
Retail Competition

This paper was prepared by MDL for ECNZ as part of its thinking on how to go about deregulating the electricity industry. It is now mainly of historical interest although, at the time, it played an important role in persuading ECNZ to support the use of 'deemed profiling', the charging approach that underpins the present competitive market for retail electricity.

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TABLE OF CONTENTS

	Page
EXECUTIVE SUMMARY.....	i
1.0 INTRODUCTION: THE NATURE OF THE PROBLEM.....	1
2.0 BACKGROUND.....	3
3.0 THE MINISTER OF ENERGY'S OBJECTIVES	4
4.0 OVERSEAS REFORMS.....	5
5.0 THE NEW ZEALAND REGULATORY REGIME	7
6.0 METERING	13
7.0 DEEMED PROFILING.....	21
8.0 USE OF SYSTEM AND CONVEYANCE AGREEMENTS	25
9.0 SEPARATION OF LINES AND ENERGY.....	27
10.0 THE FUTURE OF ENERGY TRADING BUSINESSES	30
11.0 OTHER COST ISSUES	32
12.0 REGULATORY FAILURE?.....	35
13.0 CONCLUSIONS: IMPLEMENTATION	36
APPENDIX 1 - EXTRACT FROM "ENERGY EFFICIENCY IN THE DOMESTIC SECTOR"	39
APPENDIX 2 - DEEMED PROFILING: OVERSEAS EXPERIENCE	40

EXECUTIVE SUMMARY

This paper was commissioned by ECNZ from McKinlay Douglas Limited ("MDL") as part of a process of developing means of ensuring that domestic and other small consumers benefit from the ongoing restructuring of the electricity industry.

Three sets of issues are identified as important for the typical domestic or other small consumer:

- How best to provide them with the opportunity to choose between alternative suppliers and benefit from the competitive pressure which this would bring;
- The potential for purchasing electricity on a time of use basis to generate real net benefits for small consumers;
- A relatively high cost structure on the lines side of the business where contributing factors appear to include lack of rationalisation, the impact of increasing network valuations and a generous interpretation of an acceptable rate of return.

Background

The paper is written against the background of public and ministerial concern at the lack of perceived benefits for small consumers. On average, the real price of electricity (including lines services) for domestic consumers has risen by more than 15% since 1992. Associated with this is scepticism that the "light handed" regulatory regime is sufficient to achieve its stated objectives.

The Minister's Objectives

The Minister's stated objective is to ensure that small consumers have a choice of supplier. MDL assumes, behind this, an overriding objective of demonstrating to consumers that they have benefited from the reforms.

Choice of supplier, by itself, is unlikely to achieve this. MDL therefore assumes the Minister will look to further measures, such as a formal separation of lines and energy, in order to achieve his overriding objective.

Overseas Reforms

A number of other jurisdictions are reforming their electricity industries in order to promote retail competition for the benefit of small consumers. They are doing so in a very different context from the New Zealand one, including:

- Reliance on heavy handed regulation;
- Excess capacity in generation and/or other factors (reform of the UK coal industry) which have made it comparatively easy to deliver price reductions.

The experience from overseas reforms of particular relevance for New Zealand includes:

- The opportunity of observing the problems with heavy handed regulation;
- The universal reliance on variants of deemed profiling as the means for “kick starting” competition at the retail level.

The New Zealand Regulatory Regime

New Zealand chose “light handed” regulation because of perceived difficulties with “heavy handed” regulation in overseas jurisdictions.

With experience, “light handed” regulation has its own difficulties, including:

- A lack of incentives for consumers to act on evidence of abuse - the costs to individual consumers of taking action would far outweigh the potential benefits (most of which would be captured by others) and there is no organised and suitably resourced representative consumer body;
- The increasing emphasis on WACC as a cap carries with it the risk of discouraging desirable merger or other rationalisation activity;
- As with all price control regulation, the regulator will always be behind the industry with the consequence that it will never be possible to be satisfied that bundled businesses are totally complying with both the spirit and the letter of regulation;
- Frustration over lack of progress at the retail level risks a collapse of the “light handed” regime into a “heavy handed” regime.

Metering

The introduction of half hourly metering has been seen as the key to competition at the retail level. For domestic and other small consumers there are significant barriers to wide-spread adoption, including:

- The logistics of metering more than one million connections (economies of scope and scale are also an issue, given the number of different options being explored within the New Zealand environment);
- Cost; ECNZ estimates an annual cost of \$100 to cover operating and capital costs (on a 5 year pay back). The potential gains to the typical domestic or other small consumer from time of use purchasing may be less than this amount;
- Behavioural factors. It seems likely that consumers will see the necessary behavioural changes as in themselves a “cost” which may be sufficient to discourage change.

International experience, and also the approach being taken by several New Zealand companies, suggests that the real commercial incentive for introducing “smart” metering technology is the opportunity to offer a range of bundled services.

MDL’s reservations regarding reliance on time of use metering as a first step towards retail competition leads us to place less emphasis on access barriers

and compliance costs (including MARIA) than other observers may. Nonetheless, we see it as important that the work of the MARIA Competition Enhancement Committee does result in reducing compliance costs and access barriers as our preferred option, deemed profiling, is really viable only as a step towards the introduction of half hourly metering.

Deemed Profiling

Two companies, United Electricity and Southpower, are already trialing deemed profiling.

MDL's review of the arguments for and against deemed profiling reached the conclusion that it offers three substantial benefits:

- By making every customer potentially contestable, it should remove the "captive customer" phenomenon and put downward pressure on such things as high gross margins;
- It will encourage full separation of line and energy charges;
- It should accelerate a demand for a move to "smart" metering technology. We conclude that companies, which will want to compete on the basis of deemed profiling, will be doing so primarily to build up a customer base to whom other services can be offered once they accept a "smart" meter.

Use of System and Conveyance Agreements

The blatant abuses which we were told characterised early negotiations over use of system or conveyance agreements seem now largely a thing of the past.

Instead, the industry, through MARIA, is seeking to negotiate a standard use of systems agreement. The latest version includes a commitment by the incumbent to treat all retailers (including its own) on the same terms.

Use of systems and conveyance agreements have been a problematic area and a potential anti-competitive device. In this respect we note that Section 36 of the Commerce Act can be seen more as a charter for the intelligent use of anti-competitive practices than as an absolute barrier to their use.

Even handed use of systems agreements will be an essential pre-requisite for competitive supply through time of use metering. Although we argue for deemed profiling as a first step, we consider it important that momentum be maintained in dealing with use of systems issues so that all parties in the industry have confidence that they will not present an anti-competitive barrier. The current initiatives being developed by the MARIA Competition Enhancement Committee appear consistent with this objective.

Separation of Lines and Energy

This, increasingly, is becoming the Minister's preferred option.

MDL sees merit in legal separation but within common overall ownership. Forced ownership separation would give strongly negative signals to overseas investors in the economy as a whole, probably deterring some and leading others to seek an increased rate of return (the "country risk" factor). This argument does not, however, apply to wholly trust owned companies which can still for this purpose be seen as part of the wider public sector.

MDL recommends encouraging voluntary separation through changing the regulatory environment so that bundled companies faced an absolute cap on line earnings, but unbundled companies could earn above this provided consumers shared in the gains leading to those increased earnings.

The Future of Energy Trading Businesses

Genuine retail competition, especially if accompanied by separation of lines and energy businesses, would substantially reshape the retail sector. We would expect a number of companies to divest themselves of their energy trading businesses.

In the longer term we see such possibilities as:

- Emergence of generators as the primary retailers, possibly retailing direct, possibly through a series of joint ventures, possibly by franchise operations in conjunction with (say) appliance firms or an oil company;
- The emergence of specialist energy brokers acting as advisors to individual large customers, or buying groups, but carrying no financial risk themselves;
- The emergence of service providers using sophisticated metering as a platform for a range of services and, perhaps, contracting on a pass through basis with generators.

Other Cost Issues

As well as measures to encourage competition there are other steps Government could take which have the potential to bring benefits for domestic and other small consumers. Further breakup of generation is one which deserves consideration but facilitating further competition at the retail level should take precedence over this.

Further rationalisation and tighter discipline in the regulatory environment also offer opportunities for reducing costs to consumers. There are good arguments that the trust owned companies should be leading the rationalisation process as their primary concern must be to ensure least cost service to their consumer owners.

Regulatory Failure?

There is now a very real risk that New Zealand's experiment with "light handed" regulation may be about to collapse. Energy companies may have underestimated the incentives the Government faces to demonstrate that it can protect the interests of consumers affected by the reform of monopoly

infrastructure services. It may be prudent for the companies to take the initiative in dealing with concerns such as the lack of competition and the impression that the present regulatory environment can be manipulated against the interests of consumers.

Conclusions

The context for these conclusions is the clear intent of the Minister of Energy that domestic (and other small) consumers should be able to choose their supplier and that, if the industry itself cannot deliver this choice, then the Government will need to use its powers of regulation.

The Minister's objective is not simply competition for its own sake, but to achieve public recognition that the electricity reforms have brought benefits for small consumers.

Against that background, we reach the following conclusions:

- The immediate objective must be to make choice a practical option for all small consumers;
- This means adopting a strategy which makes the exercise of choice as cheap and as simple as possible;
- Time of use metering, although technically superior to other options, faces costs (financial and behavioural) and other difficulties which mean that it should not be relied on as the preferred means for moving, immediately, to a competitive environment;
- Instead, deemed profiling offers the best option for the creation of a competitive environment at the retail level. Our analysis concludes that it would:
 - remove the "captive consumer" phenomenon;
 - encourage separation of line and energy charges;
 - provide an incentive for a move to time of use metering; retailers competing for consumers on a deemed profiling approach will do so not simply in order to sell electricity, but to attract consumers to whom they can then market a range of other services for which smart metering technology will be necessary.

We further conclude that the potential benefits to small domestic and other consumers from purchasing electricity competitively need to be complemented by other regulatory and structural initiatives. Thus:

- Definition of an acceptable Weighted Average Cost of Capital would inhibit lines businesses from earning what in practice would be excess profits through overstating their WACC;
- The regulatory environment could be redesigned to encourage a separation of lines and energy businesses as separate subsidiaries within common ownership. A possible approach would be to:
 - so long as line and energy businesses remain bundled, restrict the earnings of the lines business to WACC as a maximum;

- allow unbundled lines businesses to earn in excess of WACC provided that the benefits were shared with consumers and there were clear structural and incentive arrangements to ensure that the lines business had good reasons to resist excess cost allocations or undercharging for services rendered to other parts of the group;
- encouraging further rationalisation. In this respect, the Government should be able to look to the trust owned energy companies and the trustees of energy trusts to take the lead. There are substantial gains to be had through rationalisation (without requiring that networks pass out of local ownership). The trust companies, which are essentially consumer owned, should have reducing costs to consumers, through whatever means are available, as a primary objective.

Finally Government's decision to defer amending the Electricity (Information Disclosure) Regulations in favour of a more comprehensive review of the industry implies that it may be preparing draconian steps to force competition on the retail sector and/or move to a more heavy-handed regulatory environment. In order to pre-empt this outcome, it is in the interests of energy companies to move quickly to make a competition a reality.

Implementation

Some of the measures proposed in this paper require government intervention, but the majority do (or should) not. One critical issue is ensuring that (perceived) benefits are delivered as soon as possible. Timing will be an issue with any regulatory changes, especially as these may need to be preceded by changes to enabling legislation.

There is, first, a need for an informed constituency to argue for the measures outlined in this paper. In this respect, it will probably be necessary for Government to take the lead, but to do so in association with a broad range of consumer groups. This suggests development of a communication strategy focusing on key opinion leaders from organisations with a consumer interest or focus. This should include not only bodies such as The Consumers Institute and groupings working on behalf of low income New Zealanders, but also business organisations such as the Manufacturers Federation, the Chambers of Commerce and others whose members will benefit from increased competition.

We have considered the possibility of regulating for deemed profiling. We regard this as sub-optimal. Considerations such as:

- The shortage of Parliamentary time;
- The possible difficulty in drafting regulations;
- The resistance potential in moving to full compliance,

all argue against a regulated approach if this can be avoided. Instead, we consider that the Government should make it plain to the industry that it expects to see wide-spread adoption of deemed profiling on a voluntary basis with regulation seen as a fall back position. On the assumption that the trust

owned companies place the interests of their consumer owners to the fore, they should be quick to adopt this initiative.

The Electricity (Information Disclosure) Regulations should be redesigned along the lines set out in paragraphs 9.8 to 9.10 to provide positive incentives for separation of line and energy businesses and to reward owners for further cost reduction initiatives provided that the benefits are shared with consumers.

The Government should make it clear to trust owned companies that it expects to see more instances of rationalisation with a view to reducing overall operating costs and be prepared to enforce this, perhaps in a parallel with the 1989 restructuring of local government, if the trusts are slow to respond. As these entities are still substantially in the public domain, government intervention to require rationalisation would not have the adverse impact on investor perceptions of the New Zealand environment which would result from similar intervention with investor owned companies.

1.0 INTRODUCTION: THE NATURE OF THE PROBLEM

Introduction

1.1 This report has been prepared by McKinlay Douglas Limited ("MDL") for ECNZ as part of a process of developing means of ensuring that domestic and other small consumers benefit from the ongoing restructuring of the electricity industry

1.2 MDL was contracted to undertake a public policy project with an emphasis on developing:

- The arguments;
- The constituency;

for measures which would deliver more of the benefits of electricity industry reform to domestic and other small consumers.

The Nature of the Problem

1.3 MDL's assessment of the impact of electricity sector reform on the typical domestic (or other) small consumer is that there are three sets of issues which need to be unbundled. These are:

- How best to provide them with the opportunity to choose between alternative suppliers and benefit from the competitive pressure which this would bring.
- The potential for purchasing electricity on a time of use basis to generate real net benefits for small consumers.
- A relatively high cost structure on the lines side of the business where contributing factors appear to include lack of rationalisation, the impact of increasing network valuations and a generous interpretation of an acceptable rate of return.

1.4 In MDL's view, there has been an overemphasis on the potential benefits of purchasing electricity on a time of use basis and an insufficient emphasis on the potential for other measures to bring demonstrable benefits to domestic and other small consumers.

Approaching a Solution

1.5 In this paper we argue strongly for an approach which should make competition an immediate reality for domestic or other small consumers. It is cheap, simple, and should require a minimum either of regulatory intervention or of industry agreement.

1.6 Since we began this project, the risk that further reform would become bogged down in a never ending round of policy debates (reminiscent of the first stage of industry reform) has heightened. The initiative which was under way to introduce revised Electricity (Information Disclosure) Regulations with effect from 1 April 1998 has been put to one side in

favour of a more comprehensive review. It is in the interests of consumers to avoid further delay.

- 1.7 The approach we advocate in order to move quickly to a competitive market is known as deemed profiling. It starts from the fact that, unless an individual consumer already has time of use metering, that consumer will be purchasing electricity under a tariff based on the incumbent retailer's understanding of the average consumption pattern or profile of consumers within that tariff category. The incumbent retailer knows that most consumers will have an actual pattern different from the average on which the tariff is based but it is also satisfied that overs and unders (consumers who use relatively more power at peak times versus consumers who use relatively more at off peak times) will more or less balance out.
- 1.8 The principle of deemed profiling is that alternative suppliers should be able to sell energy to consumers using the same profile as underpins the incumbent retailer's tariff for that consumer.
- 1.9 The approach is simple and straightforward. There is no need to install a new meter. Reconciliation between the incumbent and other retailers can be based quite simply on the total consumption of each retailer's consumers in each profile group.
- 1.10 In comparison with time of use metering, it is a "quick and dirty" solution. Its advantage is that it can be implemented now and it will put real pressure on incumbent retailers (for example, on the apparently high gross energy trading margins which are faced by many small consumers).
- 1.11 The arguments in support of deemed profiling, and of other measures which will benefit domestic and other small consumers, are developed throughout this paper.
- 1.12 Finally, in this introduction we note that deemed profiling is not a final solution. Instead, it is a step on the way to time of use metering. We argue that opening up competition through deemed profiling, rather than trying to go straight to time of use metering, will actually accelerate the adoption of time of use metering itself.

2.0 BACKGROUND

- 2.1 This paper was written against a background of both public and ministerial concern that reform, at the retail level, has not delivered the expected benefits. Retail prices, for domestic consumers, have risen on average by more than 15% in real terms since the restructuring of the distribution sector¹. Admittedly, much of this increase was driven by a rebalancing of tariffs between residential and non-residential consumers². However, the public promise of reform was not so much greater economic efficiency, as lower prices for consumers (and, in a political context, it is appropriate to read the term "consumers" as equivalent to "electors").
- 2.2 There is a considerable degree of scepticism amongst industry observers with whose views MDL is familiar that the "light handed" regulatory regime is sufficient to prevent either abuse of the natural monopoly in distribution or anti-competitive behaviour.
- 2.3 Typical of the former is a statement by Simon Terry in The Independent for 27 March, in respect of cost allocation as required by the disclosure regulations that *"at the end of the day, allocation is largely arbitrary. When faced with competition, the incumbent network monopoly can potentially charge only the extra cost of performing the energy retailer service, rather than the full stand alone costs, depending on the restraints it faces on splitting the cost"*.
- 2.4 A further concern is that the methodology used for valuing networks, as part of the information regime, has itself been responsible for a significant increase in cost to consumers. This issue is discussed below in Section 5.0 *Dealing with the New Zealand Regulatory Regime*.
- 2.5 This report responds to the project brief in the following sections:
- The Minister of Energy's Objectives;
 - Overseas Reforms;
 - The New Zealand Regulatory Regime;
 - Metering;
 - Profiling; (with Appendix II providing an overview of international experience)
 - Use of System;
 - Separation of Lines and Energy;
 - The Future of Energy Trading Businesses;
 - Other Cost Issues
 - Regulatory Failure?
 - Conclusions.

¹ Source; Ministry of Commerce; *Energy data file*

² It is possible that there may be an element of "patch protection" in the way rebalancing has been managed. We have seen suggestions that gross energy trading margins in respect of domestic and small commercial and industrial customers may be in excess of 20% whilst those in respect of large customers (essentially those who are currently regarded as contestable) may actually be negative.

3.0 THE MINISTER OF ENERGY'S OBJECTIVES

3.1 The Minister of Energy has consistently stated his objectives in terms of bringing the benefits of competition to small, especially domestic, consumers. Thus:

- In his address to the recent Ministry of Commerce/Electricity Industry Forum:

"All consumers need to be confident that they are receiving good service at the lowest possible price. In the deregulated electricity industry competition is delivering a better deal to large consumers. But competition in electricity retailing for domestic consumers has not developed. I want this to change".

- In an address to EMCO's Winter Solstice Celebration:

"If there are suggestions that competitive outcomes are not being delivered, then further steps to increase competition will be increasingly prominent in my thinking" (speaking of the NZIER study).

"The reduction in barriers to competition must become a key focus of the entire industry, if it wishes to remain the least regulated in the world".

3.2 MDL's enquiries satisfy it that the Minister of Energy is not simply concerned to achieve an efficient market in an economic sense; he also wishes to demonstrate that the reforms have brought benefits for small consumers. One specific benefit which should have a high priority is that small consumers have choice and thus are not, or do not feel themselves to be, "captive" by any one electricity retailer. It is this objective, we believe, which lies behind his advocacy in support of time of use metering

3.3 Experience with other major restructurings, such as telecommunications, highlights the difficulty in persuading the general public of the benefits of reforms, even when they have genuinely resulted in lower prices to consumers. As noted, electricity reforms have resulted in significant real price increases for domestic consumers. We are not aware of any predictions that gains from improving competition will offset those increases.

3.4 In MDL's view, industry participants should assume that the Minister of Energy, if he remains committed to demonstrating that the reforms have brought benefits, will need to move on to further structural and/or regulatory change. Possibilities for this are highlighted in further sections of this report. His recent comments on the separation of lines and energy businesses suggest that he now accepts that the opportunity to purchase electricity on a time of use basis will not in itself create the (perception of) gains for domestic and other small consumers which he wishes to achieve.

4.0 OVERSEAS REFORMS

- 4.1 New Zealand is only one of several jurisdictions undertaking major reform of their electricity/energy industries. Other jurisdictions, whose reforms include the objective of competition at the retail level, include:
- The United Kingdom;
 - Norway (and other Scandinavian countries);
 - Several American States;
 - New South Wales, Victoria, and the Australian Capital Territory.
- 4.2 There are two major differences between the New Zealand situation and all of those jurisdictions:
- Their reforms took place or are taking place against a background of significant oversupply in generation;
 - All have taken a more "heavy handed" approach to regulation than that adopted in New Zealand.
- 4.3 Oversupply in generation (with occasional exceptions such as dry years in Norway) meant that there was potential for real gain in terms of downward price pressure, for consumers. This was influenced not only by structural reform of the electricity industry itself but, in cases such as the UK, by freeing up controls over fuel markets by removing, for example, the preferential position which British Coal had enjoyed and allowing generators access to world market prices.
- 4.4 Because of differences in industry structures, the situations pre-reform, and the regulatory environments, considerable caution must be used when translating the lessons of overseas experience into the New Zealand environment.
- 4.5 At a general level, comparison of the UK, US and New Zealand environments provides an understanding of the incentives created by different regulatory environments. The US environment with its emphasis on rate of return regulation, has encouraged over-investment in capital. The UK experience has led New Zealand observers to conclude that regulating the rate of change in prices (the RPI - X approach) similarly collapses down to rate of return based regulation. There is also evidence that the regime affects the approach which companies take to the introduction of cost saving initiatives. The incentive is to reduce costs so long as the company is confident that the resultant savings can be captured by shareholders rather than consumers. Once a company reaches the point at which it believes the regulator may be likely to adjust the RPI-X formula so as to capture part or all of the savings for the benefit of consumers, then the company is likely to "bank" the prospective savings by not introducing the related initiatives until it believes that there is relatively little risk of the regulator seeking to capture them for consumers.
- 4.6 The study of overseas experience has amounted to a laboratory test of the perverse incentives of heavy handed regulation. It is for this

reason that New Zealand opted to experiment with "light handed" regulation.

- 4.7 The different nature of other regulatory environments, with an emphasis on licensing distributors, also makes it difficult to draw parallels on access and use of system issues. Practices which, in New Zealand, might result in legal action under Section 36 of the Commerce Act, elsewhere might be treated as a breach of licence conditions with rather more immediate and drastic consequences.
- 4.8 For the immediate purposes of this project, greatest interest lies in the different initiatives to encourage retail competition.
- 4.9 In the UK, full retail competition (for customers with a demand beneath 100kW) will be introduced from 1 April 1998. In Norway, legal opening up of third party access to all electrical grid systems came into effect in 1991. However, incumbent requirements for metering hourly consumption for all end users with suppliers outside the system effectively excluded small consumers from the competitive market. To address this, the government legislated, with effect from 1 January 1995, for profile based competition.
- 4.10 In the US, several states (New Hampshire, Massachusetts, California, amongst others) are experimenting with the introduction of retail competition. This is embedded in a series of regulatory moves, which include legislated consumer benefits. Thus, California introduced legislation on 23 September 1996, which opens retail competition from 1 January 1998, but also requires a 10% rate cut on that date for residential and small commercial customers, with a further 10% reduction by April 2002.
- 4.11 In Australia, the timetable for retail competition indicates a possible date of 1 July 1999 for the final stage, but this is dependent on technical and economic feasibility. An issues paper released late in 1996 on restructuring of the industry in the Australian Capital Territory (which draws all of its power from New South Wales) noted that *"Victoria and NSW have both stated that bringing retail competition to their smallest customers will be subject to 'there being no significant technical or economic restraints'"*.
- 4.12 Collectively, the principal mechanism for bringing competition to small retail customers is the use of deemed profiling. The UK, Norwegian and US approaches are each different from each other and provide, in MDL's view, the main lessons of relevance for continuing reform in New Zealand.

5.0 THE NEW ZEALAND REGULATORY REGIME

5.1 In this section we look at two separate elements of the New Zealand regulatory regime. The first is the requirement to disclose pricing and cost allocation information so that consumers and others can make an informed judgement on whether an energy company owning both the lines business and other businesses (particularly energy trading) was earning more than a fair rate of return on the monopoly lines business. Of particular concern is the potential to allocate to the lines business costs which should have been allocated to other businesses and, where a lines business is providing services to other businesses, to undercharge for those services. The second element we look at is the approach to valuing networks as the benchmark against which to assess a fair rate of return.

Cost Allocation and Pricing Issues

5.2 The New Zealand "light handed" regime was adopted after review of the rate of return and "RPI - X" approaches adopted in the US and the UK. As noted, New Zealand advisors took the view that both of these systems were, in essence, rate of return regimes and encouraged over-investment in capital assets. The original intention was to create a framework within which energy companies were free to set their own charges, but required to disclose detail of their pricing arrangements and cost allocations in such a way that third parties could make well informed judgements on matters such as whether a particular company was abusing its natural monopoly or acting anti-competitively. There was a further assumption that, if such a party did detect abuse, then it could seek redress through the provisions of the Commerce Act.

5.3 There are grounds for regarding that original assumption as somewhat optimistic, especially when viewed from the perspective of the small and/or domestic consumer. Reviewing the performance of energy companies requires a significant investment of time and technical resources. The rational behaviour for the small consumer, believing that an energy company was exploiting its natural monopoly, or acting anti-competitively, is to do nothing. The potential returns, to that individual consumer, from pursuing redress would be far less than the cost. The rational response for a large consumer, in a similar situation, is to negotiate a separate contract with the energy company (although disclosure of that contract would be required, it would likely be seen as simply normal commercial practice rather than as two parties colluding in the continuation of an unacceptable practice).

5.4 For disclosure to have consequences, the total system needs to include a party or parties with adequate resources to act in the interests of small consumers. No such party exists even though bodies such as the Consumers Institute continue to take a close interest (their relatively small resource base, and the wide range of consumer issues they need to cover, limit their overall capacity).

- 5.5 The dilemma this poses is that enforcement of the underlying intent of the regulatory regime, constraining abuse, increasingly falls back on government regulators and risks the regime collapsing into one of “heavy regulation”.
- 5.6 The recent review of the information disclosure regulations suggests that this may be happening. Thus, at the recent Ministry of Commerce/Electricity Industry Forum, both the Minister and his officials acknowledged the increasing prescriptiveness of the regulations and the nature of the choices. The General Manager, Energy and Resources, within the Ministry has acknowledged that the intent of the regulations is to promote retail competition and, in effect, to cap lines charges. The recent work by the Ministry on looking at asset allocation as between the lines and other businesses owned by an energy company is another measure of a move towards a more prescriptive environment.³
- 5.7 Arguably, the regulatory process has moved from one based on an expectation that energy companies would seek to observe the spirit of the regulations, and be pro-active in complying, to one which assumes that energy companies (or some of them) will seek maximum commercial advantage from pushing the limits of the regulatory framework. The result is a process of tightening based on the assumption that a prescriptive regulatory approach will be able to keep ahead of the industry it seeks to regulate. We do not regard it as part of the approach to this brief to undertake a technical assessment of the regulations and their effectiveness. Instead, our focus is on the public policy issues associated with such an approach to regulation.
- 5.8 This leads us to the view that the current approach is sub-optimal and may, over time, be little different, in terms of incentives and resulting efficiency, from the rate of return regimes used overseas.
- 5.9 First, we consider it unlikely that regulators, without daily operating experience within the industry itself, will fully understand the scope for avoiding the intent of the regulations. We are aware that at least one industry player has commented that it would be possible to drive a truck through the amended regulations. Our informant to whom this view was expressed was not given any explicit detail. We have put this view to another industry party with a vested interest in greater competition at the retail level. Again without being explicit, that party concurred with the view. We mention this primarily to make the point that perceptions in the market place do matter, especially as they will affect people’s intentions and their view of the likely risk/reward profile of potential initiatives. Secondly, we consider that the process of

³ This part of the Ministry’s work is addressing some quite significant issues. One is whether the meter should be allocated to the lines business or the energy trading business. Currently the Ministry’s view is that it should be allocated to energy trading as metering is a competitive business and the objective is to ensure that the lines business, as far as possible, incorporates only matters which are essential for the operation of the lines business. Thus metering, contracting and billing are all seen as matters which should fall outside the lines business as such although it may purchase services from those activities. Metering is a particularly interesting issue. Whilst allocating it to the energy trading business may be consistent with putting it in a competitive environment this may create opportunities for anti-competitive behaviour if one energy trader owns the meter and wishes to exclude another (it should not be too difficult to develop mechanisms, such as long term customer contracts with an early termination penalty, which could have the effect of limiting competition but be justified by a different purpose. Such penalties are quite common for example in equipment and appliance leases. This may argue that, especially if separation proceeds, that the meter should remain with the lines business to minimise the risk of anti-competitive behaviour).

review may itself be somewhat unbalanced. The main participants have been either energy companies, or parties whose business consists of advising energy companies. It is not necessary to impute any improper motivation to observe that the weight of input will have come from an industry perspective rather than from the perspective of the consumers whom the regulations are intended to protect.

5.10 We also have concerns regarding the lack of incentive in the regulations. The Ministry is moving closer and closer to a position that the regulations should prevent companies from earning any profits, from their network business, in excess of WACC⁴ (weighted average cost of capital. It is derived from the company's actual cost of debt and market required rate of return on equity having regard to the risk of the business as compared with market risk generally). The incentives associated with such an approach are to:

- "Bank" any potential savings, holding them until the regulatory framework changes, or they can be dissipated in other ways outside the reach of the regulator;
- In particular, to use any efficiency gains for discretionary expenditure favouring the interests of management or owners, provided that these can legitimately be reported as costs of the network operation.

5.11 We recognise the dilemma which the Minister and his officials face, the implications of which were well expressed by the Minister in his address to the EMCO Winter Solstice Celebration as:

"Nor have I ruled out the possibility of splitting power companies' distribution and retail functions into separate entities."

"It seems to me such a move might be the way to keep things simple and circumvent the possibilities of creative accounting which blurs the boundaries between their line and retail businesses under the current information disclosure regime".

5.12 Another concern which we have with the present approach to regulations is what seems to be the relatively narrow view of the potential for market processes to develop options for small consumers. The Ministry divides consumers into three categories; those consuming in excess of 100,000kWh per annum; those consuming between 18,000 and 100,000 and those consuming less than 18,000. The first category is said to be contestable, the second as potentially contestable and the third as not likely to be contestable in the foreseeable future. Those are judgements which appear to be based on the economics of contesting for customers solely on the basis of supplying energy. In a truly contestable market, a range of options may emerge. Energy retailing, instead of being the sole relationship

⁴ If this approach were to be taken, it would be logical also to prescribe an acceptable WACC. The actual figure which emerges from a WACC calculation can vary quite considerably depending on the figure selected for key variables such as the beta, the market risk premium, and the tax assumption adopted. "Legitimate" variation in these variables can affect the target rate of return by as much as 2% - 3%. It is probably no exaggeration to say that the scope for earning "excess" returns through maximising WACC is probably greater than from the potential for over-allocating costs to the line business which has, to date, been the main focus of concern.

between a consumer and a supplier, may be the entry point for other services. Witness the emerging interest both internationally and in New Zealand, in the supply of bundled utility services.

5.13 In summary, our concerns with the present regulatory regime are:

- There is a lack of incentive for individual consumers to take action against energy companies which may be infringing the spirit or the law of the regulatory regime;
- There is no effective and well resourced consumer body in place to act on behalf of consumers collectively. The Consumers Institute is active on behalf of electricity consumers but has limited resources and is required to cover the entire spectrum of consumer issues, not just those arising in the electricity industry. We also recognise the good work being done by the Ministry of Consumer Affairs. However, as a government Ministry, they must necessarily be seen as part of the regulatory framework rather than as a representative of consumers;
- The increasingly prescriptive approach of the regulations, and the profit cap emphasis, must inevitably dampen incentives for innovation and promote inefficiency (in this respect, we see it as a particular concern that the Ministry of Commerce's approach may constitute a positive disincentive to merger/acquisition activity between individual companies, both earning a full WACC, regardless of the potential efficiency gains. The plain commercial reality is that mergers will only proceed if owners expect to make significant gains in their own wealth as a result. In practice this suggests that if WACC is becoming a cap on earnings then the only energy companies likely to contemplate merger if they are at full WACC and therefore unable to capture extra profits for shareholders, are those which are themselves consumer owned so that the benefits flow back to owners in that capacity).

Valuation

5.14 Related to this is concern over the impact of the regime for the valuation of networks. The purpose of the "optimised deprival valuation (ODV)" regime was to establish a proper economic value. It was recognised that the book value of line assets owned by the former electric power boards and MEDs was, in many cases, substantially understated. In the new regime with its focus on productive, dynamic and allocative efficiency, it was seen as essential to establish the true economic value of networks as the basis for measuring an acceptable rate of return and a proper benchmark for new investment.

5.15 The regime involves a number of judgements. It requires establishing the depreciated replacement cost of the network as though it were being built afresh today, but with two adjustments:

- optimising the network. This involves making an engineering assumption as to the least cost option for achieving the design objective. It is intended to eliminate any "gold plating".
- the valuation is further adjusted to allow for any case in which the cost of installing part of the network would be greater than its

economic value (the value reflecting the return capable of being earned from that part of the network).

- 5.16 In theory, the ODV was to be established, once and for all, at the time of corporatisation. Adjustments in value of the network, (other than those resulting from new investment) were to be treated as additions to or subtractions from the accounting rate of profit⁵. This approach was based on the assumption that the fair return to a network owner, over time, was a combination of current earnings plus changes in the value of the network.
- 5.17 In practice, there have been a number of substantial upward revisions in ODVs, which the companies concerned have argued are not increases in value which should be treated as part of the return to the shareholder, but, instead, represent adjustments to the original ODV valuation based on better knowledge. Currently, a number of companies are at various stages of revising their ODVs to allow for a changing view on the length of asset lives.
- 5.18 The result is an appearance of a continual ratchetting up of the base against which companies' "permitted" profits are measured. As an example, one relatively large supplier has returned the following accounting rates of profit for the past three years:

Accounting Rate of Profit

1995	10.85%
1996	29.24%
1997	9.52%

- 5.19 The company argues that part of the 1995 and 1996 ARPs was simply a "restatement adjustment" of its ODV and that its accounting rates of profit, after allowing for that adjustment, should have been stated as:

Accounting Rate of Profit

1995	8.31%
1996	8.58%
1997	9.52%

- 5.20 The restatement adjustment for that company in 1996 was 20.66% implying a substantial uplift in the ODV. On this basis, the 9.52% ARP for 1997 looks to be the equivalent of nearly 12% on the 1995 ODV.
- 5.21 From a consumer perspective, the experience is of a continuing increase in the allowable earnings of their monopoly lines service provider (although not all energy companies have taken full advantage of their increased ODVs). As well as this, there is a further concern. It is quite likely that, as the electricity industry worldwide opens up to competition, there will be major changes in technology with increased reliance on distributed generation. This could result in numbers of consumers disconnecting from the local network, and thus "stranding" significant investment. Under the present regime, the line owners

⁵ The accounting rate of profit is an accounting equivalent to the weighted average cost of capital. It is based on the financial statements of the energy company and produces a figure which can be directly compared with the nominal, post-tax WACC.

would be able to treat the write off of the stranded assets as a loss which could be recovered through increased line charges from its remaining customers.

- 5.22 There is no easy answer to the question of how to deal with a valuation approach which many would see as being somewhat perverse in its outcomes. A number of energy companies have been wholly or partly privatised; investors (both small and large) have purchased shares on the basis of the current regulatory regime. A marked change could have the appearance of confiscating value. Nonetheless, the issue is one that does need to be kept under close observation. Specifically, the question of why this particular industry, as compared to any other, should be given protection against loss of value as the consequence of technological obsolescence needs a good answer.

6.0 METERING

- 6.1 In New Zealand the development of affordable half hourly metering has been seen as the necessary precondition for retail competition at the small consumer level. Internationally, the emphasis has been more on deemed profiling, driven by the belief that metering technology will not be sufficiently cheap, within a sufficiently short timeframe, to rely solely on developments in metering to bring the benefits of competition to small consumers (with time of use metering as an option for those who wish to choose it).
- 6.2 Internationally, cost has not been the only consideration. The logistics of shifting to half hourly metering for all consumers within a system has also been seen as a major barrier. Thus, in a news release on May 6 1997 "*Electric Market Open to Utility Customers in 1998*" the California Public Utilities Commission stated "*it would take years to provide hourly interval meters for all 10 million electric customers in the state... load profiling is therefore an alternative for those smaller customers who want direct access*". Similar considerations have influenced the UK regulator where the number of conversions involved would be in the order of 23 million.
- 6.3 The New Zealand system is very much smaller than either of these (approximately 1.2 million premises in total). The absolute scale of conversion would therefore not be as great although the logistics, in relation to the size of the industry, may nonetheless be proportionate.
- 6.4 Despite international experience, the New Zealand emphasis has been heavily on the development of new metering technology as the means for extending competition. A number of companies are trialing versions of half hour meters.
- 6.5 TransAlta New Zealand Ltd, for example, is trialing a meter which, in addition to half hourly metering, can be the platform for a number of other services including home security and remote operation of appliances. Southpower is trialing the Orca technology which it believes opens the way to provision of a whole range of services including not only appliance management but also electronic banking and remote purchase of a range of goods and services. It also has an agreement with Clear Communications for offering telecommunications services. Power New Zealand is also exploring options for the use of "smart" metering technology to offer a wide range of services.
- 6.6 This reflects what is happening elsewhere. The point to note is that parties exploring the use of "smart" metering technology seem all to be doing so with an emphasis on providing a range of services which go well beyond the retailing of electricity. There appears to be an expectation that, as markets become more competitive, and barriers to access are removed, electricity will become more and more a pure commodity with the implication that margins will shrink almost to nothing. A representative statement of this view was expressed at the Gas and Electricity Risk Management Conference in Sydney on 24 July

by David Cornelius, Manager Energy Trading for Powercor Australia Limited. In looking at the retailing outlook he stated:

"In my view it will not be sufficient to be solely an electricity retailer for small businesses and residential customers:

- *Anticipate loyalty programmes, 'fly-buys', to retain customers.*
- *Anticipate aggregation by municipalities or brokers.*
- *Anticipate multiple utilities."*

6.7 Power utilities internationally are moving to a diverse range of interactive services to customers, based on energy supply and tailored to customer needs. Two examples from the USA are KN Energy and Central and South West (CSW) Corporation. KN Energy has introduced a Simple Choice service which offers satellite television, wireless Internet, appliance and home energy management services, covered by a single billing and phone service. CSW (a public utility holding company) offers through one of its subsidiaries an on-line home energy analysis service, available regardless of the residential customer's choice of supplier, and, through another subsidiary, for its direct electricity utility customers, a Customer Choice and Control programme which focuses on providing information residential customers can readily use to make energy savings, take up new service options and choose among competing providers.

6.8 The New Zealand emphasis on the introduction of half hourly metering is driven by an interest in ensuring that consumers have accurate pricing information in the belief that, if they do, then they will be able to make more cost effective choices regarding consumption. Judgements on likely take-up of the metering option, if it is available, require an assessment of:

- The actual cost of providing that information as compared with the benefits which might result.
- Consumer perceptions of/attitudes towards the changes they might need to make in order to benefit from having that additional information.

6.9 Our view is that half hourly metering is the preferred ultimate outcome and the one which offers the best potential for making the retail market truly competitive. Our concern is that this may not be possible in a single step. We have three reservations regarding the potential to shift domestic consumers from the present situation directly to half hourly metering as the means for competitive purchasing of electricity. The reservations are:

- It is unclear that the potential returns, after cost, will be attractive enough to encourage significant numbers of consumers to make the shift.
- Even if the theoretical gains from the shift are attractive in financial terms, the necessary behavioural changes, and/or the need to replace existing appliances to gain the full benefit may act as a significant barrier.

- The potential gains to companies may not, of themselves, justify the investment required.
- 6.10 The New Zealand electricity system is heavily dependent on hydrogeneration which is substantially “run of river” based; New Zealand’s dams have a relatively low ratio of storage capacity to generation capacity. This makes the system very weather dependent. In dry years this means a shift to more expensive thermal capacity or, potentially, actual shortages. In wet years it can mean the need to spill water at times of low demand.
- 6.11 There is thus an inherent volatility, over time, in the system. We have spoken with industry participants who see this potential for volatility as an argument in favour of giving consumers accurate price information to that they can make effective choices.
- 6.12 We do not see this as a relevant argument. Half hourly metering is concerned with intra-day volatility. It provides no opportunity for consumers to protect themselves against system volatility resulting from changing weather patterns. We have seen arguments that half hourly metering could make it easier to offer consumers the opportunity to hedge their own positions, if only by making them more price aware. That opportunity is available at present; we consider that consumers who are likely to use hedge products will already have a good understanding of, or readily comprehend, the arguments for and against their use.
- 6.13 The evidence is that, despite the potential for significant system volatility over time, intra-day volatility is comparatively low⁶. The NZIER, and one or two industry participants with whom we have spoken, have carried out analysis showing that intra-day volatility is little more than plus or minus 10%. ECNZ has provided analysis of intra-day volatility at the Penrose node for the period 1 October 1996 to 30 June 1997 which suggests an Auckland price range of the order of + or - 25% around the mean.
- 6.14 Generation makes up less than half of the cost faced by the typical consumer. Within that the potential for using energy at the low price point of the day applies to only part of the user’s consumption. Lighting, much heating, and cooking will still be undertaken at the same time of day as is now the case.
- 6.15 There is a further factor to consider. If only a few consumers migrate to half hourly metering and base their consumption decisions on price, then the impact within the market as a whole may be limited. However, if significant numbers of consumers act in this way, there may be a potential to alter the demand for energy in a way which would tend to lessen intra-day volatility as demand reduces at peak times and increases at off-peak times.

⁶ Currently, there is significant new base load capacity being developed or in the course of planning including Stratford, Otahuhu and some quite substantial co-generation plants. We understand that views within the industry differ as to the impact this will have on volatility but there is at least the possibility that the change of balance within the generation system between peaking and base load capacity will increase intra-day volatility.

- 6.16 ECNZ have estimated that the capital and operating costs of providing time of use revenue metering, assuming a five year payback period, would be \$100 per annum for a typical domestic consumer provided current MARIA rules were relaxed to reflect the value at risk and uncertainty. We assume that retailers would want this cost to be picked up by consumers either directly (as in a separate charge for metering services) or indirectly (as in the cost of energy and related services). It is difficult to see scope for savings on energy purchase exceeding \$150 - \$200 per annum (for a typical domestic consumer, this level of savings would represent in the order of 25% of the energy cost) so that potential gains above metering costs may be well beneath \$100 pa for all typical domestic consumers.
- 6.17 Our second concern is the willingness of the typical domestic consumer to change behaviour patterns, in order to take advantage of any variation in time of day pricing. Experience with attempts to encourage energy efficiency or conservation practices, even when these involve a zero capital cost, underline this. Consumers who could save money by adopting more conservation oriented practices (turning off unneeded lighting, adopting more sensible practices in the use of hot water) do not do so. This suggests that, at the margin, the "cost" to the consumer of changing behaviour patterns may be significantly higher than the benefits those changes may produce. It is important to draw a distinction between the enthusiasm which engineers may have for experimenting with new ways of purchasing and using energy, and the likely apathy of the typical consumer.
- 6.18 In further support of this, we understand that NZIER work suggests that the price differential, needed to encourage a typical consumer to change suppliers, may be as high as 2 cents per kilowatt hour. Clearly, this will depend very much on what is involved in making the shift. If it required the installation of a new meter, and the need to learn the associated skills of management, then resistance to change may be greater than has been observed (say) in some of the US pilot trials where there has been extensive promotion by the relevant Public Utilities Commissions associated with the promise of reductions in cost and a very user-friendly process for change.
- 6.19 We have not accessed much direct evidence of New Zealand consumer attitudes towards the retail price of electricity and the circumstances under which they would change behaviour, supplier, or tariff in order to achieve savings. One difficulty is that much of this material, to the extent that it exists, has been gathered by individual companies as part of their own market research and is treated as commercially confidential.
- 6.20 However, we have been given some information by one retailer, United Electricity Limited, which does support our views.
- 6.21 This company carries out regular surveys of customer attitudes. Consistently, price ranks as the 6th or 7th issue in terms of importance with matters such as security of supply, ease of contact (customer to supplier and vice versa) and the simplicity of the bill being ranked as more important.

- 6.22 We were also told of one specific experience United had which highlighted what we would regard as inertia. Last year the company introduced a winter/summer tariff and shifted their domestic consumers on to it. The effect of the tariff was to impose a higher per unit charge in winter than in summer. This was intended in part as a conservation measure and in part to reflect the higher cost of wholesale power during winter months.
- 6.23 Customer reaction was extremely vigorous. The company received petitions with more than 20,000 signatures calling for a return to the previous tariff structure. The new Chief Executive faced a hostile public meeting in Dunedin of more than 500 persons.
- 6.24 In reaction to public concerns, United decided to offer its customers a flat price with the winter/summer tariff as a default option. Their estimate was that as many as 25% of customers would achieve worthwhile savings through opting for the flat price. Only some 1% of those who would have benefited from the shift actually elected for the flat price despite the high public profile the issue had attracted and the very strong customer objection to the original initiative. This was despite the fact that United had written to each customer explaining the cost impact of both options.
- 6.25 There is indicative evidence, from studies of public attitudes towards energy efficiency, which also supports our view that consumers may not necessarily adopt measures simply because they will save money. Attached to this report is an extract from a 1992 report "*Energy Efficiency in the Domestic Sector*" which provides quite substantial evidence of the unwillingness of consumers to change behaviour, or adopt available technologies, in order to save money on energy even when the changes or the technologies themselves may involve no financial outlay by the consumer.
- 6.26 Some services within the household are clearly less time-dependent than others. Obvious examples include dish and clothes washing and clothes drying. For these to operate at the low price point of the day, one of two things needs to happen:
- Consumers need themselves to turn those appliances on to operate at a predetermined time. This may require investment in a timing switch, and programming that to suit; it may require turning the appliance on at the time you wish it to operate.
 - Use of an appliance which is itself responsive. Manufacturers are beginning to produce appliances designed to operate in this environment. For example, Fisher and Paykel is expected to release a washing machine in October with a chip installed which would allow it to recognise the low point for electricity cost and operate at that time. However, for that technology to become common place, it will be necessary to work through a full cycle of replacement of existing appliances.
- 6.27 We see this as a further complication. The evidence from the energy efficiency/conservation area is that people are reluctant to change even when they know that savings can be achieved (this may be perfectly rational; all it implies is that consumers have "priced" the

"cost" to themselves of making the change and concluded that it exceeds the expected benefits).

- 6.28 This leads us to conclude that, whatever the theoretical maximum savings are from a shift to time of use metering, and optimising the timing of consumption, the full gains will take some years to flow through; we doubt that many consumers would be interested in replacing appliances, ahead of a normal replacement time, purely in order to reduce the cost of electricity.
- 6.29 Quite apart from these issues, we consider that the introduction of "smart" metering will in any event be evolutionary with the likelihood that, if it were the preferred strategy for promoting competition at the retail level, it would be some years before it had any significant impact. Reasons for this include:
- Metering costs. Even if the cost of a "smart" meter reduces to as little as \$70-\$100 per meter, the overall meter plus installation costs will still be somewhere in the range \$150-\$200. So long as intra-day volatility remains low, this suggests pay back periods, for the typical customer, which would be seen as uneconomic.
 - There is no co-ordinated approach to the introduction of "smart" metering. Instead different companies and different manufacturers are each developing different options. This suggests that economies of scale, which would be desirable for a significant shift, may not emerge for some time. The most effective way of achieving these would be the adoption of an industry standard but we consider there are both commercial and legal difficulties with this. (Clearly, with a world-wide interest in "smart" metering technology, economies of scale and manufacturing are likely to emerge regardless of what happens in New Zealand. However, the different approaches being taken by local energy companies may act as a barrier to economies of scale in marketing, distribution and servicing within New Zealand.)
- 6.30 The third issue is whether electricity retailers will, themselves, be sufficiently attracted by the opportunity of selling electricity on a half hourly basis, to domestic consumers, to make the necessary investment. We consider it significant that there seem to be no electricity retailers looking at half hourly metering solely as a means of retailing electricity. Both internationally and in New Zealand the emphasis seems to be on the meter as a gateway through which to offer a range of services. The apparent universality of this approach suggests that retailers have made the judgement that, if the only consequence of the introduction of half hourly metering is the ability to market electricity more precisely, then it is uneconomic from their perspective.
- 6.31 A view that the preferred strategy, for introducing retail competition, is to move immediately to half hourly metering must be based on the assumption that alternative suppliers will believe that it is economic to make the necessary investment. That is they must believe that they will generate a sufficient return from the customers they acquire to offset the capital and operating costs involved. It is an approach which establishes a much higher hurdle than alternative suppliers are

expected to face in other jurisdictions. In the UK, the US, and Australia, competition is being kick started by deemed profiling with consumers (alternative suppliers) being given the option of migrating to half hourly metering. The commercial logic of this approach is that alternative suppliers face a least cost approach to winning new customers. It is clear from the strategies which they are following (see paragraphs 6.4 to 6.7 above) that they are doing so in order then to offer those customers a range of other services which in all likelihood will require migration to half hourly metering.

- 6.32 It seems to us a brave assumption that alternative suppliers will want to face the hurdle of persuading a customer to agree to the installation of a half hourly meter in the hope that it will then be possible to persuade that customer to accept a range of other services.
- 6.33 We do not see half hourly metering as the key to the introduction of retail competition or, to put it another way, of creating an environment in which there will be genuine competitive pressure on energy companies and real choice for consumers. For this purpose, as discussed in the next section, we would rely instead on deemed profiling where Norwegian experience suggests that a key factor has been the ability of competing retailers to put pressure on prices simply because they can enter the market and offer lower priced energy. It is the potential for change which this creates, so long as the incumbent sees this as a realistic potential, rather than the actual change, which should drive price pressure.
- 6.34 At the consumer level, the critical issue is the ability to change suppliers, with a minimum of cost and difficulty, which is important. No matter what the cost of half hourly metering, deemed profiling will always be simpler. We want to emphasise this point. The ability to change suppliers, if a customer wishes to do so, itself has significant value. It means, for example, that they can negotiate with their existing supplier in the knowledge that, if they do not like the outcome, they have an alternative. We would expect this, in turn, to influence the approach which suppliers take to their customers (it is interesting to speculate, for example, whether the Commerce Commission would have found it quite so necessary to intervene in respect of the domestic consumer contracts of some 29 companies, if those companies had been drafting their contracts in a competitive environment).
- 6.35 We consider that the real strengths of new metering technology will come not primarily because of the ability to purchase on a half hourly basis but from the related services such metering can deliver. Accordingly, we expect to see this technology marketed as the platform for a range of services, such as home security, which can be provided more efficiently and reliably by a single supplier (or consortium of suppliers) than through a series of individual suppliers. In other words, the benefits from intelligent metering are likely to be economies of scope rather than the ability to purchase energy more efficiently.
- 6.36 One final point we wish to consider is the argument that one obstacle in the way of the introduction of cheap half hourly metering is the cost

of MARIA compliant meters. We are aware that there has been a view in the industry that MARIA specifications are being kept deliberately high as a barrier to the development of competition.

- 6.37 In the course of preparing this paper we were told by one industry player that the MARIA rules are definitely a barrier; this party took the view (based on its experience) that incumbents will erect barriers wherever they have the opportunity to do so.
- 6.38 Another informant, who is involved with the MARIA Competition Enhancement Committee, was sceptical that it would have any real impact on improving competition. This informant considered that ESANZ arguments for maintaining the current standards for metering accuracy would be successful with a consequence that MARIA would remain a significant barrier to cost effective half hourly metering. Yet another informant, also involved with the MARIA Competition Enhancement Committee, cited a number of technical changes which he considered should substantially reduce compliance costs for domestic (and other small) consumers.
- 6.39 The more recent accounts we have been given suggest that the Committee is making real progress. It appears that ESANZ now recognises that it is in the interests of the distribution sector to use the MARIA process as a means of removing barriers to competition, possibly in the expectation that, if this does not happen, then Government may resort to regulatory means for the same objective. The present emphasis is on relaxing audit and documentation requirements as a means of reducing the cost of metering/reconciliation for domestic and other small consumers. We are told that this is being seen as relaxing high specifications which were originally designed for wholesale trading and which are now recognised as inappropriate for application to small consumers.
- 6.40 Clearly the MARIA compliance cost issue is significant. The lower the costs associated with reconciliation, calibration and checking, the lower the benefit threshold which installation of a meter will have to satisfy. However, the estimates we have been given of the likely low end annual cost (operating and capital pay back) suggest that metering costs will remain a substantial barrier, even if the MARIA Competition Enhancement Committee does everything it can to simplify MARIA requirements.
- 6.41 As we discuss in the next section, we believe that the immediate step to encourage competition should be the introduction of deemed profiling as a first step towards competition based on half hourly metering. The MARIA rules are basically irrelevant for deemed profiling but will have an important influence on the extent to which people migrate from deemed profiling to half hourly metering. As we believe that the main reason suppliers will want to seek customers on a deemed profiling basis is to build up a customer relationship in order to offer a range of services which will require the use of "smart" metering technology, we consider it important that the MARIA rules be relaxed so that suppliers have confidence that they can migrate their future customers to a "smart" metering environment at reasonable cost.

7.0 DEEMED PROFILING

- 7.1 Two New Zealand energy retailers, Southpower and United Electricity, have just announced a two year trial of deemed profiling beginning on 1 December this year. Under the trial, each company will be free to market electricity to up to 1,000 domestic customers (defined as customers consuming less than 30,000 units per year).
- 7.2 The trial was introduced following a study of deemed profiling as practised, or proposed, in England and Wales, Norway and the US. Appendix 2 to this report briefly outlines developments in those other three jurisdictions.

Assessment of Deemed Profiling

- 7.3 Deemed profiling has commonly been criticised as being second best, blurring price signals, and likely to delay the needed shift to half hourly metering. Although speaking of profile metering, rather than deemed profiling, a recent address by the Hon J K McLay is representative of the criticism which has been made of profiling. The quotation comes from a paper which he gave to the National Economic Research Associates Restructuring 97 conference in April 1997:

"Profile metering has a number of significant disadvantages including creating cross-subsidies amongst different groups of customers, muting of energy efficiency signals, and providing incentives to consume more electricity during peak consumption times and reducing the pace of development and introduction of competing metering technologies."

- 7.4 Assessment of this criticism can only be properly made against an appropriate counterfactual. The Hon J K McLay's criticism was clearly comparing profile metering with the preferred option of competing metering technologies. Compared with an environment in which everyone has a half hourly meter, profile metering is clearly suboptimal. However, if profile metering, or deemed profiling, is compared with the present situation, then a very different judgement may be made. For those who believe that a move to half hourly metering is both feasible and imminent, the criticism clearly has merit. For those who believe that there are significant barriers, then a move to profile metering or deemed profiling may represent a significant improvement on the status quo.
- 7.5 Deemed profiling, in our view, has three benefits which support its introduction in a New Zealand context. Collectively, and contrary to much criticism of deemed profiling, we believe that these three benefits are supportive of the industry move to the introduction of "smart" metering technology. The three areas of benefit are:
- Removing the "captive customer" phenomenon and thus contributing to rationalisation at the distribution level.
 - Under pinning the separation of lines and energy.

- Accelerating the demand for the introduction of “smart” metering.

The “Captive Customer” Phenomenon

- 7.6 In the present industry context, if the energy trading business of an incumbent retailer manages its own purchasing so that its wholesale cost of energy is above market rates (for example, it may be overly hedged in a wet year or under hedged in a dry year) then it can pass that cost on to the greater part of its customer base. If competitors, whose own purchase costs were lower, could compete for all the customers of an incumbent, then it would be difficult if not impossible for the incumbent to treat its customers as “captives” and pass on the costs of its market misjudgements.
- 7.7 This would significantly change the situation facing a number of smaller energy companies. Their directors (and owners) would be forced to confront the real implications of risk in the wholesale market and consider whether it was viable for them to remain in energy trading.
- 7.8 If, as we are being told, gross energy trading margins for at least some energy companies have been structured so that small (domestic and commercial) consumers pay prices which include relatively high gross margins and large industrial consumers prices such that gross margins are negative, then we would expect competition based on deemed profiling to force a rebalancing or reduction of margins to the benefit of small consumers.
- 7.9 We stress that, to avoid the “captive” phenomenon, it is essential that competition be introduced for all classes of consumer and not simply for some classes or for some consumers. For the reasons outlined in section 6.0 we do not consider that the introduction of half hourly metering (even assuming that MARIA and other barriers could be overcome) offers the immediate prospect of competition for all consumers. Accordingly, we support the introduction of deemed profiling to resolve the “captive customer” issue not because it is the technically best solution (it is not) but because it offers the prospect of making all customers immediately contestable.

Separation of Line and Energy

- 7.10 Deemed profiling would require incumbents to make explicit, to customers, the charges for the different services which they provide (at the moment this is required on a once a year basis only). At the moment, a number of energy companies recover part of their line charges through their kilowatt hour charge for energy. A competitor, marketing on a deemed profiling basis, would be seeking to recover only the cost of energy and its retailing costs/margin through its kilowatt hour price.
- 7.11 A practical example illustrates the point. Dunedin Electricity Ltd operates solely as a network company. Retailing of energy across its network is undertaken by United Electricity which is entering into a deemed profiling trial with Southpower. Dunedin Electricity Ltd

charges United Electricity for line services and United in turn charges individual customers. United is billed by Dunedin, monthly, a sum which represents the aggregate of the individual line charges which Dunedin would make against each customer (the charge is based on a combination of winter maximum load and the capacity of the customer's link to the network). United repackages this charge and passes it on to customers in part as a flat rate line charge and in part as a component of the variable charge for energy. The effect of this arrangement is that United over-recovers the lines charge from high use consumers and under-recovers from low use consumers (a quite common situation throughout the distribution sector).

- 7.12 Within the deemed profiling trial, Southpower will have the ability to bid for the business of high use customers solely on the basis of the energy charge. It will be required to meet Dunedin Electricity Ltd's line charge but that will be the actual line charge calculated as explained above. We understand that there are approximately 1,000 high use customers each of whom is paying approximately \$100 more for line services than Dunedin Electricity is actually charging. United will have two options:
- Readjust its charges to its remaining customers in order to recover from them the excess it was previously recovering from the customers it loses to Southpower; or
 - Act as a direct pass through from Dunedin Electricity to customers of its line charges by completely separating out line and energy. We note, in passing, that this would hand back to Dunedin Electricity the "social" concern of rebalancing line charges as between low use and high use consumers.
- 7.13 We expect that incumbents, generally, responding to competition will need to separate out their pricing so as to recover, through their line charges, their full network costs and that these will need to be separated entirely from their energy charges if they are to avoid the risk United currently faces in its trial with Southpower.
- 7.14 This would not, of itself, remove the incentive for incumbents to give their energy trading arm an advantage through the way in which they allocated costs. They would still have an incentive to allocate part of the costs of their energy trading activities to their network. By doing so, they could reduce their energy prices by the extent to which costs were allocated to the network but without prejudicing their ability to earn their required rate of return on the network.
- 7.15 What would be different, under deemed profiling, as compared with the status quo is that there would be present parties - potential competitors - who had a much stronger incentive and ability to test compliance with the regulations than is currently the case for individual consumers (see paragraph 5.3 and 5.4 above). In our judgement, therefore, competition based on deemed profiling could make a very valuable contribution to ensuring compliance with the intent of the disclosure regulations.

Incentive for "Smart" Metering

- 7.16 It is argued that the introduction of deemed profiling will delay the introduction of "smart" metering technology. In our view this criticism is misplaced.
- 7.17 The relative lack of volatility in intra-day pricing in New Zealand, and the fine margins in energy trading likely in a competitive environment, mean that there is little if any commercial gain to be had solely from acting as an alternative retailer of energy. This is clearly recognised by the companies which have been promoting deemed profiling. Their intention is quite clearly to establish customer relationships as a basis of offering a range of services and not simply as an alternative energy purchasing opportunity.
- 7.18 Our discussions with industry participants also satisfy us they recognise that, in whatever form competition comes, it will reinforce the status of electricity as a commodity. As is typical of commodity markets, they expect to see it traded on price and, with a number of competing suppliers, for there to be heavy pressure on margins.
- 7.19 In paragraph 6.6 we cited the recently expressed views of the Manager Energy Trading for Powercor Australia Ltd. Our strong impression is that this view is widely shared in New Zealand.
- 7.20 We are satisfied that we can categorically state that non-incumbents considering targeting domestic and other small consumers accept that there is no money to be made simply from retailing electricity. Their objective is to establish customer relationships which they can leverage by offering a range of services. They recognise that, in order to do this efficiently, they will need to move to "smart" metering technology. Accordingly, we take the view that it is the very suppliers who would make most use of deemed profiling who have the strongest incentive to encourage the introduction of half hourly metering.
- 7.21 We stress again that we recognise the objections to deemed profiling, if that was seen as the destination. We see it, instead, as a necessary intermediate step to the introduction of half hourly metering which will become attractive, to customers and to suppliers, only when it supports a range of services and not just the retailing of electricity.

8.0 USE OF SYSTEM AND CONVEYANCE AGREEMENTS

- 8.1 In the early days of use of system or conveyance agreements, there was clear evidence that a number of energy companies were using conditions as an anti-competitive tool. There were some quite blatantly discriminatory practices regarding payment terms and reconciliation costs which could only be rationalised as anti-competitive. Our understanding is that, at the moment, most incumbents use conveyance agreements rather than use of system agreements. The resultant requirement that the consumer receives two bills, one for line services and one for energy, is regarded by potential competitors as an anti-competitive practice as it imposes an additional burden on the potential entrant which will normally be sufficient to discourage entry.
- 8.2 We are aware, within the industry, of views that competitive access to networks is possible without the need for an agreement. Wairarapa Electricity Limited, prior to its acquisition by South Eastern Utilities Limited, operated on that basis.
- 8.3 The point, here, is that the nature and complexity of agreements may be as much a function of the attitude of the incumbent retailer as it is of any technical requirement.
- 8.4 Our primary concern, with this particular issue, is that any approach to competition which requires or enables the negotiation of complex access arrangements between an incumbent and a competitor is likely to limit the potential for competition. We note the experience in the telecommunications industry in negotiating an inter-connection agreement between Telecom and Clear.
- 8.5 More generally, we take the view that Section 36 of the Commerce Act, as drafted, can encourage what we would describe as intelligent anti-competitive behaviour. We say this because the emphasis of the Section is on the purpose of the conduct of the person who has a dominant position in a market, and not on the effect. Accordingly, behaviour which can have an anti-competitive effect will nonetheless be lawful so long as:
- There is no positive evidence available that the intent was anti-competitive;
 - The conduct can be justified in terms of a purpose which is not itself anti-competitive.
- 8.6 So long as an incumbent can put forward a credible technical or operational reason for particular requirements, then they may well fall outside the Act. This issue will be addressed in the Southpower case when that finally comes to court.
- 8.7 From the perspective of the small consumer, and alternative suppliers, use of system or conveyance agreements will remain an issue to the extent that new metering is involved. A deemed profiling approach should avoid this problem. For meter based competition, our current view is that both the Commerce Commission and the Ministry will need

to continue monitoring developments. The government stance should be that if take-up of new metering technology (at least at the initiative of competing suppliers) appears unduly slow, then there may be a need for regulatory intervention. The most obvious one is a re-write of Section 36 of the Commerce Act, but that has implications going far beyond the electricity industry itself.

- 8.8 We note also the difficulty of being satisfied that take-up is slow because of resistance within the industry, given the views we have expressed regarding the attractiveness of metering itself.
- 8.9 Finally we note that one of the tasks of the MARIA Competition Enhancement Committee is the development of a standard use of systems agreement. As drafted the proposed agreement appears to address some of the more extreme practices which were apparently a feature of the early arrangements. For example, the agreement appears to assume relatively standard payment terms rather than the payment in advance requirement which we understand some network owners tried to impose. This is replaced by a provision recognising that the network owner may require that the network user provide a performance bond or bank guarantee which may constitute a barrier to entry for some potential competitors. The draft agreement now also includes an obligation on the network owner to deal with each network user on exactly the same terms and conditions, a requirement which would seem to be a pre-requisite for ensuring that a new entrant could compete with the incumbent retailer on reasonably equal terms (note: such a requirement could still accommodate treating different retailers differently so long as their objective circumstances warranted this. As an example, a performance bond or guarantee requirement might be specified as applying to any retailer whose circumstances came within particular parameters).
- 8.10 Generally the draft agreement does appear to be an attempt to create more of a "level playing field" approach. However, we note that there are no principles set out as to how charges should be established except a suggestion that, under a multi-year agreement, charges to the network user should be adjusted by the producers' price index.

9. SEPARATION OF LINES AND ENERGY

- 9.1 It is clear that the Minister, given a choice, would prefer that lines and energy businesses were owned by separate companies. We understand that his ideal would be that the ownership of those companies themselves was in separate hands although, for the moment, we doubt that he would be prepared to put this forward as a policy proposal.
- 9.2 From a public policy perspective, the costs of mandating separate ownership of lines and energy businesses would be high. There is now substantial ownership of energy companies in private hands. Intervention by the Government, requiring firms to divest one of their separate businesses, could too easily be seen as a reversion to the interventionist practices of the 1970s and early 1980s. In our view, it would give wrong signals to investors with adverse consequences not only for investment in the electricity industry but more generally. This argument does not, however, apply to wholly trust owned companies which can still for this purpose be seen as part of the wider public sector.
- 9.3 New Zealand is a significant net importer of capital, primarily for the private sector (inevitable so long as we run current account deficits and the Government runs a budgetary surplus). If overseas investors believed that there was a risk New Zealand governments would arbitrarily intervene in private ownership arrangements, to the extent of requiring divestment, we would expect a two fold impact:
- A proportion of investors would be discouraged from investing in New Zealand.
 - Those who were still prepared to invest would almost certainly seek a higher rate of return to compensate for the additional risk.
- 9.4 The alternative of continuing with the regulatory status quo is also unsatisfactory. This simply risks an ongoing iteration between the regulator and energy companies as the former tries to constrain companies to act in accordance with the purist model of cost allocation and the companies seek to find ways of avoiding the full impact of this (we note, again, the comment that it would be possible to drive a truck through the latest amendments).
- 9.5 We would prefer to see the Minister and the regulator encouraging separation of lines and energy within existing ownership. One option would be to require such separation. Another would be to redraw the regulations to create a more draconian environment for bundled operations than for unbundled ones.
- 9.6 At the moment, there is concern in the industry that the regulations actively discourage further efficiency gains, either through internal measures, or through merger, etc., once companies are earning a full WACC. The Ministry has stated a view that the regulations are intended to cap line charges at a full WACC.

- 9.7 Perversely, a likely consequence is to discourage both further innovation and the continued rationalisation which restructuring was intended to promote. This is a high price to pay for an inappropriate regulatory framework. (See the comments on the incentives for merger activity in 5.13 above).
- 9.8 An alternative approach might be as follows:
- Make it clear, in the regulations, that bundled companies were not permitted to earn more than a full WACC on their network operations;
 - Exempt unbundled network operations from this requirement, provided that:
 - excess earnings over WACC resulted from demonstrated efficiency gains;
 - these gains were shared with consumers;
 - there were incentives in place rewarding management to the extent that they were able to reduce costs whilst maintaining service levels (a principal point of this is to give them an incentive to resist over-allocation of joint or common costs, from a holding company level).
- 9.9 It has been suggested to us that it would be sufficient if existing energy and line operations were each placed in the ownership of separate companies, with common ownership and common boards and management. We would see common ownership as consistent with this proposal but have doubts about common boards and management. Legal separation within common ownership will, in our view, only be effective if:
- There are substantially different boards of directors and managements so that those responsible for the lines business, in particular, are strongly focused on resisting any attempts to over allocate common costs or undercharge the energy trading business for services provided by the lines business.
 - The directors of the lines business company are required to act in the best interests of that business and not in the best interests of the parent company (Section 131 of the Companies Act 1993 permits directors to act in the best interests of the holding company, even when that may not be in the best interests of the subsidiary of which they are a director, if the subsidiary's constitution expressly permits this).
- 9.10 In practice we would expect incentive arrangements to be based on a technique such as economic value added and reward management for their performance in meeting return on capital and service benchmarks whilst delivering real cost reductions to consumers with a heavy weighting towards this latter factor.
- 9.11 We would expect an approach of this kind to have substantial support from user groups. Our testing of user opinion suggests that separation is seen as a necessary step to avoid over-allocation of costs, but that full ownership separation is not an immediate priority.

9.12 We also note that the consequence of the more competitive environment which deemed profiling would create may well be a decision by one or more companies to divest their energy trading businesses, perhaps triggering quite a major change in this area without the need for government intervention.

10.0 THE FUTURE OF ENERGY TRADING BUSINESSES

- 10.1 Currently, energy trading businesses depend critically on the fact that they are owned by, and enjoy the credit backing of, network owners. This suggests that under conditions of competition an energy trading business, on a stand alone basis, may be unlikely to be seen as a good credit risk.
- 10.2 At the moment, there is evidence that energy trading businesses are achieving quite substantial gross margins from domestic and other small consumers but negative margins from large consumers. To the extent that this is the case it would suggest that incumbent retailers are structuring their tariffs so as to create a cross subsidy from non-contestable consumers to contestable consumers as a means of deterring alternative suppliers.
- 10.3 If small consumers become genuinely contestable, then we would expect downward pressure on the margins being earned from dealing with those consumers as alternative suppliers would have incentives to undercut the incumbent's margins.
- 10.4 More generally, under conditions of competition, we would expect electricity as such to be traded as other commodities are. In a market with a number of potential suppliers this means very fine margins to the extent that competition is based solely on price.
- 10.5 If spot prices are lower than any hedged price, in a competitive environment, the benefit of that should pass through to retail customers (this is one consequence which would be reinforced by the introduction of deemed profiling). In this situation, energy traders who were relying essentially on long term contracts would find that, unless they had laid off the associated risk, they would be in a loss situation.
- 10.6 Conversely, in a situation of high spot prices, a trader which was not fully hedged could find it very difficult to recover the excess costs.
- 10.7 It is accordingly quite logical that energy traders should face stringent credit requirements. The need to post letters of credit means that energy traders will need to satisfy bank security requirements. Given the risks they face, this almost certainly means the backing of a "deep pockets" owner. This may be a related lines company. It may be a specialist in dealing in financial instruments.
- 10.8 We expect, as the nature of trading risks becomes more obvious, to see at least some energy companies divest themselves of energy trading.
- 10.9 This should be likeliest to happen in the trust owned area where losses on energy trading would flow through directly to consumers. This follows from the fact that the profits of trust owned energy companies are ultimately distributed to consumers, usually in some form of rebate.

- 10.10 It is easy to foresee divestment as a rational response to the risks in the market, once there is genuine competition at the retail level. It is less easy to predict the shape of the energy trading sector.
- 10.11 One argument which has been put to us is that, with genuine competition at the retail level, the natural retailers are the generators. The argument is that they are the only parties who are naturally hedged against market risk. We find this argument logical. Indeed, we believe an argument can be made that the energy trading function, as we currently know it, is an historical anomaly resulting from the regulated environment within which the industry developed.
- 10.12 An alternative view is that a hedge market gives market participants the opportunity to change their position very quickly (and certainly much more quickly than buying or selling part of a power station). We accept that, in theory, a hedge market offers participants the instantaneous opportunity to adopt whatever position they regard as optimal. However we take the view that the ability to operate in hedge markets requires a level of skill and understanding which may well be beyond a number of potential participants so that the operational risk facing a number of participants may be much higher than the availability of a hedge market itself would suggest.
- 10.13 If we were asked for our prediction of the likely shape of the energy trading sector in future, it would be:
- The emergence of generators as the primary retailers. It is a separate issue whether they would retail direct or whether they would form alliances with parties through a series of local businesses. We can easily envisage franchise operation with (say) appliance firms or an oil company. However this evolves, the structures would be designed to ensure that any intermediary carried no energy price risk;
 - (Possibly) the emergence of specialist energy brokers acting as advisors to individual large consumers, or buying groups, but carrying no financial risk themselves;
 - The emergence of service providers using sophisticated metering as a platform for a range of services and, perhaps, contracting on a pass through basis with generators.

11.0 OTHER COST ISSUES

- 11.1 As part of the brief for this project, we have undertaken a limited range of discussions with parties who have a consumer oriented interest in the electricity industry. Generally, there is a consensus that legal separation of lines and energy is essential. We have not found anyone, representing consumer interests, who believes that the combination of disclosure regulations and application of the Commerce Act will eliminate abuse of monopoly or anti-competitive behaviour.
- 11.2 Such discussions as we were able to have (ManFed; a MEUG advisor) and contact with other parties, such as the Consumers Institute, outside the context of this project but within the context of the industry, satisfy us that there is a strong constituency for measures to improve competition in the retail sector.
- 11.3 Associated with this is a view that an important factor in creating competition at the retail level is greater competition in generation. This is an inference which can reasonably be drawn from observing international experience, especially in Norway and in the developing deregulation of the industry at the state level in the US. We consider that a degree of caution should be exercised in extrapolating from those jurisdictions to the New Zealand situation. The structure of our industry and its regulatory framework are significantly different.
- 11.4 This project began with an emphasis on looking at barriers to the introduction of time of use metering; in other words, with the assumption that competition was about enabling people to purchase energy on a time of day basis. This naturally focused on the relationship between consumers and generators with retailers seen as the intermediary enabling the consumer to benefit from developments in generation and in the wholesale market.
- 11.5 As will be clear from the paper, our emphasis has shifted significantly. We put relatively less weight on the immediate benefits of a shift to time of use metering and relatively greater emphasis on the importance of competitive pressures within the distribution sector itself. That said, we think it likely that the predominant public view is still one that improving competition at a retail level will require further reform of generation. The current focus on a further break up of ECNZ reflects this.
- 11.6 Views differ as to whether a further breakup of ECNZ would deliver any benefits to domestic and other small consumers. One view is that breakup would have the effect of forcing all generators to bid station by station on a marginal cost basis. If that were the case, then there should be a substantial reduction in prices in the wholesale electricity market. Another view is that the broken up companies would still try to bid in to the wholesale market at prices which would give them their required rate of return. Holders of the first view argue that this will not be possible; at any given moment there will always be significant excess capacity in the system so that it will not be possible for

generators, once there are a sufficient number in the market, to avoid bidding in on a marginal cost basis.

- 11.7 Assuming that breakup did lead to a reduction in wholesale electricity market prices, it is far from clear that this would pass through to consumers unless there were genuine competition at a retail level. Without this, it remains possible energy traders would be able to capture much of the benefit of reduced prices.
- 11.8 We accordingly argue that regardless of the decision which Government finally takes on generation, its first step must be to facilitate genuine competition at the retail level.
- 11.9 As well, we also believe that there should real benefits for small consumers from sources such as:
- Further rationalisation at the retail level and, as a consequence, the stripping out of the costs incurred with the existence of a series of small stand alone businesses (in this respect, one very experienced informant pointed to the net present value of the savings achieved through the Energy Direct/Capital Power merger, noted that most of those were coming through business rationalisation, and speculated that equivalent rationalisation, across the network industry, could produce savings with a net present value in excess of \$1 billion).
 - Tighter discipline in the regulatory environment, with measures such as definition of an acceptable WACC and the encouragement of a legal separation of lines and energy businesses by limiting the potential to earn in excess of WACC to separated lines businesses working within an incentive framework designed to encourage passing on savings to consumers.
 - The potential benefits from bundling services so as to rationalise the costs associated with the separate billing metering etc of the range of utilities used by the typical household.
- 11.10 The obvious candidates to lead further rationalisation in the industry are the trusts which have 100% ownership of their associated energy companies. Their primary concern must be to ensure that their consumers (their ultimate owners) receive energy services on a least cost basis. Accordingly, we would expect to see energy trusts actively pursuing rationalisation opportunities (not with standing the recent collapse of the merger negotiations between the Marlborough and Tasman Trusts).
- 11.11 In saying this, we are not advocating divestment or privatisation which we see as a separate issue. We are advocating rationalisation which optimises the interests of consumers. One possible outcome is a situation in which trusts continue to own their local networks but divest themselves of all of their competitive interests including network management as such.
- 11.12 The situation will be somewhat different for energy companies where there is a substantial element of private ownership. As already noted (see 5.13 above) we believe that the regulatory environment will need to encourage amalgamations by making it clear that owners can expect

to receive financial benefits (provided that there are genuine cost savings as a result of amalgamation).

11.13 In summary we consider that there is a need to shift the emphasis of the debate away from the presumed benefits of enabling consumers to purchase power competitively on a time of day basis towards areas where there is a greater potential for cost reductions.

12.0 REGULATORY FAILURE?

- 12.1 In MDL's judgement New Zealand now faces a very real risk that the "light handed" regulatory regime will collapse and be replaced by some form of heavy handed regulation. We base this judgement on two factors:
- the clearly substantial and rising level of discontent regarding how customers have been treated in the post-reform environment.
 - the seeming reluctance of most distributors to move, proactively, on enabling competition. In our view, this stance on the part of energy companies is extremely short sighted. The Government faces a number of strong incentives to demonstrate that it can manage change in monopoly industries without unduly damaging the interest of consumers. Ahead of Government is major reform in infrastructure such as roading, water and wastewater. Unless Government can demonstrate that it knows how to ensure that the interests of consumers of monopoly infrastructure services will not be adversely affected by restructuring, the prospect of much needed reform in those important industries will be much reduced.
- 12.2 We consider that energy companies may have underestimated Government's need to demonstrate that competition is alive and well in electricity and that, notwithstanding the monopoly character of the lines business, the interests of consumers can be adequately protected.
- 12.3 When we began this project, the Government had made a policy decision to amend the Electricity (Information Disclosure) Regulations with effect from 1 April 1998. That decision has now been put on hold pending the outcome of a more comprehensive review of the industry. The implication is obvious. Government is clearly contemplating more fundamental changes which could include:
- forced separation of lines and energy.
 - heavy handed regulation of distribution (perhaps following the Australians in adopting the UK's RPI minus X regime)
- 12.4 We consider that the prudent response for energy companies is to move quickly to defuse Government's concerns. The obvious first step is to facilitate competition through deemed profiling.
- 12.5 We would be tempted to argue that companies should follow this by voluntarily separating their lines and energy businesses, or otherwise putting in place measures which would give clear assurances that they were indeed complying with both the spirit and the letter of the "light handed" regime (this could be done, even on a business unit basis, by putting in place appropriate checks and balances including means of validating separation)

13.0 CONCLUSIONS: IMPLEMENTATION

Conclusions

- 13.1 The context for these conclusions is the clear intent of the Minister of Energy that domestic (and other small) consumers should be able to choose their supplier and that, if the industry itself cannot deliver this choice, then the Government will need to use its powers of regulation.
- 13.2 The Minister's objective is not simply competition for its own sake, but to achieve public recognition that the electricity reforms have brought benefits for small consumers.
- 13.3 Against that background, we reach the following conclusions:
- The immediate objective must be to make choice a practical option for all small consumers;
 - This means adopting a strategy which makes the exercise of choice as cheap and as simple as possible;
 - Time of use metering, although technically superior to other options, faces costs (financial and behavioural) and other difficulties which mean that it should not be relied on as the preferred means for moving, immediately, to a competitive environment;
 - Instead, deemed profiling offers the best option for the creation of a competitive environment at the retail level. Our analysis concludes that it would:
 - remove the "captive consumer" phenomenon;
 - encourage separation of line and energy charges;
 - provide an incentive for a move to time of use metering; retailers competing for consumers on a deemed profiling approach will do so not simply in order to sell electricity, but to attract consumers to whom they can then market a range of other services for which smart metering technology will be necessary.
- 13.4 We further conclude that the potential benefits to small domestic and other consumers from purchasing electricity competitively need to be complemented by other regulatory and structural initiatives. Thus:
- Definition of an acceptable Weighted Average Cost of Capital would inhibit lines businesses from earning what in practice would be excess profits through overstating their WACC;
 - The regulatory environment could be redesigned to encourage a separation of lines and energy businesses as separate subsidiaries within common ownership. A possible approach would be to:
 - so long as line and energy businesses remain bundled, restrict the earnings of the lines business to WACC as a maximum;
 - allow unbundled lines businesses to earn in excess of WACC provided that the benefits were shared with consumers and there were clear structural and incentive arrangements to ensure that

the lines business had good reasons to resist excess cost allocations or undercharging for services rendered to other parts of the group;

- encourage further rationalisation. In this respect, the Government should be able to look to the trust owned energy companies and the trustees of energy trusts to take the lead. There are substantial gains to be had through rationalisation (without requiring that networks pass out of local ownership). The trust companies, which are essentially consumer owned, should have reducing costs to consumers, through whatever means are available, as a primary objective.

- 13.5 There is a need to address concerns with the ODV regime but this will need to be balanced against the fact that a number of investors have made their commitments on the basis of the present regime.
- 13.6 Government's decision to defer amending the Electricity (Information Disclosure) Regulations in favour of a more comprehensive review of the industry implies that it may be preparing draconian steps to force competition on the retail sector and/or move to a more heavy-handed regulatory environment. In order to pre-empt this outcome, it is in the interests of energy companies to move quickly to make a competition a reality.

Implementation

- 13.7 Some of the measures proposed in this paper require government intervention, but the majority do (or should) not.
- 13.8 There is, first, a need for an informed constituency to argue for the measures outlined in this paper. In this respect, it will probably be necessary for Government to take the lead, but to do so in association with a broad range of consumer groups. This suggests development of a communication strategy focusing on key opinion leaders from organisations with a consumer interest or focus. This should include not only bodies such as The Consumers Institute and groupings working on behalf of low income New Zealanders, but also business organisations such as the Manufacturers Federation, the Chambers of Commerce and others whose members will benefit from increased competition.
- 13.9 We have considered the possibility of regulating for deemed profiling. We regard this as sub-optimal. Considerations such as:
- The shortage of Parliamentary time;
 - The possible difficulty in drafting regulations;
 - The resistance potential in moving to full compliance,

all argue against a regulated approach if this can be avoided. Instead, we consider that the Government should make it plain to the industry that it expects to see wide-spread adoption of deemed profiling on a voluntary basis with regulation seen as a fall back position. On the assumption that the trust owned companies place the interests of their

consumer owners to the fore, they should be quick to adopt this initiative.

13.10 The Electricity (Information Disclosure) Regulations should be redesigned along the lines set out in paragraphs 9.8 to 9.10 to provide positive incentives for separation of lines and energy businesses and to reward owners for further cost reduction initiatives provided that the benefits are shared with consumers.

13.11 The Government should make it clear to trust owned companies that it expects to see more instances of rationalisation with a view to reducing overall operating costs and be prepared to require this, perhaps in a parallel with the 1989 restructuring of local government, if the trusts are slow to respond. As these entities are still substantially in the public domain, government intervention to require rationalisation would not have the adverse impact on investor perceptions of the New Zealand environment which would result from similar intervention with investor owned companies.

APPENDIX 1 - EXTRACT FROM "ENERGY EFFICIENCY IN THE DOMESTIC SECTOR"

Follows:

APPENDIX 2 - DEEMED PROFILING: OVERSEAS EXPERIENCE

1. This appendix outlines experience with deemed profiling in England and Wales, Norway and the US.

England and Wales

2. The industry is committed to retail competition, for all consumers, with effect from 1 April 1998. In recognition of the relatively high cost of half hourly metering, and the huge logistical task of changing in excess of 23 million meters, the chosen means for competition is deemed profiling.
3. Under this approach, a series of at least eight representative load profiles will be developed (the work is currently being carried out by the Electricity Association under contract to the regulator; the work is still confidential).
4. There are grave doubts regarding the wisdom and feasibility of the UK approach. The intention is that every consumer, regardless of whether or not the consumer has opted to purchase electricity from a different retailer, will be reconciled daily. Each day the estimated half hourly consumption plus network losses for each installation will be adjusted for national temperatures and regional light levels (the adjustments varying by profile) and summed by half hour. There will be a residual error with metered network injection, so all small consumers will be scaled in each half hour to eliminate mismatch.
5. The current estimate is that the cost of implementing the proposals will exceed £300 million. There is concern that the complexity of the system and the huge logistical undertaking (which has now been lessened somewhat by a decision to introduce profile based competition in stages) may result in severe transition problems.

Norway

6. The Norwegian system is much simpler. Instead of the eight or more profiles being developed in the UK, one deemed load profile is used. Small customers are assumed to have the same load curve as the average customer in the grid area, after all hourly metered customers have been accounted for (in Norway, the wholesale market operates on hourly rather than half hourly intervals for charging purposes).
7. Customers have the option, if they wish, of opting for metering but the cost currently discourages this.
8. United Electricity, in its proposal "*A Blueprint for Competition for Small Electricity Users in New Zealand*" comments that one of the weaknesses of the Norwegian approach is that "*some consumers will have real wholesale costs much higher than the deemed profile will recognise (and others much lower). A competing retailer can offer such a consumer a retail price matching this lower-than-real purchase*

cost, forcing the network-retailer to raise prices to remaining consumers”.

9. This criticism seems misplaced. It is correct to note that there will be consumers whose consumption pattern departs from the deemed load profile (by definition it is an average). However, the suggestion that a new entrant operating in a deemed profiling context could put pressure on the incumbent by offering consumers, whose real cost of purchase of energy was higher than the price established by the use of the deemed profile, a lower-than-real purchase cost seems unreal. That consumer is already being charged, by the incumbent, on the basis of a deemed profile (incumbents have traditionally used deemed profiles as a means of establishing their standard tariffs) so that there is already an element of cross subsidy by other consumers, on the same standard tariff, whose real wholesale costs are closer to or lower than the “standard” wholesale cost.
10. The likelier effect, to the extent that there is significant intra-day variation in the spot price, is that consumers whose cost of energy was less than the price established by the deemed profile, would migrate to time of use metering thus, over time, eating away at the element of cross subsidy within their tariff category. We understand from discussion with industry participants that they believe they can readily identify customers who would be attractive targets for such a shift.
11. The more likely price impact, and the one which seems to have happened in Norway, is to put pressure on incumbent retailers whose wholesale cost of energy is higher than the pool cost. Individual generators, who have made unwise investments, and were taking a “captive customer” approach to laying off the resultant cost, or retailers who had signed contracts outside the pool for prices higher than the pool price would come under particular pressure.
12. In Norway, this pressure has resulted partly from the fact that the industry, prior to deregulation, was extremely fragmented and included a number of small retailers with expensive imbedded generation. The ability of alternative suppliers to contract with customers through the use of deemed profiling has forced those incumbents to reduce the price they charge for energy. This has had nothing to do with intra-day variation in price. Instead it has resulted from the fact that alternative suppliers have had a cheaper source of energy than the incumbent.
13. There is little sign that the ability to change suppliers has had much attraction. Eighteen months after introduction of the initiative (which itself resulted, amongst other things, from small consumer complaints that it was hourly metered consumers who were benefiting from the reforms) only some 5,000 consumers had opted to switch suppliers using the deemed profile option. When deemed profiling was first introduced, consumers switching suppliers had to pay a fee of approximately \$NZ40. This fee has recently been removed and may have been something of a discouragement for consumers thinking of changing suppliers. Since the removal, the number of consumers who have switched is now 8,000 in total.

- 14 This is neither surprising nor an indication that deemed profiling has been ineffective. What matters is that the Norwegian system has created the opportunity to change suppliers and thus force incumbents to bring their prices into line with those of alternative suppliers. Thus, in a fashion typical of competitive markets, the threat of competition appears to have been a sufficient discipline to bring benefits for consumers.

US

15. Several different states have been experimenting with the use of deemed profiling. The New Hampshire option is the one looked to, by the United/Southpower initiative, as the most relevant for New Zealand. Its trial commenced on 28 May 1996 and involved some 17,000 small consumers. The state moves to competition for all consumers on 1 January 1998.
16. Four deemed profiles will be used (residential, small commercial, medium commercial and industrial, large commercial and industrial). Reconciliation is much simpler than the UK model. Rather than all individual consumers being reconciled daily, non pilot installations will be treated in bulk.