

Grey Power

NEW ZEALAND FEDERATION INCORPORATED



GREY POWER SUBMISSION ON MARKET DESIGN REVIEW

ISSUES PAPER SURVEY OF MARKET PERFORMANCE

JULY 20, 2007

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COMMENTS ON THE MARKET DESIGN REVIEW

1 INTRODUCTION

This submission is made on behalf of the Grey Power Federation of New Zealand which currently has over 90,000 members. We are also supported in our endeavors on behalf of domestic consumers by Age Concern, The Royal New Zealand Returned Services Association and The Consumer's Institute. In this regard it is estimated that this group represents over 300,000 domestic consumers directly and also indirectly the views of many others. We must emphasise that domestic sector accounts for over 34% of the electricity used in New Zealand and as such is entitled to full consideration as a substantial stakeholder in the electricity market.

The main thrust of our argument is that there is no real competition in the domestic market. This clearly indicated by the steady increase in domestic prices over the last six years while commercial prices rose less, and industrial prices remained relatively stable.

It has also clearly shown that the so-called threat of regulation has done nothing to control industry participants. Retailers are flagrantly saying they will not provide disclosure of line and energy charges until it is regulated, totally ignoring the GPS. The protocol developed for the low income consumer was agreed by all the agencies involved - but because it is again voluntary, when the recent crisis situation developed it was virtually ignored.

The bid system of the wholesale market also appears to create perverse incentives, with no incentive at all for any supplier/ generator to invest in additional generation to ensure reliability and security of supply. By restricting supply availability in the market to the bare minimum of generation capacity, the suppliers ensure they will always be dispatched and that they will be reimbursed at the highest dispatch price. Likewise there are no incentives for line companies to reduce losses, the cost of which is simply passed on mainly to residential consumers.

In a perfectly competitive market, generators would bid at typically their short run marginal cost, to ensure they were dispatched ahead of their competitors. But the Market Review Issues Paper appears to consider spot prices should approximate the long run marginal cost. This is the behavior of oligopolists – it creates very large revenue surpluses, now being remitted to shareholders (mainly Government), at the expense of all consumers.

Competition could also be enhanced if lines companies had an enabling environment to facilitate privately owned distributed generation and net-metering as is commonly the practice in more developed markets.

If the market were truly competitive, the standard reaction of gentailers when confronted with increased costs would not be “this will have to be passed on to consumers” but rather how can we absorb this to remain competitive. This was the response of the retailers when confronted to adopt smart metering techniques. They wanted to recoup the full cost in the first year of an installation.

2 PERFORMANCE MEASURES

We suggest that the performance measures should be used in judging outcomes of market performance from this review:-

The Market review must:

- identify the problems and suggest options to address them.
- define major criteria to judge outcomes:
 - is it working efficiently and reliably? (maximizes wealth)
 - is it working fairly? e.g.
 - is there open access to all potential competitors
 - is competition really working?
 - is there evidence of market power by gaming the system?
 - is there transfer of wealth to parties with more political? commercial? Influence?
 - * is it sustainable? (i.e. does it help adapt to and mitigate climate change and not depend on fortuitous gas discoveries?)

Examples shown below highlight some of the anomalies that are affecting a large section of the domestic market. It is all very well to try and treat electricity supply as a commodity, but it has to be recognized that a reliable affordable supply is essential for the survival of families and their homes.

3 COMMENTS ON QUESTIONS RAISED IN ISSUES PAPER

Market Information

The end-consumer is the fundamental player in the electricity market. Those people who flick the switch at any particular time determine which power station will be on the margin, therefore what the spot price will be, what intra marginal rents will be collected by hydro generators, and what the greenhouse gas emissions will be at the time.

If demand grows fast, new power stations and lines will be built to satisfy them, and prices to captive consumers will rise to pay for them. If energy efficiency investments reduce load growth, prices ought to remain stable for longer. Thus a

fundamental piece of market information is the trend of power demand – in particular, trends in residential demand.

We agree with the spirit of the first question: is data acquisition challenging? Even the simplest data on residential electricity demand has proved untrustworthy. The release of the 2006 calendar year information in the latest Energy Data File shows an extraordinary shift in the assessed average demand of the residential consumer – from 8150 kWh per year in 2005 down to 7630 kWh per year in 2006.

A footnote reads, “Preliminary investigation suggest that 2005 consumption data for the residential sector may be overstated. Further investigation is underway with the companies involved and this figure may be revised in the future.”

This is simply not good enough. We are well aware that retailers have ample statistical data on consumer consumption which could be used without compromising their commercial interest. Fundamental policy decisions such as the balancing point of low fixed charges need to be based on good information on what the average consumer really uses.

Reliability of Supply

Agree with observations? As far as they go, yes, but it would seem that 2007 may be almost as bad as 2006 in terms of major regional outages. In times of rapid change, updating is essential.

Other issues? Disconnection for non-payment is a fundamental social indicator, and should be disclosed by regulation. Less important, but significant to lowest income consumers, is ripple control failure which may result in consumers having to pay for an electrician, when it is the fault of the ripple system itself.

Priority for Market Review: for domestic consumers, prices and market power may well be more important than reliability statistics. A performance measure is needed for information availability during outages, because these are less damaging when good information is available to the end consumer. Poor information is probably a reason for recent customer dissatisfaction as shown in the indicators.

End User Pricing

This is a fundamental concern of Grey Power. No valid reason is indicated in the Issues Paper data for domestic prices to rise continually from 2000, while other sector prices rose less or hardly at all.

Agree with observations? No – “little overall trend during the 25 years to 2005” may be true for average prices only until about 2000, after which all prices rose. Residential prices rose steadily from about 1990 save a three year period when a price freeze had been announced, following the Bradford reforms.

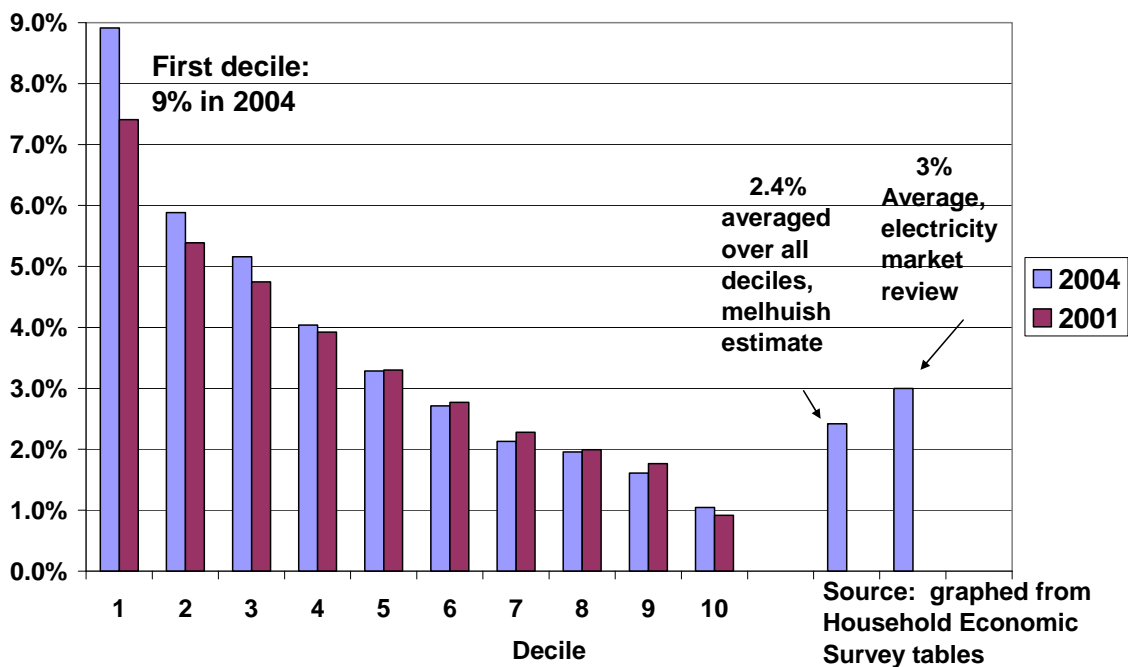
Detailed examination of retail prices, and the reasons for the trends, is of the highest priority to Grey Power.

Energy Poverty

The focus in the Issues Paper on average percentage of income spent on household fuel and power is inappropriate. It is the low income groups where some consumers are deprived of essential heating in winter, or are paying power bills at the expense of food, or even are disconnected altogether because of inability to pay their power bills.

This is not only unfair; it is inefficient in the purest economic sense.

Graph: Percentage income spent on household fuel and power



An important data issue is the need to update the data for % household income spent on fuel&power to 2007.

Power bill differences were not included in the Issues paper

Comparison of cheapest with most expensive supplier was presented in the Sunday Star-Times 24 June, Consumer July 07

Meridian proved the cheapest in all (city) cases; Trustpower was the most expensive, or most expensive equal (Dunedin)

Differences between cheapest and most expensive were:

- Auckland \$138/yr
- Hamilton \$306/yr
- Wellington \$204/yr
- Christchurch \$183/yr
- Dunedin \$164/yr

But what are the differences between the incumbent and the cheapest?

What of prices to consumers in the smaller districts?

And why does the Market Review omit information on the total power bill? This is a fundamental measure of competitiveness.

Estimated Retail Margins

This is of equal concern, as we suspect that excessive profitability of the retailer-generators comes from the repeated price hikes. As prices rise, asset values appear to follow, so that profits remain a reasonable percentage of the asset value. This is not a competitive market, but evidence of what we would call market power.

Retail margin data: Assumptions (Table 2), figure 26 (note only smaller districts)

•Assumptions do not state meter or meter reading costs: The MED report on domestic prices in Invercargill says \$52/yr

–But spinning disk meters cost little more than \$50. Most of these are over 20 years old and new technologies have significantly reduced the cost of meter reading. ODV regulation that allows unrealistic values to be attributed to meters should be changed to eliminate the perverse incentives to retain this outdated technology. The Market Review, if it considers it should not address this directly, should indicate responsibility for doing so.

•“Uplift” of 7.5% has been added to wholesale E costs to reflect risk and load shape

–Australian regulatory benchmark = 1.0 to 2.5% for risk.

•Assumptions include retail operating cost of \$170 /customer./yr

–Australian figures are A\$60-80/customer/yr

•Fig. 26 shows, despite apparently padded costs, NZ's estimated weighted average retail margin higher than Australian regulatory benchmark.

•Is this efficient? Is it fair?

Agree with observations? No, as noted above, retail margins contain very high “costs” – of meter “rentals”, of retail operating costs, etc. At the prices paid, modern meters could be installed to provide those consumers who want them with pricing information to facilitate demand side management participation,

And the Issues Paper's correlations of retail prices with contract prices is unconvincing – as the gentailers are so highly hedged internally that money appears to be being transferred from one pocket to the other in the same company.

Split of energy charges from line and transmission charges

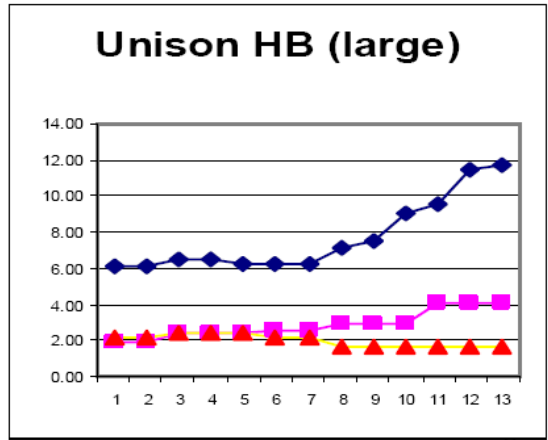
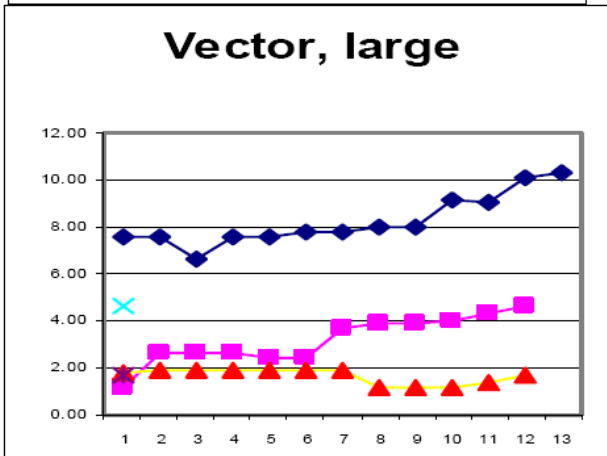
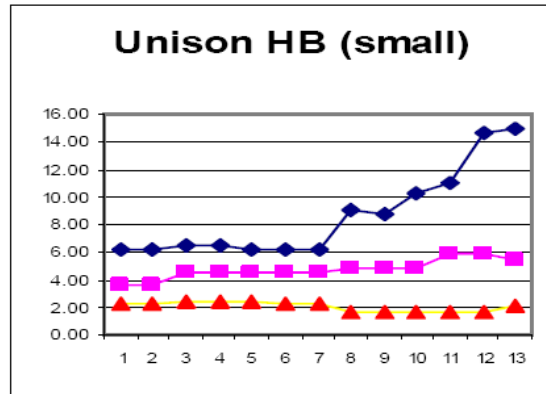
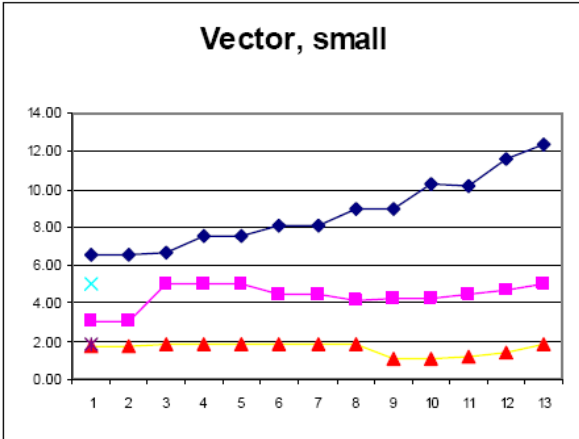
Grey Power has long called for disclosure of line and energy charges on the customer's power bill. MED does publish all three (though the energy charge must be calculated by subtracting the two line charges from the total retail charge).

Using a full spreadsheet from MED, we have graphed the three components separately, for small and large consumers in six districts, from 1994 through 2005. The trend is clear – transmission prices were high and were then regulated; distribution charges are considerably higher but have stabilized, and energy charges rose steadily after about 2000, even though there has been no significant new generation installed over the last five years.

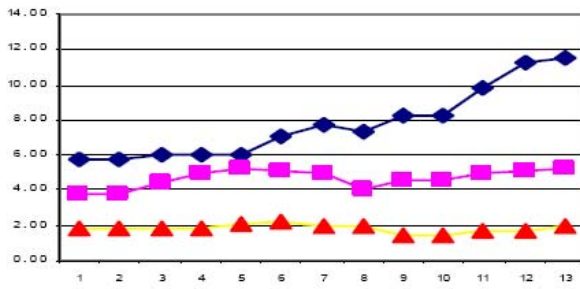
The Market Review should discuss the ability of retailer generators to seemingly charge what the market will bear without the prospect of any competition from the demand side of the market.

The graphs below show energy and line charges for a selection of lines company districts, as time sequence from 1994 to 2006. Energy charges (in blue) are the highest; distribution (violet) second highest, and transmission charges (in red) lowest at around 2 c/kWh. Data come from MED Electricity Annual Statistics.

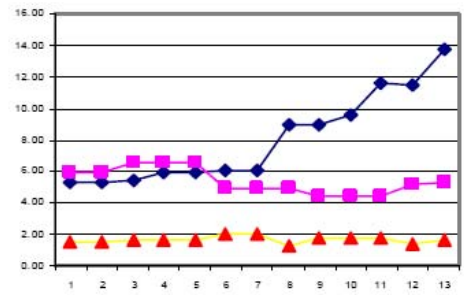
The left hand axis is in c/kWh, the bottom axis is years 1994 (1) to 2006 (13)



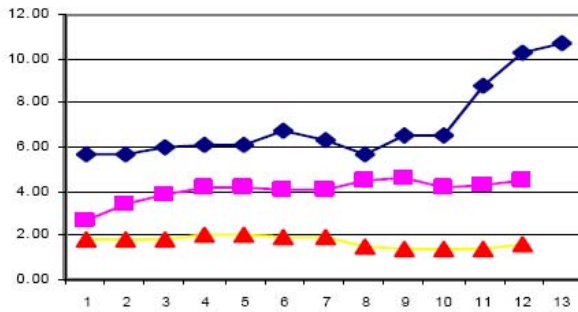
Orion, small



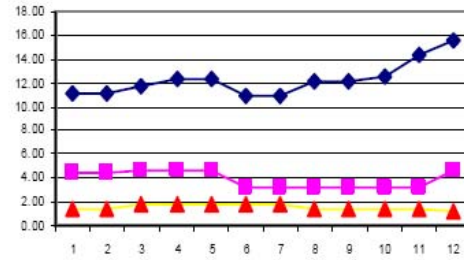
Tasman, small

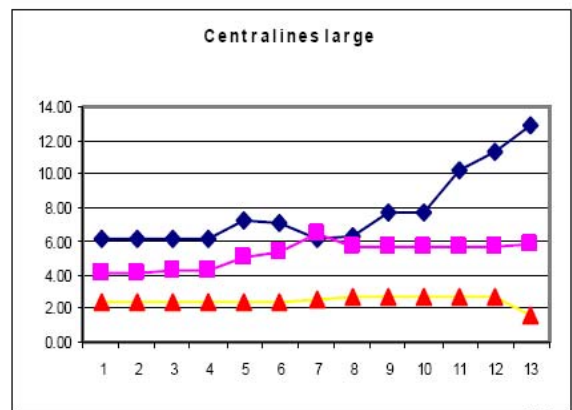
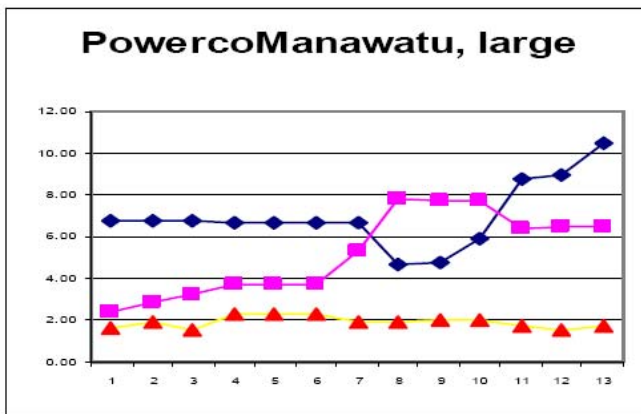
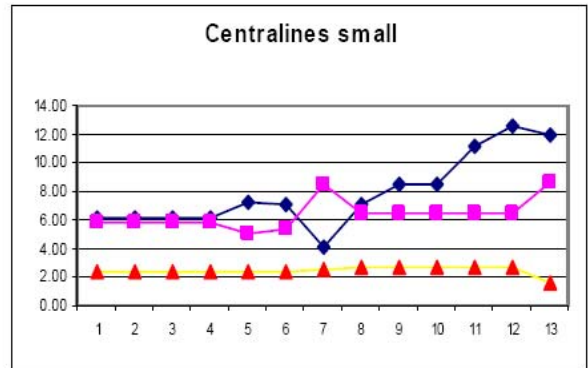
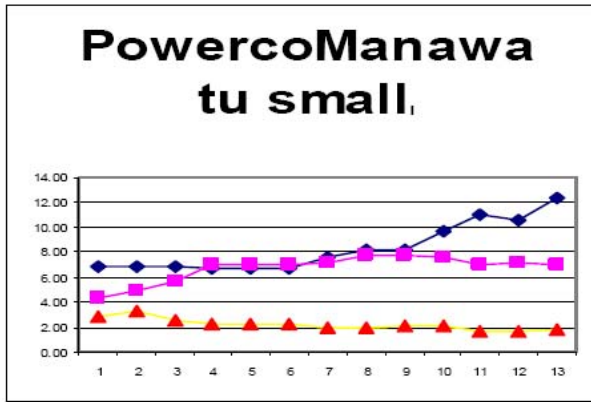


Orion, large



Tasman, large





Calculated % of power bill, 1994, 2006
 (note averages are not weighted by # customers)

	Energy	Distribution	Transmission
1994 small cons.	46%	37%	17%
1994 medium cons.	54%	29%	17%
2006 both are same	62%	29%	9%

Gaps, data on domestic consumption:

- What is causing the apparent rapid increase in “average” domestic electricity consumption? [*But note new information described below!*]

- Energy Data File: 7800 kWh/yr (2004), 8150 kWh/yr (2005).

- What was average in domestic consumption in 2006? Is there an important trend beginning?

- Are big houses? heat pumps? driving growth in demand?

- Domestic consumers are told that power prices must rise to ensure new power stations built. But majority of existing customers are not increasing power demand.

Post script: Today, 18 July, this year’s Energy Data file was released, showing the apparent trend of increasing household electricity consumption may not have been real. Recorded average household consumption has now decreased, from 8150 kWh/yr (but considered an untrustworthy figure) down to 7630 kWh/yr.

The unreliability of even the simplest electricity consumption data makes appropriate Government policy responses almost impossible.

Retail competition indicators

The data in this section appear to come from the “dashboard” project of the Retail Market Advisory Group – we note that that project was not considered particularly relevant by Grey Power.

The summary observations on the retail competition indicators appear by and large correct. New Zealand consumers switch suppliers less than half as often as Australian consumers – even though they could probably save up to \$10 per month by switching from the incumbent to the cheapest retailer (see section on power bill differences).). Grey Power does not consider this situation indicates that the market has achieved a very low level of power pricing; instead it is more likely to be indicative of cartel behavior by retailers.

The low level of switching may due partly to customer disillusionment with apparent benefits of switching. Figure 40 shows that some 45% of customers had problems switching in 2001 (mainly due to Trans Alta having to sell off all its consumers following the 2001 hydro shortage). Problems dropped to a little over 10% in 2006, but rose again in 2006.

Consumers are evidently unaware that they could save so much by switching to the cheapest supplier. As noted above, unfortunately none of this important information on annual power bills is presented in the Issues Paper.

Meaningful retail competition would require a range of tariffs to be offered, consistent with the Governments desire to promote DSM responses, in which prices more closely reflect costs, so that consumers could have more control of their power bill by making relatively easy changes to their consumption patterns. But these require advanced meters that measure consumption in real time and provide information both to the consumer and the retailer. It also requires substantial investment in educating consumers, and trialling tariffs to find what are acceptable.

It is questionable to what extent suppliers will support true real-time metering and pricing, as it is the most effective way by which consumers can challenge the market power of suppliers.

WHOLESALE MARKET ISSUES

These will be covered in far less detail in this submission, as they impact less on the retail prices which are of greatest concern to Grey Power. However some comment must be made on the following topics:

Capacity margin through time:

We do not agree with the observations on capacity margin through time, as graphed in Figure 42. The presentation at the Market Review briefing described the energy margins during NZ Electricity Department's "power planning years" of the 70s and early 80s as "volatile". Margins would be better described as showing the interplay between large-scale power capacity expansion and major industry expansion, which is entirely predictable rather than showing volatility.

The Issues Paper does not correlate the capacity margin with the average wholesale or retail prices – yet the sudden increase in generation capacity about 1997 through 1999, shown in Figure 42, is the usual explanation for the stabilizing of prices in the immediately following years, shown in Figure 13. A discussion of that correlation would have been helpful.

This information demonstrates that generation surpluses in an electricity market have led to price reductions, even at the retail level.

The corollary is that shortages lead to price hikes. This alone creates sufficient rationale for retailer-generators to delay new power station construction – delays help to ensure high prices remain.

Grey Power is very concerned about the high dividends remitted to the Government shareholders of the three state owned retailer-generators – and especially about dividends remitted to private shareholders in Trustpower, and to Contact Energy (mostly offshore). This does not indicate any form of productivity increase by the incumbents; in fact in an uncompetitive market this simply indicates a high degree of price gouging that is condoned by the owners.

The Issues Paper describes no correlations between capacity margins, spot prices and dividends – yet these are fundamental relationships of concern to small consumers.

The policy issue that arises from this is whether some of the dividends should be recognized as coming from non-discretionary expenditure by effectively-captive consumers, and should therefore be re-invested, as a matter of public policy, in measures that reduce the burden of the steadily increase of domestic power prices.

Long run marginal cost comparisons with wholesale electricity prices: discussion

We skip over masses of data describing management of hydro spill (which has apparently improved in recent years), fluctuations in wind generation (in which the demand-side could play a significant part if the barriers to market entry were eliminated), and hedge contracts (which are mostly about sharing wealth and risk between electricity Market Participants). We move to an important feature of the electricity market debate – what is a reasonable level of electricity prices?

In a competitive market, any surplus of capacity will drive spot prices down towards short-run marginal cost (SRMC) – which is the cost of running power stations that are already built.

Shortages will drive average prices up to around long run marginal cost (LRMC). But prices that are consistently above LRMC give rise to “surplus profits”, that is, profits which are more than are needed to build new generation. These profits are now being internalized by artificially raising the asset values of the existing supply system – so profits return to a “reasonable” percentage of the asset value. The “regulator” is satisfied, but the consumer is paying a higher price than is reasonable.

One option for establishing the true value of the generators might be to offer public participation of their ownership sufficient to expose the companies to scrutiny by serious investors.

The policy dilemma is that shareholders prefer the “shortage” side of this balance with its resulting higher profits, while consumers prefer the “surplus” side with its resulting lower prices.

In an efficient electricity market, new generators could enter the market at a lower price, creating a new surplus that would drive prices back down. This would become evident in the “capacity margin” graph, which demonstrates that it simply isn’t happening now (it did in the late 1990s). Or, consumers would be able to invest in equipment that reduces their electricity use – insulation, efficient lighting, solar and gas-fired and wood-fired heating. But consumers face a much higher cost of capital than companies that build new power stations. Many other barriers to energy efficiency investments are well known – so economically efficient investment by consumers simply isn’t happening either.

This is a core issue for the Market Review from the consumer’s perspective.

Answers to wholesale market price level questions

In the light of the discussion above, we respond to summary observations of LRMC compared to wholesale prices: Our summary is that the analysis in the Issues Paper is insufficient to prove that wholesale prices are reasonable. But the high dividends to power companies suggest that prices are excessive.

Wholesale prices are described, correctly, as a combination of spot and contract markets. Figures 73 and 74 show the relation between contract and spot prices – it is significant that the NZ Tariff and Fuel Index, which reflects prices to medium to large commercial consumers, is a good deal higher than the Energy Hedge index, which reflects prices available to electricity Market Participants. Even large consumers struggle to get a better deal.

Whether the Energy Hedge Index is reasonable is described in the Issues Paper by comparing it to the “estimated retail netback”! This we have criticized in the earlier section on estimated retail margins. Like all electricity market costs, it is susceptible to padding in many ways, which makes life difficult for a regulator.

“Reasonable” spot prices would fluctuate between SRMC and LRMC. This they do – it is the average that matters. Prices that average consistently above LRMC are clearly unreasonable - thus the assumptions for LRMC costs are critical.

Figure 77 showing LRMCs for generation options – interesting that wind generation is put at over 11c/kWh, partly due to scarcity of turbines on world markets - whereas NZ built turbines (Windflow) claim considerably lower costs. Niche markets in other small-scale generation could also compete, especially if they can substitute for retail electricity at over 20c/kWh. This is why feed-in tariffs for small-scale generation have been so effective in Europe. But

negotiations on terms and conditions for connecting small-scale generators remain stalled within yet another agency – Ministry of Economic Development.

LRMCs of energy efficiency investments need to be factored in to this analysis – they are not even mentioned in the Issues paper. Energy efficiency competes with new generation and should be positively encouraged, so as to drive spot prices down. The Government Policy Statement on Electricity requires such facilitation. Energy efficiency is addressed in the final section of the Issues Paper.

All the above issues should receive the highest priority in the Market Design Review.

DEMAND SIDE PARTICIPATION

This section of the Issues Paper is extremely brief, and the data cover demand response from large consumers only. Our response is equally brief – yet we believe that demand response is the most important remaining area of development needed for retail electricity markets. Data requirements include information on time-of-use demand particularly in domestic and commercial sectors, on price elasticity of demand, and on trends over the years as correlated with temperature, appliance sales, and measures of discretionary expenditure (including income decile, as shown in our analysis of energy poverty, above).

The summary observations on which comment is sought mention ripple control as a form of demand response, but do not offer ideas for active small consumer participation in demand response. Advanced metering, and “smart appliances” which can automatically respond to either real-time price or to signals sent out, are a reality in several other jurisdictions, but are simply not addressed in the Issues Paper. Yet they are a critical issue to be covered in the Market Review itself.

Responding to the “summary observations” on p. 4-17:

Investment horizon: This long-term time scale is the most important for creating a sustainable electricity and energy system for New Zealand. As shown in Figure 90, “electricity intensity” has decreased, but how is residential “electricity intensity” defined? The phrase usually means quantity of electricity consumed per unit of GDP, but the latter does not apply to residential consumers.

Some measure of residential energy efficiency is needed to enable design and monitoring of good mechanisms to encourage such investment. Investment is perhaps the most important form of “demand-side participation”, and should be a priority for the Electricity Commission.

Unfortunately the Commission's actions are confined to "electricity efficiency", so the review of appropriate market mechanisms should also be discussed with EECA and possibly Ministry for the Environment (who has a Warm Homes programme) and MED (who appears to be the lead player in distributed generation, a major option for improving electricity efficiency). Indeed responsibility for facilitating small-scale investments that are part of the retail electricity market is so fragmented that the Electricity Market Review needs to address this problem directly.

Medium term demand response (especially to dry hydro years): could involve more use of log burners in dry years, but this would require a combination of true cost-reflective tariffs, and policies to promote efficient wood burning at low capital investment. Both are possible but are not being pursued under today's policies. The recent review of dry year security, by Castalia, did not address wood as a potential dry-year resource. Government's focus on low-carbon energy strategies requires that this omission be redressed.

Short term demand response is provided by residential consumers today through ripple control, as noted in the Issues Paper. Active demand response requires real-time advanced metering and infrastructure, as described in the consultation paper on advanced metering already released.

To understand the potential for short and medium term demand response, a much less "averaged" display of half-hourly prices through the day is needed than Figure 93, which averages these over a whole year, for all NZ consumption.

What is the effect on peak demand of replacing log burners by heat pumps? Christchurch demand patterns, where the Clean Heat programme has encouraged this substitution over the past three years, should be compared with Dunedin demand patterns, where no such programme has begun yet. The comparison should cover the winter months only. Demand should be temperature-corrected.

Similar analyses could usefully be done to better understand trends in irrigation demand, and air conditioning demand.

Short term demand response would be greatly facilitated by some form of day-ahead pricing. The Market Design Review should address this subject.

If small consumers are to offer effective demand response in retail electricity markets, they will need to buy in to the concept. This requires education, pilot trials, and then further education. Grey Power would be keen to help develop and participate in such trials.

4 CONCLUSION

Most of the data in the Issues Paper is relevant to wealth shifting between Market Participants, not reducing supply costs and improving economic efficiency.

Excessive retail margins are inefficient as well as unfair. Analysis of wholesale prices offers little discussion of the assumptions used to benchmark what prices are reasonable.

Insufficient competition from energy efficiency and distributed generation also shows that the wholesale and retail markets are inefficient and unfair.

The Issues Paper gives little information on line vs. energy charges, and none on the drivers of demand growth.

Lines companies do not have incentives to reduce losses (which are simply passed on mainly to retail consumers); this results in their disinterest in supporting DG and DSM activities,

Small-consumer data are presented as averages, which are of little relevance to sub sectors of consumers – low-income, small user, large domestic user. A true market economy would make offers to niche markets, something which is much more difficult in a planned economy.

New Zealand has lost the sense of publicly scrutinized planning for energy investments, but consumers, especially small consumers, have gained few of the supposed benefits of the market paradigm.

An essential issue for consumers is whether alternative fuels are enabled to compete effectively with electricity purchases. The data in the Issues Paper give no relevant information on this. The fragmentation of responsibility for overcoming barriers to energy efficiency and distributed generation is a major issue to be addressed in the Market Review.

Demand-side response by small consumers is potentially the most cost-effective and efficient outcome of an improved electricity market. This will require education and pilot trials. Grey Power would be keen to participate in the Commission's work along these lines.