RETAIL COMPETITION

IN

ELECTRICITY SUPPLY

An Issues Paper

NEW SOUTH WALES

ELECTRICITY REFORM TASKFORCE

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1. Introduction

1.1 Background

Around the globe, great changes have been taking place in that most traditional of industries, the electricity supply industry (ESI). Competition is replacing central planning. The vertically integrated monopolistic structures are being broken up into distinct building blocks, each representing a different function of the industry. Some countries have chosen to reassemble the blocks in different ways to create new competitive structures. Others, for example, the United Kingdom, or more precisely England & Wales, have chosen a competitive industry structure where each component has a distinct function. Australia is following this latter path. In New South Wales the distinct blocks are:

- generation
- dispatch
- wholesale trading
- transmission
- distribution
- retailing (supplying energy services [1] to the end-use customer)

The restructuring is designed to introduce competition where it is feasible. The transport of electricity, known as the "wires" business, involves the transmission and distribution functions. These are regarded as natural monopolies. The high costs of the infrastructure required for electricity transportation make it unlikely that parallel sets of wires would be constructed to allow competing transport providers. The outlook for competition in generation and supply is promising.

Competition in supply means giving wholesale and retail customers a choice of supplier. It is this introduction of competition into supply, more than any other development, which is bringing and will bring the greatest changes and benefits to the industry. Customers are moving from a passive to an active role. Though there may be some cost to the customers in exercising their choice, in future, they will be able to work with suppliers to create an industry which will serve the best interests of the community.

Effective competition between companies providing energy services is, in principle, the most powerful protection for consumers. Two forces, the lure of higher profits and the risk of losing market share, create strong pressure to provide customers with preferred services at minimum cost. The market will be driven by customers' preferences and this will allow for the growth of specialised, dedicated energy service providers working to satisfy a range of customer needs, including, quite possibly, demand-side management options.[2]

1.2 Reform Objectives of the NSW Government

The NSW Government, together with the other States, Territories and the Commonwealth, agreed, at the April 1995 meeting of the Council of Australian Governments (COAG), to the implementation of a package of National Competition Policy reforms designed to increase the competitiveness and growth prospects of the national economy. Analysis undertaken by the Industry Commission indicates that the biggest single source of economic benefit will be reform of the electricity and gas sectors.

In May 1995 the NSW Electricity Reform Statement was released. This document outlined the strategy for reform, with the following three major aims:

- to promote the interests of consumers in New South Wales through the provision of low cost and safe electricity at a high level of reliability;
- to recognise the major impact that the electricity industry has on the environment and to ensure that the reforms maximise environmental outcomes, support environmentally friendly technologies and promote energy efficiency; and
- to reduce the costs of electricity through market based incentives rather than via heavy handed government regulation. This requires that the industry structure gives wholesale and retail customers in New South Wales real choices between competing suppliers and having market arrangements that are consistent with and support the developments of the national markets.[3]

1.3 The National Electricity Market (NEM)

The industry reforms being undertaken in the NSW are just part of the general restructuring of the Australian electricity supply industry. In 1991, the National Grid Management Council (NGMC) was established to implement a national electricity market across the southern and eastern states. The overall objective of the NGMC is to establish an open market for the supply and purchase of electricity, where trade is as free as possible and investment is undertaken when benefits outweigh costs.

The Code of Conduct contains the rules and regulations which are intended to govern the operation of the national market. Chapter 3 of the Code contains all the rules for market operation and sets out the procedures for wholesale trading and some provisions for retail competition.

Those trading in the wholesale market must meet certain requirements. Basically, this involves agreeing to be bound by the Code, satisfying prudential requirements, registering with the National Electricity Code Administrator (NECA) and paying all prescribed fees. Once the application is accepted then that "person" (in the legal sense) is, in the parlance of the NGMC, a "Market Participant". Generators with a significant presence in the ESI and the retail arms of distributors are required to become Market Participants. End-use customers whose electricity requirements satisfy the NGMC criteria may also apply to become Market Participants. The main criterion is demand level. The NGMC proposes to set a demand level and customers with demand above this figure may participate in the market. This level is termed a "threshold limit". There will also be a transitional program for the progressive lowering of the threshold. The details of participation criteria are still being developed.

1.4 New South Wales Electricity Reforms

The first step in the reform process in NSW was to separate transmission from generation. The Electricity Transmission Authority (trading as TransGrid) was established to manage the high voltage transmission network.

Two working groups made recommendations for appropriate structures for distribution and generation. The Distribution Review Group recommended a reduction in the number of distributors from 25 to six (See Appendix A). Within each distributor, there would be separate accounting arrangements for the functions of providing network services. This is now one of the agreed principles governing access to the distribution network.[4] The Generation Working Group recommended that Pacific Power be divided into two or three generating companies. The Government chose the option that recommended dividing Pacific Power into two companies.

This restructuring of the generation and distribution sectors is designed to encourage competition in the wholesale market. With such competition and an effective regime governing access to the transport system, (that is, both transmission and distribution networks) the stage is set for retail competition.

Reform Timetable

The aim is to have the NSW reforms in place before the start of the national market, tentatively scheduled for September 1996. The timetable for action in New South Wales is:

1 October 1995	Establish the six distribution businesses
1 March 1996	Corporatise each distribution business Start state wholesale electricity market
1 September 1996	Start national wholesale electricity market Introduce state retail competition

1.5 The Retail Market

Once the competitive retail market starts, retailers will compete to provide energy services to the end-use customer. The functions of a retailer are to:

- buy energy through the wholesale electricity market or from other energy traders
- compete with other suppliers to supply electricity in the retail (competitive) market
- procure network services (connection to and use of the network) on behalf of end-use customers
- provide other energy related services to customers

Providers of these energy services may be, amongst others:

- retail businesses of distributors, both those associated with the local network owner ("local retailer") and those operating outside their own network areas ("remote retailers")
- companies not necessarily owning electricity generators or networks (energy traders, large industrials or property leasing companies, for example)
- generators

This competitive scenario is in direct contrast to the existing situation in the retailing of electricity. At present, with rare exceptions, an end-use customer must buy electricity at a regulated tariff from the distributor who has a monopoly right or franchise over the area in which the customer uses the electricity.

Customers who have a choice of retailer are referred to as "contestable" or "non-franchise"; those who do not, are termed "franchise" customers. The introduction of retail competition will mean moving from a wholly franchise market to one which is partly or fully contestable. During the transitional period, when franchise and non-franchise supply arrangements may exist side by side, the *local retailers* will be under an obligation to:

supply electricity at regulated prices to franchise customers in the designated franchise area.

1.6 National Market Position on Retail Competition

The movement to retail competition must be achieved within the guidelines of the national market specifications. The relationships between the different customer classes, and the markets in which

they will be able to operate, in the framework of the national market are shown in Figure 1. A brief description of the roles and responsibilities of each of the customer groups is given in Appendix B.

Since we are only looking at the retail market, the term used in this paper to describe those customers who are free to choose where they purchase their energy is "contestable".

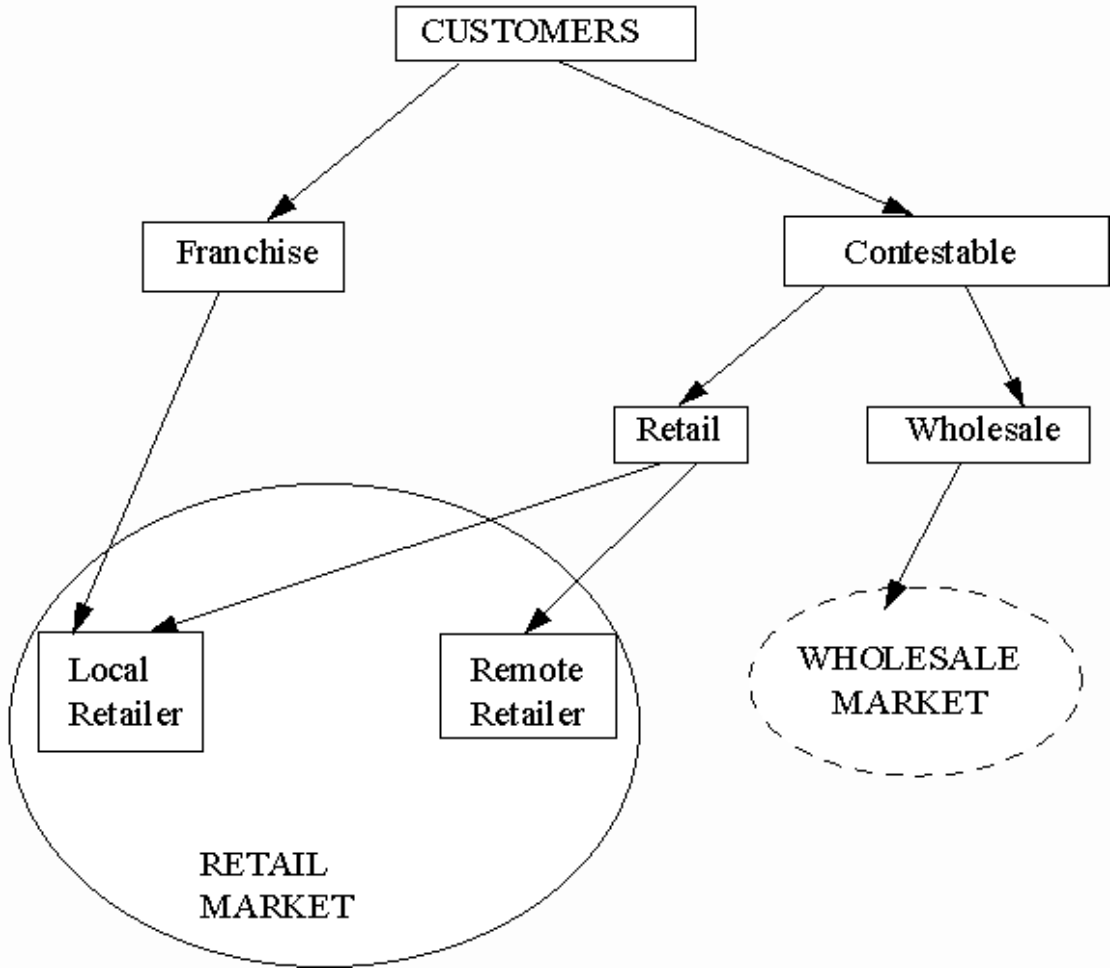
1.7 The Implementation Process

Retail competition offers customers the ability to shop around. However, the implementation of retail competition does involve costs in establishing technical arrangements. The process must be directed so that the benefits outweigh the costs The implementation of retail competition in NSW must meet the requirements of the national market and be introduced in such a way that:

- the benefits of competition are maximised, recognising that regulatory frameworks can be adapted to promote various forms of competition
- the interests of all customers are protected, recognising that there are trade-offs to be made here
- new entrants to the market are encouraged, or at least are not arbitrarily deprived of opportunities to participate
- the process is cost-effective and the costs and inconvenience to customers seeking alternative suppliers are minimised

FIGURE 1

CUSTOMERS IN THE NATIONAL MARKET



- environmental considerations are taken into account

All customer classes should be able to participate in the competitive market. They should not be arbitrarily excluded from, or substantially delayed in, receiving the benefits of increased competition. The process of reform must be carried out in a manner that does not compromise the financial integrity of the existing electricity businesses and continues to provide them with a reasonable opportunity to be profitable.

This paper sets out a range of issues that will have to be addressed in opening up the market to retail competition. Decisions will need to be taken on these issues, and taken with regard to the requirements of all parties. Comments are sought from across the industry and consumer and environmental interest groups. Active discussion will be encouraged to ensure a smooth, well-managed transition to a competitive retail market.

2. MARKET STATISTICS

There are now six retailers in the NSW market. Tables 2.1 and 2.2 show sales by customer class, and the number of customers they serve. The approximate accounting values of distributors' assets included in Table 2.2 is for the total business - retail and wires. While no precise asset allocation between the two businesses is available, most of the assets are assigned to the network, that is the wires business.

TABLE 2.1

NSW DISTRIBUTORS' SALES BY CUSTOMER CLASS[1] 1993-94

Distributor	Sales in GWH			
	Residential	Business	Others [2]	Total
MetNorth Energy	7,083	11,003	699	18,785
MetSouth Energy	4,305	5,592	429	10,326
NorthPower Energy	2,125	1,927	163	4,215
MidState Energy	829	1,122	60	2,010
Energy South	1,275	1,973	158	3,406
Far West Energy	62	217	5	284
TOTAL	15,678	21,835	1,514	39,027

[1] Estimates prepared by NSW Electricity Reform Taskforce based on 1993-94 data for the 25 former distributors provided by the Department of Energy.

[2] Includes Public Lighting and others Classification (Irrigation, Public Institutions).

TABLE 2.2

NSW DISTRIBUTORS' VALUE OF SALES, ASSET VALUES AND CUSTOMER NUMBERS [1] 1993-94

Distributor	Sales ($million)	Assets [2] ($million)	Customers ('000)
MetNorth Energy	1,930	3,692	1,251
MetSouth Energy	1,041	1,955	649
NorthPower Energy	474	760	358
MidState Energy	207	379	113
Energy South	327	536	230
Far West Energy	24	35	11
TOTAL	4,003	7,357	2,611

[1] Estimates prepared by NSW Electricity Reform Taskforce based on 1993-94 data for the 25 former distributors provided by the Department of Energy.

[2] These are accounting values which will change when the distributors are corporatised.

Each of the NSW metropolitan distributors has larger sales than any of the distributors in other states, see Table 2.3.

TABLE 2.3

DISTRIBUTORS' ENERGY PURCHASES[1] 1993/94

	NSW	3 STATES NSW, VIC, SA	4 STATES NSW, VIC SA, QLD
		MWh	
New South Wales	39,695	39,695	39,695
Victoria		25,330	25,330
South Australia		8,423	8,423
Queensland			20,604
Total	**39,695**	**73,448**	**94,052**
	% SHARE OF RETAIL SALES		
NSW			
MetNorth Energy	48%	26%	20%
MetSouth Energy	26%	14%	11%
NorthPower Energy	11%	6%	4%
Energy South	9%	5%	4%
MidState Energy	5%	3%	2%
Far West Energy	1%	1%	1%
NSW Total		**54%**	**42%**
VICTORIA			
Citipower		6%	5%
United Power		8%	7%
Powercor Australia		10%	8%
Solaris Power		4%	3%
Eastern Energy		6%	5%
Victoria Total		**34%**	**27%**
SOUTH AUSTRALIA		**12%**	**9%**
QUEENSLAND			
South East Qld			12%
Capricornia			3%
North Qld			2%
Far North Qld			1%
Mackay			1%
South West Qld			1%
Wide-Bay Burnett			1%
Queensland Total			**22%**

[1] Estimates prepared by NSW Electricity Reform Taskforce based on 1993-94 data for the 25 former distributors provided by the Department of Energy.

3. INTRODUCING RETAIL COMPETITION- ALTERNATIVE APPROACHES

In a fully competitive market there are no franchise customers. To achieve partial or full retail competition, some way must be found of reducing or eliminating the statutory franchise supply arrangement presently in existence. Alternatively, eligibility for the contestable market has to be broadened. How will this be achieved?

There are two different ways of approaching the issue. One way is to control the entry of customers into the market by some selection process. The traditional approach, one that is being followed in the UK and Victoria, is through the mechanism of threshold limits. This means that customers whose maximum demand is below a prescribed threshold have no choice of supplier. This threshold is then progressively lowered, thus opening up the market to more customers. A variant on this approach, controlling the introduction of retail competition by placing constraints customers, is to group customers, for example, by geographical area, then allow successive entry. The criterion for entry is no longer related to electricity usage.

An alternative, more innovative approach, is to move the control constraint to the industry, that is, the retailers. This would allow the existing NSW retailers to compete for all customers, but would limit new entrants to the retail sector. This approach would be accomplished by setting a statewide quota for the contestable load and then using a tendering process to allocate the rights to compete to supply volumes up to that quota to new entrants. Each of these approaches is outlined below.

3.1 Controlling Customers

3.1.1 Threshold limits

Under this arrangement, customers could choose to enter the contestable market once their energy requirements met a pre-determined threshold.

Defining/Setting the Limits

In setting threshold limits, the practical considerations of adequacy of metering, availability of data handling facilities, and the costs of installation to the customer, both current and future must be considered. This is not an easy task. Metering and data handling for a contestable load will have an upfront cost of approximately $1,500, plus an annual cost per customer which could be similar to the upfront cost, **based on today's prices**. It would be a mistake, however, to take today's prices as indicative of even the near future. The prospect of a market could well speed up delivery and reduce costs more quickly. The speed at which metering systems are introduced, and the consequent reductions in costs per customer as numbers increase, will influence the timetable for opening up the market and *vice versa*. A further question which arises is whether sufficient meters will be available to fulfil the demand, or whether there may be waiting lists.

The following table indicates customer numbers above threshold limits of 10MW, 5MW, and 1MW in the five states.

TABLE 3.1

APPROXIMATE NUMBER [1] OF CUSTOMERS WITH DEMAND ABOVE THE SPECIFIED LEVEL

Customer Number	>10MW	>5MW	>1MW
NSW	40	90	530
Queensland	30	65	515
South Australia	10	25	100
Tasmania	8	14	24
Victoria	21	46	330

[1] The numbers are cumulative, ie the 90 NSW customers with demand above 5MW include those 40 customers whose demand is above 10MW.

Subject to metering and data handling facilities being either in place or easily installed **and leading to a manageable system**, the initial threshold could be set to maximise initial access to the market. However, the sooner the threshold is reduced and the greater the rate at which it is lowered, the greater will be the uncertainty facing retailers. The uncertainty will be a function of each retailer's customer profile, that is, the number of customers in each category and their energy consumption as a percentage of the total. As customers become eligible to choose their retailer, some retailers may risk losing significant sales volumes. The GWh sales figures, by customer class, in Table 2.1 highlight the possible extent of the risk.

The Taskforce seeks comments on:

- ***selecting an initial limit***
- ***a time path for the lowering of the threshold limits***
- ***the actual thresholds at each point of change***

In setting threshold levels, should consideration be given to developments in other jurisdictions? Is it necessary to have uniformity across all jurisdictions?[5] If not, suppliers in a state, say, with a low threshold could argue that they were disadvantaged because, while other markets were closed to them, their market was open to all. There is, however, the practical reality that qualified customer numbers, and hence load, vary from state to state.

The Taskforce seeks comments on the question of the jurisdictions moving in unison to lower the threshold limits.

Demand or Energy Based Limits?

Threshold limits in the UK are based on demand, as are some proposed schedules in California. Victoria, while selecting a demand-based definition for the initial threshold limits, is moving to an energy-based schedule as the threshold lowers.

A demand-based initial threshold limits access to those large customers who have adequate demand-metering already in place. However, as the threshold is progressively lowered fewer and fewer customers will have demand-metering in place. A judgement based on (previous years') energy consumption, customer class and current tariff would be needed to assess their annual maximum demand and hence qualification for the contestable market.

Demand thresholds tend to reward those customers with peaked load profiles who, from a network capital investment perspective, are "inefficient". A threshold limit based on a minimum average energy consumption, over, say, the previous two years, is a more precise measure at lower levels where demand metering is non-existent. Under this arrangement, those with high energy bills will enter the competitive market sooner. The key market measure on which payment will be made for purchases, and the principal driver of total costs, is energy. Regardless of what method is chosen for the higher threshold limits, it would seem sensible, at lower levels, either to have energy-based limits or to set the threshold based on the dollar amount of the electricity bill.

The approximate numbers of NSW customers above various energy-based thresholds is given in the Table below:

TABLE 3.2

NUMBER [1] OF NSW CUSTOMERS WITH CONSUMPTION ABOVE SPECIFIED LEVELS

>10MW or 40GWh	>4GWh	>1GWh	>200MWh
40	530	1,600	7,000

[1] Again, the numbers here are cumulative.

The Taskforce seeks comments on preferences for demand or energy-based limits.

3.1.2 Other customer selection criteria

Setting threshold limits is one way of managing customer entry into the contestable market. Other ways of selecting which customers (and when) to move into the market could be equally effective; for example, using geographic areas. Customers from one area would enter the market, followed over time by those from the remaining areas.

A variation on threshold limits is mixing customers on the basis of energy use. Those with demand within a certain range could be combined with those with demand within another range. The ranges could be chosen to permit a mixture of high and low use customers. These two methods offer contestability to a wider selection of customers.

The Taskforce seeks comments on the workability of these selection criteria and/or suggestions on any alternative selection criteria.

3.2 Controlling Suppliers - Retail Supply Rights

Under a supply rights approach, all customers, in principle, are given a choice from the outset. They are able to choose their supplier from among existing retailers within the state and new entrants. If customers choose other than their local retailer, then, as per national market requirements, they would be obliged to install a metering/communication system. Due to costs of metering and billing (as discussed in more detail in Section 4.1, below) and possibly the actual availability of meters, there will be barriers to customers taking up the opportunity of dealing with an alternative retailer.

Supply rights are offered to new entrants through a quota system. The quota could be a specified percentage share of the market which would increase over time. Increases in the quota would follow a prescribed path. The right to supply would be opened to tender. In NSW there are some

$4 billion or approximately 40,000GWh of sales by retailers annually. To allocate supply rights either a $ or GWh unit of account could be used. The units could be in blocks of a chosen size. For example, if it were decided to allow new entrants to compete for 10% of the market, under a GWh sales volume, there could be "lots" of 10 x 4,000GWh or 40 x 1,000GWh. Setting a maximum limit on the holdings of any individual party is not envisaged.

The Taskforce seeks comments on this approach; and in particular seeks comments on:

- ***choice of the unit of allocation for supply rights***
- ***effects on existing retailers***
- ***the likely uptake of supply rights***

Supply rights would be issued through a licensing system. If the market developed, secondary trading in the rights would be permitted. Two different licences would be offered:

- a licence for the retail business of the distributors
- a licence for new retailers

This would be a transitional arrangement only. After a certain point, there would be only one retail licence; all suppliers would then compete on an equal footing. The licence for the existing retailers might be a "deemed" licence only, at least until the end of the transitional period. However, after that, existing retailers would require a licence.

Customer Choice

Metering costs form a natural technological barrier to entry to the competitive market, unlike the artificial barriers of threshold limits. Metering costs, while high today, could reduce very rapidly. The market for real-time metering is not limited to Australia. Changes in ESIs across the world are creating a demand for these real-time meters. If anything is certain it is that the pace of technological advance is faster than ever predicted. One just has to look at the proliferation of mobile phones to recognise this. From being playthings of the rich and famous (and infamous possibly) just a few short years ago, they are now almost regarded as standard equipment. The communications interface associated with the meters does not necessarily have to be dedicated to electricity use measurement alone; for example, home security services could be offered too.

Customers will be able to exercise their option to choose when their marginal value in opting for an alternative supplier is greater than the cost of the meter and associated systems. They will not have to wait until their usage meets the threshold eligibility criterion or wait until their area is moved into the contestable market (although there could be waiting lists due to shortages of meters, or rationing of meters by price). Contestability will go to those who value it most, and it will be a customer-driven choice.

Customer Protection

Under a franchise arrangement customers are protected by regulated tariffs. Similar protection for customers would be put in place with this approach. The local retailer essentially has a competitive advantage (the costs of switching to alternative sources of energy are high). Because of this advantage an obligation would be imposed on the retailer to supply certain customer classes at a regulated tariff. The setting of tariffs would remain the responsibility of the Government Pricing Tribunal (GPT). This arrangement could be formalised in the licensing agreement.

Retailers

How would retailers fare under the supply rights approach? Existing retailers would have a mobile customer base with more uncertainty than under a threshold limits approach. However, if, under a threshold limits approach, customers were allowed to aggregate loads, the uncertainty in both approaches would be much the same.

The movement of customers outside the NSW retailer group could be controlled through the supply rights system. Setting aside this "outside" movement of customers, among the retailers there would be only a transfer of sales. Total sales would remain the same. The more important question is whether the existing retailers would compete aggressively or would tacitly collude in order not to destroy one another's profitability.

Vesting contracts [6] may not necessarily be required. Although it removes price uncertainty by specifying the price, a vesting contract locks the retailer into purchasing a specified quantity. A retailer would want to match his purchases with his sales, that is have back-to-back contracts. With an uncertain customer base this is not be possible. The need to match sales to the purchase obligation no longer exists when vesting contracts are removed.

Retailers are given more freedom to operate in the wholesale market. Instead of vesting contracts, they may choose bilateral contracts (generator-retailer) to give some degree of security, tailoring contracts to cover expected demand. Retailers will have a responsibility to educate themselves quickly in the ways of the new market. In the absence of vesting contracts they will not have the security of a learning period.

Although customers would be offered an immediate choice, it may be that, for some, the barriers in switching to contestability are insurmountable. Nonetheless, immediate contestability still allows customers to take advantage of the choice when these technological barriers of metering and data collection costs are removed. At worst, customers are no more disadvantaged than if threshold limits were put in place. At best, customers have a very good chance of becoming contestable sooner rather than later, because the pace of technological change does tend to accelerate, particularly in the area of electronics/communications.

The Taskforce seeks comments, particularly from customers, on the desirability of opening up the market sooner rather than later, even though there may be barriers to immediate contestability.

Comments are also sought on whether it is desirable to open the market to existing NSW distributors in advance of new entrants.

4. ISSUES AFFECTING THE INTRODUCTION OF RETAIL COMPETITION

4.1 Metering and Data Collection

Most electricity consumers in NSW are aware that there is a price difference between peak and off-peak usage. However, customers may not be aware that under the new market arrangements the wholesale price of electricity will vary every half hour. Some customers (large industrial users and those, but not all, with time-of-use meters, for example) have metering systems in place which can register half-hourly usage. However, the majority of customers do not. Indeed, the number of half-hourly meters in place is only on the order of hundreds in a meter population of a several millions. In order for customers to respond to prices, ideally, everyone should have a half-hourly metering system in place. Customers will be responsible for their metering costs.

Metering, data collection and settlement [7] costs can be high. Indicative estimates of the cost of installing a half-hourly meter and providing communication interface range upward from $1500. To this must be added the settlement costs, which are as yet an unknown quantity. Of relevance may be the UK experience, where the level of metering and settlement costs has proven a concern in the move toward full retail competition. As the contestable limit is lowered, the average size of the customer's bill decreases. Clearly, smaller customers will be more sensitive than larger customers to the costs of metering and communication systems. Although costs have fallen, customers in the UK still face an initial bill of £500+ for installation and ongoing costs of £400+. For a small customer whose annual bill would probably be roughly £400 per year, contestability today is not a realistic option.

The Taskforce seeks comments on the expected movement over time for:

- ***meter and installation costs***
- ***communication interface costs***
- ***settlement costs***

Existing metering of the NSW retailers and some of the state's larger customers will satisfy the requirements for meters set down in the Code of Conduct, or will be able to satisfy those requirements with minimal upgrading. Additionally, those customers who already have time-of-use meters installed will be able to modify their existing systems. However, the upgrading necessary will differ from customer to customer, as will the cost. Adequate metering and data handling facilities currently do not exist for all customers.

The Taskforce seeks comments on:

- ***the penetration of half-hourly metering within areas according to customer class and/or electricity consumption***
- ***the likely costs involved in upgrading the different metering systems and an estimate of the time that would be involved in the upgrading***.

The structure proposed for the retail market must be compatible with the metering that will exist at implementation and as the transition progresses. An issue that needs to be addressed here is the availability of metering systems (to the appropriate technical standards and specifications) and more importantly the availability of qualified and registered meter installers. The time required for implementation of the necessary metering and indeed, the availability of meters, may, in some cases, dictate the speed of reform.

The Taskforce seeks comments on:

- ***the feasibility of introducing half-hourly metering to all the community given possible constraints on availability and cost and expertise***
- ***the level of Information Technology costs associated with the move to half-hourly metering***

Ultimately, advances in technology should allow customers of all sizes, down to the level of households, access at reasonable cost to a metering system, and thereby access to choice of supplier under the Code (see Section 1.6). As noted above, during the transitional period, cost and availability constraints may well prove a barrier to introducing universal metering. With high costs it is likely that there will be customers who would like to have a choice of retail supplier but will be unwilling to outlay significant sums. For some customers, even if costs were not a problem, their desire to become contestable might be thwarted by non-availability of meters.

The Taskforce seeks comments on whether it is appropriate to make installation of a half-hour meter mandatory if metering and associated costs or non-availability of meters prove a barrier to entry into the competitive market.

4.2 Alternatives to Metering

If a workable alternative to metering could be put in place then would metering for all households be necessary?

The Taskforce seeks comments on allowing alternatives to metering either in the short or long term.

Proposals put forward in California offer customers a choice between a rate scheme which reflects usage of electricity in real time, and one which averages the cost of electricity and then multiplies it by the monthly consumption figure.

The Taskforce seeks comments on the feasibility of introducing the Californian scheme, or a similar scheme into NSW.

Load profiling

The UK plans to offer load profiling as an alternative to metering. Load profiling utilises estimates of the pattern of consumption of particular categories of customers across each half-hour of the day. By arrangement, the remote retailer who supplies the electricity to the customer pays the local retailer as if actual consumption had conformed to a specified load profile. Total consumption is read from the customer's meter and allocated to each half-hour using the specified profile. The risk of incorrect profiling is borne by the local retailer. Accordingly the local retailer must be given some say in determining whether a proposed load profile is acceptable. Errors in profiling may pose a significant financial risk for retailers.

In the UK estimated accounts are often the norm, with reconciliation taking place once a year. Here, however, legislation requires an accurate meter reading every quarter. Customer satisfaction with an estimated account would need to be considered.

If the customer believed errors were being made, the options would be to:

- switch to a competing retailer
- install half-hourly metering.

The two option give the customer protection but installing a meter does incur a cost.

If customers are able to choose between profiling and metering then:

- those who benefit most from their actual consumption being out of line with their profile are more likely to continue profiling
- some retailers could find themselves disadvantaged.

The Taskforce seeks comments on the workability of load profiling.

4.3 Operational Responsibilities

When the national market is operational, the responsibility for data collection and settlements rests with the national market manager (NEMMCO). During the transitional period, this function will be undertaken by TransGrid. Depending on the timing of the introduction of the national market and the opening up of the NSW retail market to competition, there may be a period when the numbers of eligible customers choosing to become contestable will increase significantly. Will TransGrid want to take on the extra burden/costs of the associated data collection/settlements procedures?

Would it be advisable for the retailers and/or distributors to undertake some aspects of the settlements work? Alternatively, could an independent body do the work?

The Taskforce seeks comments on who should be responsible for data collection and settlements during the transitional period.

4.4 Aggregation

Aggregation is the term used to describe the process whereby energy users, for payment purposes, have their energy consumption totalled across different meters. If franchising is removed progressively, threshold levels will be set at each point along a prescribed time path. In order to benefit from entry into the competitive market, customers may wish to aggregate loads either by aggregating loads across multiple sites, or by aggregating at a single site.

An entity such as a commercial operation, or hospital operating out of several locations which do not reach the threshold level individually, but do so in aggregate, may want to argue for eligibility on the grounds of aggregation.

The Taskforce seeks comments on the desirability and/or advisability of allowing aggregation in the above instance.

Similarly, several customers occupying the same site could be ineligible individually, ineligible, but together would meet the threshold level. They may also want to argue their case for eligibility.

The Taskforce seeks comments on the desirability and/or advisability of allowing aggregation in this situation.

Discussion above refers to a "site" without defining exactly what is meant by the term. Some individual sites are quite large and may have multiple meters even though they may be occupied by a single customer. If this is the case, can amalgamation by several customers on one site be rejected? Should the concept of a "site" be dropped in favour of a definition based on the "flow" through a meter. This may not be desirable for a large customer relying on a "site"-based definition where the site has more than one meter.

The Taskforce seeks comments on a workable definition of the term, "site", to be used in conjunction with any decision made concerning aggregation.

On-Selling

Another form of aggregation, in a slightly different context, is on-selling. In a commercial situation, a shopping centre for example, the owner of the complex could on-sell electricity to the tenants. Individually, these customers may not be eligible to join the competitive market, but collectively they can. Should on-selling permitted? If so, should there be any information

disclosure upon the lessor as to lessees' rights? For example, should the on-seller be obliged to inform the lessees of their rights as regard supply?

The Taskforce seeks comments on the issue of on-selling, the degree to which it exists today and whether it should be allowed in the future.

4.5 Existing Contracts

Over 80% of sales to customers in the 40GWh and above market are made on a contractual basis. Included in this percentage are the direct sales made by Pacific Power to large industrial customers. The percentage of these sales declines over time, in 1998 it will fall to round 65%.

If contestability is introduced through the process of lowering threshold limits, customers who are locked into pre-existing contracts may feel disadvantaged. However, if contracts are declared null and void at the start of the state market, a degree of financial uncertainty will enter into the market.

The Taskforce seeks comments on the following:

Should existing contracts remain in place for their full term, or should they be declared null and void at the start of the market?

If threshold limits are chosen as the means by which contestability is to be introduced, should the terms and conditions of existing contracts be linked in some way to threshold limits?

4.6 Vesting Contracts

Participants entering a competitive market, and especially one in which there is excess capacity, could be subject to the risk of price volatility. One method of controlling the price path during a transitional period is through vesting contracts. Vesting contracts apply only to the wholesale market, between generators and retailers, or possibly between generators and large customers. A vesting contract between a generator and a large industrial customer might be necessary if the existing contracts of large customers were declared null and void (as discussed above).

The contracts are purely financial instruments. Quantities and prices (with escalation/deflation provisions) are specified for all periods across the duration of the contract. Essentially, a retailer is locked into a price path for some or all of his purchases. This has implications for transitional arrangements in the retail market. The lower the threshold for contestability, the fewer the number of customers buying on regulated tariffs. A retailer could be contracted for volumes greater than sales and/or at a price greater than the competitive price. Some relationship between vesting contracts and the introduction of contestability is clearly necessary.

The Taskforce seeks comments on the use of vesting contracts to control the price path and the implications for the introduction of competition into the retail market.

4.7 Obligation to Supply

The existing "Obligation to Supply" is defined within the framework of a specified geographical area. The local distributor is obliged to connect and offer supply under prescribed conditions. Under the changed market conditions, the Obligation to Supply will be redefined as an obligation to connect, and an obligation to supply. In the proposed legislative framework, the obligation to connect rests with the "wires" business of the local distributor while the obligation to supply is

placed on the local retailer, that is, the local distributor's supply business. The obligation to supply may no longer exist in the contestable market, but this obligation will still remain in effect for supply to franchise customers.

Keeping the obligation to supply in place is reassuring for the customer, as it provides a safety net, but it may pose some risk to the commercial viability of the retailer obliged to provide that supply. The risk is that of being obliged to supply predominantly low-margin customers, and thus being unable to derive a revenue stream that will cover total costs.

Social responsibility requires that there always be some sort of protection for low income residential customers, possibly guaranteeing supply at a regulated price. How far the offers of supply at a guaranteed price should be incorporated into the obligation to supply and the timeframe over which they would extend are issues that need to be resolved. Another issue is who should bear the costs associated with any social program to provide guaranteed supply at a fixed tariff to low income earners.

The Taskforce seeks comments on whether supply at a guaranteed price should be offered as part of the obligation to supply.

4.8 Other Issues

Four sector issues have significant implications for the long term structure of the retail market. These are:

- cross-subsidies
- vertical integration
- joint gas/electricity utilities
- further structural changes

Some of these have been mentioned above, in passing. Even though some may not be immediately relevant, these issues should be addressed as part of a coordinated policy.

Cross-subsidies

Cross-subsidisation is an issue which falls within the ambit of the GPT, which has been addressing the issue. Traditionally, it has been the commercial customer in NSW who has paid the subsidy, and the domestic and rural customers who have benefited. While there has been some reduction in the levels of cross-subsidisation, it is not yet fully eliminated. Any decision on the setting of threshold limits must take into account the degree of cross-subsidisation still existing and the extent to which potential loss of customers might affect a retailer's financial viability if the retailer were left with a large, subsidised customer base. Retailers with tariffs containing a cross-subsidy component face competition from retailers and other suppliers who are not funding subsidised tariffs. This is an important issue for retailers' profitability. Assigning responsibility for the cross-subsidy to the wires businesses may solve this difficulty.

The Taskforce seeks comments regarding the possible effects of cross-subsidisation and its impact on businesses in the move to competition.

Vertical integration

While reform processes around the world have aimed at breaking up the vertically integrated monopolistic utility structures, in the UK there has been a return to a form of vertical integration. Much of the impetus for vertical integration of the distribution companies backward into generation has come from anomalies in the UK regulatory framework; nonetheless it is a genuine concern.

The following integrations could occur:

- backward integration of a retail (supply) business into generation
- movement of generators into the retail side by purchasing or establishing a supply business

Retail supply businesses may want to invest in, or come to some arrangement with, smaller cogeneration units embedded within the distribution network. In fact, this already occurring. [8]

The Taskforce seeks comments on the desirability of controlling vertical integration.

Joint Gas/Electricity Utilities

In order to improve their competitive edge and meet customers needs, retailers may consider providing what could be called total energy solutions. Ideally, this would imply combining roles in both the gas and electricity markets. The process has already begun. A partnership between Australian Gas Light Co and a subsidiary of Energy Initiatives, a New Jersey-based US utility, has purchased Solaris Power, the smallest Victorian electricity distributor.

The introduction of regimes governing third party access to gas transport networks (as required by the Competition Principles Agreement, see Footnote 4) will allow electricity retailers access to the gas market, in line with the freedom gas retailers have to enter the electricity market. To ensure equality of opportunity, the progress of reform in the gas industry should keep pace with reforms in electricity.

Open access to both markets would encourage appropriate use of the two forms of energy. Consumers would benefit from greater choice and by receiving more information upon which to base their choice. Ideally, the introduction of contestability in both the electricity and gas markets should be associated with moves to open up the energy sector generally, so that all forms of energy, including demand management services, can compete on a competitively neutral footing.

Thought needs to be given to whether regulations are required to deal with such questions as ownership, for example, placing limits on shareholdings in joint ventures and degrees of allowable penetration into markets. The creation of joint gas and electricity utilities may aggravate inefficiencies if they lead to greater monopolisation of the energy market.

The Taskforce seeks comment on the following issues as they may relate to joint gas/electricity ventures:

- ***limiting ownership***
- ***limiting participation in either market***

Further Structural Changes

As the franchise market shrinks, market forces may exert pressure to force further changes in the structure of the retail sector. There could be consolidation of state-owned retail supply businesses, joint ventures, for example, buying alliances, could emerge, or there may even be a call for full separation of the retail supply businesses from their associated wires businesses. Measures put in place for the establishment of the competitive market should not prevent any of these developments, nor should they be biased towards any preconceived structural outcome.

Footnote:

1 Energy services can range from simply selling electricity through to providing a whole range of services on energy related matters, for example efficient use of energy
2 Demand-side management (DSM) refers to initiatives which reduce the wastage of electricity in producing services such as lighting, cooling, heating and power.
3 NSW Treasurer and Minister for Energy, Electricity Reform Statement, May 1995.
4 Electricity distribution networks will be subject to access provisions that comply with the requirement of the Competition Principles Agreement between the States and the Commonwealth, which is part of the "Hilmer" competition policy reform package. Details of the access regime are being worked out in the light of the present examination of retail competition issues.
5 States and Territories.
6 Vesting contracts are contracts put in place on besting day, ie the day the (wholesale) market commences. They are a mechanism to control the risk to players of price and volume uncertainties. Additionally, they provide some control over financial returns to the generation and distribution sectors.
7 These are the costs associated with determining the units consumed, calculating charges and issuing the bill.
8 For example, Sithe Energies, MetSouth and Pacific Power are involved in a cogeneration development at Smithfield.

APPENDIX A

RECENT AMALGAMATION OF DISTRIBUTORS

RECENT AMALGAMATION OF DISTRIBUTORS

Six new electricity distributors were formed in October 1995; replacing the former 25 distributors. the new distributors and their predecessors are:

New Entities	**Amalgamating:**
MetNorth Energy	Sydney Electricity
	Orion Energy
MetSouth Energy	Prospect Electricity
	Illawarra Electricity
NorthPower Energy	Namoi Valley Electricity
	New England Electricity
	NorthPower
	Northern Rivers Electricity
	North-West Electricity
	P-CCC Electricity
	Tenterfield Shire Council Electricity Division
MidState Energy	Central West Electricity
	Ophir Electricity
	Southern Mitchell Electricity
	Ulan Electricity
	Western Power
Energy South	Monaro Electricity
	Murray River Electricity
	Murrumbidgee Electricity
	Northern Riverina Electricity
	Southern Riverina Electricity
	Southern Tablelands Electricity
	South-West Slopes Electricity
	Tumut River Electricity
Far West Energy	Broken Hill Electricity
	(name change and corporatisation)

APPENDIX B

NATIONAL MARKET POSITION ON RETAIL COMPETITION

NATIONAL MARKET POSITION ON RETAIL COMPETITION

Customers are divided into two major groups based on whether they are eligible or ineligible to trade in the wholesale market.

Those who are eligible to trade in the wholesale market are called "contestable" customers. Customers who are not eligible to trade in the wholesale market are termed "franchise" customers. Eligibility to trade in the wholesale market does not carry with it the obligation to do so. This is a choice the contestable customer makes, and one which further divides the group into "retail" customers and "wholesale" customers, although the use of the term, "wholesale", is generally dropped in favour of contestable. A brief description of each of the different customer classes is given below. The relationships are illustrated in Figure 1 in the main text.

Contestable Customers

Contestable (or non-franchise) customers are free to purchase electricity from either of two markets:

- the wholesale market for electricity operated by NEMMCO (the National Electricity Market Management Company)
- the retail market

Contestable customers must choose to operate fully in one of these markets.

Retail Customers

Retail customers are a subset of contestable customers. A contestable customer who elects to operate in the retail competitive market, may shop around for the best retail tariff for electricity from registered retailers. In the nomenclature of the NGMC, these customers are known as "Retail Customers". Unlike contestable customers trading in the wholesale market, these customers are not Market Participants (see Section 1.3 in main paper). The retailer (or energy supplier) which the customer chooses will be that customer's Market Participant.

There are two categories of retail customer:

- those who elect to remain with the local retailer
- those who choose an alternative supplier known as the remote retailer

The retail customer who chooses a remote retailer will be required to obtain a revenue (half-hourly) meter and comply with the metering code provisions in Section 7 of the Code of Conduct. The tariff structure will be a matter for negotiation between the customer and the retailer. The information recorded on the customer's meter will be fed directly to the NEMMCO database.

The retail customer who remains with the local retailer will not have to install a revenue meter. However, the customer will still have the opportunity of negotiating with the local retailer on the terms and conditions of supply.

All retail customers will be required to pay network service charges, that is the costs of transporting the electricity to their local network service providers which is the term used to describe the wires business of the local distributor. If the customer prefers, the retailer may arrange to make the payment on behalf of the customer. In this case, the customer could opt to receive a bill with transport costs, that is the charges for using the transmission and distributions networks, and electricity charges bundled together.

Protection for Retail Customers in the National Market

The Code is primarily concerned with Market Participants, that is entities that operate in the wholesale market and are registered with the National Electricity Code Administrator (NECA), the company which administers the national market. The retail customer is not a Market Participant and thus not protected by the provisions of the Code. However, the retailer (or other supplier), from whom a customer gets his energy, trades in the wholesale market and therefore a Market Participant bound by the provisions of the Code of Conduct. If a customer has a grievance with a supplier, the customer is entitled to bring this to the attention of NECA which can properly investigate the complaint. For example, if metering inaccuracies give rise to any claim by a customer that cannot be settled between the customer and the supplier, the customer can take the claim to NECA.

Franchise Customers

Conditions of supply for franchise customers are the subject of the regulatory regimes in place in each of the participating jurisdictions and are not covered by the Code.[1] These conditions of supply include but are not limited to:

- retail tariffs
- obligations to supply and/or connect
- on-selling
- disconnection

[1] NGMC Draft Code of conduct e 3.5

APPENDIX C

OVERSEAS REFORMS

OVERSEAS REFORMS

While a number of countries have introduced wholesale competition into the electricity industry, few have taken the further step of introducing retail competition. The notable exceptions are New Zealand, England & Wales, Scotland and Norway.

NEW ZEALAND

The New Zealand ESI has been through a process of major reform. In 1987, the Electricity Division of the Ministry of Energy was corporatised as the Electricity Corporation of New Zealand (ECNZ). Generation was deregulated in 1987. The transmission grid is now owned, managed and operated by TransPower New Zealand Limited which was set up in 1988 as a wholly owned subsidiary of ECNZ. There is open access to transmission, and network and energy charges have been unbundled. In 1992, the 48 distributors were corporatised. There is financial separation of the functions of retailing and distribution. Progressive deregulation of retailing has taken place. Distribution franchises were abolished in a two-stage process over twelve months, resulting in a fully competitive market. In April 1993, small customers became contestable, followed by large customers in April 1994. TransPower split from ECNZ in 1994.

Retail competition is supported by small independent generating units. Retailers selling outside their own distribution networks must enter into an agreement to reconcile metered quantities with contractual traded quantities. As an independent party, TransPower acts as national Reconciliation Manager. TransPower contracts with distributors for connection to the grid. Energy traders gain access to transmission and distribution through use-of-system agreements with distributors. All transmission and distribution contracts have to be disclosed.

The non-competitive sectors of the ESI are subjected to "light-handed" regulation; that is prices are not directly controlled, but general rules are defined. The Commerce Act (1988) contains provisions for price control that can be "used" as a threat of "heavy-handed" regulation.

ENGLAND & WALES

On April 1, 1990 the UK ESI was privatised, with slightly different structures in Scotland and England & Wales. In England & Wales there are three generation companies (one nuclear), 12 distribution companies (Regional Electricity Companies, RECs) and the National Grid Company which owns and operates the transmission system and also runs pooling and settlements, the latter at arms length. Of the 22 million electricity customers in England & Wales, about 50,000 have demands of 100kW and above (5,000 have demands above 1MW). The franchise customers are protected by regulation which is administered by the Office of Electricity Regulation (OFFER) headed by the Director General of Electricity Supply.

Retail competition was introduced into England & Wales through the mechanism of a second-tier supply licence. In UK parlance, a supplier is someone who buys electricity, either under contract or direct from the Pool, and resells it to final customers. There are two types of suppliers:

- first-tier suppliers - the RECs
- second-tier suppliers - generators, independents and large industrials

Holders of second-tier licences are permitted to purchase energy from the Pool. The industrial giant, ICI, is a second-tier supplier. To supply outside the area in which it owns the wires, a REC must hold a second-tier licence.

The RECs were initially granted franchise protection for customers under 1MW with a progressive lowering of this threshold. In April 1994, the limit was lowered to 100kW and will be removed altogether in April 1998. Customers eligible for competitive supply may elect to remain as tariff customers, but, having taken supply competitively at any time, cannot return to tariff service. Percentage limitations were placed on the permitted erosion of the non-franchise market by the generators. The limitations were written into the second-tier licences.

All suppliers have to meet similar levels of security of supply requirements. Bans on price-discrimination and cross-subsidisation are imposed on the suppliers. Once a customer has moved to a second-tier supplier, under the provisions of Section 17(1) of the Electricity Act, 1989, it would seem that the REC has no further obligation to supply that customer, although the language is not entirely clear on this intent.

Initially, the RECs' supply businesses operated under price control for all customers. The price control governed the prices charged to customers in the competitive market, and those still in the "monopoly" franchise market. In the "1994 Supply Price Control Review", the Director General of Electricity Supply extended effective competition down to the 100kW level, and removed the price control from the competitive market. Regulation was left in place for the franchise customer. The RECs' franchise supply businesses are currently subject to a revenue cap that will be remain in existence until the next review in 1998, coinciding with the removal of the franchise.

Current UK Developments in the Retail Sector

In 1998 the UK retail market will be fully deregulated. Currently, the threshold limit is 100kW (lowered in April 1994) and about 50,000 customers in England & Wales are in the competitive market. Nearly half this number have opted for second-tier suppliers, moving from their local REC. While most of those who have moved are larger customers, the shift away from the local REC has not been confined to this customer class. Over 20% of the smallest eligible customers (those in the 100-300 kW range) have opted for an alternative supplier.

Customers who have switched suppliers have benefited from greater choice of contractual terms and pay significantly lower prices. Interestingly, this benefit has also extended to eligible customers who did not switch suppliers. The incumbent suppliers, moved by the threat of losing customers, have had to match competitive terms.

Arrangements for competitive customers are as follows:

- those choosing to move from the local REC are required to install half-hourly metering and communications equipment
- those remaining with the local REC use existing metering

A 100kW - 1MW customer presently faces a total cost for a half-hour meter and associated communication interface of approximately £150-200. Added to this is an annual charge per metering system of £299. For a customer with demand under 100kW whose bill is probably only

£400 per year, these costs could be prohibitive. OFFER has been investigating ways of lowering these two costs and looking at alternatives to metering.

Large production runs may lower the cost of a meter to around £40-50. There are similar signals for meter installation costs with the cost perhaps falling to £10. A report from OFFER (August 1995) indicates that, for a domestic customer, the settlement (data collection, reconciliation etc.) costs would not exceed 1% of the average bill when deregulation is achieved. OFFER has requested that further work be done on costs.

A Preferred Trading Arrangement (PTA) has been adopted for use in the retail market. Suppliers will be allowed to trade using either:

- half-hourly metered data; or
- demand profiles.

Unlike the current system, where only customers of the local REC can retain their existing metering, under the PTA, customers will be able to choose between alternative suppliers without having to install a new meter. This avoids the metering costs.

In January, a "1998 Coordination Group" was set up to monitor the reform progress in England & Wales and Scotland. Members of this group are individuals from the electricity and gas industries, meter manufacturing companies, consumer groups, and government bodies. The group was given responsibility for reviewing the timetable for reform and identifying key issues and problems which may arise in the reform process. Papers and minutes from the meetings of the group are in the public domain.

NORWAY

The Energy Act of 1990 set in chain a comprehensive restructuring of the Norwegian ESI. The objective of the Act was to create a more flexible, competitive electricity market to promote efficient production and use of electricity. The new system came into operation in May 1992. Competition was not introduced incrementally, instead implementation was full and immediate. Norway now has some 60 generators (99.6% hydropower), a regulated state-owned transmission company, Statnett, which also operates the pool, and about 240 distributors. The distributors range from small local entities serving fewer than 1,000 customers to regional ones with over 100,000 customers. Most of the industry is publicly owned (state and municipal), though there is private ownership (15% in the generation sector, for example). Central regulatory control is limited to granting service area franchises and licensing the building of hydro plant. Tariffs are not regulated but are negotiated by local authorities.

Under the Act the electricity market was deregulated at the generation and retail levels to create a competitive market for the production and sale of electricity. The market environment has seen the emergence of electricity brokers and traders. Customers are offered a wide variety of choice in supply. A customer may purchase from:

- the local distribution company
- a remote combined production/distribution utility
- a production only utility
- the pool
- an electricity trader
- a broker via contracts

Customers are free to meet their need through a portfolio of suppliers and contracts. Individuals are responsible for securing connection and supply at costs established by the supplier. There is no obligation to supply.

All customers are eligible to participate in the competitive market. In practice the costs of changing suppliers have restricted participation to the larger customers (those consuming annually 100MWh or more). These costs include metering costs and transaction fees. The transaction fee is a fixed annual payment made to the network owner to cover administrative and other costs not included in the transport fee. The regulatory authority, Norwegian Water Resources and Energy Administration (NVE) initially set a ceiling for network fees of 5,000 Krone ($1,000) to ensure access fees would not be a barrier to entry. Even so, this has still proven a hurdle for the smaller customers.

More smaller customers are likely to become market participants as access fees to the market and metering costs are lowered. Cheaper metering systems for small users are being developed.

Given the large number of generation companies, development of a competitive generation sector should be assured. In comparison with the UK, the retail market is less constrained, having a wider range of supply options.