	**19 responses**	**12 had same conditions as those requested**	**15 had acceptable FM/suspension clauses**	**14 had other clauses that were acceptable**	**13 had prices at GXPs requested**

Medium purchasers

Of 17 approaches, medium purchasers received 13 responses representing a 76% response rate. Of those responses, 62% had the same conditions as those requested (8 of 13), 62% had acceptable FM or suspension clauses (8 of 13), 54% had other clauses that were acceptable (7 of 13) and 92% had prices at grid exit points requested (12 of 13).

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?**
	1 approached 1	-	-	1	-	-
	2 approached 3	5	2	3	3	4
	1 approached 4	4	2	4	4	4
	1 approached 6	4	4	-	-	4
Total	**17 approaches**	**13 responses**	**8 had same conditions as those requested**	**8 had acceptable FM/suspension clauses**	**7 had other clauses that were acceptable**	**12 had prices at GXPs requested**

Small purchasers

Of 16 approaches, medium purchasers received 12 responses representing a 75% response rate. Of those responses, 83% had the same conditions as those requested (10 of 12), 50% had acceptable FM or suspension clauses (6 of 12), 75% had other clauses that were acceptable (9 of 12) and 92% had prices at grid exit points requested (11 of 12).

SMALL PURCHASERS						
	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 approached 3	4	4	1	4	4
	2 approached 5	8	6	5	5	7
Total	**16 approaches**	**12 responses**	**10 had same conditions as those requested**	**6 had acceptable FM/suspension clauses**	**9 had other clauses that were acceptable**	**11 had prices at GXPs requested**

3.16 Electricity as a proportion of input costs

Electricity costs are a more significant proportion of input costs for large and medium purchasers. 4 of the 7 large purchasers said they comprised between 25-50% of input costs with the remainder saying they comprised between 10-24.9% of input costs. By contrast, they comprised less than 10% of input costs for all 7 small users.

PURCHASE OF PHYSICAL ENERGY AS A PROPORTION OF INPUT COSTS

Approximately what proportion of the input costs of your business/ organisation is the purchase of physical electricity (excluding interest, depreciation and tax)?

	Total Purchasers (excluding generator-retailers) (n=21)	Small Purchasers (n=7)	Medium Purchasers (n=7)	Large Purchasers (n=7)	Generator-Retailers as Purchasers (n=6)
More than 50% of input costs	-	-	-	-	-
25% - 50% of input costs	4	-	-	4	1
10% - 24.9% of input costs	6	-	3	3	-
Less than 10% of input costs	11	7	4	-	2
Unsure/Don't know	-	-	-	-	3

All gentailers who purchase electricity do so on the spot market via the clearing manager, but only 1 large purchaser does that too. Most purchasers (13) purchase from a retailer.

PLACE OF ELECTRICITY PURCHASE

Where does your organisation purchase electricity?

	Total Purchasers (excluding generator-retailers) (n=21)	Small Purchasers (n=7)	Medium Purchasers (n=7)	Large Purchasers (n=7)	Generator-Retailers as Purchasers (n=6)
On the spot market via the clearing manager	1	-	-	1	6
On the spot market via an agent	4	-	2	2	-
From a retailer	13	6	5	2	-
Unsure/Don't know	-	-	-	-	-
Other	3	1	-	2	-

3.17 Types of hedge contracts

All gentailers purchase contracts for differences, 4 purchase options and 1 fixed price variable volume.

PURCHASERS ONLY - CONTRACTS

What types of electricity contracts do you purchase?

	Total Purchasers (excluding generator-retailers) (n=20)	Small Purchasers (n=6)	Medium Purchasers (n=7)	Large Purchasers (n=7)	Generator-Retailers as Purchasers (n=6)
Contracts for differences (hedge contracts)	14	3	5	6	6
Fixed price variable volume (i.e. single price tariff)	11	3	5	3	1
Spot price	12	2	3	7	-
Volume based time-of-use	3	1	1	1	-
Options (e.g. caps, collars, swaptions)	1	-	-	1	4
Other	2	1	-	1	1

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

All 6 gentailers sell contracts for differences, fixed price variable volume and spot based contracts, 5 sell volume based time of use contracts and 4 sell options.

SALE OF ELECTRICITY HEDGES

Which of the following types of electricity hedges do you sell?

	Generator-Retailers as Sellers (n=6) N=
Contracts for differences (hedge contracts)	6
Fixed price variable volume (i.e. single price tariff)	6
Spot based contracts	6
Volume based time-of-use	5
Options (e.g. caps, collars, swaptions)	4
None of the above	-
Other	-

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

3.18 Responsiveness to offers

Most purchasers (19) including gentailers as purchasers say it takes less than 14 days for suppliers to respond to their requests for contract prices and 7 say they take longer than 14 days.

SUPPLIERS RESPONSE TO HEDGE REQUESTS

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

	Total Purchasers (excluding generator-retailers) (n=21)	Small Purchasers (n=7)	Medium Purchasers (n=7)	Large Purchasers (n=7)	Generator-Retailers as Purchasers (n=6)
More than 14 days	7	2	2	3	-
8 - 14 days	6	2	3	1	1
2 - 7 days	7	3	1	3	4
Less than 2 days	-	-	-	-	1
Unsure/ Don't know	1	-	1	-	-

16 purchasers, including gentailers as purchasers, say it takes them less than 14 days to respond to an offer once it has been provided and 10 say it takes them more than 15 days.

PURCHASERS RESPONSE TO OFFER

How long does it typically take you to respond to an offer once provided?

	Total Purchasers (excluding generator-retailers) (n=21)	Small Purchasers (n=7)	Medium Purchasers (n=7)	Large Purchasers (n=7)	Generator-Retailers as Purchasers (n=6)
Over 1 month	1	-	1	-	-
15 days - 1 month	8	3	3	2	1
7 - 14 days	7	3	2	2	1
Less than 7 days	4	1	-	3	4
Unsure/ Don't know	1	-	1	-	-

All 7 gentailers as sellers say it typically takes them less than 7 days to provide an offer once requested.

SUPPLIERS RESPONSE TO HEDGE REQUESTS *How long do you typically take to provide offers once requested?*	
	Generator-Retailers as Sellers (n=7) N=
More than 14 days	-
8 - 14 days	-
2 - 7 days	5
Less than 2 days	2
Unsure/ Don't know	-

However, only 1 of 7 purchasers say it typically takes less than 7 days for parties to respond to their requests and 4 say it takes between 15 days and 1 month.

PURCHASERS RESPONSE TO OFFER *How long does it typically take for parties to respond to an offer you have made?*	
	Generator-Retailers as Sellers (n=7) N=
Over 1 month	-
15 days - 1 month	4
7 - 14 days	2
Less than 7 days	1
Unsure/ Don't know	-

3.19 Force majeure and suspension clauses

4 of 7 gentailers' have more than 50% of their hedge contracts (in GWh) with FM clauses included and this includes 1 with over 90% of their contracts. However, 4 of the 7 have less than 10% of their hedge contracts with suspension clauses though 1 has 50-74.9% of their contracts with suspension clauses.

FORCE MAJEURE AND SUSPENSION CLAUSES			
What proportion of your electricity hedge contracts contain Force Majeure - genuine Acts of God only, not including suspension clauses? (in % of GWh)	**Generators / Retailers as Sellers (n=7)**	*What proportion of your electricity hedges contracts contain suspension clauses? (in % of GWh)*	**Generators / Retailers as Sellers (n=7)**
90% and over	1	90% and over	-
75% - 89.9%	-	75% - 89.9%	-
50% - 74.9%	3	50% - 74.9%	1
25% - 49.9%	1	25% - 49.9%	1
10%-24.9%	1	10%-24.9%	1
Less than 10%	1	Less than 10%	4
Unsure/ Don't know	-	Unsure/ Don't know	-

Most purchasers (11 of 21) say that over 90% of the hedges they have purchased have FM and or suspension clauses. 5 of 6 gentailers have less than 50% of the hedges they have purchased with FM and or suspension clauses.

PROPORTION OF CONTRACTS WITH FM CLAUSES *What proportion of your electricity hedges purchased contain FM and/or suspension clauses? (in % of GWh)*					
	Total Purchasers (excluding generator-retailers) (n=21) =	**Small Purchasers (n=7)** =	**Medium Purchasers (n=7)** =	**Large Purchasers (n=7)** =	**Generator-Retailers as Purchasers (n=6)** =
90% and over	11	4	3	4	-
75% - 89.9%	-	-	-	-	-
50% - 74.9%	3	2	-	1	1
25% - 49.9%	1	-	-	1	3
10%-24.9%	-	-	-	-	-
Less than 10%	2	-	1	1	2
Unsure/ Don't know	4	1	3	-	-

Most purchasers (13 of 21) say that less than 10% of their hedges contain FM and or suspension clauses that are unreasonable. However, 1 large and 1 medium purchaser say that over 90% of their contracts have such clauses which they think are unreasonable.

PROPORTION OF CONTRACTS CONSIDERED UNREASONABLE

What proportion of your electricity hedges purchased contain FM and/or suspension clauses that you consider are unreasonable? (in % of GWh)

	Total Purchasers (excluding generator-retailers) (n=21)	Small Purchasers (n=7)	Medium Purchasers (n=7)	Large Purchasers (n=7)	Generator-Retailers as Purchasers (n=6)
90% and over	2	-	1	1	-
75% - 89.9%	-	-	-	-	-
50% - 74.9%	1	-	-	1	1
25% - 49.9%	-	-	-	-	-
10%-24.9%	-	-	-	-	-
Less than 10%	13	4	4	5	4
Unsure/ Don't know	5	3	2	-	1

Only 4 of 21 purchasers and 2 of 7 gentailers think FM and suspension clauses are acceptable as contracts are negotiated bilaterally while 3 purchasers and 2 gentailers say they are not acceptable. 6 purchasers and 2 gentailers think FM clauses are acceptable, but not suspension clauses while 7 purchasers and 1 gentailer think FM clauses are acceptable and suspension clauses may be in some circumstances.

FM OR SUSPENSION CLAUSES ACCEPTABLE

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

	Total Purchasers (excluding generator-retailers) (n=21)	Small Purchasers (n=7)	Medium Purchasers (n=7)	Large Purchasers (n=7)	Generator-Retailers as Purchasers (n=6)	Generator-Retailers as Sellers (n=7)
No, hedges should not have FM or suspension clauses	3	-	1	2	2	2
It is acceptable for hedges to have FM clauses, but not suspension clauses	6	2	2	2	1	2
It is acceptable for hedges to have FM clauses, and suspension clauses may be acceptable in some circumstances	7	3	2	2	1	1
Yes, all FM and/or suspension clauses are acceptable as hedges are negotiated bilaterally	4	2	1	1	2	2
Unsure/ Don't know	1	-	1	-	-	-

Purchasers were very unsure whether hedges with FM and or suspension clauses were efficiently priced with 15 of 21 saying they were unsure and 5 saying they were not. In contrast, 6 of 7 gentailers as sellers of hedges thought they were efficiently priced and 5 of 6 gentailers as purchasers thought they were efficiently priced.

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?*

	Total Purchasers (excluding generator-retailers) (n=21)	Small Purchasers (n=7)	Medium Purchasers (n=7)	Large Purchasers (n=7)	Generator-Retailers as Purchasers (n=6)	Generator-Retailers as Sellers (n=7)
Yes	1	-	1	-	5	6
No	5	-	2	3	-	1
Unsure/Don't know	15	7	4	4	1	-

3.20 Locational (basis risk)

Most respondents had had difficulty getting hedges at some locations. 9 of 21 purchasers said they had had difficulty, including 5 of the 7 large purchasers. In addition, 3 of the 6 gentailers had had difficulty too

PRICING AT DIFFERENTIAL LOCATIONS

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

	Total Purchasers (excluding generator-retailers) (n=21)	Small Purchasers (n=7)	Medium Purchasers (n=7)	Large Purchasers (n=7)	Generator-Retailers as Purchasers (n=6)
Yes	9	2	2	5	3
No	10	4	4	2	3
Unsure/Don't know	2	1	1	-	-

Locational price risk is perceived as a significant problem for most large purchasers (4 of 7), most gentailers as purchasers (4 of 6) and most gentailers as sellers (5 of 7).

LOCATIONAL RISK

Do you perceive locational price risk as a significant problem?

	Total Purchasers (excluding generator-retailers) (n=21)	Small Purchasers (n=7)	Medium Purchasers (n=7)	Large Purchasers (n=7)	Generator-Retailers as Purchasers (n=6)	Generator - Retailers as Sellers (n=7)
Yes	8	2	2	4	4	5
No	11	5	3	3	2	1
Unsure/ Don't know	2	-	2	-	-	1

3 of the 6 gentailers and 3 of the 7 large purchasers had found that a lack of offers meant they had had to purchase at locations other than their preferred locations.

PURCHASING AT LOCATIONS OTHER THAN PREFERRED

Have there been situations where a lack of offers has meant that you had to purchase hedges at locations other than your preferred locations?

	Total Purchasers (excluding generator-retailers) (n=21)	Small Purchasers (n=7)	Medium Purchasers (n=7)	Large Purchasers (n=7)	Generator-Retailers as Purchasers (n=6)
Yes	4	-	1	3	3
No	15	6	5	4	3
Unsure/Don't know	2	1	1	-	-

Of 5 gentailers as sellers of hedges, 3 said they only sell at nodes for which locational price risk was not an issue for them 4 price in a premium at nodes they would rather not sell at and 3 purchase cross-hedges from generators..

MANAGEMENT OF LOCATIONAL PRICE RISK

How do you manage locational price risk problems?

	Generator-Retailers as Sellers (n=5)
Only sell at nodes for which locational price risk is not an issue for you	3
Price in a premium at nodes that you would rather not sell at	4
Purchase cross-hedges from generators with generation at locations where locational price risk could be an issue	3
Other	1

3.21 Duration

None of 6 gentailers had had difficulties getting prices for hedges for the term they wanted, but almost half the purchasers (9) had had difficulty.

DURATION *Have you had difficulties getting prices for hedges for the term (length of contract) you want?*					
	Total Purchasers (excluding generator-retailers) (n=21)	**Small Purchasers (n=7)**	**Medium Purchasers (n=7)**	**Large Purchasers (n=7)**	**Generator-Retailers as Purchasers (n=6)**
Yes	9	3	2	4	-
No	11	4	4	3	6
Unsure/Don't know	1	-	1	-	-

2 of 7 gentailers had policies not to provide prices at some locations.

SELLERS – LOCATIONAL PRICING POLICY *Do you have a policy not to provide prices for hedges at some locations?*	
	Generator-Retailers as Sellers (n=7) N=
Yes	2
No	5
Unsure/Don't know	-

None of the gentailers said they had a policy to only provide hedges for certain durations.

SELLERS – DURATIONAL POLICY *Do you have a policy to only provide prices for hedges for certain durations (length of contract)?*	
	Generator-Retailers as Sellers (n=7) N=
Yes	-
No	7
Unsure/Don't know	-

3.22 Credit arrangements

5 of 7 gentailers as sellers, 3 of 7 large purchasers and 1 medium purchaser had encountered problems entering into a hedge contract because the counterparty was unhappy with their credit arrangements. Only 1 gentailer as a purchaser had encountered problems.

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 regarding credit arrangements?*						
	Total Purchasers (excluding generator-retailers) (n=21)	**Small Purchasers (n=7)**	**Medium Purchasers (n=7)**	**Large Purchasers (n=7)**	**Generator-Retailers as Purchasers (n=6)**	**Generator - Retailers as Sellers (n=7)**
Yes	4	-	1	3	1	5
No	16	7	5	4	5	2
Unsure/ Don't know	1	-	1	-	-	-

3.23 Load management

Most (13 of 21) purchasers had been approached to reduce load during a crisis including 6 of 7 large purchasers.

APPROACHED TO REDUCE LOAD

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

	Total Purchasers (excluding generator-retailers) (n=21)	Small Purchasers (n=7)	Medium Purchasers (n=7)	Large Purchasers (n=7)	Generator-Retailers (n=6)
Yes	13	4	3	6	2
No	7	3	3	1	3
Unsure/Don't know	1	-	1	-	1

Gentailers principally reduce consumption and increase hedge cover during periods of high spot prices. In contrast, 10 of the 21 purchasers maintain consumption and 9 reduce it. Large purchasers are more likely to also use a political response with 4 of the 7 saying they employ this response.

RESPONSE TO HIGH SPOT PRICES

Which of the following are your responses to periods of high spot prices?

	Total Purchasers (excluding generator-retailers) (n=21)	Small Purchasers (n=7)	Medium Purchasers (n=7)	Large Purchasers (n=7)	Generator-Retailers (n=6)
Reduce consumption	9	2	2	5	5
Maintain consumption	10	4	4	2	-
Increase hedge cover	1	-	1	-	5
Political response (lobby Government/ media)	5	-	1	4	1
Unsure/ Don't know	-	-	-	-	-
Other	3	1	2	-	4

3.24 Hedge seller performance

Of the 5 gentailers that were rated by 12 or more purchasers, the best rated in descending order were Contact Energy (mean of 2.2), Meridian and Mighty River Power (both 2.4), Trustpower (2.6) and Genesis (3.4). The same order occurred when gentailers rated each other with the exception of Meridian which was rated second and Mighty River power third.

RATING OF GENERATOR-RETAILERS AS HEDGE SELLERS

Using your personal experience please rate the following parties on their hedge seller performance.

	Total Purchasers (excluding generator-retailers) (n=21)	Small Purchasers (n=7)	Medium Purchasers (n=7)	Large Purchasers (n=7)	Generator-Retailers (n=6)
Genesis Energy/ Energy Online	3.4 (14)	2.6 (5)	3.6 (3)	4.0 (6)	3.4 (5)
Meridian Energy	2.4 (16)	2.4 (5)	2.8 (4)	2.3 (7)	2.3 (4)
Todd Energy	3.0 (2)	-	3.0 (1)	3.0 (1)	4 (1)
Trustpower	2.6 (14)	2.0 (5)	3.0 (5)	2.8 (4)	3 (5)
Mercury Energy/ Mighty River Power	2.4 (12)	2.3 (4)	3 (3)	2.2 (5)	2.6 (5)
King Country Energy	2.5 (2)	2.0 (1)	3.0 (1)	-	2.5 (2)
Contact Energy/ Empower	2.2 (15)	1.8 (4)	2.5 (4)	2.3 (7)	2.2 (5)
Pioneer Generation	3.0 (1)	-	3.0 (1)	-	2 (2)
Tuaropaki Power Company	3.0 (1)	-	3.0 (1)	-	1.5 (2)

Purchasers in this survey (excluding gentailers) had most contracts with Meridian Energy (9) and Contact Energy (8).

CONTRACTS WITH GENERATOR RETAILERS					
	Total Purchasers (excluding generator-retailers) (n=20)	**Small Purchasers (n=7)**	**Medium Purchasers (n=7)**	**Large Purchasers (n=6)**	**Generator-Retailers (n=6)**
Meridian Energy	9	2	3	4	3
Contact Energy/ Empower	8	3	3	2	4
Mercury Energy/ Mighty River Power	6	2	1	3	3
Genesis Energy/ Energy Online	4	3	1	-	2
Trustpower	4	2	2	-	1
King Country Energy	2	1	1	-	1
Tuaropaki Power Company	-	-	-	-	2
Pioneer Generation	-	-	-	-	1
Todd Energy	-	-	-	-	-
Other	3	-	1	2	1

Small and medium purchasers had a greater proportion of their contracts with Contact Energy than any other gentailer while among large purchasers Meridian Energy had the highest proportion of contracts.

PERCENTAGE OF CONTRACTS WITH GENERATION RETAILERS

Please estimate the proportion of your electricity contracts that are with each of the following parties (in % of GWh terms)?

	Small Purchasers (n=7)	Medium Purchasers (n=7)	Large Purchasers (n=6)	Generator-Retailers (n=6)
Contact Energy/ Empower	31 (3)	29 (3)	16 (2)	16 (4)
Meridian Energy	16 (2)	17 (3)	42 (4)	19 (3)
Mercury Energy/ Mighty River Power	19 (2)	14 (1)	28 (3)	15 (3)
Trustpower	19 (2)	22 (2)	-	1 (1)
Genesis Energy/ Energy Online	15 (3)	4 (1)	-	10 (2)
Tuaropaki Power Company	-	-	-	16 (2)
King Country Energy	-	2 (1)	-	-
Pioneer Generation	-	-	-	2 (1)
Todd Energy	-	-	-	-

3.25 Awareness and ratings of initiatives to improve liquidity

Awareness that the Electricity Commission is considering a number of initiatives to promote hedge market liquidity is much high among gentailers with all 9 aware and large purchasers with all 7 aware compared with medium purchasers where only 1 was aware and small purchasers where 3 of 7 were aware.

AWARE OF INITIATIVES TO PROMOTE HEDGE MARKET LIQUIDITY

Are you aware that the Electricity Commission is considering a number of initiatives in order to promote hedge market liquidity?

	Total Purchasers (excluding generator-retailers) (n=25)	Small Purchasers (n=10)	Medium Purchasers (n=8)	Large Purchasers (n=7)	Generator-Retailers (n=9)	Other (n=9)
Yes	11	3	1	7	9	8
No	14	7	7	-	-	1
Unsure/Don't know	-	-	-	-	-	-

Among initiatives respondents were aware of, awareness was highest for the development of Energyhedge with 63% aware (27 of 43). Awareness of all initiatives was much higher among gentailers and large purchasers with a majority of each of these groups aware of all initiatives and was much lower among medium and small purchasers with a majority of these unaware of all the initiatives.

INITIATIVES AWARE OF

Which of the following initiatives are your aware of?

	TOTAL AWARE (n=43)	Total Purchasers (excluding generator-retailers) (n=25)	Small Purchasers (n=10)	Medium Purchasers (n=8)	Large Purchasers (n=7)	Generator-Retailers (n=9)	Other (n=9)
Development of EnergyHedge	**27**	12	5	1	6	8	7
Publication of contract details	**24**	10	2	1	7	8	6
Support for model master agreement	**22**	10	3	1	6	7	5
Regular survey of market participants	**21**	10	3	-	7	7	4
Publication of outage and fuel data	**20**	7	1	1	5	8	5
Locational rental allocation (LRA)	**19**	8	1	1	6	7	4
Promotion of training and advisors	**13**	4	1	-	3	6	3
None of the above	**3**	1	1	3	-	1	-

2 initiatives, the development of energyhedge and the publication of contract details, were rated significantly higher than the other initiatives for their contribution to promoting hedge market liquidity. Support for a model master agreement and locational rental allocation were rated moderately well while publication of outage and fuel data, promotion of training and advisors and regular surveying of market participants were rated poorly.

INITIATIVES CONTRIBUTING TO HEDGE MARKET LIQUIDITY (NET CONTRIBUTION)

Please rate the initiatives in terms of how highly you think they will contribute to promoting hedge market liquidity:

	(VERY HIGH + HIGH) – (LOW + VERY LOW)						
	TOTAL NET USEFULNESS (n=43)	**Total Purchasers (excluding generator-retailers) (n=25)**	**Small Purchasers (n=10)**	**Medium Purchasers (n=8)**	**Large Purchasers (n=7)**	**Generator-Retailers (n=9)**	**Other (n=9)**
Development of EnergyHedge	**27**	16	5	6	5	5	6
Publication of contract details	**21**	14	7	5	2	2	5
Support for model master agreement	**13**	6	5	1	-	2	5
Locational rental allocation (LRA)	**11**	4	1	2	1	5	2
Publication of outage and fuel data	**7**	6	4	2	-	-2	3
Promotion of training and advisors	**-**	3	5	-	-2	-4	1
Regular survey of market participants	**-1**	-1	-	1	-2	-3	3

3.26 Involvement in future surveys

Most respondents (37) said they were prepared to take part in future surveys on hedge and risk management issues, 4 said they would not take part and 2 were unsure.

INVOLVEMENT IN FUTURE SURVEYS

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

	Total (n=43)	Small Purchasers (n=10)	Medium Purchasers (n=8)	Large Purchasers (n=7)	Generator-Retailers (n=9)	Other (n=9)
Yes	37	7	6	7	9	8
No	4	3	1	-	-	-
Unsure/ Don't know	2	-	1	-	-	1

4. Qualitative Research

4.1 Market competition

4.1.1 The case that competition does not exist

➢ Scarcity of offers

Views on whether there is a competitive hedge market are polarised. Purchasers' experiences suggest competition is quite limited. Some give scarcity of offers as evidence for this. In the 2 cases illustrated below, the first is a single site, North Island-based purchaser and the second a South Island purchaser with multiple sites.

> *As an indication I put a request out about 3 weeks ago to 6 generators and I had a response from 2 and only 1 was a generator. I don't know whether you'd say a competitive market exists because no-one is in the market because they've got their books full. People like Meridian would never actually quote to us. At the most we've normally ever had 2 offers when we've been out. There's not really enough players in the market to make it truly competitive. It's an oligopoly at the best.* (Purchaser)

> *Not strongly competitive. My evidence would be the number of times we have sought to go to market for supply either for parts or for the whole group we've had a limited response and we have had in most cases very little differential between the offers.* (Purchaser)

There was also the perception among some that there was a lack of competitive pricing provided by retailers. This may reflect a lack of understanding regarding the pricing of risk associated with hedges.

> [Why not competitive?] *Prices tend to be up here and competitively we think that they should be down here.* [How do you compare what is expensive and what's not?] *It's the gap between the normal average spot price and the hedge price because we are comparing it with – if we don't have a hedge we have spot so that's what we're comparing – we're comparing those 2.* (Purchaser)

➢ Vertical integration

Vertical integration of the gentailers is regarded as a principal cause of lack of hedge market liquidity which arose because their retail base provided a natural hedge for most of their generation, thus releasing a relatively small proportion of generation for active hedge trading. Although 1 of these respondents agreed there was a competitive market, they went on to say that prices were not competitive.

If a competitive price existed then the prices we'd get would be the same as the spot prices outcome. If it is higher than that, then it means the supply side has market power and if it is lower then it means the demand side has market power. Not only that, but the average spot price is influenced by the people selling hedge prices in the first place. To me it's all a bit too insular and I can't possibly see how it is competitive with only 4 main players and most of the hedges they sell to themselves and the little bit they have left they sell to outsiders like ourselves and basically they don't even need to, so they can turn anything down that isn't a great price. That basically is what happens, so it's definitely not competitive. (Purchaser)

There is a competitive market, but to us it doesn't seem to result in a highly competitive price. [What do you think are the reasons for the lack of price competitiveness?] *I'm probably still of the opinion that because all the generators are gentailers are vertically integrated that they have their own market. They supply themselves first and what's left over, to some degree, it's a bit of a take it or leave it to some degree, take it or leave it for the rest, so they've got their own natural hedges, not like we have*. (Purchaser)

No, because while I see evidence of tendering and quotes for supply with a number of variables that appear to be competitive, the prices I see are very similar. Vertical integration I see as problematic. (Purchaser)

The signals that show it are that there aren't a lot of new participants. The vertical integration makes it difficult for new entrants and the current mix of generator-retailers are quite comfortable with their position. When we do tenders we tend to get lots of responses, but I wouldn't say they are competing aggressively against each other on price. (Other)

Distrust of gentailer behaviour to manipulate market prices emerged as an issue too.

We just thought it was too easily manipulated… I think they withhold some of the bids from time to time to further their own interests… I sense that there's some manipulation going on still at the moment. Since Genesis have to hold that stockpile of coal at Huntly for security reasons, I sense that the other power companies with renewable hydro resources are quite happy to wind them down to much lower levels and take a much less cautious approach than they would have otherwise. Making money out of the lowest cost of generation knowing that Genesis are having to provide the backstop. (Purchaser)

Vertical integration also posed a problem for independent retailers.

You've got large organisations with massive asset bases who also have a retail function that are fully integrated and so you get – or you have the ultimate ability to cross-subsidise and you have the ultimate ability to create their own internal hedges and you don't have a lot of incentive to sell outside of your own market or outside of your own customer base, and so there's no significant incentive for a major generator retailer to sell hedges at a market competitive price to an independent retailer. (Other)

Another take on the effect of vertical integration was that it had created a thin market not only in terms of volumes traded, but also in numbers of participants too.

The price is not what people would often like. [Why do you think the price is not as right as it should be?] *I think it is the depth of the market. It's depth from sellers and also depth from the actual amount that is physically able to be sold. When you match the generation with what's committed and not committed with what's available on any day. It's not as if the market has any huge depth from lots and lots of players in it.* (Other)

My view is because it's such few participants and there's no real market place, there's no real forum to have that secondary trade so it's not like Forex where there are many buyers and many sellers. There's few sellers of products and there doesn't appear to be, in my view anyway, that ability to then – if you don't want the hedge anymore to sell it. (Purchaser)

I guess the way to increase competitiveness is to have more players with more capacity and that's just not happening. The growth in capacity is considerably slowed down by government policies and resource management constraints and as long as the capacity barely exceeds demand, then there's no incentive at all to compete strongly. (Purchaser)

➢ The challenge of increasing liquidity

Some purchasers advocated some form of accounting separation of generators and retailers to provide greater liquidity so that retailing arms could purchase from any generator.

You could break them up – separate generators from retailers. (Purchaser)

1 respondent said the lack of liquidity was difficult to address as it would require major regulatory intervention that would adversely affect private sector investor confidence. The intervention referred to was some form of separation of generation from retail at the least intrusive level involving some form of transparent accounting separation.

All of us, in any financial market, run training models that say how much of our portfolio should be hedged and the number generally comes out at around 80% give or take a little bit depending on the markets that you're trading in. If the magic number's 80% and your retail customer base gives you 70% of that, then you only have the appetite to go out and transact another 10%. So, if you want the hedge market to flourish, stop vertical integration but that's a little bit tricky now because they've kind of screwed that pooch by floating Contact Energy and selling 50% off to a cornerstone international investor. (Other)

However, there was some doubt cast on the ability to effectively regulate.

There's that many ways to screw the numbers in terms of what your hedge position is. Do you use installed capacity as the guide for generation? Do you use mean? Do you use capacity in a mean hydrology year? Do you use it in a low hydrology year? When you try and unbundle retail product it's easy. Anybody can go out there and see what [deleted] *are charging its retail customers… It is very, very hard from an application point of view to actually be able to get any meaningful information out of splitting retail and energy businesses in any sort of transparent but non-ownership manner.* (Other)

[Regulation?] *Energy companies are saying that is a step too far and the risk associated with running their retail business will go up and so then will the prices of hedges, so be careful what you wish for. The risk of running their residential, retail portfolio may impact on the wholesale market in ways we won't like so I'd need to do some work on that one. In principal there would be more volume available to everyone and we could compete with retailers for hedge volume and if that happened that would be good. But there are probably reasons why it won't work.* (Purchaser)

Another solution was for The Electricity Commission to provide for compulsory hedging to increase liquidity which might also encourage new entrants to the market.

The way to fix the hedge market problems is to encourage more generation. If there was a surplus of generation then the market power that exists would be much reduced. The Commission really needs to think how we encourage some new entrant into this market. I think they have looked at that, but nothing has changed. There's always a way round it – if everyone has to hedge, then as soon as somebody builds more generation there cold b e market there for them because they have to hedge some of their output. John Small at Auckland University has some ideas around that. The Commission could look at that. And purchasers would be required to hedge as well. (Purchaser)

➢ Asymmetry

The asymmetry of information and resources between gentailers was identified as an issue which for several respondents clearly meant it was difficult for them to gauge whether they were getting competitive offers.

The problem is most of the information is very one-sided. The generators have most of the capacity and most of the information. Even ourselves it's not our number one business buying electricity although its 40% of our cost, its' very important it's still not our business. And the generators have substantial financial resources to analyse it. Plus, we're taking our hedges for different reasons. We're not both trying to protect our costs and revenue because the potential for our costs to go very high is much greater than the potential for the generator's income to go low. Because while you can 100% above $70 you can't go 100 below $70 very much on a long term basis. (Purchaser)

Uncertainty about the market, possibly stemming from lack of knowledge about hedging, persuaded some to buy long term fixed price variable volume contracts rather than develop a more sophisticated hedge portfolio to manage risk as was the case for this purchaser.

It's not a significant part of our operating costs - 2.5% of our total operating costs. We're more likely to go for certainty in an area like that than try to get some gains and find you lose half a million. If you lose half a million it's a significant part of your profit. Everything you try and manage tightly. (Other)

Concerns about the imbalance of information were also reflected in anecdotal comments about the market knowledge of some purchasers.

> *The same person that's managing the electricity procurement programme is also managing the ordering of fluorescent vests and the toilet paper and the safety equipment and every other thing. Electricity is a financial product. Take it out and give it to the treasurer*. (Other)

1 purchaser also said that the hedge market was really only designed for the big players.

> *I think that if you do go to energy retailers you will find pricing I think at certain levels. If you're a very high consumption user, perhaps even larger than the likes of _____, an industrial user or something like that, you'll find some pretty competitive pricing out there, particularly from the likes of probably Contact Energy and Trustpower would also probably be pretty interested. Meridian, if you struck them at the right time, and then Mercury. Whilst it exists there, it certainly is something for the larger players in the market as opposed to the smaller users*. (Purchaser)

➢ Information disclosure and *energyhedge*

This gave rise to whether there was a need for greater disclosure of information, a point that was supported by some on the supply side too.

> *Very clearly no. I don't think there's a market there at all. I should temper my "no" as I recognise there are endeavours being made, but the fundamental reason is there is not disclosure. There is not a system, for disclosure albeit it recognised trading through energyhedge for very small quantities compared to the total size of the market and in my view something that is just not representative. It cannot be called a market when it deals with such micro-quantities.* [So, it is the volume of trading more than anything else – it's not related to the market power of generators or vertical integration issues?] *Volume is one issue, but the fundamental issues is that it's in-house and in its crudest form it could be looked upon as in-house deals.* (Generator)

However, the emergence of *energyhedge,* it was argued, had led to greater disclosure and indication of price.

> *There's energyhedge.co.nz, so there does seem to be something there. You can actually see real prices and there's also some awareness of energy hedge now in terms of some major customers' awareness of its existence*. (Other)

> *When energy hedge first started 3 or 4 years ago, nobody used it as a benchmarking curve. Now if you go out on price tenders – we could go out on price tenders with a one or two dollar credit premium over the forward curve and miss out by 1% or 2%, so the majority of people who are pricing contracts now are using an energy hedge curve so there's a competitive hedge market out there. Whether the counterparties actually like the price or not is a completely different story.* (Other)

Some scepticism was raised about the value of the *energyhedge* forward curve as an indicator of price.

> *To get even a workably competitive market there's got to be a reasonable price discovery process and I think one of the concerns that we have is that the price discovery process is very poor in the New Zealand electricity market. The only tool that's available – there's energy hedge but…there are varying views as to how reliable a predictor of future prices or an indicator of current prices energy hedge actually is*. (Purchaser)

A key argument to counter disclosure was the loss of confidentiality.

> *I think there are issues to do with confidentiality that I would be concerned with having to disclose data. I think that the contracts are too complex to be able to disclose a little bit of information – you almost have to disclose so much information that the confidentiality would be an issue. And I think that's one of the problems in the past that's been had with the likes of MCo's index is that it's quite broad information and you need more information to be able to make the judgement, but if you get more information given the size of the New Zealand market you can virtually identify the parties.* (Other)

There was also some scepticism that disclosure would achieve nothing more than tighten the price range. It might not for instance equate to any more competitors making offers at a specific grid exit point or add anymore liquidity to the market.

> [Do you think disclosure of hedge transaction information will improve the availability of hedges?] *No, I don't think so. Not to say it doesn't have benefits, I just don't think it will change people. I think what it will do instead is that it will give those that are buying hedges or buying fixed price – any sort of bilateral contract for supply possibly, depending on the outcome of the disclosure of course, will have a degree of more comfort around whether the price they're paying is fair or not. And also it'll place some form of constraint. It's the door that swings both ways, disclosure. Those suppliers that have been able to extract maybe slightly higher prices due to customer apathy or just their asymmetry of information, they will have to come back probably closer to the market price so to speak. Equally those customers who have been able to negotiate improved prices and terms just because of buyer power or just their good negotiating ability I think they will probably find that they're having to pay closer to the market price because again suppliers just become more aware of what – they'll be a more concentration towards whatever that disclose market price is. You'll get less variance away from that, down and up, I suspect.* (Gentailer)

And it was argued that only complete disclosure would provide meaningful information and allow relevant comparison to be made, but that it would also create problems for the protection of confidential commercial information.

> *If you don't publish everything, how do you compare? So, it has to be the whole lot. If you don't know the location and that sort of stuff how do you compare. And why would we want to publish the hedges we have at* [deleted] *because everyone would know who it is.* (Purchaser)

➢ Barriers to entry

Participation in *energyhedge* appears to be limited to those who have significant financial backing. Certainly, *energyhedge's* only active trader that is not a gentailer is a major bank.

> *There's no ability for anyone who doesn't have a huge balance sheet to participate in that market. There's no – in electricity hedge, I'm not sure how familiar you are, but there is no set process for anyone to join and participate in that market. There are no set rules that a potential participant would need to meet in terms of their credit requirements so you've got the major players in the market. The only people that can participate are people with large balance sheets who eliminate all risk credit and then negotiate an independent bilateral agreement with each of the independent market players and there are no rules about what that agreement is necessarily going to be, although a sort of a standard ISDA has developed but in terms of the process and the application – there's no application form. There's no central body that has put their hand up and said "we are the people to come and approach if you wish to participate in this market" or if there is, it's not publicised outside that group.* (Other)

Another barrier to entry appears to stem from securities legislation.

> *The other reason that a free-flowing hedge market is never going to develop for the time being is that the securities law prevents people from trading hedges and you can only sell them to customers of a certain size and hedges of a certain size.* (Other)

➢ Atypical usage profiles

The power usage profile of some purchasers also inhibits their ability to get the kind of hedge they would ideally want because none are on offer.

> *We have tried to sell electricity back. Because of the strong seasonal aspect to our business it also brings a period of the year when we basically shut down our plants for maintenance. Now hedging currently doesn't allow us to leave those gaps when the plants are shut for maintenance. So what we have tried in the past is when we are trying to shut them and we roughly know 12 months in advance is to try and off-load some of our hedge product and that generally hasn't been successful and we've finished up selling back into the spot market. So, effectively we are over-hedged and all we can do is dump it back into the spot market.* (Purchaser)

> *The other problem you have when you buy product is what you call the shape risk so you might have domestic customers and they use a lot more through the daytime than night, and when you trade energy hedge it's flat. So there is issue with shape risk, but New Zealand is very small. We're not a big country.* (Gentailer)

➢ State ownership

State ownership acted as a brake on competition according for some respondents.

> *You'd have to ask why 4 companies owned by the same thing would compete aggressively against each other on price. If you took that away and said there were 4 companies out there and they were all owned by Contact would you expect them to all compete aggressively?* (Other)

➢ SPD and nodal pricing

Another respondent was concerned about the impact of the Scheduling Pricing and Despatch model (SPD) employed by Transpower on pricing.

> *If Transpower relaxes constraints in its SPD model, then there is a major impact on prices. Sorry, there can be a major impact on prices, and I'm wondering whether in fact what needs to happen is that SPD needs to be looked at to see whether in fact it's providing the best overall approach… I think the NZEM may in fact be falling down in a major way and why we're not getting the competitive outcomes that we expected from a competitive market, and in that regard it goes back to the SPD model that the system operator operates.* (Purchaser)

Closely related to these comments were those made by several respondents, both gentailers and pure purchasers, that the nodal pricing model employed in New Zealand needed to be simplified. This issue is addressed in more detail in the subsequent section on location issues, but the thrust of these comments was that reducing the number of nodes to about 5 or 6 regional ones across the country would see more offers made.

4.1.2 The case that competition does exist

➢ Evidence of successful and unsuccessful offers

Gentailers on the other hand took the view that a competitive market existed. For some the evidence for this lay in the fact that they did not win every bid they put in.

> [What is the evidence for the existence of a competitive electricity market?] *I think the ability to access offers from parties and parties are able to provide volumes for people when requested in a reasonable timeframe.* (Gentailer)

> *Well I would suggest that the easiest test is do we win every offer that we present to a customer? And the answer is clearly, no, that we don't. We get feedback from customers as to reasons why, and it's predominantly price. My sense is that most customers will receive 3 or more offers to anything that they're looking for, those that go to tender, and those that are several parties. I don't know exactly our success rate at the moment, but we don't win everything, we don't keep all the customers that we currently have when they come up for renewal, and we win customers off others. And no guarantee that we'll keep them for anything more than the term of which we sign them up for.* (Gentailer)

I think in the last 3 to 4 years we have had no trouble in going out to tender and getting people supplying us with electricity… We've been successful once in 4 tenders so we know that they're getting it from other people too so we know roughly there or thereabouts and we use this as an indicator to what to tender into that market. Similarly when I'm buying I use this market to give me an idea when I'm buying. (Gentailer)

➢ Increased numbers of offers

Others talked about an increase in the number of offers they received from the market over the past couple of years or so.

It's improving – let's put it that way. [What evidence do you have that it is improving?] *It's a couple of years since we went out competitively that's because of our relationship with* [deleted], *so on alternate years we just get some hedge quotes from* [deleted] *and if they look there or thereabouts we just accept them, but every other year we've been going out to the market and just checking that our assumptions are correct which they have proved to be. The first couple of times we did it we struggled to get another response and the last time we did it we got 2 other responses and that was 2 years ago. We're just about to go out again and there are probably 3 or 4 other players in the market, so on that basis yes the situation has improved*. (Generator)

I believe there is now. I think it has grown a lot. I was a bit dubious back when they did the first survey. Certainly we are getting responses from most players – not everyone and so we are pretty happy that we are getting reasonable, contestable options. We have bought hedges from a lot of different people – not everyone, again some are a bit higher than others, but not always. (Gentailer)

➢ Preparedness to quote at any location

Some gentailers talk about how they provide a quote for every request that comes in or state they are prepared to price at any location. However, it was conceded that gentailers preferred to sell in the regions where they generated and where they were able to control the nodal price risk. Again this issue is addressed later under location issues.

1 gentailer qualified their response to suggest there was sufficient competition for small volumes, but not for large. This would suggest support for the view that liquidity in the market is an issue.

If there are small volumes, I think there's a degree of competition. However I think if you extended that to larger volumes, then the degree of competition probably falls away fairly quickly. Not that we've got direct experience in that. It certainly becomes a bit more problematic to trade 50 megawatts or 100 megawatts or something. Certainly the negotiations would be a lot more protracted. (Gentailer)

➢ Rebuttal of high prices

There was also rebuttal of purchaser claims that prices were higher than they should be which was given as evidence by some for a lack of competition. This was explained in terms of the relationship between average spot prices and hedges as well as a shift from the era of cheap Maui gas.

> [Some people have said there's not a competitive market because they think the pricing's high. They compare it to spot] *Yes, that's true. Now you would always expect the hedge market to trade above the average spot price simply because as you understand electricity prices can go to zero but they can go to $5000 so there's much more downside limits than upside, but I had another point to make there, in that the New Zealand electricity price was based around a new entrant gas generator and the Maui gas field pricing mechanism didn't escalate over time, so we had for over 10 years a gas price that was fixed at around $3 a GJ for gas which means the electricity benchmark price didn't shift. Now ECNZ when they were actually tendering have been trying to push the electricity price up above that because they knew that as soon as that gas field had run down the price probably of gas would double which is actually what's happened so now it's above $6 a GJ so our fundamental cost-driving market has doubled because of the price of gas. The market has just taken a long time to come to terms with the fact.* (Gentailer)

➢ Liquidity and improvements

1 gentailer said they provided the majority of the volume traded on *energyhedge*. Despite the liquidity issues they maintained that apart from a handful of large industrial users they felt *energyhedge* would be able to meet the volume needs of most industrials.

Another gentailer said that the Hedge Market Development Steering Group had acted on a number of recommendations to improve the market and that in recent years there had been more informed interaction between buyers and sellers.

➢ Threat of regulation

Another Gentailer, which said that when it went to market it always received at least 3 offers and fair prices, questioned whether a country New Zealand's size could support a lot of players in the market. It was also suggested that the threat of regulation forced generator-retailers to make the market work.

> *There is a kind of like a threat if you like on all of the gentailers that if they don't somehow make it work the government will intervene and do something else to us, and there's a huge risk. The regulatory risk on us all of them stepping in and actually shoving the market around is enormous and none of us actually want that*. (Gentailer)

4.2 Competition – the last 12 months

➢ *Energyhedge* and improvements

The general tenor of responses indicates an improvement or at least no deterioration in the competitiveness of the hedge market over the past year. Evidence for this came from energyhedge where more volume was reported to be traded and the entry of the ANZ which provided more confidence for some parties to engage with those other than their direct competitors.

> *I think it has improved a little bit. Again at this smaller end we've noticed that in the energyhedge trading market there have been more volumes that have been traded and also you've had the entry of an independent party. ANZ is acting as a sort of a broker. I'm not sure if they're directly responsible for those uplifting volumes, but certainly it gives an avenue for parties that, like ourselves, might be a bit reticent about having to deal with energyhedge parties, dealing with basically a competitor, in order to get access to market*. (Gentailer)

A tightening of prices on *energyhedge* was also mentioned and it was noted that it provided a useful source of information about price when offers were evaluated though the quantitative survey shows that offers and indications as well as independent forecasts were regarded as more useful for forecasting prices than *energyhedge*.

> [Do you believe the competitiveness of the contracts market has improved over the last 12 months or not?] *We believe that it has.* [Again, any particular reasons, evidence to show why it should have improved over the last 12 months?] *We're noticing much tighter spreads to energyhedge, for the over-the-counter activity, and that time-of-use market which makes up by far the biggest segment of what I would loosely call the forward market, or the contract market. We're also seeing anecdotal evidence of increasing numbers of people referring to energyhedge as a basis for evaluating offers.* (Gentailer)

➢ Greater flexibility

Some extended the time horizon back to describe the emergence of greater flexibility by gentailers to meet purchasers' requirements over a number of years.

> *I think the market for hedges has improved during the 8 years I've been involved with it, but it's not a huge step change. It's just been a gradual change. There's been a learning curve and people feel more comfortable with it. And I think the generators are becoming a bit more prepared to look at alternative instruments and look outside the square a little bit. I don't think it's moved far enough in 12 months to say it has improved, but if you said 5 years I'd say "yes" it has improved*. (Purchaser)

Signs of being prepared to offer across more locations were also noted.

> *We might have had more people offering us hedges now from that point of view because Meridian, up until a few years ago, wouldn't offer hedges in the upper North Island and now I think they do.* [Are the prices similar to the others?] *Price is still our main bone of contention*. (Purchaser)

➢ Liquidity

However, the liquidity issue was seen to be a limiting factor for those seeking larger volume hedges.

> *Another thing about getting hedges, 10 years ago big was beautiful. If you wanted a 30 MW or 40 MW hedge, it was probably more – it was attractive for the generators. Now big is not so beautiful and 30 MW or 40 MW is too big and you'd probably have to chop it into lumps of 10s or 20s generally* (Purchaser)

➢ Increased generation

The sharp focus on price as an indicator of competitiveness led 1 respondent to suggest the need to encourage new generators into the market, a view that was shared by some purchasers too.

> *There has been an improvement in competitiveness pricing and I put that down largely to EP3 coming into play – you've got this big, extra lump of generation that has to be got away, so they are possibly competing against each other a little bit more both in terms of hedges and wholesale prices*. [Given that answer is increased supply a factor in increasing competition?] *Yep, when supply is tight there is not going to be as much competition, so that is why I say when supply was tight why was it that new generation wasn't being built and why was it that new players didn't come into the market? Why didn't one of the big multi-national generators come in and build power station. Probably because they didn't have a retail market to sell to – probably a chicken and egg situation.*(Other)

4.3 Fairness of the contracting process

There was general consensus that the hedge contracting process was fair involving a willing buyer and a willing seller.

> [Are the existing processes fair?] *I guess they are just one-off deals done now, so I'd say they are as fair as they can be in the circumstances*. *But they are a bit challenging because there seems to be a lack of consistency*. [In what respect?] *Around the documentation like the so-called force majeure area. Is it a clinical hedge agreement like other hedges like other hedges are like foreign exchange*? (Other)

Yes I think it's all commercial activity at the end of the day, and the underlying structure of the industry and how many buyers and how many sellers, and depth - those sorts of issues are structural rather than about a process is fair or not. (Gentailer)

Yeah, they are big boys so I'd say fair. (Other)

I think the process is alright, it's just the price that comes out of it. (Purchaser)

It is reasonably fair because at the end of the day you take it or you don't. (Generator)

However, the point raised earlier about barriers to entry to *energyhedge* and the limited participants in that market did infer some inherent unfairness.

We're still, as a small company, have all sorts of problems, again from a credit point of view… in terms of prudential securities because that's a massive barrier to entry for any market participant. (Other)

It's a pretty thinly traded market really. The generators seem to place a lot of faith in it. It's a small cartel of people. (Purchaser)

4.4 Other forecasting sources

7 forecasting sources – independent forecasts, offers and indications, *energyhedge.co.nz* forward curve, market commentary, M-co hedge contract index, market forums and internal modelling - were rated in the quantitative survey and respondents were asked to identify any additional sources they found useful.

Information provided by the Ministry for Economic Development was mentioned by several and tended to be highly regarded.

MED modelling and the MfE modelling…some of the stuff that's coming out of the New Zealand Government energy strategy has been really, really interesting in terms of modelling. (Other)

We use MED. We do use the MED work and we actually will report on the MED work as well so it's actually very valuable but a lot of our decisions – it's my expectation that when I settle on a recommendation on a hedge contract for next year that I'll be using Energy Link, the company Energy Link. It will be their work that will guide me. (Purchaser)

We'd use macro sort of stuff like what MED publishes. (Gentailer)

Other sources also included future investment plans.

> *The disclosure of people's investment plans, whether it comes through a market forum or some other way. And annual reports and I mean a lot of the nature of the entities that are out there are disclosing their generation. And you've also got the Electricity Commission and MED that are actively disclosing information, maybe on an anonymous basis.* (Gentailer)

Data from Transpower was identified as useful supplementary information.

> *The only one would be Transpower. Transpower does reasonably detailed demand and volume things which can be useful as part of the missing equation for price*. (Other)

Some though volunteered that they would like to have additional information available, such as, on hydrology and the impact of carbon pricing.

> *Having access to all the information about the hydrology is important and the ability to forecast the weather is important*. (Purchaser)

> *Water and carbon I think are now 2 of the big players in determining the price so…we cannot form a view of what the market price is going to be, but it's because of those 2 unknowns.* (Purchaser)

However, 1 respondent said they did not use the information that was available because future prices were heavily dependent on hydrology and that could not be predicted.

Independent forecasters, who were generally rated highly in the quantitative survey, were not always seen to be on the ball.

> *We have at times taken independent advice on what the outlook for electricity prices might be from independents who work both privately and for some of the generator group as well, but we have found they have generally been off the mark – unreliable would be a way of describing them.* (Purchaser)

Also, the usefulness of *energyhedge* to inform forward pricing was limited for some by its lack of depth.

> *The only thing that's useful – I mean we do look at the energy hedge curve and it's because it's the only indicator of forward prices that's in the market, but we don't have access to it, but we can't go out and buy that electricity at those prices ... Until energy hedge is a proper open market with more than just the big guys as participants, it's never going to be an accurate reflection of what forward prices will be.* (Other)

Few thought he M-Co Index was useful.

> [M-Co Index?] *Not useful at all. We have to ask ourselves where they get some of those buys from. We include them in our various reports but we don't see them being particularly relevant to what our customers are being offered and so wonder what the basis of some of that information is, because it doesn't provide an accurate indicator for us so that's why I say, wow. I don't think it's that useful neither do our customers.* (Other)

4.5 Reserve generation

➢ Minor impact

The provision of reserve generation at Whirinaki, which is brought into play when the spot price of electricity reached $200/MWhr, was regarded as providing only a weak influence at most on participant's risk to the market. Although the trigger price for Whirinaki did alter participants' behaviour as prices approached the provided $200/MWhr, it was not regarded as providing an effective cap on price. 1 gentailer described this effect as "more of a speed bump"

It was also noted that it had yet to be used for its original purpose.

> *Whirinaki acts as a chunk of generation which can be offered into the market, at a price which under the formula would be $200. So that doesn't cap the market, we certainly just see it as another increment of energy that will reduce the opportunity of higher costs. In the circumstances where it might increase our risk, it's offered into the market by very prescriptive formula, and sometimes that formula may provide perverse outcomes, so you might get prices set at $1000 and reserve implications that might increase the costs and/or the risk to us. …without a doubt, it is a negative influence on people's decisions to invest in some of the type of generation.* [The impact of having that reserve generation, how significant is it, is it a big impact on reducing or increasing risk?] *I'm sure it's relatively minor. Having said that, we haven't seen it used for the original purpose for which it was procured, it's a dry year reserve. So it hasn't run as a dry year reserve but yet it's tended to run as a capacity supply to deal with either very high peak demand or transmission constraints*. (Gentailer)
>
> *I think it makes very little difference. It's not something that we factor into our deliberations.* [Why doesn't it factor in?] *It's a couple of hundred megawatts in a couple of thousand.* (Purchaser)
>
> *It's not really a cap because you can go above that, but you know that there's a block of support in the market and when that comes on people often start to think about changing their behaviour as well*. (Gentailer)
>
> *I think it's possibly increased the risk a bit and that's basically around having a price that encourages pricing up to just underneath it and then once it breaks through it's going to jump dramatically, so basically it's a bit of distortion instead of a smooth run through where you get a bit piled up behind it*. (Gentailer)
>
> *It provides a capped price for a volume of energy, so as long as the volume required doesn't go above what Whirinaki can provide, then you have a temporary cap on the price. The issue is if it impacts on other party's normal investment in the market negatively then that could increase the risk via high spot prices. I think it probably has a relatively minor impact on the market overall*. (Other)
>
> *I'd be very happy if they took it and sold it to the Chinese or to someone who knows how to use it…it devalues the worth of the hedges we already hold – so who is paying us for that? And we have to may 70 cents or something a*

MW/hr for this white elephant and then they offer it out at $200 MW/hr when its fuel costs are something like $300 MW/hr. And everyone knows the offer strategy, so it's not hard to outsmart the Government's Whirinaki plant. So, little wonder spot prices sit on $199 for days on end. What use is that? I wouldn't be surprised that it dames the price up to $200 rather than cap it. (Purchaser)

Another gentailer said that Whirinaki's limited capacity meant its impact was only in play over a short period of time, so its impact was small. Its capacity was a point taken up by those who said it had no impact in risk. It was also suggested that reserve generation might have more relevance if it were located closer to Auckland.

➢ No impact

Some said Whirinaki made no difference at all to risk.

Not one bit. Whirinaki is a mere 200 MW capacity. In a nasty market situation that band will just get pissed straight through, 200 MW is not even 4% of average half-hourly load so I think it's an absolute disgrace that they built it in the first place... you've got to get down to 750 MW or 1000 MW below normal running position and then you come in with a 200 MW piddler and save the day? The party's over by then. (Other)

I don't notice any difference. I can't recall the number of times that generation has kicked in and you still see spikes in spot prices the reserve generation does not deal with. (Purchaser)

No, it hasn't, because Whirinaki exists, it's got certain operating parameters so the whole market builds those into their price forecasts which are driven off availability forecasts, fundamentally driven off plant availability and hydrology What it's done is it's damaged the incentive for the normal market to invest in the sort of peaking generation that would be required in a much better location than Whirinaki is. Whirinaki was a panic reaction by the government that was feeling political pressure to do something, to be seen to do something, and I think that's the tragedy of it. (Purchaser)

It doesn't necessarily cap the market and so in that sense it's a rather odd factor to have to take into account when you think about your hedging. The way it's offered, where it will come in, is it a $200 cap? No. I mean the price can very readily blow right through there. There's nothing to say that Whirinaki will come on and will cap prices. Its location is not ideal for getting energy into the system. It adds another piece to the puzzle, not always in a positive fashion. (Gentailer)

No, but it does give some more confidence in the range within the spot market you can trade. I certainly see it as helpful. It doesn't give me an absolute guarantee, but it's helpful. (Other)

➢ Few rate impact as significant

However, 1 or 2 respondents felt it did play a significant role.

> *Does add a significant risk because when the spot price is above a certain level we turn off and because we have hedge contracts we get cash flowing in and that allows us to run when the prices are lower. So when they are flat – what do we do? If we turn off, it's not worth it and if we keep going we've got no margin on our finished products so it's basically made us uncompetitive.* (Purchaser)

> *It reduces. I think it is a significant factor. I think it significantly reduces the volatility of the price at the very top end when shortages start to occur*. (Other)

> *I think it reduces it alright, it caps it.* [I think it is providing a cap. (Interjection.)] [Has it reduced it a lot or not?] *I think it's reduced the top end exposure a lot but there is a cost to having it there obviously so if we look at the overall on a normal year, then probably not a lot, no*. (Other)

And while it might reduce short-term risk somewhat it came in for criticism because in the long-term it distorted market investment and deterred potential investment in peaking plant.

> *In the short term it reduces risk; in the long term it increases risk. Now the reason I say that is in the short term, yes there's a 200 megawatt plant that we're paying for which acts as a cap, but it also – that plant deters other parties participating in that segment of the supply chain. I mean peaking plants and things like that. Because that particular plant has all its fixed costs covered and only can recover its SRNC. Whereas anyone who wants to compete in that particular market, they're not in that position. They don't get their fixed costs covered. The price they offer in at means they're recovering their – trying to make their LRMC on a day, not a period. So in the long term I think that plant, in effect it deters new investment in peaking plants*. (Gentailer)

4.6 Hedging policy

All gentailers had some prescribed hedging policy which set clear parameters. 1 gentailer spoke of having a policy to hedge in certain geographic areas. Any movement outside those parameters required Board approval. The typical pattern was to have most risk hedged over the short-term.

> *Management makes recommendations to the Board about certain risk parameters and we get those endorsed and then failed to remember what those parameters were. Essentially it's about what we expect to generate. Typically, you'd probably have most of your risk relatively short-term and less as you go out*. (Gentailer)

We have a policy, it doesn't dictate to an absolute level. But, yes there is a policy which outlines the risk parameters within which we can trade basically. (Gentailer)

Yes. We know what we can expect in a dry year in our area. So, what we do is hedge so we can cover if our generation is at the low end and we try and do that in 2 year tranches and buy them a year ahead of the first kick-off, so are fully hedged for 2 years out and half hedged for a year beyond that. (Gentailer)

We have a set of governance requirements…and then me and the other management teams decide where within that range we're going to be in that particular year. (Gentailer)

Several purchasers also had hedging policies. Some of these referred to the influence of the dry years of 2001 and 2003 which had persuaded them to take out forward cover. And many had taken fixed price variable volume contracts for their simplicity to secure future supply.

Yes. That works on a scale for us. We work on a minimum percent for one year out and it's a different percentage for the second and third year out. The further out we go the less we lock in and as the year rolls we in we then purchase additional top up. In an existing year we'd be looking at 75-90%, year 2 we're probably talking 50% and year 3 a minimum of 25%. As the years roll in we lift the cover up. (Purchaser)

We should cover 60% as a minimum. That 60% base load we then look out 10 years and then top up with 2-3 year contracts for shorter term requirements because of this carrying production quantity we don't know where we are likely to be 10 years out. (Purchaser)

Yes, we aim to have 60% of the current year hedged and we have a rolling programme of 45, 30 and 15 for the next 3 years and they are made up of a number of 15% blocks. It's a rolling hedge programme. (Other)

We hedge to our minimum continuous output which by chance is about 90% of our average output. I guess really our policy is to hedge 100% of our secure base load. (Other)

I think we have the view that with the variability of spot pricing in the market and the changes in legislation that have just been announced with respect to renewable energy and no new coal-fired power stations in 10 years, the best course of action for our company was to get the longest contract we could on fixed price variable ... so that drove our strategy and as a result of that, in 2007 we entered into a 5-year contract and we have a fixed price variable contract that goes through to 2012 and we think that's the safest play for us in a market that we see is still rising in terms of prices and absolutely unpredictable in terms of spot pricing. We'd rather give the business certainty than live with the doubt. I think if there was more competition we might think differently about hedging a portion of our account but the lack of competition and the manipulation by the energy companies – by that I mean we've always felt that maintenance goes down at a very convenient time for some of these stations. (Purchaser)

> [Do you have a risk management policy that guides your electricity and price risk management?] *Not a Board policy but management have developed a policy.* [Is that to go for fixed price variable?] *Correct. We can't beat them.* (Purchaser)

> *It has been established by* [deleted] *head office to hedge up to $80 of our expected requirements, but we don't have to do that and we don't necessarily do that and we may hedge more or less.* (Purchaser)

There were though some purchasers that had no hedging policy with some choosing to remain on the spot market as electricity is a small proportion of their costs. 1 respondent said many of their customers did not have a hedging policy.

> *No, we don't have a firm policy but we will have, and we should have. If it's a big spend and there's big risk and there's big volatility, you should always have a risk management policy in place.* (Other)

> [Do you have a policy to hedge to a certain level each year?] *No. The general company view has been that for a big company with deep pockets that we can afford to take the risk rather than pay somebody else to take it because you don't necessarily always have it all happening at the same time.* (Purchaser)

4.7 Centralised trading platform

There was some support for a centralised trading platform. 1 gentailer took the view that this would be a way of trying to increase liquidity and had been exploring options available including with the New Zealand stock exchange.

> *We also have been talking with other participants about trying to get some alternative platform. We've even been having discussions with NZX. We see trying to increase liquidity as a very important goal. Increasing transparency will only go so far.* [So an alternative platform, that would be trying to cater for what sort of demand?] *I think it would be to allow anyone to play on it that met presumably certain appropriate prudential requirements.* (Gentailer)

However, while there was a willingness to use whatever platform was available, another gentailer cast doubt on whether a centralised platform would have sufficient liquidity to justify its establishment.

> *We're happy to use whatever mechanism is available, if there's the futures market, there's energyhedge, there's over-the-counter, we'd use whatever is delivering us the most efficient way of managing risk. At the moment that's over-the-counter, and because the vast majority of our customers prefer a fully risk-managed instrument, it's likely to remain over-the-counter, therefore I don't believe that a centralised trading platform has the volumes behind it to warrant the costs of setting up and running it.* (Gentailer)

1 purchaser was motivated by the need to be able to obtain larger volumes than were available on *energyhedge* due to its low liquidity.

> *Based on my earlier comment, we'd much prefer not to be in this situation, but given the status quo and we have to be then a centralised facility probably does give us some advantages. We have from recollection over the last couple of year we have used that energyhedge once, but we didn't find it attractive because the volumes are too small in many cases for what we want, so it doesn't form part of our purchasing strategy.* [How much would you put on the platform?] *75-90% and our annual usage is round about 85 GWhours*. (Purchaser)

Another was motivated by lack of confidence in *energyhedge* which was said to be too influenced by hydrology.

> *We would certainly look at it. There is merit in a centralised trading platform to get a bit more accurate data. I have very little faith in energyhedge – it's too much affected by the current meteorological and water conditions. So if the water conditions are dry, then the future years are priced higher and as soon as the current water levels are higher the prices go lower and it's got nothing to do with the current water levels. It's interesting to see there are some differences reflecting conditions coming in now. I don't know whether that's an influence of the ANZ-National Bank being in there as well. But certainly you're starting to see 2010 starting to jump up significantly probably reflecting a provision for the ETS* [energy trading scheme]. (Gentailer)

A gentailer saw such a platform as providing a preferable option to *energyhedge* which had requirements that were too onerous.

> *Yes we would, but it would depend on the terms of entry to that market. Like we're not willing to participate in the energyhedge trading platform because of the terms of entry*. [What are the particular terms of entry?] *The two-way posted prices and the obligation to trade each day. We don't have the resource to do that. We just don't have the scale really at this stage. Maybe down the track things will change. But right now we're just too small. We'd rather be in and out sort of thing as we required sort of thing rather than have to actually trade.* (Gentailer)

A purchaser shared the view that another platform could provide advantages that *energyhedge* failed to do by only providing a hedge at the Haywards' grid exit point.

> *Energy hedge is a standard ... type hedge based at Haywards, no FM. So that adds I guess to the price transparency. I don't think it necessarily adds to the liquidity. I would not recommend that we get a hedge at Haywards. We want hedges a bit closer to where we physically are.* [Would your company be interested in using a centralised trading platform to purchase standard hedge products?] *Well, if it's centralised to the degree that it's all based at Haywards, the answer is probably no. But if the trading platform had them either at Haywards or Huntly or Otahuhu at some of the major nodes, we'd be interested. Huntly and Otahuhu are sufficiently close to us that I would say yes to that.* (Purchaser)

There were other purchasers who were more tentative about a platform and said they required more information, such as credit requirements and the resources they would have to allocate toward participation. And 1 suspected that the need for two-way prices would exclude his company's participation.

> *If we did have to put up two-way prices we wouldn't join because we wouldn't approval to do that because that would be speculating. But if you don't post two-way prices, everyone is sitting there as a lot of vultures as price takers. Sounds good in theory, but in practice you'd probably have to post two-way.* (Purchaser)

4.8 Other contract elements

Respondents who answered in the quantitative survey that counterparties provided additional services for them were asked to specify what these were. Only a few said that additional services were provided and generally referred to the provision of market intelligence, administration and billing as well as network support services.

> *We typically rely on the counterparty to provide us with market intelligence as well as a contract.* (Purchaser)

> *The other thing retailers often offer is energy management type services – they offer websites where you can go and look at your data. They can offer network support like if you have problems with a power factor they have technical people that can come in.* (Other)

> *They do our bidding into the market for us. We have a base contract whereby they buy all of our generation, then we have a hedge contract that sits over the top of that, so I think the service is probably in the base contract than in the hedge contract.* (Generator)

> *No, but we have done deals where we have done contracts with people for fixed volume deals where we offer other services as part of a package deal – it's a service agreement more than anything else.* (Gentailer)

> [And other services provided by the counterparty?] *That's actually quite important for us. If I can give you an example, we have like one meter going into our container terminal but there's a whole lot of trickle meters off that and they do wherever we have tenants at the port and they actually measure – they do the meter reading of that as part of our deal and provide the invoices so we can invoice our tenants, so that's actually ancillary uses and response time to faults are quite important to us.* (Purchaser)

4.9 Training

Respondents who had undertaken training courses identified those organised by Energy Link, Lincoln University, M-Co, KPMG and some gentailers. Of these, Energy Link came in for special mention for the usefulness of its courses.

> *I've been, and my predecessor has been, to a number of courses run by Greg Size at Energy Link. They're all very good and they give you an understanding of the market, how it operates and risk management strategies as well.* (Purchaser)

> *Energy Link run some really interesting courses which I think are extremely beneficial for people like accountants.* (Other)

> *Yes. I've attended electricity risk courses. It really increased my knowledge of the market. It was run by Energy Link and those guys seemed to be pretty onto it with their modelling and I understand they are being used by generators and purchasers alike.* (Purchaser)

Gentailers also said they provided courses and sought to improve their customers' understanding of how to manage hedges and to alert them to spot market risk.

1 respondent noted the requirement across the Tasman to have an accreditation process for training.

> *If you look at Australia, basically I think you have to go through a formal accreditation process in terms of training. Whether or not that's something that should happen here in New Zealand I don't know. There is a cost obviously associated with that. I'm sure there are times when you look at certain participants who decide to use the political route when prices are going high that you sometimes think "can you remember, is there another way of solving this?". It would be an advantage if there was some sort of accreditation type process just to make sure everyone's going into this with their eyes open.* (Gentailer)

Some respondents had acquired their knowledge of the market on the job and had received no formal training. Electricity trading was not a core concern for them.

> *I have had no formal training in it and I guess if I were honest we'd prefer not to be doing what we currently do. Because the reason we are in the situation where we are buying hedge product contracts for differences is because we can't get in our view a fixed price variable volume contract, so we're not in this situation by choice. Our business is not being an energy trader. We'd much prefer my time directed toward our core business not what I consider a peripheral issue in trying to secure competitive energy.*[What proportion of input costs is electricity?] *Double digit costs – 10-15%. Our energy spend is about $10 million a year.* (Purchaser)

> *No, we haven't undertaken any training. I guess if we had somebody new coming in then there would be a need, but I've been around for a while and I am reasonably aware of what the risks are.* (Generator)

1 respondent made the point that the emphasis should be placed Jon ensuring a more open market than training if the goal was to improve risk management.

> *My sense is that training is unlikely to help risk management – an open market is the main thing that will reduce risk*. (Other)

There was little support for seeing the Electricity Commission taking on the role of providing training as suppliers for that's services already existed. And concern was expressed that levies would go up to support the Commission to carry out such activity.

> *I wouldn't have thought the EC needs to get involved in it if somebody else has seen a niche in the market and offers a service*. (Purchaser)

> *I don't see there is a role for the Commission because I don't see that there's an information gap and what I don't want to see is the Commission moving into areas that it doesn't need to go into without a clear specification of whether or not there is a problem and what the problem is and what's the best way to fix it.* (Purchaser)

> [Do you think the Electricity Commission should have any role in assisting with training?] *No. Well, we're getting told often enough that we need to watch more Maori octogenarian lesbian documentaries so I don't know that the Electricity Commission has to come in and tell us how to train our market. No.* (Other)

> *No. I think their role might be to just ensure that the training that's available in the market is working properly I suppose.* (Gentailer)

> *No. There are independent training providers anyway*. (Purchaser)

However, it was envisaged that the Electricity Commission did have some role. 1 respondent suggested it could promote training without actually providing it while another suggested that rather than promotion, its role could be to ask the right questions to determine whether companies had the right policies and training in place.

There was some support from a gentailer for a suggestion by the Electricity Commission that it would be useful for commentators to have a broader understanding of the market.

> *The Commission has been talking about generally trying to increase understanding of the industry and I think that is very important. Understanding of what are some of the dynamics in terms of pricing throughout a year but also just in terms of the regulatory environment and so I think if you were talking about training, if you broaden it, that some of the commentators that go off to appeal hearings and what have you, it would be useful if they did have a broader understanding. I've had conversations with David Caygill saying that he feels that the general understanding of the sector is pretty low and that he thinks that one of the things that he ought to be doing in his new role is to increase the general understanding and I wholeheartedly support that.* (Gentailer)

4.10 Force majeure/suspension clauses

➢ Acts of God

There was some support for genuine acts of God to be part of hedge contracts with some saying that this was standard practice for any financial contract.

> *I think the FM clauses covered under the master ISDA agreement are entirely appropriate. They're present in all financial market contracts. They're present in damn near every legal market contract, and that's your classic act of God or terrorism…They already exist in the master ISDA agreement that you've got with somebody. Suspension clauses – you can argue that in some cases they were appropriate. In general I don't think they should be present. It makes it very hard to compare apples with apples.* (Other)

> *FM clauses should be there for genuine acts of God, but not for other risks.* (Other)

> *I come from a financial markets background and it's a purely philosophical argument. You buy a hedge because you want the risk taken care of and presumably the other party has priced that risk in.* (Gentailer)

Genuine Acts of God beyond the generators' control were acceptable, but not suspension clauses which were seen as within their control.

> *There's some nasty suspension clauses in some of the contracts. I assume you mean the generic ones that says if the price goes like this and we don't like you then you can suspend the contract, well I don't agree with that, so what I'm saying is force majeure needs to be specific.* [That's outside their control almost] *Yes, that's right, but suspension can be within their control. Within your control stuff, that risk should be handled by the generator*. (Gentailer)

➢ Declining incidence of FM/suspension clauses

There was anecdotal evidence from both the supply and demand side that the use of what might be considered unreasonable FM and suspension clauses was far less evident than a few years ago during the dry years of 2001 and 2003.

> *There's this tendency to look back at 2001 and 2003 and proclaim that those sorts of clauses in contracts are still evident today, but in fact they're not.* [Do you sell contracts that have FM and/or suspension clauses – and those that don't have them? And do you place a price premium on those without?] *Yes. We've got a range of different contracts, which are … some historical stuff, and yes, then there are different pricing levels.* [Is it – right at the beginning we talked about increased competitiveness, tighter market – does that tend to flow through where inclusion of suspension clauses have become less used?] *Certainly they're less used at the moment.* [And is that derived from increased competition?] *Partially, it will be increased competition, and partially from the change in circumstances under which you want to include suspension clauses.* (Gentailer)

1 gentailer said that they did not sell contracts with FM clauses as they felt they were best able to manage their own risk.

Comment was made that another gentailer, Meridian, did not offer FM or suspension clauses and another seller specifically excluded them to provide greater clarity for the purchaser.

> *If you're buying off Meridian you'll find there's no suspension or FM clauses. The only people who stick those in are the gas and coal-fired guys because the physical plant might go down. It's not anything like as reliable as hydro.* (Gentailer)

> *No, solely for the purpose of trying to improve the clarity of the transaction between the parties. The counterparty I am dealing if I want to give him a clean product I perceive in my mind that it's easier for the party on the other side understand how to price that if I don't have exclusions and risk that I am putting on to him.* (Other)

> *We don't believe particularly in force majeure clauses or suspension clauses. We tend to ignore them or we downgrade the value of them when we look at it. We have taken the odd one and we have taken them.* (Gentailer)

➢ Acceptance and resistance to FM/suspension clauses

Some purchasers objected to FM clauses but had faced the situation where they had no choice but to accept them.

> *It had an FM clause we didn't want, but we couldn't get anything else. Solely because we are trying to hedge to minimise risk and what you are being offered is an out-clause. We have had no circumstances where force majeure has applied but contractually it's just not where we want to be.* (Purchaser)

> *Ones that exclude events which is exactly when you want to be protected from high prices, like when a transmission line goes down, if a major generation station goes out, I've seen some that include a dry year where the Electricity Commission has called a dry year. That's when you want to have hedge for is to protect yourself against those things.* (Other)

A few were relatively comfortable with FM clauses as they felt they were standard in most contracts and were rarely called.

> *We have experienced that most people have got them in contracts. We perceive the risk to be pretty low but if we had an earthquake tomorrow we might review our thought on that.* (Purchaser)

> *We've never had an FM clause that has ever kicked in.* (Purchaser)

The existence of suspension clauses however were firmly resisted, particularly though not exclusively by those on the demand-side.

My impression is they have a lot of outs, say they have a mechanical fault or something and suddenly you're back on the spot market and you haven't got anything like you thought you'd contracted for. So I would have thought a force majeure relating to maintenance is an unreasonable contract. (Purchaser)

No – a hedge is a hedge is a hedge really. Any sort of detail that means the contract is null and void that is not a true financial contract. (Other)

When they say it doesn't apply because it's dry weather. One we've actually experienced was if a significant portion of their generation were to go down because of planned maintenance. It was specifically stated to be incidents or accidents but including maintenance planned or unplanned. We thought that was totally unreasonable. (Purchaser)

It was also pointed out that sellers of hedges were much better placed to value risk when pricing contracts with or without suspension clauses whereas it was more difficult for buyers to value. It was suggested that as thermal generators' gas supply risk was the most common reason for an FM provision and as such they should seek to manage that risk by purchasing hedges from hydro generators instead of passing the risk directly onto purchasers.

Suspension clauses are another area we have to value and we tend to over-value them when challenged by providers. At the end of the day a hedge is all about risk management and with that there are many layers of risk and it is very difficult for participants to be able to query that risk. Hedge providers understand their risks very well and they are a lot more advanced than on the demand-side of the market. Until the demand and supply sides have a higher level of trust these issues won't ever be handled correctly. (Purchaser)

It is thermal generators who lose their gas supply and they basically pass that risk onto us…it's shame they haven't done a deal with one of the hydros and priced it [the risk] *in that way. It's probably easier to pass it on to us*. (Purchaser)

This purchaser felt that the one-sided management of risk was a fundamental failing of the market.

[Do you feel that there are some types of FM and/or suspension clauses which you feel are unreasonable?] *Oh yes.* [What are your reasons?] *They're one-sided. FM is always on the side of the seller of the hedge. There's no buyer FM available… FM gets abused. What happens is they put these outs in under FM and these are not FM because these are actually manageable… an unplanned plant outage, that's a risk that the generator is there to manage…What I see with Transpower in particular and with the generators as well, is that they contract out of managing those risks and they pass those risks onto consumers who frankly can't manage the risk without appropriate products from the generators, and I think that is a fundamental failing in the NZEM.* (Purchaser)

A counter view was that it was the purchasers who could manage risk better than generators.

> *The thing is that if you're a generator selling energy and Huntly goes down, you should be able to call in FM because it's not fair. I'm of the view that risk should sit with those parties who are best able to manage them and you could argue "how can an industrial customer manage risk?" but they can actually take plant out if the price gets dear enough, whereas if in fact you put it all on Genesis, there's no pressure on the companies to do stuff that they could otherwise do and everybody can take their plant out. They might say it's not cost effective for them to do so but they physically actually do it, but if Genesis has got its plant out because the transformer's not running, it cannot make it run. It physically cannot make it run, whereas physically an industrial customer can actually turn his plant off.* (Gentailer)

Even so some gentailers held the view that hedges with FM or suspension clauses were fair because they were negotiated bilaterally and priced accordingly.

> *None. I don't have any sympathy for people who – because generally there are parties out there who do offer those and they will only offer those types of clauses. So there are other parties out there who offer the same basic product, without them, it just comes at a price difference, and it's not like they're forced to take those FM clauses, it's just that they like the price, but they don't like the term. And you've got to make your choice.* (Gentailer)

It was argued though that the ability of including a suspension clause had benefits for both parties as it enabled parties to reach agreement outside prescribed policy parameters and facilitated trading.

> *So, if you link some of these questions in together – "do you have a risk management trading policy?" Yes. The risk management trading policy says that you will only write certain types of contracts and you won't go beyond the trading bounds, if you're then asked to write a contract which would take you outside. But if you can resolve that by adding a suspension clause, and the counter-parties have to take it, then why would you not do it? The over the counter market is specifically to structure a contractual arrangement that best suits the 2 parties. That's why contracts are tailored to meet the needs of 2 parties. So I can't for the life of me see why you'd want to hinder that ability, by putting restrictions on what type of contracts should be traded. And if someone tried to legislate that, like all good trading people you'd try to find out ways to circumnavigate around it.* (Gentailer)

However, some parties have had success in getting undesirable clauses struck out of contracts and this appeared to reflect the competitiveness of the market. This respondent also identified contentious right of renewal clauses and the trend now occurring for new contracts to include pass-through carbon charges.

> *We quite often get contracts with force majeure clauses that we've managed to get changed like TrustPower's ones. There's a few clauses popping up now around carbon and there's another one that says if you accept this offer and need gas supply like lpg you have to go to them for an offer. If our customer doesn't have a need for gas it doesn't matter otherwise we point it out to our client and say this is something you may want to negotiate out. The other*

clause which can be contentious is the right of renewal or right to match clause and in general we try and get them take it out. If the term runs out we have to give them prices, so we have to go to market and we have to give them prices which they are allowed to match. We are adamantly against it. If the customer already has one of those clauses in we try and carefully manage it so we aren't disclosing other people's prices. We tell the incumbent that they have to submit prices up front anyhow. (Other)

If there's a high degree of contestability in the market, market tension, then yes, you can negotiate anything you like. They're more than willing generally to negotiate over those sorts of terms. If the market's tight or there's less competitive tension, then your ability to negotiate those sorts of things declines. Which is to be expected. (Gentailer)

The carbon pass through is currently being set as a percentage of whatever the price of carbon will be, but ambiguity existed over how this would be measured.

The pass through will be a factor or percentage of the price of carbon when it comes in, so effectively if it is $30 a tonne we are going to charge you a percentage of that, but you still don't know what that is. And also, they have said it is going to be a factor of what it is – but does that mean whatever it is on the day everyday or does it mean an average over a year because it is going to be an instantaneous number. But the thing is you'd never really know the real cost because it's all going through the spot market. That's a tricky one and the predominantly hydro generators with their retailing arm tend to have standard clauses for increases for taxes. (Other)

The exclusion of the carbon tax or the emissions trading scheme. One of our big problems with that is our hedge price is related to movements in the spot price due to carbon initiatives. If they go the way they are going now we won't know what that is. While it increases the spot price – what does it increase the spot price by? For generators that have got thermal are going to lower their bid prices, but we won't know how much by, we won't know who the marginal generator is to know what they have factored in and some of the generators are going to make billions out of this because it is not going to be a cost to them, but it is going to add to their revenue. 90-95% of our production is contracted to our shareholder and it all depends what their demand is. Today we'll get their 2008-09 volume and 2009-10 volume we won't get till this time next year, so what we've done there is project current year's volume through to the next 2 years. The exchange rate is a factor on the demand required. (Purchaser)

And in relation to increased use of renewables, it was suggested that the market would have to develop products to manage the intermittent nature of wind generation.

It will be for managing intermittency of wind. So like a double knockout option that comes into play. Solving the wind issue is going to be one of the big things going forward for the success of the market. (Other)

➢ Pricing of FM/suspension clauses

Contracts with and without FM/suspension clauses are priced differently. 1 gentailer said it used its own internal modelling to assess relative values as for instance one contract might be at a better location and have an FM clause while another might have no FM clause at a less desirable location.

While it was reported there could be significant variations in the prices of contracts with and without clauses, 1 purchaser said that the price of those with clauses were not priced sufficiently low to reflect the off-loading of risk.

> *Yes. Sometimes they offer it without and that's often a preferred option anyway. There can be quite big differences in price for those with FM and suspension clauses.* (Gentailer)

> *If you have a FM or suspension clause that means that you should put your price down because we are taking some risk. They're off-loading risk onto us so therefore the price should come down to reflect that. That doesn't always seem to be the way.* (Purchaser)

4.11 Location issues

➢ Significant limitation on competition

Location plays a significant role in limiting the availability of competitive hedges. While some gentailers say they are prepared to price at any location where they have user agreements with distributors, it can mean they will price themselves out of the market.

> *Yes, we will price anywhere. Now we will price in risk to I suppose offset the risk that we're taking.* (Gentailer)

> *There is one network area we don't have a user systems agreement to use their network. We can't get acceptable commercial terms, so we tend not to trade in that area, so we might not offer physical supply contracts and/or time of use contracts. There'd be nothing that prevented us from offering CFD there though. Financial contract. There are one or two areas where we would be very wary, or we'd put a big price premium on because of the inability to manage risk in that. The Bay of Plenty was a notoriously difficult area. I'm a little bit more removed from the day-to-day activity now, but I think that that may have even resolved itself to a large extent.* (Gentailer)

> *Effectively if you're not that keen it's because you're concerned about the risk so you put your risk premium in and basically what happens is you price yourself out of it.* (Purchaser)

> [Do you have a policy not to provide hedges for some locations?] *Yes*. [Which locations?] *234 of the 244 nodes*. [So just main grid exit points that you'll go for] *Yes*. [And the reason for that] *There's absolutely no way of managing the basis risk and pricing in alternate nodes.* (Other)

Those on the supply-side whose generation is confined to a small geographic area or an island tend to be more limited about where they will offer hedges.

> *Because I am not diversified as a generator with a single site*. (Other)

> *We would probably only look at it on the main nodes in the central North Island*.(Gentailer)

> *We won't provide hedges at locations we deem to have unacceptable levels of transmission risk, that are far from our generation sources. So we wouldn't do a hedge at Otahuhu for example. We do sell to customers in the Auckland area, but in terms of hedges, then no, we'll probably more locate them closer to – at GXPs, which are not necessarily where our generators but there is what we deem to an acceptable level of transmission risk. Or there hasn't been a history of transmission risk. Hawke's Bay is another area, Northland, Auckland and above really. And there are probably also some particular GXPs with particular line issues*. [And South Island too presumably?] *Oh yes, definitely currently*. (Gentailer)

This issue was supported by the experience of purchasers. The first quote is from a South Island purchaser.

> *Upper North Island generators trying to give one at our grid exit point.* (Purchaser)

> [You say you've had difficulty getting hedges at some locations. What locations?] *If we said we wanted something at Haywards, they might come back with Huntly. Okay, sometimes we've asked for Haywards and we've been offered it where their generator is*. [Are there any particular locations which are problematic in terms of the way they'll respond?] *Certainly we've asked for Haywards and have been quoted at their generating site*. (Gentailer)

Particular areas of the country are problematic because of the scarcity of generation or transmission risks that exist. 1 gentailer identified the upper South Island and Northland as such areas.

> *I think once you start to go out onto the East Coast, the Bay of Plenty can be tricky, Northland can be tricky. Nelson can be tricky. You'll generally always get a price in those places but it will be horrendous and you'll only get one because you've got the geographical monopolisation of market power*. (Other)

> *You'd probably find there'd be more people offering hedges at a major node area or where there's a lot of generation. When you come to us, there's virtually no generation in this area, so people don't want to sell to us, so people don't want to sell to us. A Hedge in the South Island or Upper North Island is not very good for us because the variances in nodal pricing are huge*. (Purchaser)

An inability to break offers down into their components including location risk created some distrust toward sellers.

> *We have difficulty breaking a price down into its various components. With location risk there is an unhealthy lack of trust which means that if we would like a price at a different location the responses can often be from a very safe location and we are suspicious, so the ability to share risk is difficult.* (Purchaser)

➢ Size a factor too

It was also reported that the size of the hedge at particular locations could limit competition. 1 gentailer said they had received only 1 offer at a location when they sought a hedge for more than 100 MW.

➢ Self-constrained purchasing behaviour

However, knowledge of who is likely to make a competitive offer has led more sophisticated purchasers to only seek hedges from those who are likely to provide them.

> *No. Most of the locations we've requested we would get offers at – of course again, as a more sophisticated purchaser we'd know where, there's a limit to where we need to go anyway. And we've probably already worked out what a likely response is going to be.* (Gentailer)

> *Yes. We sort of know what retailers will offer at different places, so if we ask for a hedge at say Otahuhu we'll often get offered a hedge at somewhere else and we'll have to make that evaluation. So it's not always guaranteed we'll get hedges offered where we want them offered…typically hedges are offered at main nodes, so if you want a hedge in Wellington you'll ask for it at Haywards and not Melling because we know that's where hedges are offered.* (Other)

➢ Absorbing risk

And those seeking hedges for a small proportion of their load can at times absorb the locational risk.

> *If I was a buyer just looking to enter into one contract for all of my load, then it would be quite a significant concern. When it's only a 5 or a 10% proportion, then you're able to absorb that risk and you're not prepared to pay the premium for the location risk management. You're probably going to price it closer to where you think it will actually sell.* (Gentailer)

➢ Changes needed to nodal pricing

There was a common call from supply and demand side respondents to see the complex nodal pricing model greatly simplified to make it easier to price to about half a dozen nodes.

> *From a risk management and pragmatic approach, for a country New Zealand's size, do you need 250 grid exit points? I don't think so, but I acknowledge where the system operator is. From their perspective it's ideal and I would – in an ideal world you'd argue that certainly from risk management that you had less grid exit points. It's far easier to price 4 or 5 than 250.* (Gentailer)

> [Is there an easy answer to encourage people to –] *Absolutely. You get rid of the unnecessary evil that is full nodal pricing. I haven't seen one piece of evidence in the past 12 years of existence of the New Zealand electricity market that suggests that anybody has located any form of generation or transmission investment on the basis of full nodal pricing which was always the argument for the introduction of full nodal pricing. It was economically the purist way of signalling where investment should occur. I think what's happened is that while academically it might be the perfect solution, practically it's just screwed a whole lot of people up.* (Other)

It was suggested that a regional pricing model could be adopted similar to what was used in Australia.

> *The hub and spoke-based model says pick zones, it can be 2 regions, 3 regions, 10 regions. Call it the regions you want to call it. There seems to be a sensible geographic way of dissecting the country that results in about 6 or 7 regions. You take those 6 or 7 regions. You have marginal pricing to all of those 6 or 7 regions so there's still strong locational pricing segments but then within those regions you just have average losses ... so I could always price – I might not be able to price at the Gisborne 501 node now because I have no idea what's going on. In a hub and spoke model I will price to Taupo and I know that the losses from Taupo are 1.45% so I'm happy to price to you at the door in Gisborne because it's just my Taupo price plus 1.45%.* (Other)

Though this was seen to have its shortcomings too.

> *I too have though why do we need 250 odd nodes – why not have 6 or 7, but the difficulty with that is…how do you get some generator sitting somewhere who has to come on to relieve a transmission constraint within the region – why should they run. If there is a high spot price they're into it and it kind of works. But otherwise the system operator has to give them a constrained on instruction saying I want you to generate 50 MW, well that generator is then going to say what are you going to pay me and they basically set their own price for that and that basically leads to all sort of possibilities of extortion or rorts and generators in different places or with different loads can manipulate this. I think it would lead to the potential for a lot of gaming and an even worse outcome than the 254 node model ...but in terms of liquidity I think it's true you would probably get more offers.* (Purchaser)

Although the current nodal pricing system was supposed to provide a signal to locate more generation closer to load and thus derive economic efficiencies, it was argued that generation was actually being located primarily for other reasons such as where generation is to be sourced, a point that may be more relevant with a greater focus on renewables.

> *If you're going to build a new generator the first thing you look at is where the fuel source is for your generator. Is it water or gas or wind? The second thing you look for is where am I going to get my resource consent, and the last thing you look for is what's the price uplift here versus the price uplift across the rest of New Zealand. In 100% of the cases we've installed generation to date has been on the basis of the first 2 of those 3 issues. Nobody's ever turned around and said "actually the price uplift on this is what drives my decision to invest here". It's "shit, is there any water that I can dam, is there any gas here that I can burn, is there a geothermal steam asset". That's why you put generation where you put generation, and it's the same for the businesses on the other side. A lot of them are saying "well gee, this is where a freezing works has to be because it's the central point, this is where a dairy factory needs to be located", then they turn around and say "jeepers the price is a little bit ugly in there but gosh I've got to do it anyway*". (Other)

An alternative suggestion expressed the hope that the likes of the ANZ might be able to develop an aggregated product derived from purchasing hedges from a number of sellers which could enable a competitive alternative to be on offer that was not dependent on any single generator.

> *We're always after location-specific things and the energy hedge is just a proxy for the overall market. We're locationally risky. If we had aggregators in the market like the ANZ, they might be able to effectively do that for us and therefore offer us a product that's acceptable at our node or reasonably close*. (Purchaser)

1 gentailer was critical of some purchasers and felt they could be more supportive of transmission investments that would reduce some of the location risks that were faced.

> *It's interesting though, some of these players who – they could help themselves by not interfering too much, or not support some of the transmission investments that are ultimately going to assist in the mitigation of their risks.* [I think that's a valid point. (Interjection.)] *Fundamentally there may be 4 or 5 major constraints within the country and Transpower is working to try and remove some of those, and response to reliability investments under the Part F transmission framework and yet a lot of the major users are forever delaying the process*. (Gentailer)

4.12 Duration

There appear to be some barriers to obtaining hedges for a long-term duration of more than 3 years. 1 gentailer said they had restrictions on providing contracts for differences for longer than 3 years and Board approval was required to provide longer term hedges.

Another respondent identified the problem of obtaining an informed opinion about long-term pricing and said there needed to be generators in the market offering sufficient of them together with more disclosure. This respondent had little confidence in current forward price curves because of the liquidity issues mentioned earlier and the short-term nature of the hedges that were offered.

> *Yes, currently 2 to 3 years and we do less. I did a 3-month 1 the other day – filling in gaps between hedges – rolling-over.* [Why not longer?] *Mainly because of the difficulty in pricing, the challenge to arrive at the pricing. And as a secondary issue, the management of the true force majeure.* [What more would you need in terms of information in order to be able to price longer term hedges?] *There needs to be comfort in the pricing, so other like-minded generators selling longer term and some form of disclosure to say what the forward market is. I guess the flip-side to that is an absolute lack of confidence in the current available information and viewpoints on forward prices.* [Is that because the volumes are too thin?] *Yes and they are all relatively short-term in energyhedge, the only disclosed one. The disclosures inside the M-co are relatively short term and the detail in them, the underlying conditions aren't clear. It's been my observation over the last few months that enegyhedge appears to be reflecting more closely my perceptions. It' still one I am uneasy about.* (Other)
>
> *It depends whether we are in a surplus situation. If we were I a surplus supply, we would certainly be selling hedges on a longer basis or a different basis – there would be a range of options. We would be quite amenable if it made sense.* (Gentailer)
>
> [Going back to that issue of competitiveness, a question for some who would like to see the ability to acquire a longer-term hedge than the 3-year restriction] *We are very, very keen to proactively facilitate that happening. You may be aware over the last 18 months we've been looking at long-term hedge offers. We went out and talked to people about a market offer of a 10-year hedge. That's something that we're actively looking at.* (Gentailer)
>
> Do you have a policy to only provide for certain durations?] *No.* [Apart from the 3-year limit I guess that you have on energy hedge] *Yeah, but no there's no* – [If someone was to come to us for a 10-year deal – (Interjection.)] *We'd have to go to the Board.* (Gentailer)

4.13 Credit arrangements

Credit arrangements appear to be an infrequent barrier preventing hedge contracts being put in place. Several respondents talked about the use of gaining letters of credit from banks where, for instance, a formal credit rating on a company was not available.

> *No-one has said "no" but we have had various bank notes and guarantees from time to time, but it's no different to what you have to do to be in the electricity market anyway.* (Gentailer)

> [Deleted] *doesn't have a credit rating as such, so therefore we've always been forced to have to provide bonds and a credit note etc and that bit's fine. But we always found that dealing with the likes of Meridian etc, they rely on their credit rating when really, when you're buying a hedge from them, who's got the most exposure? I mean from a retailer buying a hedge, the price can only go to 0. If you're buying at 6cents the maximum exposure is 6cents, whereas when you're buying from a generator, it's uncapped, even for someone like Meridian.* (Gentailer)

> *We're very conscious of credit. I'm trying to think whether it's actually happened or not. We've certainly run up against our internal credit parameters. We may have breached because the market's moved and the market valuations have taken you outside the parameters. We have not in my recollection – oh, there are 1 or 2 instances where we've had to try and negotiate with the customer to try to address some of our own credit policy issues. So in effect you're almost trying to make a margin call. But very, very infrequently, because I'm thinking once or twice in my memory.* (Gentailer)

A few respondents felt that credit arrangements were a growing issue.

> *A company was seeking credit support which we didn't want to provide and never had to provide in the past and it is becoming more of a norm these days. We chose an alternative provider as credit comes at a cost.* [Unusual?] *Not unusual, especially for a company that isn't listed. No-one knows anything about our credit worthiness, we expect people to ask and I would if I was in their shoes.* [Expect to come up more often?] *The generators I know are worried about it, not just with us, everyone.* [What will you do if all offers require credit support?] *There are different ways around it, we can provide a bank guarantee rather than pay a premium.* (Purchaser)

It was pointed out by 1 gentailer that it was important that credit arrangement requirements were highlighted at the outset of a negotiation as its subsequent introduction at a later time could unwind a negotiation or result in the need to renegotiate price.

For most gentailers credit arrangements were not a problem given their generation capacity.

> *Most of the time we're a sufficient generator to cover any purchases that we've been making and over the last almost 9 years I think there's been a couple of times when we've needed to put up some cash in the bank I think. We have encountered situations where people have been reluctant to provide prudential or understand why they might be required to provide prudential. It's an education one, I think, more than anything.* (Gentailer)

However, this was not the universal view of gentailers.

> *We have argued in the past that the current prudential issues in the market are quite serious. The problem we have is that you can't expect someone to sell electricity at $60 to somebody and not know that they're going to be robust if the price goes to $800 or so. It actually has to work although to be fair it seems to be the seller that takes that risk, not the buyer. Australia has similar prudential arrangements to us and they're common across the world so you could argue perhaps you're right but that's actually what people*

believe is necessary because it's not fair that the market should fail because of the default of the small retailer. That's a false economy. They have to somehow build the cost of the prudentials, but I'm pretty sure that if they wanted to, they could go to a bank and the bank would back it off at a price, so ANZ Bank for example is one of those because they actually understand the electricity market very well so when they're bitching about it, how hard have they tried to actually come up with a pragmatic solution? (Gentailer)

At the moment in New Zealand what they do is they put the actual hedge, the dollar value of the hedge into the market, and it settles through the market. In Australia what they do is they say that "you and I had a hedge for 30 MW" so they subtract 30 MW off the generator and credit 30 MW to the load, so it's like the load's now got a 30 MW generator offsetting its prudential risk so there's no discussion on price, so that price could be $30 or $300 and no-one would know, because that price transaction still happens. All they're doing is shifting the 30 MW from the generator, when he generates into the market, over and crediting that 30 MW to the customer which is something I have occasionally suggested here but haven't got anywhere. (Gentailer)

A case was put for having special arrangements made for smaller purchasers.

Have a requirement to provide for larger and smaller players. So maybe there's a high volume market and a small volume market but some sort of market that allows smaller volume trades and smaller volume participation and therefore smaller volume credit requirements. I think that's an important thing, and then to match that the securities market legislation has to be redrafted to allow those smaller volumes of securities to be traded without the need to provide a registered prospectus. (Other)

And it was also suggested that ANZ, as a bank, could perform the role on *energyhedge* of managing prudential guarantees.

The ANZ Bank is the only member that's not a retailer. So if I was going to get someone to buy for me, I'd actually ask the ANZ Bank to do it and they might clip the ticket at 50 cents or so per gigawatt and they can actually also handle the prudential and all the other stuff because they're a bank, so I think that's something where they see themselves coming into it. (Gentailer)

This was supported by the view that banks themselves were in a better position to evaluate risk than market participants.

Give credit risk to the people that can price credit, the people that have got information. Banks will always have better information about a client's financial status than a generation company. (Other)

4.14 Influence of the 2001 and 2003 dry years

The dry years of 2001 and 2003 have influenced the behaviour of most respondents to ensure prudent governance arrangements are either in place or have been enhanced.

> *Yes. We've certainly gone from ad hoc decisions based solely on perhaps on one person's view of the future to the point where we have developed internal modelling and promulgate that model with information that we are given predominantly from the tendering process and also third parties and we make a lot of effort to understand all the components within price e.g. location, the HVDC.* (Purchaser)

> *Well without question the outcomes of 2001 in particular were a shock to market participants, i.e. for the level of dry year that we had, I don't think anyone anticipated what prices we'd need to go to, to manage that. So it provides somewhat of a benchmark or a data point from which you can base your modelling.* [And I presume it's made you more conservative in your risk management strategy, or not?] *Well, I wouldn't think it's right to say we're more conservative … rather than being conservative, it's made us realise the value that's inherent in that portfolio, in making sure that if we're getting compensated for it, we're giving some of that value through a contract with counter parties.* (Gentailer)

> *More disciplined governance. Reporting, analytical modelling work. Probably to some degree your eyes are more open. You're aware of the risks, even if you're not doing exactly the same strategy as the one you did during 2001 and 2003, you are a little bit more cognisant of the consequences following that.* (Gentailer)

> *We have a much more rigorous governance process now than we had in 2001.* (Gentailer)

1 purchaser said they no longer went on the spot market even though at times it would have been more advantageous to do so but reporting requirements to shareholders dictated that they had a smooth cost curve.

Some respondents said that they had altered their hedging behaviour because the cost of doing otherwise could be potentially disastrous. Purchasers were also more conscious of the need to acquire more information and market intelligence to inform their hedging decisions.

> *Yes. I guess we have taken a higher hedge position than we might otherwise have taken. The last dry year we encountered we suffered badly. It cost us millions.* (Purchaser)

> *Yes. We used to hedge 80% - perhaps a conservative approach and we found in a dry year particularly we were struggling to generate to the 80% mark so we were having to buy expensive and sell cheap basically. So, on that basis we've gradually come down. We came down to 70 and then 65 and currently 60%. Partly because we are getting a bit more comfortable and partly because the market is settling down and partly because of the dry year as well.* (Other)

Definitely – that's why we go out for 10 years basically. It's impressed upon us the importance of having hedges. (Purchaser)

2001 and 2003 showed you that the ceiling was a lot higher than people initially thought it would be. [In what ways has it affected? Are you more conservative?] *I guess in terms of how we buy, I think there's just a general awareness that having a higher hedged position going into a spot position is far, far more important than you may have initially thought.* (Other)

Some used the experience to educate others to the potential risks that exist.

Yep. [In what way?] *We try to highlight to our customers what prices could do and we use those high price periods to show what impact they could be exposed to – those high prices. Subsequent to some of that, we offer a risk analysis service before we go out to tender. Often the people we are dealing with our middle managers and we advice them to ensure their senior managers are aware of the potential for blow-out on costs, so they don't end up getting kicked in the backside. It's just making them aware of how bad it can be if they are on spot.* (Other)

However, 1 purchaser said they were better off on the spot market even if what happened in 2003 were taken into account.

They did a 5 year survey which included the dry years. The whole feeling was that if we'd bought this or this, we were still better off by $40,000 on spot. [Even taking into consideration the dry years?] *Again, the company view is that we spend $4 billion a year, say we spend $2 million on electricity, compared to $4 billion is that going to affect our share price, no. That's how they look at it. CFOs reasoning is that we have other things to worry about.* (Purchaser)

4.15 Responses to high spot prices

The inability to respond to high spot prices was often an economic decision though in some cases regulations also prevented a response being made.

It's very difficult – we're in an industry that's heavily regulated by food safety and we're not prepared to go down that path. (Purchaser)

[Would you be relaxed about cutting load if you were able to, or would you be doing it under duress? This is in times of high spot prices.] *I think what we would be looking at quite seriously would be the arbitrage cost of value of lost load versus cost of installed generation so to me the value of lost load is potentially significantly higher than what it would cost us to have some sort of installed generation ... megawatt diesel generator at the bottom of the building rather than cut load. Just fire that up. A lot of our load, the nature of our business is a lot of our load is considered core load. People need computers. We don't have manufacturing processes or refrigeration that we can just turn off and not open the door for 2 hours.* (Other)

> *We have in the past chopped 20, power the melters down and turn the hot water off.* [How long would you be able to do that, or would you be prepared to?] *A couple of hours.* [Is it a big decision to cut that, or is it something you're reasonably happy to do if the spot prices are high?] *Both. I ring up – by looking at ... I see very high prices coming along, we have a trigger level that I ring people up and they tend to look at where are they with respect to where they should be with production and if they're behind production they'd probably say "no bugger off" and if they're ahead of production they'd probably say "yeah we can turn off for 2 hours and maybe schedule a bit of short-term maintenance in that 2 hours".* (Purchaser)

> *A half-hour and currently do so when supplying reserves into the market*. [Is this something you are quite relaxed about doing or would you be doing it under duress?] *Only if paid to do so.*[Is there a particular price point where it gets to painful to continue without shedding load?] *At $300-$400 M W/h, but it's a moving point as we have to take into account foreign exchange at the time and the cost of production.* (Purchaser)

1 purchaser was adopting less energy intensive processes in any event which would have a benefit during times of high prices.

> *We are actively pursuing energy reduction programmes and we are moving away from high energy intensive grades.* (Purchaser)

And some purchasers with the capacity can respond by injecting power into the system.

> *If the cost of spot electricity is far higher than that, then it's worthwhile doing it, and one month in the past we saved ourselves the thick end of a million dollars by buying extra electricity from cogen as opposed to buying that electricity from the grid. That was during one of the hydro crises.* (Purchaser)

However, some purchasers did not think there was sufficient compensation available for those who reduced their consumption.

Gentailers felt they had limited ability as retailers to influence residential demand except through arrangements they had with local distribution companies.

> *Easily? 0 as a retailer. I mean we might be able to switch on, get the line company to switch on an additional ripple control and things like that, but generally it's more likely we're able to increase generation rather than reduce demand.* (Gentailer)

Comment was made that the influence of the Commerce Commission's regulatory regime removed the incentive on distribution companies to engage in ripple control initiatives.

Because the Commerce Commission manages the network pricing regime, the onus on the network companies to actually encourage hot water heating load control is going away. They used to use it to reduce transmission pricing but the Commission permits them to pass the transmission pricing through to the customers so that the line companies get no personal benefit for reducing transmission pricing say, and therefore now they don't need to encourage the use of load control on their grid because it looks like the Commerce Commission doesn't understand that impact. (Gentailer)

Gentailers though did have arrangements in place to call on additional generation.

We have arrangements whereby we can seek demand reduction, or we've got calls on standby generation, which achieves the same thing. So, for example, we have diesel gensets for purposes not really for the normal production of energy but it might be that there's something that network companies, who use it to limit capacity charges which they would otherwise incur from Transpower. So it's your highest instantaneous demand which sets your prices from Transpower. So if the network company can lower those … and they have diesel gensets which they will use for their own purposes in those high capacity types in which they – we've got arrangements to call on. (Gentailer)

We would reduce consumption, increase hedge cover, manage hydraulic risk. (Gentailer)

We have worked on co-generation options, so in a dry year we'd actually generate there and use the off-gas for making hot water and we would have the option to run harder so could generate even if we couldn't do it quite so efficiently and we could generate more and export the balance. (Gentailer)

Some provide advance warning to users so they can manage a foreseeable price spike and conducted education campaigns targeting residential users when prolonged periods of high prices occurred.

It's encourage, we don't require but we encourage – we make sure everybody's aware that there's a high-price perhaps happening on Thursday so we've just done that, so we've told all of the industrial commercial customers, high-priced event on Thursday, you want to be prepared to be able to be able to take load off if you want to, and by doing that, if we can encourage another 200 meg of load to come off, it means that that high-priced generator, that last 200 meg isn't priced at the established market, it's lower than that. If we want high prices we wouldn't do that. (Gentailer)

Well as a retailer we would run campaigns, provide incentives for customers to reduce demand, which we've done in the past. Our approach has been to work with the communities to provide some community type incentive for members of the community to reduce demand. (Gentailer)

4.16 Recent hedge experience

The quantitative survey asked respondents a set of questions designed to elicit how competitive the most recent hedge market purchase experience had been. Gentailers typically reported the most number of offers and at times there can be a significant variance in price.

> *I think we get responses from 3 to 4 people each time we go out. Most of them would respond. 3 out of 4 would be fair. We would actually go out to 5 people if we went out for a tender, we'd go out to the lot, and I'd expect at least 3 to respond. Remembering we're actually going out and asking for vanilla. You're not doing anything clever or fancy.* [What was the difference in price?] *I was just remembering we went out to one – sometimes it can be as much as $15 just depending on the position of different people's books*. (Gentailer)

There were however large single site purchasers who reported reporting receiving only 1 or 2 offers due to their location and they did not regard the market as competitive.

Respondents were also asked whether there were any caveats that applied to the hedge contracts they had entered into. Only 1 or 2 confirmed that there were any.

> [Do you have any special contracts that are activated under special circumstances, for example, a dry year which may not have been covered in your initial response?] *Well the short answer's yes, yes we do, there are some which are very far from vanilla swaps. So they'll basically be in the form of an option, and there is a trigger for being able to call the option, which is not necessarily purely price-related. There'll be conditions, it's conditions-dependent.* (Gentailer)

4.17 Competitive prices

Respondents were asked whether they believed the prices for hedges they were offered were competitive. Responses largely followed the answers already provided to the question about whether a competitive market existed.

> *Because I don't think there is a competitive market out there. The market is defined by a very small number of vertically integrated generators and retailers with the generation and retail complementing each other.* (Purchaser)

> *No because I don't believe the market in its entirety is competitive. I don't see any real commercial tension in this which as a consumer we would like to see.* (Purchaser)

> *No. Look to be fair that answer is – really it's a maybe because really they're not sharp so this isn't very competitively cheap, but neither is it way over the top dear. They're there or thereabouts.* (Gentailer)

4.18 Distributors and generation

Only 2 distributors were interviewed in the survey about their views on lifting restrictions on distributors' involvement in generation. Only 1 of these, Powerco, agreed to be identified and it advanced the case for deregulation though with some requirement to ring-fence in order to prevent preferential treatment relative to other generators.

> *I think it's time for them to come off. I think it has certainly kept them focused on them lifting their game when it came in 1998-99, but I do think it would be useful to take them off. Now, obviously there have to be some arms-length rules, but you can deal with those…I don't see lines companies interested in doing the big stuff – it will be smaller, niche locations either for peak lopping or maybe a bit of base load, but it won't be much. None of us have the balance sheets to get in they'll all want to do something, but how interested they are I don't know.* [Do you see no restrictions at all?] *I think we need something along the lines of the Australian model where you have a ring-fenced set of rules which is really about no preferential self-dealing, so a set of rules and transparency obligations to demonstrate you are not preferentially dealing to improve your own position, that is, the distributor improving position on its generation arm and then it's how the distributor protects the confidential information of other generators. That's really it. The generator is competing in an open market, but the distributor unless he gets back into retail can't favour himself.* (Powerco)

> [Can you see any negatives about taking away restrictions?] *No. I tend to think is that what you'll find that existing generator-retailers will be a bit grizzly about it – they have a patch to protect, but if you look at it on balance the portfolio lines companies will get into will be relatively complementary and a smaller scale.* (Powerco)

The other distributor felt current regulations should stay in place expressing a concern that generation could become a distraction to the core business.

> *I think in some cases it doesn't make a whole lot of sense where the plant is truly complementary to the network business – back-up diesel generation and all that sort of thing.* [Would you make any changes to current restrictions?] *I would generally be cautious about letting distributors into generation. I think it would generally be a distraction from their core business and it would take them away from running their core business as well and will slowdown network companies amalgamating with others to get economies of scale. There's a little bit of inconsistency there, but it's hard to write rules to allow distributors into some areas where there are genuine synergies. In general, I think it's a bad thing.* (Other)

4.19 Most critical hedge market issues

Issues that limited the competitiveness of the hedge market or appeared to be symptomatic of an uncompetitive market dominated the list of the most critical issues identified by respondents.

➢ Liquidity

The lack of liquidity re-emerged, as one such issue.

> *Liquidity and transparency of pricing. It's knowing if the price you're offered is a fair price or not.* (Purchaser)

> *Just the liquidity or lack of. I don't how much the location is a factor. The location means we can't get an offer at the node we want. But the liquidity is more to do with the small number of players in the market. The issue of whether they will offer at a certain node or not is a risk issue – whether we take on the risk or they do.* (Purchaser)

> *It's liquidity. They've got to address liquidity and liquidity will only come through opening the market to greater participants. So that means finding a reasonable mechanism by which smaller parties can participate.* (Other)

> *Liquidity in the market and how long prices are available for. If they are longer, I think it would be a good thing. Energyhedge to me I think makes a big difference, but I may be naïve in thinking that. I don't profess to be an expert in this. I would have thought for major customers it just doesn't make a significant difference. People who want to buy hedges have trained to work out their own hedging strategies.* (Other)

> *The biggest issue for us is getting that depth in the market because with depth comes competition and innovation and that is good for all the customers connected to our network because if you end up with a market where people can only treat between 2 retailers it's not that healthy. It makes it easier for us to send the bills out, but it doesn't do anything ultimately for the customers' benefit, so the more liquid the hedge market hopefully the more entrants you'll get which will flow through to the customer because if the customer is happy everyone else is happy.* (Other)

It was suggested that regulation could require gentailers to make a certain percentage of their books available for hedges to increase liquidity.

> [In terms of the hedge market, what would be the one single biggest thing that you'd like them to focus on?] *It's liquidity. They've got to address liquidity and liquidity will only come through opening the market to greater participants. So that means finding a reasonable mechanism by which smaller parties can participate.* [And is that regulation like you mentioned previously?] *I'm not a fan of regulation of any form but in this particular case, I'm really loath to say that regulation is the answer. It's a solution. The kind of regulation that would be maybe useful would be some sort of onus or requirement placed on the parties to meet some standards in terms of – required to submit some public and very clearly defined mechanisms by which you can join and participate in the market and have those regulations have a requirement to provide for larger and smaller players. So maybe there's a high volume market and a small volume market but some sort of market that allows smaller volume trades and smaller volume participation and therefore smaller volume credit requirements. I think that's an important thing, and then to match that the securities market legislation has to be redrafted to allow those smaller volumes of securities to be traded without the need to provide a registered prospectus.* [Retailer]

Related to this issue was a perceived inability to resell a hedge.

> *My view is because it's such few participants and there's no real market place, there's no real forum to have that secondary trade so it's not like Forex where there are many buyers and many sellers. There's few sellers of products and there doesn't appear to be, in my view anyway, that ability to then – if you don't want the hedge anymore to sell it.* (Purchaser)

➢ Vertical integration

And as indicated in the earlier part of this report, lack of liquidity was seen to be a consequence of vertical integration. 1 purchaser talked about the lack of 'honest' offers from sellers.

> *I think the biggest issue around electricity hedges will always be that the high level of vertical integration in New Zealand significantly retards the necessity for the generators to provide hedges.* (Other)

> *The internal transfer price I think is quite high anyway. It sort of justifies the wholesale price in a way.* [I'm just wondering why the internal transfer price would be deemed to be high] *Well it's always my perception that the internal transfer price is higher than the actual price to the market. So it sort of is balancing off the retail arm against the competitive pricing pressures for the wholesale business. But they all seem to do it*. (Purchaser)

➢ Pricing and usage profile

Several purchasers identified problems getting more competitive prices and an inability to get offers to meet particular requirements.

> *The lack of a competitive market or one that feels truly competitive. I think of other commodities and services that we are involved in like the spot Asian pulp market and we know what competition feels like and we are dealing there with many companies with different circumstances. So our customers see a diverse range of offers – it feels competitive because you're getting responses from a diverse range of suppliers. The hedge market doesn't feel competitive and as a result you don't really trust it.* (Purchaser)

> *There are 2 things that are really critical to us and one is price because we are competing in a global market – 95% of our product is exported. And the other issue for us is trying to get protection for the style of industry we are – to get energy pricing that matches our usage profile –so it's the lack of flexibility. When you go to talk to some of these generator they don't think outside of the square. This is what we produce, this is what we can offer you – end of story. Not prepared to debate or negotiate circumstances to meet customers' requirements. It's there- take it or leave it. And that underlines our view that it isn't competitive – they don't have to. It's just a shuffling of the pack. They're not competing against one another.* (Purchaser)

> *I think we've told you 20 times before, competitiveness in price.* (Purchaser)

Trying to make prices as efficient as possible. Efficient means that prices are as low as they can be while still encouraging timely investment. (Other)

I do feel that the wild swings in the market, pricing in the spot pricing, for businesses that need electricity and are totally dependent on it for their day to day needs is not conducive and the risks are too great to encourage it, so what do you do about that? I don't know. (Purchaser)

➢ Long-term pricing and disclosure

There was also a desire to see a clearer, long-term indication of forward prices and more disclosure of market information.

The establishment of a long-term market with the consequential disclosures. The development of an openly, disclosed hedge market. (Generator)

Getting a real handle on the forward price curve. That's the one thing that this proposal the EC has been working on around hedges and the database on hedges has some real merit. That's the one thing I think that would make the most difference. (Gentailer)

➢ Nodal pricing

Location issues and the need to move away from the complexities of the current nodal pricing model were mentioned mainly by gentailers.

Efficiency in dealing with location. I don't think that there are many jurisdictions worldwide that have got it right. I mean it's a trade-off between – you want efficiency in the wholesale energy market versus efficiency in transport arrangements. And I think that when they developed this node of spot market price concepts, it was all about very much short term efficiencies of delivering megawatts, but it came at the expense that you created incentives for regionalisation, people looking to secure load close to their generation resource and avoid transmission risk. In other jurisdictions – in Australia they tend to have nodal pricing, but again that creates inefficiencies on the transport side of things. But it makes things more competitive on the retail, energy side of things. (Gentailer)

I'd like them to fix up the loss of constraint rental allocation mechanism and I'd like them to think about how to get the demand signals – I was talking to you about the line companies and the generators – I'd like them to work with the Commerce Commission to get the line companies' pricing mechanism to encourage them to be effective in terms of how they manage the load control as well. (Gentailers)

The lack of a transmission hedging capability. So basis risk for us. (Gentailer)

4.20 Most critical electricity industry issues

There were echoes of some of the same issues with respect to the competitiveness of the market when respondents were asked about the most important issue for them in the electricity industry.

➢ Competition

1 purchaser identified the market power of the supply side which, due to transmission constraints, provided limited competition across regions and saw risk shift onto the demand side by generators and Transpower.

> *I think it's the exercise of market power and in particular – I think that's based really around our long skinny transmission system which does not allow competition across regions because of the location risk. But also, as discussed earlier, it's the ability of Transpower and the generators to offload risk, that they are in the best position to manage, onto consumers, and Transpower does it very, very effectively through the electricity governance rules and regulations and its own operating contracts as well.* (Purchaser)

The limited number of supply-side participants and what was perceived as their less than robust competitive behaviour was another criticism that was voiced.

> *I don't really feel that there are truly commercial operations from a competitive point of view. In reality, there are a small number of players in New Zealand. While I don't believe there is any market manipulation going on, I feel they understand each other very well and each other's pricing structure, so there is a lack of true competition.* (Purchaser)

> *…deluding itself that it is an effective market because of the limited suppliers and that they are basically regionalised anyway. Meridian doesn't really get out of the South Island yet theoretically it is in the market. Our managing director gives the example of a vegetable market. If you went to a vegetable market to buy a cabbage and you asked how much it was and the guy said it's a $ now and it might be $2 in an hour's time, but we'll tell you what it is tomorrow – how do you decide whether to buy the cabbage?* (Purchaser)

The lack of market liquidity was raised again too.

> *Lack of market liquidity. If you draw the comparisons with the currency markets and look at the electricity market you'd have to conclude the electricity market is immature and just doesn't function well at all.* (Purchaser)

> *All the paper work that comes out and just trying to keep track of it. The bigger companies can split it up across a number of people to digest and read. For a smaller company it's pretty hard to cope with. it's just the sheer volume of paper and the sheer legalese and keeping up with the changes. That's the biggest problem.* (Generator)

Again, I still think the biggest issue is getting efficient prices and the main thing for me is getting competition and I am not convinced there is adequate competition for the reasons we talked about earlier. (Other)

New generation we've talked about in terms of having adequate competition. I am yet to be convinced that we need a separate capacity market. I feel that's almost saying that the market doesn't work in its own way to encourage the right sort of investment. I am not convinced that's the case and in terms of transmission issues I guess here they are referring to the capacity to which it affects generation (Other)

Regional duopolies were unavoidable given the small size of the New Zealand market, 1 purchaser said.

I can't help thinking that the market's controlled by a few big players that can manage the situation. (Purchaser)

Probably because we are a large user and we go out into the market say for 300-400 gigawatt hours of electricity, not a lot of people can actually tender for that and most of them are Government entities… It's like I say, New Zealand is such a small market. Maybe it's fair the way it is and any larger number would mean then that the businesses are so small they're uneconomic. (Purchaser)

➢ Renewables

The government policy on renewable energy sources and a moratorium on building new fossil-fuelled power stations drew criticism from several quarters concerned about the reliability of supply. The dominance of the State-owned Enterprises, it was suggested, gave the government too much influence over the sector.

The most obvious is the love affair with renewable generation. I think rationality has taken a bit of a holiday in this whole debate… unless you build massive over supply of hydro…you've got no consistency of supply because you're always exposed to dry years. Wind, I mean wind is wind. Sometimes the wind blows, sometimes it doesn't. (Other)

I think I'd be a little bit concerned about the government's policy of a completely sustainable future and the noises they're making about a 10-year moratorium. I think that the market should sort that out rather than the government making the rules because that's the risk that the market players have. The SOE model gives the government too much influence. There are not enough competitive players. [Purchasers]

Capacity around generation and particularly during dry years and how we can deliver that particularly under the new targets for renewables, it's going to be very tight. (Other)

You need thermal base load to cover dry years – no question. (Purchaser)

There was a desire to see greater clarity and detail around the new policy.

Clarity around the government's energy strategy. There are still a number of issues to be resolved around fuel generation. They've announced a moratorium on base load thermal generation. There's all sort of hooks around that, and proposed exemptions from the moratorium which need clarification. (Gentailer)

There was also a desire to see more information available on new generation, possibly in the form of face-to-face briefings as the information that was currently available came through the news media.

A big thing of forecasting electricity prices is to do with a planned electricity generation ... whether or not it would 2 years out, 3 years out or whatever it might be, that really does dictate to what electricity contract prices can do. (Purchaser)

We get very little information about what is going on. We never hear from the Electricity Commission, with my previous job I used to go along to Electricity Commission meeting. I knew exactly what was going on… [You'd be interested in going along?] *Yes, we just want to know what's going on out there. We know the power lines are reputably going through but what is the stage of play? What is happening with the cable between the islands, where is the reality, how will it affect us? I don't know how to get this information.* (Purchaser)

➢ Political interference

Political interference was seen as the most significant issue by some. This applied to the policy on the use of renewable energy sources and concern that such interference would create inefficiencies.

My concern is more and it's a concern about generation as well and that is that interference in the industry is leading to inefficient decisions both generation and transmission which will ultimately lead to higher prices than otherwise would be the case. (Other)

Oh political interference. I think that's there's too much of it, and that's across the board… Given the government's leaning towards renewables, there is a danger that they I suppose impose costs on others that are inefficient, that there'll be cross-subsidies in effect, either through policy or that generators might be required to offload voltage and frequency support to provide. And do so free of charge, to facilitate some of those new intermittent technologies such as wind. And again that's not right. Wind generators should pay their way. (Gentailer)

There was also criticism made of the response to the Mulianga tragedy when a woman at home on a respiratory machine died after power to the home was cut.

Continual interference at the political level. The whole issue around the Mulianga business has been blown out of all proportion. Sure there are things that could have been done better there, but the level of things that being done there now basically you're saying there are some people who will never be disconnected and there are people out there who know they will never be disconnected and they won't pay and everyone else has to support them. (Gentailer)

And flowed through into perceptions about decisions made by the Electricity Commission.

> *Bad decisions like the Otahuhu substation decision. I think the Electricity Commission made a big error of judgment when they approved that and they basically didn't follow their own rules. I think they will come a cropper at the High Court where they are under judicial review and they deserve to be. And political interference that is the biggest problem and that's why Otahuhu got approved and it's the same as the 400 kV line – there are other options.* (Purchaser)

➢ Nodal pricing

The complexity of nodal pricing also re-emerged.

> *Another complicating factor with these nodal pricing areas is the international financial reporting standards that have just started.* [What are the implications of them?] *Well, when you value your hedges to go on your balance sheet the further away or the bigger the difference in the price between where you've got your hedge and where you've got your node can affect the effectiveness of the hedge and therefore how much of the movement value goes onto your p and l and we've found that a very costly exercise to work through to do the calculations and do the reporting. The basic problem there is identifying a real market value. The ineffectiveness, which is effectively the difference in the nodal pricing, can go onto your profit and loss and affect your reported result for the year*. (Purchaser)

> *There is probably a bit of complexity in the transmission area and if I linked that into an issue it's sometimes hard if I am contracting to have my hedges nationwide its sometime challenging to a deal out of district or region because of the effects of transmission, so it's the narrowing of the risk around transmission pricing effects and I appreciate some work is being done on that*. (Other)

➢ Transmission

Nodal pricing issues tended to overlap with several comments made about the need to remove transmission constraints in order to open up more competition at nodes closer to purchasers.

> *The first thing we need to do is alter the constraints coming into the Bay of Plenty. That's first and foremost, so that all the other energy suppliers can beat the price at Haywards or wherever and we can get a comparative product.* (Purchaser)

This was seen by 1 purchaser as an issue for the Electricity Commission to address.

> *One of the issues that very much disturbs us is the Commission's abdication of responsibility in introducing a transmission pricing methodology that actually addresses those locational factors*. (Purchaser)

The general relationship between Transpower and the Electricity Commission and its relationships with the industry was mentioned too.

> *I think getting Transpower under control. Getting Transpower to work more in their customers' interests rather than their own, narrow corporate interests. There is some lack of certainty around transmission. I think Transpower runs the business with a very narrow focus rather than a broader focus* [What is the narrow focus?] *Running the business around the regulator, purely focusing on the regulatory side and their inability to work constructively with regulators I think is a real problem and their complete lack of customer focus I think is a real problem.* (Other)

Pricing of the HVDC link was a problem specific to those generating in the South Island, though 1 purchaser said it was appropriate for South Island generators to bear the cost of the link.

> *We would like to see the DC link charges not assigned to South Island generators but that's not really an overwhelming issue*. (Gentailer)

> *One of the fundamentals for us is the transmission pricing methodology and the fact that South Island generators are charged for the HVDC. For us, that means that should there be an upgrade which is what's being talked about post-2012 that we'll be paying as a payee in excess of what that upgrade means in terms of our private benefits. That's at a detriment to us. We don't support the upgrade and so the whole transmission pricing methodology we think is flawed and breaches the pricing principles that are set down there in the legislation basically. I think the other single biggest factor affecting the electricity sector at the moment is what's going to be the price of carbon.* (Gentailer)

➢ Barriers for independent generators

The emphasis on renewables and the claim that this heavily favoured some gentailers was also used to illustrate how difficult it was for independent generators to get established.

> *I think the thing is it's heavily weighted in favour of an existing state entity with hydro resources to invest in wind farms, so it's not a level playing field. There's lots of independent money out there that wants to invest in wind generation that's constrained from doing so right now because of banks, because of all sorts of reasons. If you come along to me and you want to borrow $100 million to build a wind farm, I'll loan you that $100 million but I want to see some evidence of revenue certainty, so I want to see some kind of off-take contract, I want to see you show me that at least 50% or 70% of your forecast output is hedged. No-one's buying that hedge off you so I won't loan you the money…So that is a big, big hurdle for independent wind generators to get up and running. The only way you can solve that is contractually through financial products.* (Other)

➢ Competing regulatory regimes

The drivers placed on the Electricity and Commerce Commissions were mentioned by some as competing against each other.

I saw some stuff last week come out from the Electricity Commission and its looking at some quite good thinking on what it can do to reduce carbon by having electricity distributors and Transpower reduce losses by heat on the power lines. But one thing they acknowledge is that you've got the Commerce Commission competing in the other direction because a lot of it will mean that older assets should be replaced before earlier than what you are driving for lower cost. So, you've got the Commerce Commission trying to drive lower cost be trying to extend lives because that's cheaper. So, you've got 2 agendas competing and I think the climate change issue will bring it into sharp focus. (Other)

And the second one is really they've got to sort out the almost competing agendas of the Commerce Commission and the Electricity Commission because you've got 2 regulators trying to look after a large part of the industry and also doing their investigation into generation. [Do you mean have one regulator than two?] *Yes, I think it is or at least a lot clearer understanding – if you look at the MoU between the Electricity Commission and the Commerce Commission you'll see its all motherhood and apple pie and no detail.* (Other)

➢ Slow decision making

Slow decision-making by the Electricity Commission was also mentioned.

This industry is ponderous. To make any change at all it's unbelievable slow. Things that were agreed to change 5 years ago have not changed. [What is slowing the pace of change?] *The Electricity Commission are pathetic – it's such a slow bureaucracy. Why does it take 5 years to make a rule change*. *There are other things out of control – frequency keeping. The industry basically got together and agreed on a better way of doing it and it was over-ruled by the bozos in the Electricity Commission*. *And frequency keeping costs were $9 million in December when they should be about $3-4 million*. (Purchaser)

Appendix 1: Quantitative Survey Questions

This survey is divided into 5 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
- Section E is for all respondents to answer

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? [Tick 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 3 years (for year ending 31 March, base load with no force majeure (FM) at the Haywards node[1]) given current market conditions.

	1 April 07 – 31 March 08	1 April 08 – 31 March 09	1 April 09 – 31 March 10
> $80 /MWh			
$70 - $80 /MWh			
$60 - $70 /MWh			
$50 - $60 /MWh			
< $50 /MWh			
Unsure/ Don't know			

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

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 are fair?

- ☐ Yes
- ☐ No
- ☐ Unsure/ Don't know

■ 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

12A. 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?
- [ ] Sometimes reduces and sometimes increases your risk to the spot market?
- [ ] Makes no difference to your risk to the spot market?
- [ ] Unsure/ Don't know

12B. Under what circumstances would the provision of reserve generation by the Government reduce your risk to the spot market?

12C. Under what circumstances would the provision of reserve generation by the Government increase your risk to the spot market?

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 3 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 06 – Mar 07 (Actual)	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?				

21.a How far ahead is your usual planning window for assessing your contract position?

- ☐ Less than 6 months
- ☐ Between 6 months to 1 year
- ☐ Greater than 1 year to 2 years
- ☐ Greater than 2 years to 3 years
- ☐ Greater than 3 years to 5 years
- ☐ Greater than 5 years to 10 years
- ☐ Greater than 10 years
- ☐ Unsure/ Don't know

[2] Note that all information provide in this survey will remain confidential in un-aggregated form.

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 6 months
- ☐ Between 6 months to 1 year
- ☐ Greater than 1 year to 2 years
- ☐ Greater than 2 years to 3 years
- ☐ Greater than 3 years to 5 years
- ☐ Greater than 5 years to 10 years
- ☐ Greater than 10 years
- ☐ Unsure/ Don't know

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] Force 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 that is closest to your view].

- ☐ 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] Force 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 the most recent occasion you sought to purchase hedges: [Leave blank if the most recent occasion you sought to purchase hedges was more than 2 years ago].

		Example	Most recent occasion
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. Under normal business operations, 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 that is closest to your view].

☐	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 parties (in % of GWh terms).[5]

Party	**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%**

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

[5] These should sum to 100%. If you are one of the listed parties, please include all internal contracts.

■ Hedge seller performance

63. In your personal experience please rate the following parties on their hedge seller performance. If you are one of the listed parties, 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)						

Section E – All Respondents

■ Hedge market initiatives

64. Are you aware that the Commission is considering a number of initiatives in order to promote hedge market liquidity?

- ☐ Yes
- ☐ No
- ☐ Unsure/ Don't know

65. If **YES** above, which of the following initiatives are you aware of? [Tick all relevant boxes].

- ☐ Publication of contract details
- ☐ Locational rental allocation (LRA)
- ☐ Development of *EnergyHedge*
- ☐ Support for model master agreement
- ☐ Publication of outage and fuel data
- ☐ Promotion of training and advisors
- ☐ Regular survey of market participants
- ☐ Unsure/ Don't know

66. Please rate the initiatives you are aware of in terms of how highly you think they will contribute to promoting hedge market liquidity.

	Very high	High	Average	Low	Very low	No opinion
Publication of contract details						
Locational rental allocation (LRA)						
Development of *EnergyHedge*						
Support for model master agreement						
Publication of outage and fuel data						
Promotion of training and advisors						
Regular survey of market participants						

■ 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

Appendix 2: Qualitative Interview Questions

1. [**Refer Q4 and Q8**]

   You say a competitive hedge market does not/does exist in New Zealand.

   [If DOES NOT exist], please explain the problems [probe further if answer is market power of generators or vertical integration are referred to – any examples? Is the limited size of the NZ market and hedges available an issue? If so, is this linked solely to generator power or vertical integration or are there other factors?] What specific evidence is there that there are problems? What are the solutions?

   [If DOES exist], what is the evidence that one does exist? What, if any, improvements, could be made do you think?

2. [**Refer Q9**]

   Are there any sources you find useful in forecasting electricity prices that we may have missed in question 9?

3. [**Refer Q12**]

   Has the introduction of the Government's reserve energy scheme changed your hedging strategy? If so, how has this changed your hedging strategy?

   Has the decisions made by the Commission on the need for reserve energy for 2005 and 2006 influenced your perception of the reserve energy scheme? If so, how has this refined your hedging strategy?

   You say in question 12 that it has reduced/increased your risk to the spot market. How significant is that reduction/increase – much or just a bit?

   [If reduced] Has this led to lower spot prices? Will it keep spot prices low?

4. [**Refer Q20**]

   Have they received any training?

   Do you think it would be useful if training were provided to assist companies in making risk management decisions? If yes, in what areas? Do you think the Commission could/should assist?

5. [**Refer Q21**]

   In Question21 when you were asked to fill out your actual and forecast load and generation positions for each of the next 5 years, were there any qualifications you felt like putting around your answers when you completed the survey? What were they? Do you have any special contracts that are activated under special circumstances e.g. a dry year which may not have been covered in your initial response?

6. [**Refer Q22**]

   Do you have a firm policy that you should hedge to a certain level each year? What is your policy with respect to hedging?

7. [**Refer Q26**]

   If YES, You said Yes to Q26, the question about using a centralised trading platform to purchase hedge products - what % of your load would you look at purchasing? Approximately what would that be in MWh or kWh?

SELLERS ONLY

8. [**Refer Q34**]

   In question 34, you said 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/all FM and suspension clauses are acceptable…can you tell me a bit more about your reasons for making that choice? What types of suspension clauses are acceptable/not acceptable and why?

9. [**Refer Q35**]

   Do you sell contracts that have FM and/or suspension clauses and those that don't have them? [If both] Do you place a premium on those without FM and/ or suspension clauses? If so, how much is that premium?

10. [**Refer Q36**]

    [If YES to Q36] In question 36 you say you have a policy not to provide hedges for some locations. What locations and why?

11. [**Refer Q37**]

    [If YES to Q37] In question 37 you say you have a policy only to provide hedges for certain durations. What durations and why?

12. [**Refer Q38**]

    [If YES to Q38] In question 38 you say you have encountered problems entering into a hedge because of credit arrangements. What were the problems?

13. Are you prepared to have hedges lodged as a prudential security? If not, why not?

PURCHASERS ONLY

14. [**Refer Q42**]

    [If OTHER SERVICES to Q42] What other services provided by the counterparty were you referring to in question 42 which referred to rating the importance of factors you weigh up when purchasing hedges?

15. [**Insert after Q43**]

    Have your experiences from the dry years of 2001 and 2003 affected your approach to risk management? [If yes] In what way has your approach to risk management been affected?

16. [**Refer Q44**]

    Question 44 asked you to answer some questions about the 2 most recent occasions you had sought hedge contracts. When were the last 2 occasions? Do you keep records/ was it easy or hard to find this information? Did you find it easy or difficult getting the prices and terms you sought? Was there anything you wanted to add to your answers which perhaps didn't fit the questions that were asked?

17. [**Refer Q48**]

    [if NO to question 48] Why do you believe you are not offered competitive prices for hedges? Have you ever accepted a hedge you did not want to? Was that because there was just one offer? What was the problem – price too high? Location? FM clauses unreasonable? Anything else?

18. [**Refer Q51**]

    In question 51 you identified some types of FM/suspension clauses that you felt were unreasonable. What were you reasons?

19. [**Refer Q52**]

    You say you could cut some load in periods of high spot prices. How long would you be prepared to cut load for? Is this something you are quite relaxed about doing or would you be doing it under duress? Is there a particular price point where it gets to painful to continue without

shedding load? What is that price point? Is there anything more that could be done to assist demand side reduction?

20. [**Refer Q54**]

    Do parties offer you prices with and without FM/suspension clauses? If so, what premium are you asked to pay for those without such clauses?

21. [**Refer Q55**]

    [if YES to Q55] You say you have had difficulty getting hedges at some locations. What locations?

22. [**Refer Q57**]

    Have you asked for an offer and didn't get one? Or were only offered one?

23. [**Refer Q62**]

    In question 62 you ticked "other" means of responding to high spot prices. Can you tell me a bit about those responses?

24. [particularly for The Warehouse and Telecom] Have you considered retailing electricity? If you think your company may have, but are not sure you can get back in touch with me later.

OTHERS ONLY

25. [If formerly a retailer]

    Why did you choose to stop being an electricity retailer? What would need to happen for you to re-enter the market?

    Would you give us permission to report your comments back to the Commission on this question as there is a very small base of respondents who fall into the category of former retailers who are being interviewed?

26. [If a distributor]

    What are your views on providing generation restrictions on distribution companies? What would you change if you could? What would be the pros and cons of such a move?

    Would you give us permission to report your comments back to the Commission on this question as there is a very small base of respondents who fall into the category of distributors who are being interviewed?

ALL

27. Finally, if you had to identify the single biggest issue for you around the issue of electricity hedges what would it be? What about in relation to the electricity industry in general? [possibly prompt on lack of certainty and new generation? voltage fluctuations? Transmission issues]