

Retail Competition in Electricity Supply

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EXECUTIVE SUMMARY

1. BACKGROUND

1.1 This Report

The Electricity Reform Taskforce has prepared this Report in order to present the Minister for Energy with the preferred approach to the introduction of competition in electricity retailing in New South Wales. The Report responds to the commitment made in the *Electricity Reform Statement* of May 1995 to "give retail customers in NSW a real choice between competing suppliers".

In preparing its recommendations for an implementation process, the Taskforce sought to:

- maintain consistency with National Competition Policy
- promote effective competition
- reinforce the impetus for positive environmental outcomes
- ensure a managed reform process
- strengthen protection for franchise customers during the transition
- realise the full potential for productivity gains.

1.2 Procedure

Issues examined

Issues affecting the introduction of competition in electricity retailing can be grouped under:

- consumer protection
- environmental protection
- market power and effective competition
- metering, including collection of metering data for financial settlement purposes
- load consolidation within the retail market.

Following comprehensive examination of these topic areas, the Taskforce arrived at its preferred approach for narrowing and ultimately removing the statutory franchise.

Consultative process

At the outset, the Taskforce recognised that effective solutions would be found only through extensive consultation. The process began with the publication of an issues paper, *Retail Competition in Electricity Supply*, in November 1995. In order to widen the audience and provide opportunities for further involvement in the process:

- a public seminar was held in December 1995
- a workshop was organised in January 1996, targeting electricity industry representatives and customers representing large industrial, commercial and government organisations
- numerous informal meetings were held with consumer and environmental advocacy groups, industry personnel and customers.

At the same time, the Taskforce collected and analysed data and assessed the effects on the industry of various approaches to the introduction of retail competition. The culmination of that effort was the publication in February 1996 of the Interim Report, *Retail Competition in Electricity Supply*. The consultative process which followed included:

- a Business Forum in February 1996
- a Public Forum in March 1996
- individual meetings between Taskforce team members and retailers, customer and public interest advocacy groups, providing opportunities to discuss concerns and present suggestions in confidence.

The exhaustive consultation process gave members of the Taskforce a deeper understanding of the issues. The Taskforce is grateful to the respondents to the Issues Paper and the Interim Report, and to those who contributed valuable assistance through various ongoing formal and informal discussions with the Taskforce.

1.3 Reasons for Introducing Retail Competition

In order to gain customer loyalty, retailers will seek to supply a range of value-added services such as "heat" and "light" rather than kilowatt hours priced and valued as a commodity. Although the commitment to providing choice has been crucial in driving the introduction of competition into the retail market, retail competition involves more than bringing choice to customers.

Competition in retail trading is essential to realising the full benefits of competition in electricity generation. Retailers will contract more efficiently with generators, and over a wide range of energy sources, to help maintain a competitive edge. This in turn will influence decisions made on investment in the generation sector.

With the introduction of market-based competition, retailers will compete on the cost of the product. They will also compete for customer satisfaction by providing customers with choices not previously available. Such choices could include itemised billing *by major appliance or machine*, immediate meter rereads in response to customer queries and on-demand bill projections at any point in the billing cycle. Distributors will know instantaneously which houses are out of service during a storm and will be able to dispatch maintenance crews as required. Customers of retailers that follow the full broadband communications route will be able to access a whole range of voice, video and data services, ranging from total energy provision to cable TV and telephone.

In promoting effective competition, important public interest criteria must be met. An essential part of the reform of the electricity supply industry is the establishment of a consumer protection framework and proactive environment protection measures. The new arrangements will ensure continuity of safe, reliable energy services, delivered in a climate of heightened environmental awareness.

Customer protection framework

The best protection for most customers is rigorous competition. However, it is still necessary to provide protection for some individuals or sections of the community, particularly those who may be subject to undue risk in the transition to full retail competition. Customers will be afforded protection through a range of measures including:

- complaints and dispute resolution mechanisms
- customer representation in the policy making process
- public consultation processes
- an education program covering the operation of the electricity market and customers' rights and obligations
- systematic monitoring of customers' experience in the market, with feedback to the education program and monitoring of licence compliance.

Environment protection measures

A competitive electricity market hastens the retirement of inefficient generation. Pressure to obtain energy from environmentally friendly sources will flow from customers to retailers to generators, which will be forced to respond. Information, will be the driving force in the new competitive market. It will allow detailed monitoring of supply and demand, leading to more efficient use of the existing infrastructure. Two-way, real-time communication between customers and retailers will enable more sophisticated demand side management programs. Cooperative load shedding will help reduce the need for additional investment in generation and transmission.

Additional measures for protecting the environment include:

- conditions in retail licences requiring retailers to implement strategies for relevant environmental outcomes, with independent verification
- Government funding to assist in the commercialisation of sustainable energy technologies, through the Sustainable Energy Fund
- continued regulation of the electricity sector by the NSW Environment Protection Authority
- investigation of the use of economic instruments to achieve positive environmental and economic outcomes.

Market power and effective competition

Three main areas of concern, all related to the potential for misuse of market power, are still under investigation:

- i. Incumbent distributors, given their joint role as network service providers and retailers, have the potential to behave in an anti-competitive manner.
- ii. Generators are keen to hold retail licences, and they can provide an important source of competition. However, particularly in the early stages of the market, there is a perception that competition in the market may be weakened if there are no sector-specific restraints on retailer/generator relationships.
- iii. The size of retailers and the scope of their activities may be an issue. Economies of scale or economies of scope in retail supply might put the larger of the incumbent retailers in an unduly privileged position. Retailers without ready-made customer bases in NSW might be disadvantaged in assembling portfolios of wholesale supply and retail sales contracts.

The Taskforce is commissioning a study to investigate these issues with the intention of providing advice to the Minister by August 1996. It is desirable that the Minister clarify arrangements for regulation of market structure and market conduct in order to give market participants a clearer basis for formulating their business strategies.

2. PREFERRED APPROACH FOR RETAIL COMPETITION IN NSW

The Taskforce has examined the process for narrowing and ultimately eliminating the statutory franchise, bearing in mind the criteria listed in 1.1 above and the following combination of circumstances:

- the recent introduction of the wholesale market in NSW
- the forthcoming national electricity market
- developments in other jurisdictions
- the expressed desire of customers to have a choice of supplier as soon as possible.

Proposed timetable

The proposed schedule for introducing choice of electricity supplier allows time in which the customer is free to exit from franchise status and choose a retailer to provide supply, or to continue as a franchise customer of the local distributor. This period provides the customer with time to "shop around". In other words, there is a date at which the customer may elect to become contestable and then, somewhat later, a date at which the customer is "declared" contestable and the option of continuing as a franchise customer is removed.

PROPOSED TIMETABLE FOR REMOVAL OF NSW RETAIL FRANCHISE¹

Site thresholds	Date for	Eligibility	Date for	Mandated Contestability	Percentage ² of Total Energy Sold by Distributors
>40GWh pa	1 October 1996	1 October 1997	14%		
>4GWh pa	1 April 1997	1 October 1997	29%		
>750MWh pa	1 July 1997	1 July 1998	40%		
>160MWh pa	1 July 1998	1 July 1999	47%		
zero threshold ¹	1 July 1999	1 July 2000	100%		

1 The timetable as it applies to sites using under 160MWh pa is subject to modification in the light of discussions with Victoria on the alignment of State electricity markets, see page ES vii.

2 The percentages are cumulative, thus 29% of total energy is sold to sites using more than 4GWh annually.

At the *eligibility date*, the customer must satisfy the site energy consumption threshold and ensure that the site is equipped with metering that adheres to the market rules.

At the date for *mandated contestability*, the site becomes contestable, if it is not already so, and the customer is obliged to have the site metered in accordance with the rules of the retail market.

For customers whose sites have an annual energy usage less than 160MWh, there will be a further key date, 1 January 2000. At this date, if the customer with a site using less than 160MWh annually decides to become contestable, it is envisaged that the retailer of choice will work pro-actively with the customer to ensure that metering for the site adheres to the market rules. Under the Electricity Supply Act, the Minister has powers that can be used, if necessary, to achieve this result. This additional "staging post" creates an incentive for customers and retailers to work together to devise ways of facilitating the entry of large numbers of customers into the contestable market. Retailer/customer cooperation is the best means of ensuring an efficient, functioning market.

Metering

To minimise disputes over electricity supply transactions, responsibility for determining metering rules for contestable customers should reside with the Minister for Energy. The Minister will consider recommendations from the agency that handles financial settlements in the wholesale market, the Market and System Operator (MSO). The Taskforce proposes that metering rules be developed by the following dates:

METERING RULES ANNOUNCED NO LATER THAN ...¹

Timing	Site thresholds	Notes
31 July 1996	>4GWh pa	Metering rules may include rules for estimating unmetered quantities (for example, interpolation between meter readings, backed by validation methods).
31 October 1996	>750MWh pa	
31 October 1997	>160MWh pa	
31 October 1998 ¹	zero threshold	

1 Dates are subject to the adoption of the proposed timetable for removal of the NSW retail franchise, including the caveat regarding sites using under 160MWh pa.

The Taskforce considers that in the retail market metering rules for non-franchise supply should be the same, irrespective of whether the supplier is the retail arm of the site's local distributor, or a different retailer. In specifying market metering rules, even-handed treatment of retailers will create strong incentives to reduce metering costs and to develop metering rules that are sufficiently flexible to suit "small-site" customers. The pay-off from this metering strategy will be earlier effective customer access to choice of retailer, and, in consequence, earlier access to the productivity gains driven by competition. The metering strategies will become increasingly focussed on the communications element. This will be a source of benefit for NSW distributors in that they will have greater opportunity to join the ranks of leading electricity utilities worldwide who have become, or are becoming, involved in telecommunications.

Load consolidation

The proposed approach permits a customer, (defined as a single legal entity), to add together loads from one or more of the customer's sites, in order to move the load for the combined sites over the threshold limit for contestability. The individual loads will have to satisfy a predetermined minimum. This opportunity will be confined to eligible customers spending upwards of \$500,000 a year on electricity. The spending threshold will deter groups of unrelated customers from forming legal entities purely as a device to obtain entry to the market ahead of time.

Customers who use load consolidation as the means of entering the market will still be obliged to have the relevant sites metered in accordance with market rules. However, the Taskforce considers it appropriate that these customers have some scope to negotiate with the MSO regarding customised metering rules. Such negotiation will be part of the market making process, paving the way for the development of more flexible metering arrangements for other sites using small amounts of electricity.

3. HARMONISATION OF INTERSTATE TRADE

On 9 May 1996, Ministers from New South Wales, Victoria and the Australian Capital Territory met to discuss issues relating to the proposed national electricity market. The Ministers agreed, subject to ratification by their governments, that harmonisation of markets across the three jurisdictions would commence on or around 1 October 1996. The NSW and Victorian ministers further agreed to:

- adopt common transitional steps to introduction of retail competition by 1 July 1997
- consult on further alignment of steps to full retail competition after 1 July 1997
- move to dispatch of generation plant on the basis of an integrated market across the three jurisdictions by 1 July 1997.

The ACT is still to determine its position on these matters.

The timetable for opening up the market to competition in NSW is such that by July 1998, NSW and Victoria will have opened their respective markets down to 160MWh per annum customers. However, the market rules, including the definition of a "customer", will still need to be aligned. Beyond July 1998, the NSW Taskforce's preferred mechanism for entry of "small-site" customers into the retail market differs markedly from that proposed for Victoria.

Customers using less than 160MWh per annum represent by far the largest group by number (approximately 2.7 million in NSW). They also account for the largest proportion of energy consumed (approximately 60% of energy sold by NSW distributors).

Alignment of the two states' retail markets beyond 1 July 1998 will be a major factor in adhering to the principle of providing equal effective access to customers within each jurisdiction. This principle was endorsed in the recent discussions between Ministers.

COMPARISON OF NSW AND VICTORIAN RETAIL COMPETITION TIMETABLES

Date for Eligibility	Contestability Threshold	New South Wales (Taskforce "Realistic Fast-Track" Timetable ¹)		Victoria	
		No of Customers	Percentage ² of Electricity Traded in State Market	No of Customers	Percentage ² of Electricity Traded in State Market ³
December 1994	5 MW demand			47	0 - 23
July 1995	1 MW demand			377	5 - 30
July 1996	750MWh pa			1,877	20 - 40
October 1996	40GWh pa	47	14		
April 1997	4GWh pa	660	29		
July 1997	750MWh pa	3,500	40		
July 1998	160MWh pa	10,800	47	7,000	25 - 50
July 1999 ¹	zero threshold	2,700,000	100		
January 2001 ¹	zero threshold			196,000	100

1 The timetable as it applies to sites using under 160MWh pa is subject to modification in the light of discussions with Victoria on the alignment of State electricity markets.

2 The percentages are cumulative, as are customer numbers.

3 The range shown for "Percentage of electricity traded" in the Victorian market reflects the presence of large numbers of customers who have the option of remaining on a regulated tariff (Tariff H) until January 2001.

4. NEXT STEPS

The program for the introduction of competition in electricity retailing calls for a strong sense of purpose, coupled with receptiveness to new ideas. Importantly, the ideas that can play a useful part will come not only from within the electricity supply industry but also from outside. This free flow of ideas across industries will be the catalyst for transforming the electricity supply industry.

Implementation must focus on program objectives and outcomes rather than the underlying processes. This will allow for innovative commercial and technical arrangements to hasten the passage from existing technology to 21st century solutions.

The nature and extent of the implementation work demands a project management approach. The Taskforce proposes the establishment of a program implementation structure comprising workgroups that will be managed by the Taskforce as a coordinating body. Key features of the implementation structure must be that:

- the workgroup arrangement promote focussed discussion of matters requiring resolution at each stage of the program
- in determining workgroup membership, efforts be made to ensure that each workgroup will be well-informed and representative, and will be receptive to the viewpoints of all those whose interests are affected by its work.

The Taskforce proposes to provide detailed recommendations to the Minister on the implementation structure once the Minister has considered the present report.

5. RECOMMENDATIONS

SETTING THE SCENE

Regulatory stance on barriers to entry

The Taskforce recommends that the NSW Government issue a statement of intent, on or before 30 September 1996, clarifying the intended regulatory arrangements for:

- providing third-party access to electricity distribution networks
- managing the possible hindrance to competition arising from electricity generator/retailer relationships
- overseeing the market structure in a wider sense, recognising that firms may acquire large market shares giving rise to monopolistic competition (in activities **meshing horizontally or vertically with electricity retailing, not only in electricity retailing**).

PROTECTING THE PUBLIC INTEREST

Customer protection

The Taskforce recommends that:

- coinciding with the phasing-in period for retail competition, a professionally designed and implemented information and monitoring program be conducted, which actively disseminates information on the operation of the retail market, responds to customer and retailer inquiries and reports on customers' experiences as the market develops
- the Electricity Reform Taskforce, in association with the NSW Market and System Operator, and in consultation with the Department of Fair Trading, manage the inception phase (to November 1996) of the combined information and monitoring program and then hand over the operation to a designated government agency
- the Department of Fair Trading convene a working group to provide advice to the Minister for Energy and the Minister for Fair Trading on customer protection matters, notably credit management standards and dispute resolution guidelines, and that the working group prepare an information paper on customer protection by the end of August 1996.

Environmental outcomes

The Taskforce recommends that the Minister for Energy issue a statement in June 1996, setting out the application procedure for retail licences and providing administrative guidelines on (among other things) how licensees will be assessed for compliance with the condition that they negotiate certain strategies/plans with the Minister, notably those relating to environmental outcomes.

TRADING SYSTEM ISSUES

Metering rules in the retail market

The Taskforce recommends that:

- within each size bracket in the retail market, metering rules be applied uniformly across all non-franchise customers regardless of whether the chosen energy supplier is the retail arm of the local distributor or another retailer
- the NSW Market and System Operator submit recommendations to the Minister for Energy on retail market metering rules, with the rules for sites using under 4GWh a year to be defined according to the function which the meters and communication linkages will perform, without reference to the hardware which will perform those functions

- from a date to be determined by the Minister for Energy, but no later than 1 July 1997, the supply and installation of metering for sites converting to non-franchise status be a contestable activity in line with the National Electricity Code and that it be coordinated by the customer, who may appoint as his agent the retailer chosen to supply energy to the site.

Consolidation and resale

The Taskforce recommends that there be no provision initially for customers to convert ineligible sites to contestable status via aggregation and that limited provision for this occur from July 1997. It should be restricted to sites using at least 160MWh a year, with the added requirement that the consolidator be an individual customer (a single legal entity) with an annual electricity bill in NSW of at least \$500,000.

IMPLEMENTATION PATH FOR NSW AND INTERSTATE TRADE

Timetable for introducing retail competition

The Taskforce recommends that:

- the removal of the NSW retail franchise proceed in tranches, commencing with sites using 40GWh or more per annum becoming eligible to convert to non-franchise status from 1 October 1996; sites using 4 to 40 GWh per annum becoming eligible to convert from 1 April 1997; sites using 750MWh to 4GWh per annum becoming eligible to convert from 1 July 1997; and sites using 160 to 750 MWh per annum becoming eligible to convert from 1 July 1998
- arrangements for extending contestability to sites using under 160MWh per annum be determined after consultation with other jurisdictions, and adhere to the principle of providing equal effective access to customers within each jurisdiction, with a possible start date of 1 July 1999
- the metering rules be determined by the dates shown in the table in Section 2 (page ES vi), subject to adjustment in line with decisions on the contestability timetable for sites using under 160MWh per annum, as detailed in the recommendation above.

LOOKING FORWARD TO RETAIL COMPETITION

Managing the implementation

The Taskforce recommends that:

- the Minister for Energy establish a program implementation structure under the Electricity Reform Taskforce, after due consultation with market participants (customers and prospective suppliers alike) and with relevant organisations pursuing public interest objectives
- the Taskforce be assigned responsibility for overseeing the establishment of the program to introduce competition in electricity retailing and a project manager be appointed for that purpose.

Furthermore, the Taskforce recommends that:

- NSW seek the agreement of other jurisdictions in the National Grid Management Council to assign responsibility for the entire settlements process (wholesale and retail) to the National Electricity Market Management Company (NEMMCO), with precise arrangements to be subject to agreement between the participating jurisdictions, with NSW seeking to ensure that meter reading and transmission and dissemination of data become contestable activities
- NSW Government agencies' responsibilities under recommendations in the previous chapters (for example, metering, customer information) be reviewed in the event of any proposal emerging for NEMMCO to assume those responsibilities either in whole or in part.

1. INTRODUCTION

1.1 Background to this Report

Reform of the electricity supply industry is one element of the New South Wales Government's wide ranging program of microeconomic reform. Initiatives to reform the electricity industry follow the undertakings made at the COAG (Council of Australian Governments) meeting on 11 April 1995 to implement a national competition policy. This accord commits the NSW Government to participate in a competitive national electricity market, to undertake structural reform of public monopolies and to provide "open" access to essential facilities such as transmission and distribution networks.

The restructuring of the state electricity supply industry has been carried out in the manner foreshadowed in the Electricity Reform Statement (NSW Treasurer and Minister for Energy, Electricity Reform Statement, May 1995.). The functions of generation, transmission and distribution, which were formerly incorporated in one vertically-integrated monopolistic structure, have now been separated.

The high voltage transmission network is operated by a regulated authority, the Electricity Transmission Authority, trading as TransGrid. The restructuring and corporatisation of the generation and distribution sectors was finalised in March 1996. The electricity generating capacity of Pacific Power has been disaggregated into two state-owned corporations, First State Power and Macquarie Generation. The former 25 distributors have been amalgamated and reduced to six, of which two are metropolitan-based. Details of the changes in the generation and distribution sectors are given in Appendix A.

The eight new energy services corporations or ESCOs (two generators and six distributors), established under the Energy Services Corporations Act 1995, are all state-owned corporations. Administered by independent boards with a commercial focus, they are accountable to the Government as their shareholder. The shares are held by the Treasurer and one other Minister nominated by the Premier. Each year the corporations must formulate a statement of corporate intent.

The objectives and functions of the ESCOs are not limited to supplying electricity. Distributors have two roles: one as owners and operators of the distribution network and the other as retailers supplying energy services. These are two distinct business operations, a monopoly *wires* business and a competitive *energy trading and energy services* business. An effective access regime and accounting separation will together ensure that the regulated monopoly network business does not shield the retail supply business from competition. Principles for regulating access to the transmission and distribution networks are set out in the Competition Principles Agreement which forms part of the COAG reforms of April 1995.

The next stage in the reform process is the introduction of an effective market for the wholesale and retail sectors. On 1 March 1996, the NSW wholesale electricity market commenced limited operation with administered prices. Normal trading started 10 May 1996.

Bringing competition to the retail sector will fulfil the final commitment of the reform process in NSW (As expressed in the Electricity Reform Statement, May 1995.). Opening up the market to competition will give every customer, regardless of level of electricity use, a choice of service provider.

1.2 Introducing Competition

Retail competition involves more than merely offering customers choice. Competition in retail trading is essential to achieving the full benefits of competition in the generation sector. In a competitive retail market it will not be possible for retailers to pass on the costs of over-priced generation to captive customers. Nor will it be necessary in a competitive, customer-oriented environment, for a regulatory agency to take on the difficult task of determining whether a given electricity sourcing strategy is efficient.

Operating in a competitive environment, retailers will manage price through "smart" purchasing of electricity. Smart purchasing by retailers has upstream, as well as downstream implications. Retailers successful in sourcing and purchasing energy are likely to combine spot purchases and portfolios of bulk supply contracts

with direct involvement in generation. Retailing/generation alliances can provide a natural hedge against unexpected movements in the pool price, thus performing the same function as market-purchased hedging instruments.

The market-driven developments in energy retailing will put pressure on the generation companies to contract efficiently with retailers. They may also contract with some energy users directly if this makes good commercial sense.

The move to efficient contracting over the full span of the energy and energy services supply path will affect investment in electricity generation and networks. This will create the potential for moving to a dynamically efficient mix of plant. Thus, strategies that are developed and tested in the retail market will underpin generation projects and complementary infrastructure initiatives through investments in the physical network for energy trading and associated load control systems and customer equipment.

If the full benefits of competition are to be realised, the reforms must meet certain requirements, the foremost being to lower entry barriers for retailers and customers. However, there will be difficulties to overcome. Successful implementation will require a substantial effort over a number of years by government policy makers, customers, the industry, existing participants, new entrants and public-interest oriented organisations. The reforms must:

- maintain consistency with National Competition Policy
- promote effective competition
- protect customers where this is needed, while still realising the full potential for productivity gains
- maintain the impetus for positive environmental outcomes
- manage change to achieve smooth progress

1.3 Consultative Process

The issues involved in introducing retail competition into the electricity supply industry are complex. Effective solutions will result through ongoing consultation. The public process of determining the framework for introducing competition began with the publication of an Issues Paper, *Retail Competition in Electricity Supply*, in November 1995. In that paper, issues were raised and comments sought. Issues included the preparedness of customers, suppliers and the trading system, and the speed at which reform should be introduced. Information was requested from the industry regarding the penetration of half-hourly metering. Other issues raised for comment included future industry structure. Comments were sought on the prospects for joint gas and electricity utilities emerging to provide customers with energy services.

In order to widen the audience and provide opportunities for further involvement in the reform process, a public seminar was held in December 1995. This was followed by a workshop in January 1996, which provided electricity industry representatives and customers (a mix of large industrial, commercial and government organisations) with a forum for exploring the issues and an opportunity to discuss options for the introduction of retail competition.

Members of the Taskforce met informally with consumer and environmental advocacy groups, industry personnel and customers to gather information and views on various aspects of the implementation. The Taskforce collected data and analysed the potential impact on the industry of the various approaches to the introduction of retail competition. This work resulted in the publication of an interim report in February 1996 (NSW Electricity Reform Taskforce, Interim Report: Retail Competition in Electricity Supply, February 1996.).

In the Interim Report, four options for the introduction of retail competition were presented for comment. A further process of consultation, information gathering and assessment followed the publication of the Interim Report. Meetings with individual organisations provided an opportunity for participants to present their concerns in confidence. A second Business Forum and a Public Forum were held. Feedback from these meetings was of immense value to the Taskforce. At the Public Forum the Taskforce again invited formal submissions.

The thoroughness of the consultative process gave the members of the Taskforce a greater understanding of the issues. This assisted the development of a program for the introduction of retail competition and an implementation strategy.

The Taskforce prepared a detailed proposal for consideration by the NSW Government. The present report describes that proposal.

1.4 Structure of the Report

The remainder of this report is set out in the following manner:

Chapter 2 describes the legal and institutional framework within which the industry will operate. A review of relevant legislation focuses on sections pertaining to the retail market. An overview of the wholesale market is followed by a discussion of the role of the retail market in the context of the industry as a whole.

Chapter 3 details the elements of the strategy for achieving key public interest objectives in the transition to the energy services marketplace. Customers will gradually lose the protection afforded by a public authority and will be placed in an unfamiliar market environment. This requires significant social change. A program implementation strategy is needed to cope with uncertainty, stemming not only from this social change, but also from technological developments that will impact on the energy services market. Mechanisms to ensure adequate protection of consumers, to sustain the impetus for positive environmental outcomes and to elicit vigorous competition are an integral part of the strategy.

The two key issues influencing the choice of trading arrangement, namely, metering and consolidation, are discussed in Chapter 4. The current and forecast costs of metering are analysed, including the costs of the meter and the associated communication link. Consolidation is the term used to describe a number of activities, one of which is load aggregation. The advantages and disadvantages of consolidation are set out in the chapter.

Chapter 5 analyses the possible options presented in the Interim Report and their later modification in the light of the submissions received and ongoing discussions with interested parties. A detailed analysis of the preferred approach is provided. The liberalisation of interstate trade in electricity is also discussed.

Chapter 6 sets out the steps necessary to begin the process of achieving full competition in the retail market. Possible future directions in the energy industry are highlighted in the concluding section.

2. SETTING THE SCENE

Structural reform of the NSW electricity supply industry has been accompanied by corresponding reform of the legislative framework. Three Acts, all passed in December 1995, provide the legislation to enable the electricity supply industry to operate in a competitive mode. The new legislative framework is reviewed in Section 2.1.

The introduction of a competitive regime means that electricity is now bought and sold in a market environment. In the future, there will be both a wholesale and a retail market. In the wholesale market the price of electricity is the market clearing price, which varies across the day. Those trading in the wholesale market will have at their disposal financial instruments to hedge against price variations. This situation is in stark contrast to the operation of the former centrally-administered organisations where the bulk supply price of electricity was fixed by the government.

In the retail market, where most customers will "trade", contracts will be the order of the day. The style of the contract will generally depend on a customer's electricity consumption. Customers will be able to shop around for their energy. Not only will they be able to choose their supplier, but they will also be able to choose the terms on which they buy. Section 2.2 describes how the wholesale market works and how the retail market may develop.

2.1 Legislation for a Competitive Electricity Supply Industry

The material presented here is not intended to cover all aspects of the legal framework within which the new competitive electricity market will operate. The aim is to provide an overview of the new legislation and then to highlight those areas of particular relevance to the operation of the retail market.

2.1.1 Overview of legislation

Three new Acts contain the core legislation which will govern the operation of the NSW electricity supply industry under a competitive regime. These are:

- Electricity Supply Act 1995 (No. 94 of 1995)
- Energy Services Corporations Act 1995 (No. 95 of 1995)
- Sustainable Energy Development Act 1995 (No. 96 of 1995)

Electricity Supply Act 1995

This Act provides the necessary statutory underpinning for:

- establishing a competitive wholesale and retail market in electricity to promote efficient and environmentally responsible production and use of electricity and to deliver a safe, reliable supply of electricity
- establishing a Market and System Operator responsible for administering the competitive wholesale market. This task is being undertaken by TransGrid.
- regulating network operations and wholesale trading in the wholesale market for electricity in anticipation of the introduction of the national electricity market
- regulating network operation and electricity supply in the retail market in a manner that ensures open access to electricity distribution systems, promotes customer choice and creates customer and supplier rights and obligations in relation to electricity connections and electricity supply
- establishing various administrative and advisory bodies
- imposing of environment protection conditions on licences for retail suppliers and distributors.

Energy Services Corporations Act 1995

The effect of this Act is to :

- establish certain statutory, state-owned corporations as electricity generators or distributors (including an outline of their objectives and functions)
- amend and modify the State Owned Corporations Act 1989, as required
- provide for the transfer of the staff, assets, rights and liabilities of the dissolved distributors and generator.

Ecologically sustainable development is now a key corporate objective of energy service providers under the Energy Services Corporations Act.

Sustainable Energy Development Act 1995

The effect of this Act is to establish the Sustainable Energy Development Authority and to define its functions.

2.1.2 Provisions relevant to the retail market

Electricity Supply Act 1995

The provisions of the Electricity Supply Act 1995 are designed to regulate:

- network operations in the retail market
- the supply of electricity in the retail market.

To operate a transmission or distribution system for retail supply, a network operator's licence is required. To obtain a connection to premises, a customer must apply either directly or through a third party to the distributor within whose area the premises are located. The distributor **is obliged** to provide customer connection service to the premises or to ensure that the service is provided. A distributor must prepare a standard form connection contract to establish conditions for service. In cases where arrangements other than standard form contracts are desired, there are provisions for negotiated customer connection contracts.

To supply electricity, a retail supplier's licence is required. As with connection, if an application for supply is made to the **local** distributor (who must hold a retailer's supply licence) the local distributor **is obliged** to supply electricity to the applicant's premises or to ensure that electricity is supplied. This obligation holds for all franchise and non-franchise customers. However, if the retail supplier is not the supply arm of the local distributor, there is no obligation to supply. Supply must be provided under customer supply contracts prepared by the retailer. Negotiated supply contracts can be used for supply to franchise customers. It is intended that contracts for supply to non-franchise customers remain unregulated.

Compliance with the provisions of the distribution and retail licences will be monitored by a four member Licence Compliance Advisory Board. Membership of this Board will comprise one member nominated by each of the following:

- Nature Conservation Council
- Australian Consumers Association

together with two members representing the Minister of Energy. The Department of Energy is responsible for ensuring the establishment of the Licence Compliance Advisory Board.

The Minister for Energy is obliged to impose the following additional conditions for a retail supplier's licence:

- that the licensee develop strategies based on a reduction of greenhouse emissions in negotiation with the Minister and including independent verification of emissions

- that the Environment Protection Authority audit, at intervals of no more than three years, the effectiveness of the greenhouse gas reduction strategies - the report on each audit to be made publicly available at the offices of the Environment Protection Authority, sent to the Licence Compliance Advisory Board and tabled in each House of Parliament
- that the licence holder develop one, three and five year plans for:
 - energy efficiency and demand management strategies
 - strategies for purchasing energy from sustainable sources cogeneration, purchasing of renewable energy, buyback schemes from grid-connected solar cells on buildings and remote area power systems
 - annual reporting in relation to the above.

Sustainable Energy Development Act 1995

The objectives of this Act are to:

- bring about a reduction in the levels of greenhouse gas emissions and other adverse by-products of the production and use of energy
- encourage the development, commercialisation, promotion and use of sustainable energy technology.

These objectives are to be achieved with the assistance of the Sustainable Energy Fund.

2.2 The Market for Electricity

Electricity will be bought and sold within a market environment, through wholesale and retail market trading. This section outlines the workings of the wholesale and retail parts of the market.

2.2.1 The wholesale market

The NSW wholesale electricity market has been set up as an interim market, pending the introduction of the national electricity market. Once the full national market commences, the NSW market will cease. The systems, including the trading arrangements, which enable operation at the state level will then be taken over and operated at a national level. The NSW market has been designed to facilitate the transition to a national market. It will not be necessary to wait till the national market is operating with full functionality before the NSW market ceases operation. The Minister for Energy can order the cessation of the NSW market on commencement of an earlier interim national electricity market if the Minister considers this to be appropriate.

The detailed rules for the operation of the NSW wholesale market are contained in a State Wholesale Market Code. The Code covers, among other areas, system security, pool rules, metering and network pricing. The NSW wholesale electricity market, commonly known as the pool, is a half-hourly spot market for the sale of electricity to retailers and other wholesale purchasers. All persons within NSW who operate an electricity generating unit with capacity beyond a certain level, and export electricity into the publicly-owned electricity network, are required to sell the electricity into the pool. The pool is operated by the Market and System Operator (TransGrid). Generators bid competitively into the pool and are dispatched in "merit order" (least-cost dispatch), taking into account any constraints on the network.

Network operations, that is, the flow of power along the transmission and distribution networks, are also regulated under the State Wholesale Market Code. All network operators are required to give non-discriminatory access to all authorised wholesale market participants. As Government-owned monopoly services, network services are subject to maximum pricing determinations set by the Independent Pricing and Regulatory Tribunal (IPART).

Persons permitted to purchase electricity from the pool are:

- retailers who purchase electricity to sell to domestic, industrial and commercial customers
- end-use customers (generally large industrial or commercial users) who purchase electricity for their own use.

Initially, participation will be limited to:

- the NSW generators
- the six NSW retailers and ACTEW (ACT Electricity and Water Corporation. Discussions with the ACT Government are proceeding with a view to establishing a combined NSW/ACT retail energy services market by mid-1997.).

Interstate trading between NSW and Victoria and South Australia will also take place through the pool. This activity will be carried out by the Interchange Facilitator, a financially ring-fenced trader within TransGrid. The trader is accountable for maximising the value to the state of NSW of interchange trades with Victorian and South Australia.

The commencement date of the NSW market in the above form was 10 May 1996. The decision to limit initial participation in the market was made for practical reasons. The systems for trading and settlement will require several months of testing under operational conditions to ensure that all arrangements are fully auditable. If the start of the national market is overly delayed, the Government will open up the NSW market to wider participation.

2.2.2 The retail market

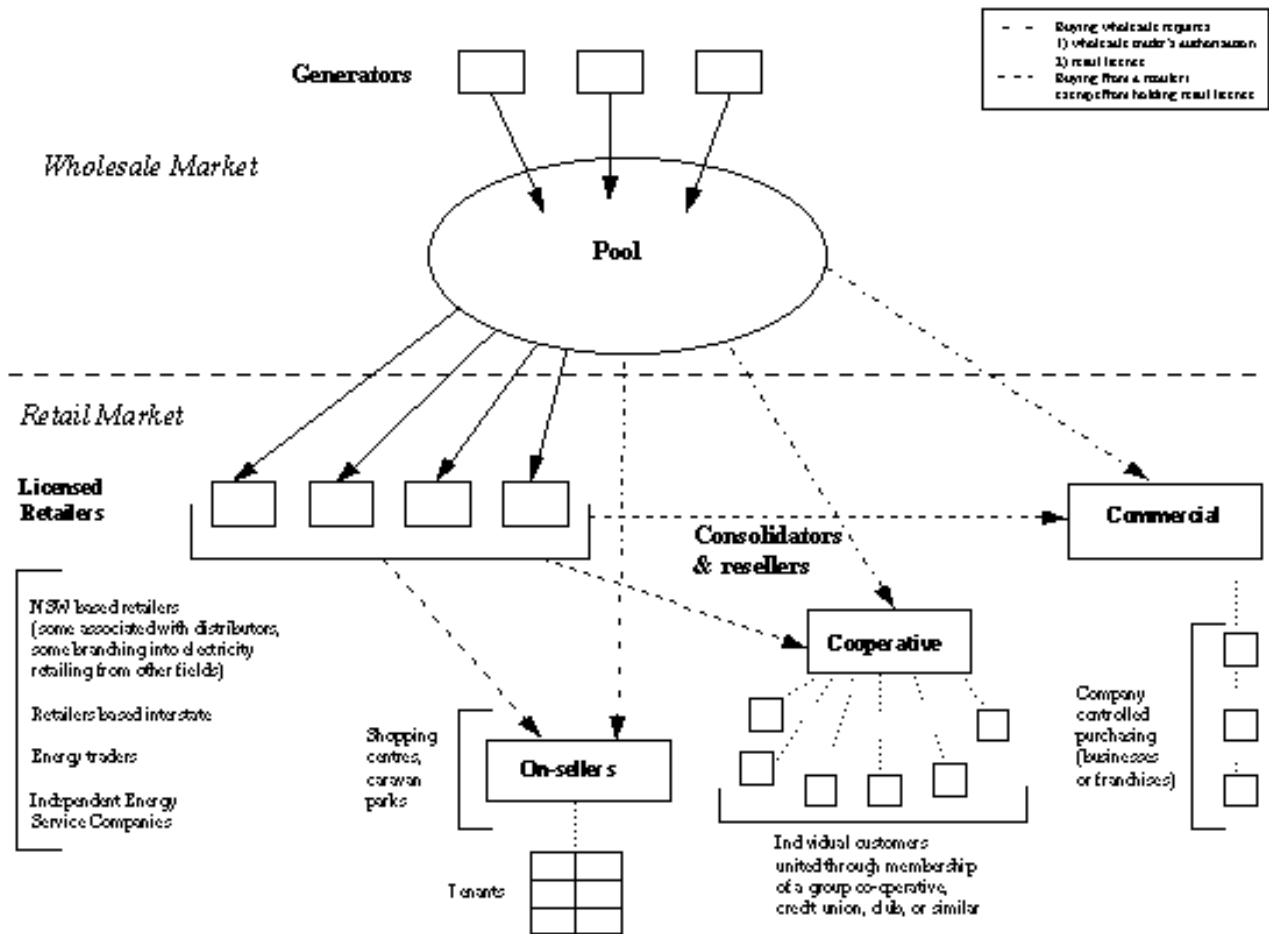
The retail market will take shape gradually as area franchises are removed. The way in which it operates will ultimately depend on the participants, including new entrants. Retailers will become more responsive to customers' wants, but customers must be discerning and make their requirements known to the retailers. In the final analysis it will be the customers who shape the retail market and this will have flow-on effects to the wholesale market. The link between the wholesale and retail markets is the retailer. A retailer can be energy supply arm of a distributor or an independent company buying in the wholesale market to sell to customers.

As the new electricity industry develops and buying patterns change, the somewhat artificial distinction between wholesale and retail will blur. Theoretically there will be nothing to stop any contestable customer from trading in the wholesale market. Practically, the transaction costs (prudential requirements, acquisition of knowledge and, above all, the commitment of time) will tend to militate against this happening for all but the largest customers. However, as the market matures and customers become more knowledgeable, it is envisaged that groups of customers will combine to "buy in bulk". For most individual customers and for most groups, buying from a retailer is likely to be the preferred arrangement, although it is not the only option.

Figure 2.1 is a schematic diagram of the possible relationships within a fully competitive retail market. As the market matures, more innovative linkages will evolve. Indeed, one of the benefits of competition is its dynamism. For this reason, it is vital to put in place trading and regulatory arrangements which foster creativity and innovation.

FIGURE 2.1

TRADING ARRANGEMENTS



As illustrated in Figure 2.1, customers may buy from retailers, from on-sellers who provide electricity under landlord/tenant agreements, or from consolidators (The term "consolidators" is used to cover those situations covered in previous reports by the term "aggregation". Further explanation can be found in Chapter 4.) On-selling arises typically in the case of shopping centres, caravan parks and office blocks where the landlord purchases the energy and has an arrangement for payment with the tenant. Consolidation, broadly speaking, encompasses the practices of individual customers getting together in an organisational form to purchase energy and of one customer amalgamating the loads from several sites he owns to qualify for a better deal. For example, the owner of a chain of restaurants or variety stores could contract with a retailer to supply energy to all the sites. Potentially, these sites could range across the state. In Figure 2.1, this is labelled "commercial consolidation".

The relevant form of consolidation for smaller customers is labelled "cooperative consolidation" in Figure 2.1. In a market, the smaller customer is often disadvantaged in comparison with larger buyers. One means of redressing this imbalance is for smaller customers to band together to form buying cooperatives. The cooperative can negotiate with a retailer to obtain price and service benefit for its members. The role played by cooperatives could extend further into wholesale trading or even generation. Customer empowerment is the future direction of the energy service industry.

In the transitional phase, strong restrictions will be imposed on consolidation (see Section 4.3), but with a fully competitive market this will no longer be necessary.

The patterns shown in Figure 2.1 represent those that may be found in a competitive market when all customers have a choice of supplier. Both the on-seller and the consolidator have the option of buying in the

wholesale market or buying directly from a retailer. In the latter case, they do not require a retail licence. However, if on-sellers and consolidators choose to trade in the wholesale market, they are in the same category as retailers and, as such, require a wholesale trader's authorisation and a retail supplier's licence. In this situation, the consolidator or on-seller is acting as agent for the customer(s). Accommodating this form of trading, which is common in other areas, such as insurance, moves the electricity industry closer to operating within a commercial framework. Principal-agent arrangements are covered under fair trading requirements and the Trade Practices Act.

Further details of the regulatory/licensing requirements for retail trading are presented in the booklet, *The NSW Electricity Supply Industry During the Transition to Full Retail Competition*, available from the NSW Electricity Reform Taskforce.

The NSW wholesale market will become part of the national market. To facilitate a smooth transition to national operation, the code developed for the NSW wholesale market mirrors the National Electricity Market Code. The code is simply a binding list of rules regulating the behaviour of all participants in the wholesale market. Regulation of the NSW retail market is managed through provisions in the licences and customer contracts. While these instruments cover general behaviour, some trading and operational arrangements will require more specification. Details of these arrangements should be set down in a form which is readily available to all. A suitable vehicle could be a commercial protocol covering retail operation. It is anticipated, and indeed highly appropriate, that representatives of customer groups be involved in the process of developing the arrangements (see Chapter 6). The commercial protocol will be referenced, where required, to the national market and will maintain consistency with licence and contract conditions.

2.3 Matters Pending

Two main areas of concern, both related to the potential for misuse of market power, are still under investigation. These are:

- the potential for incumbent distributors, given their joint role as network service providers and retailers, to behave in an anti-competitive manner. With market shares of approximately 50% and 30%, respectively, the size of the two largest NSW distributors is also a possible source of concern.
- generators holding retail licences, particularly in the early stages of market development.

Any decision made in either or both of these areas will affect the working of the retail market.

Network access and initial market shares

A prerequisite for effective competition in the supply of energy services is non-discriminatory access to the wires. In other words, existing and potential competitors should have reasonable access to both the transmission and distribution networks. A key function of IPART will be to ensure that there is no discrimination, either pricing or technical, (An example would be failure to maintain wires or metering if the latter were under the control of the network service provider.) in obtaining access to the networks. IPART will also work to eliminate other possible avenues of anti-competitive behaviour. The Tribunal has highlighted the need for:

- regulation of the "wires" component of the distributors' businesses separately from the retail franchise component
- strong separation or "ring-fencing" of the retail and wires components
- publication of prices and terms for access to the network, which do not discriminate between potential retail suppliers
- procedures for resolution of access disputes (Independent Pricing and Regulation Tribunal, *Electricity Prices*, March 1996.).

Progress has been rapid. Little now remains to be done to meet these requirements. However, prospective new entrants have questioned whether the steps taken will be sufficient to induce vigorous retail competition.

Doubts have arisen about the adequacy of access arrangements to help new entrants overcome the natural synergy between retailer and distributor, which is the outcome of pre-existing arrangements. New entrants fear that a distributor will:

- set network charges above the costs of provision and/or charge prices to its retail arm that are lower than those charged to rival firms
- impose technical requirements selectively, for example, power factor correction and metering standards.

Concerns have also been expressed that information held by distributors will not be freely available and could be used to the advantage of associated retailers. This would include information on customers' electricity use and installation details.

Incumbent retailers are well entrenched. In the formative phase of the retail market there is no doubt that being there first has certain advantages. There is a need to consider whether these incumbency advantages will compromise market effectiveness.

Generators holding retail licences

Integration of generation and retail supply is a contentious issue. There is a perception that competition in the market may be subdued, and even hindered, in the absence of sector-specific restraints on retailer/generator relationships. The issue has recently arisen in both Victoria and the United Kingdom.

Although retailers in Victoria strongly opposed the application by the Yallourn generator for a retail licence, the licence was granted conditional on accounting separation being put in place. In the UK, the electricity industry regulator voiced concerns about two proposed mergers between generating companies and regional electricity companies, (The two mergers are PowerGen's bid for Midland Electric and National Power's bid for Southern Electric.) yet the Monopolies and Mergers Commission (MMC) gave the go-ahead for the mergers to take place. However, within a few days of the MMC's announcement, the UK Government overruled the decision. The President of the Board of Trade argued that, while not against vertical integration in principle, "the adverse findings contained in the MMC's reports lead me to the view that, in the current state of the market, there would be significant detriments to competition if these mergers proceed. I do not believe that the remedies proposed by the majority MMC report would be sufficient to address these detriments" (Reported in Power in Europe, 3 May, 1996, 223/3.). The UK Government has also decided to retain the special shares it holds in the two generators (National Power and PowerGen). This effectively means that no one can take over the generators until 1998.

Generating companies can be an important source of competition with other retailers. However, there is a possibility that generating companies may "squeeze out" other participant retailers by:

- passing on to their retail arms commercial information gained from their dealings with other retailers
- closing out the market to competing retailers.

The latter behaviour is a more significant concern where there is limited competition in generation. It is achieved in the following manner. Generators raise the wholesale price in the pool and thus increase the costs to other retailers. Then the generators undercut these other retailers in the wholesale market by offering more favourable deals to their own retailers.

A possible response to this problem is to rely on the Trade Practices Act to ensure that the generating companies do not act anti-competitively. However, action in advance may be preferable, given the desire to provide active encouragement to new entrants who do not have an established presence in the NSW electricity supply industry.

One action that can be taken in advance is to place limits on the volumes of energy that generating companies may trade in the retail market. This would reduce concerns about market dominance by generating companies, particularly in the early stages when rival firms, including prospective new entrants to the NSW

market, are evaluating opportunities. The volume restrictions could be loosened as the market developed and it became clear that there would be no adverse impact on competition.

An alternative regulatory instrument is ring-fencing, that is, separation of the business affairs of the generation and retail sectors of the generating company. Accounting separation is one possible means of increasing transparency in transactions, but it is difficult to implement in an effective manner. Splitting the generating company into two separate subsidiaries would ensure greater transparency, but would not of itself prevent anti-competitive behaviour. Competition law would still need to play a part.

Whatever the approach chosen, it must take into account the concerns of the generating companies and the concerns of those customers purchasing large volumes of electricity. Some of those customers have strongly expressed their desire to deal directly with generating companies. The concerns of other retailers, who may fear unfair competition, must also be considered. Above all, the response must maintain the Government's commitment to fostering competition.

Work in progress

The Taskforce is commissioning a study to investigate issues of network access, initial retail market shares and generating companies holding retail licences as outlined above. The investigation will cover the broader question of cross-licence holding, looking not only at the issue of generating companies holding retail licences, but also that of regulating retailers' involvement in electricity generation.

Findings from the study will be available in August 1996. Policy decisions taken before the investigation has been completed, should allow flexibility to respond to those findings, while giving generators, retailers and large customers an indication of the likely regulatory approach to enable them to plan their competitive strategies.

The Taskforce recommends that the NSW Government issue a statement of intent, on or before 30 September 1996, clarifying the intended regulatory arrangements for:

- providing third-party access to electricity distribution networks
- managing the possible hindrance to competition arising from electricity generator/retailer relationships
- overseeing the market structure in a wider sense, recognising that firms may acquire large market shares giving rise to monopolistic competition (in activities meshing horizontally or vertically with electricity retailing, not only in electricity retailing).

3. PROTECTING THE PUBLIC INTEREST

3.1 Overview

The stated aim for the introduction of competition into the retail sector is that it be implemented with full consideration of all issues. Among the criteria enumerated in Chapter 1 are requirements to protect community interests and improve environmental quality. Issues receiving most attention to date, however, have been those associated with the method of introducing competition as it affects the suppliers and their transactions with customers, with only passing reference to the experience in store for the customer or the wider community. This chapter redresses the balance by looking at the impact of competition on the customer in particular, and the community, in general.

Although protection of individual customers is a social objective of government, people do not live and work in isolation. They are part of the community at large. Any measures that impact on the individual, impact on the community and vice versa. People must have access to essential services on reasonable terms. Businesses must be placed under obligations, where necessary, to secure the opportunity for the people of today and future generations to attain a satisfactory quality of life.

In commercial transactions, whether for electricity or any other item, customers want value for money. They also want to know that they, and others, will be protected from exploitation and poor service. The move away from a centrally controlled industry is introducing uncertainty into what was previously perceived as a very secure environment.

The NSW Government is implementing a strategy for introducing competition in electricity supply that is designed to minimise for individuals and the community, the uncertainties associated with change. As part of its responsibilities in providing advice to the Government on the introduction of retail competition, the Taskforce has produced recommendations for the content of the Government strategy.

The elements of the proposed strategy, in relation to customer protection, are:

- extensive public consultation
- active dissemination of information
- mechanisms for complaints and dispute resolution
- public monitoring of the transition
- customer representation in policy making processes.

In relation to the protection of the environment, the elements of the Government's strategy are:

- environment protection conditions in retail licences
- Government funding to assist with the commercialisation of sustainable energy technologies
- continued monitoring of the energy sector by the NSW Environment Protection Authority (EPA).

Customers and the public in general can have confidence that remedial action will be taken if things go wrong. An important part of the reform of the electricity supply industry has been to put in place a consumer protection framework and pro-active environment protection measures. The new arrangements will ensure continuation of safe, reliable energy services delivered in a climate of heightened environmental awareness.

3.2 Choice for Customers

Competition in the retail sector will mean that customers will be able to choose from a range of energy service suppliers and, moreover, will be in a position to make informed choices. This will apply to customers generally, not just those who are intensive users of energy. In the new environment, retailers will focus on providing customers with products tailored to their specific requirements. These will range from connection through to supply and, in many cases, beyond-the-meter. The industry will move from institutionalised pricing by service

class to "mass customisation", that is, the selling of a standardised commodity to mass markets tailored to suit individual needs.

Choice will arise from retailers' marketing strategies. In order to gain, and more importantly retain, customers retailers will have to manage price while providing value-added services to differentiate their product from that offered by other retailers. These value-added services may include monthly billing, detailed usage data, information on how to improve efficiency and beyond-the-meter energy services. Beyond-the-meter services, for example, can be built-in energy management routines tailored to the individual. Information and communications technology are likely to play a significant role in the energy services arena. Such technology will enable services to be extended to the customer side of the meter via smart appliances and other devices such as multipurpose communications links.

3.3 Protection for Customers

Although effective competition is the ideal source of customer protection, markets do not always deliver. Issues such as safety, assurance of supply, fair and reasonable prices, quality and service standards must all be addressed. Maintaining and improving the standards that exist in the industry today can be combined successfully with introducing competition. Customer protection measures can, and should, be implemented to complement the process of reform, not detract from it.

NSW now has statutory underpinning for effective competition in the supply of energy services. The commencement date for the Electricity Supply Act 1995 was 10 May 1996. All electricity distributors' and retailers' dealings with customers are covered by that Act. As energy services corporations, distributors, (the wires and the retail businesses), do not receive the protection of crown immunity. The Trade Practices Act (Commonwealth) 1974 applies to them in much the same way it applies to private companies, guarding against anti-competitive conduct and providing consumer protection.

Changes in legislation were essential to give protection to customers in the new environment. Customer information programs, mechanisms for handling customer complaints and central monitoring of the complaints will reinforce the legislative measures.

3.3.1 Information

Access to information is the key to ensuring that smaller customers are not disadvantaged in the market. All customers must have the necessary information to make knowledgeable choices. A carefully targeted information program will be crucial to ensuring the information is available and readily accessible.

Education can speed up the acceptance rate of new ideas, but the permanency of acceptance is increased if the changes are not accompanied by what appears to be masses of "red tape". People do not have the time or inclination to find their way through a maze of words describing the rules of the new market. A well-designed customer information program is essential if the transition from old to new is to be managed with minimum calls on the time and patience of customers, while providing a high level of protection to customers.

For maximum effectiveness, the information program should be run professionally and should be targeted at those customers who become contestable at each threshold level as the transition progresses. By dealing with each threshold group as it prepares to enter the retail market, the program can be managed in a modular way with common themes linking the modules.

Often anything new is regarded as threatening. People uncomfortable with change seek the familiar. The new electricity industry is radically different from the old and yet it is closer to what people are used to in other areas of trade. It is now a market. There is nothing frightening about going to the supermarket, shopping around for insurance, choosing a telecommunications provider. People routinely do these things and, in time, choosing an electricity retailer will be commonplace. The retail market is new, it is different and there is a new vocabulary to learn. There will be a period of adaptation.

In the inception phase of the electricity market, the appropriate agency to conduct the customer information program is the Market and System Operator. This body, charged with overall operational responsibility for

facilitating the market, has the in-depth knowledge required to organise such a program. However, given the magnitude of the task, it is sensible for the Electricity Reform Taskforce to play a role in managing the program.

3.3.2 The customer's statutory right to connection and supply

Two mechanisms, licences and contracts, come together in the Electricity Supply Act 1995, for the regulation of the provision of network connection services by:

- requiring all electricity distributors to hold a distributor's licence, as a prerequisite to conveying electricity to [retail] customers on behalf of retail suppliers
- providing all persons situated in an electricity distributor's distribution district with a **statutory right to the provision of customer connection services** by that electricity distributor, under a *customer connection contract*.

In addition, the Act regulates the supply of electricity to retail customers by:

- granting retail supplier's licences to retail suppliers
- providing all franchise and non-franchise customers situated in an electricity distributor's distribution district with a **statutory right to the supply of electricity** by that electricity distributor, under a *customer supply contract*.

An application for customer connection services may be made to an electricity distributor by:

- any person who owns or occupies premises within that distributor's distribution district (excepting wholesale customers) or
- any other person on that person's behalf.

Retail customers may apply directly for connection or authorise a retailer to arrange connection on their behalf. Thus a retailer, either as the retail arm of the distributor or, if the customer is contestable, possibly some other retailer, can be the sole point of contact for the customer. The retailer will cover both connection and supply arrangements. This relieves the customer of the burden of having to deal with multiple service providers, except in cases where the customer prefers to have two separate contracts.

3.3.3 Licences and contracts as mechanisms for customer protection

This section gives an overview of the provisions of the licences and contracts which regulate supply from the perspective of consumer protection.

Licences

In the retail market, licences and customer contracts are at the heart of ensuring customers are protected. The two licences relevant to operations in the retail market are the:

- distribution licence
- retail licence.

A mandatory licence condition applying to retail suppliers relates to standards of service. The Minister must impose conditions concerning annual reporting on performance in meeting minimum standards of service required under [standard form] customer supply contracts

Under the terms of the licence, the retailer, subject to guidelines, presents a business plan. The plan must cover **standards of service, environmental strategies and safety and risk management**.

Contracts

Retail market services must be provided to customers only by contract. Customer contracts define the contractual relationship between the customer and the retailer, and the customer and the distributor. All parties have rights and obligations defined explicitly in the contracts. This contrasts with the former situation where the rights lay with the distributor and the obligations with the customer.

There are two distinct contracts, a "customer connection contract" and a "customer supply contract". Where connection and supply services are provided by a single entity, the two contract types may be combined (see Section 3.3.2 above). Customer contracts may be either standard or negotiated.

- **standard** customer **connection** contracts apply to **all** customers unless the customer and supplier agree to a negotiated contract
- **standard** customer **supply** contracts apply to **franchise** customers unless the customer and supplier agree to a negotiated contract.

Standard form contracts are prepared by the electricity distributor, vetted by the Customer Consultative Group (see below, Section 3.3.7) and published in a local newspaper before they can take effect.

Standard form customer connection contracts must specify:

- the basis on which charges for connection services are to be calculated
- standards of service
- arrangements for disconnection
- procedures complaints handling and dispute resolution

Standard form customer supply contracts must specify:

- the basis on which charges for the supply of electricity to franchise customers are to be calculated
- the standard of service to be provided by the retail supplier
- arrangements for discontinuation of supply
- procedures for complaints handling and dispute resolution (For further information on complaints/dispute resolution see Section 3.3.5.).

The customer contract is written in plain English so that customers can understand the rights and obligations of parties contracting for provision of connection/supply services.

Licence holders are responsible for establishing their standards of service with input from customers. As a general rule, minimum state-wide standards of service are not appropriate, given the differing needs and costs of service across areas. However, some issues are particularly sensitive for customers and it may be desirable to develop standards for those which could be adopted state-wide. Credit management, which covers issues such as procedures for overdue payments, interest charges and disconnection is a particularly sensitive area. It is appropriate that the Department of Fair Trading chair the working group established to develop approaches to these and other highly sensitive consumer protection issues.

A full description of the structure and regulation of the electricity supply industry in NSW, with particular reference to retail customer arrangements, is contained in the booklet, *The NSW Electricity Supply Industry During the Transition to Full Retail Competition*, available on request from the NSW Electricity Reform Taskforce.

3.3.4 Price regulation

Historically, customers have paid a "total" price for delivered electricity. This price, though not itemised, was, in fact, made up of a charge for transport (use of the transmission and distribution network), a charge for the electricity purchased or, in some instances, generated by the retailer, and a charge to cover the retailer's administrative and other costs. In recent years, price control has been imposed through an independent regulator, the Independent Pricing and Regulatory Tribunal (IPART), which has determined maximum prices for delivered electricity inclusive of the three components mentioned above.

Breakdown of Charges		
Franchise Customer		Non-Franchise Customer
	Retail Prices	
Gross margin cap for franchise customers set by IPART with tariff charges subject to side constraints set by IPART.		Negotiable between customer and retailer.
Of which		
	Power Purchase	
Charge to the customer will reflect a portfolio of vesting contracts (a high fixed proportion of purchases at a contract price set by the Government) and wholesale contracts and spot market purchases, plus embedded generation. In addition there will be set charges for ancillary services, pool fees and so on.		Charge to the customer will reflect a portfolio of wholesale contracts and spot market purchases, plus embedded generation. Retailers who are not good portfolio managers will have their portfolios automatically marked to market (the retailer takes the loss). In addition there will be set charges for ancillary services, pool fees and so on.
	Transmission Use of System Charge (TUOS)	
Charge will be regulated by IPART.		Same.
	Distribution Use of System Charge (DUOS)	
Maximum revenue cap set by IPART covering franchise and non-franchise customers. Charges determined by distributor subject revenue cap.		Same.

The role of IPART is to regulate monopoly services. In the electricity supply industry transmission and distribution are natural monopoly services and will remain so in a competitive market. In the future, the transmission network may well come under a national regulatory regime.

In a fully competitive market, only the transportation charge will be regulated. The energy price and any retail service charge not included in the energy price will be competitively determined. Contestability is not immediate. It will be phased in. In the transition, only a contestable (non-franchise) customer will pay an unregulated energy charge. Customers who do not have a choice of supplier (franchise customers) will still pay fully regulated electricity tariffs determined by IPART.

When customers are contestable, the retail price they pay for energy is a market-based price, albeit with some fixed, regulated elements. In time, some retailers may offer integrated energy service contracts to non-franchise customers, with the charge for delivered electricity subsumed in a single charge covering smart metering, electricity and gas supply, periodic energy audits and, possibly, appliance purchases. Retailers will need to think about the commercial feasibility of such contracts. An important part of this will be to understand what value, if any, the customer might see in such a package compared with a contract for delivered electricity only.

3.3.5 Customer complaints/dispute resolution

Customer complaint resolution mechanisms should be readily accessible, easily understood and, above all, should minimise cost to the complainant, except where the complainant is pursuing the matter purely to make a nuisance. The resolution process should be begin internally with the provider of the services and, failing resolution at this level, only then should the dispute move to external adjudication or arbitration. An industry-wide independent body can provide a less costly alternative than judicial processes. An ombudsman or complaints resolution body fills this role. Only after all other avenues have been exhausted should recourse to the courts be required, though it must always be there as an option for complaints of substance.

Legal authority for dispute resolution mechanisms is found in Section 96 of the Electricity Supply Act 1995, which gives customers rights of appeals against certain decisions. For example, any person may appeal against:

- the decision of an electricity distributor regarding a charge payable under a standard form customer contract
- the decision of a retailer supplier regarding a charge payable by the person under a standard form customer supply contract.

The procedures for making an appeal and for dealing with an appeal are as prescribed by the regulations tabled in Parliament, (A regulation is legislation subsidiary to an Act which sets out matters, usually in more detail, and cannot be contradictory to the Act. The making of regulations of this type involves a public consultation process.) which are required under the Electricity Supply Act.

The more immediate avenues for complaint are most of concern to customers. As detailed above in Section 3.3.3, customer contracts must specify procedures for handling customer inquiries and customer dispute resolution. The contract must describe these procedures. Customers will have input to the design of these through the Customer Consultative Groups (see Section 3.3.7).

A toll-free line is an ideal way of providing an interface between customer and retailer, and not only for complaints. Customers often have general queries and appreciate being able to get immediate answers. This avenue of contact can also help prevent misunderstandings, which, in a climate of change and attendant uncertainty, can create frustration and magnify minor concerns out of all proportion. Licensees could choose to set up an alternative interface mechanism that fulfilled the same role.

The retail licence conditions prescribed in regulations will require the retailer to appoint an *independent* dispute resolution body to resolve disputes which are not resolved to the customer's satisfaction through the retailer's internal dispute resolution processes. Guidelines to cover the setting up of an "independent" dispute resolution mechanism will be developed by the working group, referred to above (Section 3.3.3), to be chaired by the Department of Fair Trading. Each of the six NSW electricity distributors has indicated that it will become a member of an electricity industry ombudsman scheme which is offered as a service to the industry by the Electricity Association of NSW. The features of the scheme are shown in the box overleaf.

Furthermore, it will be a condition of retail licences that the retailer regularly publish comprehensive information on the nature and level of complaints that are handled internally and those resolved by the independent body. This will provide the basis for

central monitoring of the level of customer complaints, which is an important aspect of monitoring the impact on customers of competition in electricity supply.

Electricity Industry Ombudsman

Consulting an industry ombudsman is an effective way of dealing with complaints. Complainants have the security of knowing that an ombudsman is one step removed from the industry and, as such, offers an impartial forum for dealing with complaints about the industry. The Electricity Association of NSW is proposing to set up an ombudsman scheme along the lines of those that have proven effective in telecommunications and banking and in the Victorian electricity industry.

A three tiered structure comprising a Board, a Council and the Ombudsman is envisaged, with the Board elected by shareholders in the Ombudsman corporation (shares are proposed to be issued at a nominal price to any retail electricity supplier in NSW). The Board will appoint the Council, which is proposed to have equal representation of customers and the electricity industry. The role of the Council is to determine the policies to be adopted by the Ombudsman in handling complaints.

The key roles of the Ombudsman will be to:

- resolve individual disputes
- advise industry members on the development of dispute resolution processes and improvements in customer relations
- report to all stakeholders regarding complaints and trends
- educate the public about the role of the ombudsman and establish a two-way communication network with all relevant community sectors and bodies to promote the scheme and facilitate its use.

As a final note, there is nothing in the Act which impedes the operation of general consumer law. If a customer feels unhappy with the electricity-specific mechanisms, all avenues of complaint procedures which apply to general trading are available for use.

3.3.6 Monitoring

Licence compliance

The licence imposes requirements on the retailer to abide by his plan. There must also be a compliance monitoring process to ensure that he does so.

FIGURE 3.1

ELECTRICITY SUPPLY ACT 1995

RETAIL LICENCE - GENERAL MONITORING APPROACH

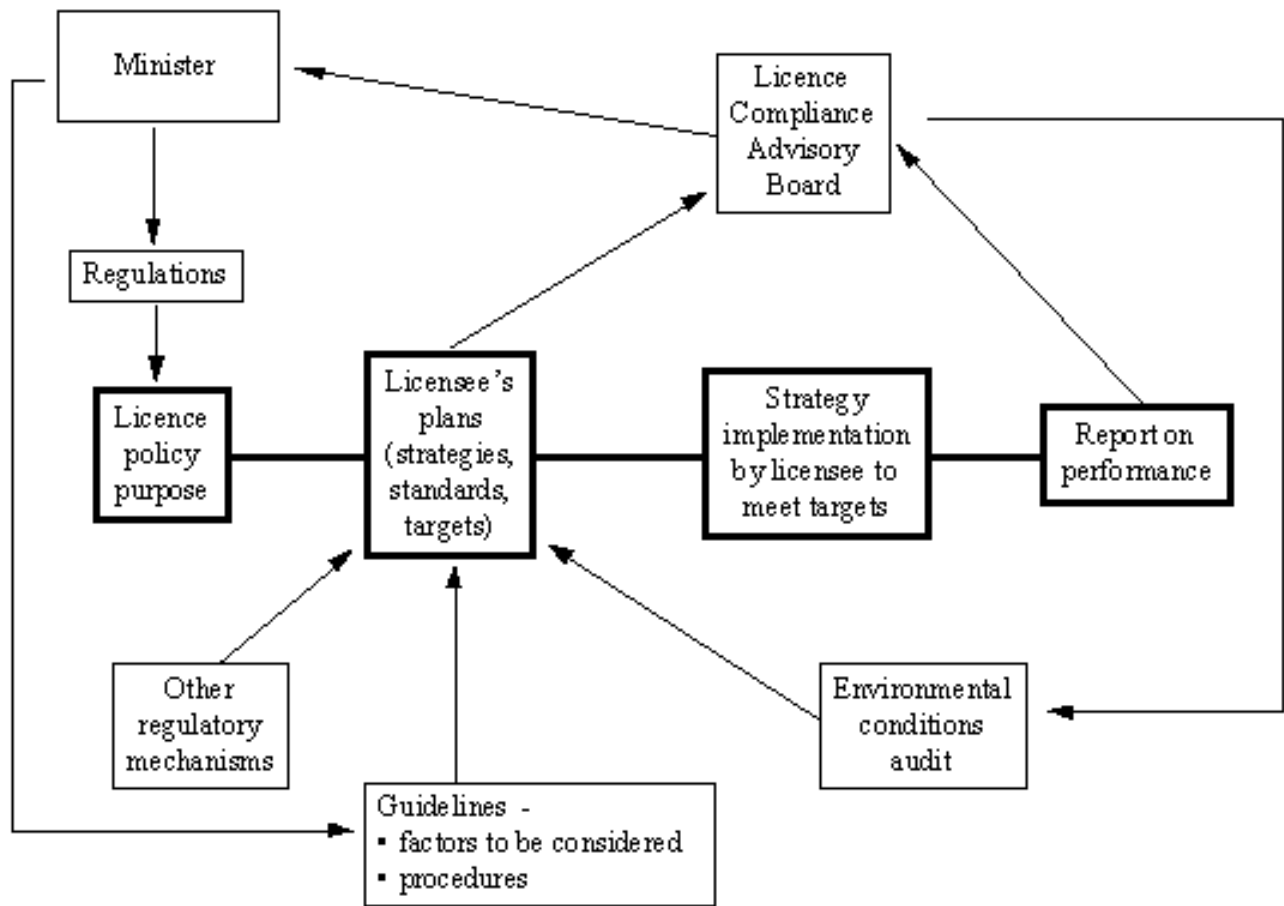


Figure 3.1 illustrates the framework controlling retail licences. The Licence Compliance Advisory Board, whose function and membership is discussed in Section 2.1.2, is an important element in the strategy for the Government to exert control over retail and distribution licensees if they circumvent the customer protection or other provisions of the licensing regime.

Customer experience

In the formative years of the retail electricity market, it is desirable that there be central monitoring of customers' experience in the market. To some extent this can be achieved through central monitoring of the nature and level of customers' complaints to retailers and monitoring of the handling of those complaints, as mentioned in the preceding section. However, monitoring only complaints provides an incomplete picture.

Customer response to the changes should also be examined. Central monitoring of customer attitudes will facilitate the task of helping customers gain maximum benefit from competition. There are two ways of using information from the monitoring program to help customers. First, the customer information program can be adapted to reflect customer experiences in the market. Second, the rules and regulations that define the competitive framework can be modified in response to market experience.

Any changes to guidelines, rules and regulations must be made with care. Rule changes can be costly for businesses and households. Investment in equipment made under one regulatory framework may end up as "sunk costs" when that framework is changed. Furthermore, the prospect of rule changes can deter investment from the outset. Rules may adapt in response to information from the market. The process of change is likely to happen over three to four years.

Clearly savings would accrue in combining the customer information program of Section 3.3.1 and the suggested program to monitor customers' experience in the market. However, it would not be appropriate to assign sole responsibility for the monitoring program to the NSW Market and System Operator. The Department of Fair Trading should have primary responsibility for monitoring the side of the program relating to customer experience. Input should also be invited from customer network organisations, some of which are leading players in the development of programs. These organisations could profitably assist in the design of the monitoring program.

Programs for monitoring customers' experience in the market, should also have professional input from firms specialising in the design and delivery of targeted communication programs.

3.3.7 Representation in the policy process

Representation on bodies involved in making, implementing and overseeing decisions that directly, and indirectly, affect customer welfare is perhaps the strongest of all protective measures for customers. The policy of encouraging customer representation meshes well with the customer focus of the new energy industry.

In preparing this report, the Taskforce followed a process of extensive public consultation from December 1995 through to April 1996. As documented in Chapter 1, this began with a Public Forum held in December 1995 following the publication of an issues paper on retail competition. The consultative process will continue. The introduction of retail competition is best achieved through an evolutionary process, which requires, even demands, participation from everybody. The Taskforce has received valuable input from a variety of sources and is most grateful for this help.

The implementation process will require workgroups. Representation on these groups should reflect the wide range of customer, business and electricity industry involvement in the reform process. Rural interests should be acknowledged.

Customer Consultative Groups

The Electricity Supply Act (Section 89) states that each electricity distributor should appoint at least one customer consultative group to act as a forum for consultation between the distributor and its customers. The groups are to include members representing the following sections of the community:

- consumer groups
- low-income households
- persons living in rural and remote areas
- domestic customers
- industrial and commercial customers

Under Section 91 of that Act, the functions of the consumer consultative groups are to provide information and advice to their electricity distributors, among other matters, on:

- the form and content of standard form customer connection contracts and standard form customer supply contracts, together with any amendments to these contracts
- the effect on retail customers within their distribution district of any proposed change in the way that their electricity distributors operate
- any improvements that could be made to the way in which electricity distributors operate, that the customer consultative group believes would benefit customers.

The Taskforce recommends that:

- coinciding with the phasing-in period for retail competition, a professionally designed and implemented information and monitoring program be conducted, actively disseminating information on the operation of the retail market, responding to customer and retailer inquiries and reporting on customers' experiences as the market develops
- the Electricity Reform Taskforce, in association with the NSW Market and System Operator, and with consultation from the Department of Fair Trading, manage the inception phase (to November 1996) of the combined information and monitoring program, and then hand over the operation to a designated government agency
- the Department of Fair Trading convene a working group to provide advice to the Minister for Fair Trading and the Minister for Energy on customer protection matters, notably credit management standards and dispute resolution guidelines, and that the working group prepare an information paper on customer protection by the end of August 1996.

3.4 Safeguarding the Environment in a Competitive Electricity Market

It is a fundamental consumer right to live and work in an environment that is neither threatening nor dangerous. Safety issues pertaining to the connection and supply of electricity have been addressed above. However, these are but a small part of the wider environmental protection issue. The Government has put in place a strategy to protect the environment. The elements of this strategy, referenced in Section 3.1, are presented in more detail below.

3.4.1 Legislation to safeguard the environment

In a market situation, the policies needed to safeguard the environment will require changes to the traditional command-and-control style of regulation. A prime example of this are requirements for particular emission control technologies and individual fixed emission rate limits. This rigidity fails to reward innovation and discourages cost-effective emissions reduction. A regulation that limits a generator's emissions rate gives no credit for demand-side management. Another common means of taking into account environmental externalities is for governments to require generators to have policies for sourcing feed-stock. However as the nature of the industry changes, regulating generation loses its effectiveness. Requiring retailers to purchase renewable energy can achieve a similar outcome.

The Electricity Supply Act 1995 requires the Minister to impose mandatory conditions on retail licence holders to undertake measures of an environmental protection nature. These conditions are set out in Section 2.1.2. In addition, distributors' licences contain a mandatory condition which requires an electricity distributor to investigate whether it would be cost effective to implement demand management strategies as an alternative to any proposed expansion of its distribution system **and** to publish annual reports on the results of such investigations.

3.4.2 The Sustainable Energy Fund

A competitive electricity market gives customers choice, can improve efficiency and hastens the retirement of inefficient generation. While these are desirable outcomes, there is some concern that placing greater emphasis on price will be to the detriment of environmental policies. Competitive pricing of generation could discourage demand-side management programs. Market forces could deter high risk investment, including investment in the commercialisation of renewable energy technologies. Investors will bear commercial risk only if they can reap appropriate rewards.

The Government has recognised this and implemented mechanisms to ensure that research into sustainable energy development will continue. This will be accomplished through the Sustainable Energy Development Authority (SEDA). SEDA manages a Government-established fund, with an initial three-year allocation of \$65 million, provided to encourage the development, commercialisation, promotion and use of sustainable energy technology.

3.4.3 Broader environmental regulation

Legislation

Environment protection legislation will apply to the newly created corporations (generators and distributors) in much the same way as it applied to Pacific Power and the former distributors. For example, the new electricity generators will be required to hold pollution control licences issued by the Environment Protection Authority. Any independent generator will also have to hold a pollution control licence. The new generators and distributors have to comply with the Environmental Offences and Penalties Act. The Act imposes on directors personal liability for certain offences.

Policy development

Retail competition will create a need for further new policies. The most successful will rely on efficient market mechanisms or incentives to enhance the quality of the environment. One such mechanism is to have a tradeable emission rights scheme placing limits on total emissions (In response to the Retail Competition Issues Paper, the Australia Institute submitted a paper canvassing the idea of a tradeable permit scheme for greenhouse gas emissions.). Such limits may be imposed per unit of time, with a facility for "banking" units of emission quota. An initial distribution of permits could be established by auction or allocation. However, this is not a rigid control since these permits could be traded.

While it limits emissions, a permit also confers on a firm or a source the right to a certain emission level. Permits must specify whether, and how, they can be transferred. There is a great deal of work involved in developing these specifications, especially in relation to intertemporal transfers.

Permits are valuable assets for their holders. Tradeable permits tend to move to the firms who are prepared to pay the most. Final owners use them where most profitable, applying them to those emissions which would be most costly to prevent or do without. Such trading improves the cost-effectiveness of emission control.

Tradeable permits represent a step towards decentralised decision-making. Firms will make decisions on pollution control on the basis of prices they face in markets, as they do with all their decisions. However, permit schemes may not be satisfactory where markets are not fully competitive. In a retail oligopoly, (Oligopoly is limited competition between few producers or sellers.) for example, if retailers can pass the price of permits on to customers, it is in the retailers' interest to bid up permit price.

The extent to which oligopolistic companies can (and may wish to) pass on permit costs to their customers is one of many issues that need to be addressed before taking any decision on a permit scheme. The EPA has indicated that it is convening a working group to explore the feasibility of introducing the approach in NSW.

3.4.4 The role of the community

The community is learning to place a high priority on environmental protection. Recognising this trend, retailers have developed strategies that have factored in the environment. It makes good business sense to provide the customers with what they want. Increasingly customers are looking not only at their environment, but the one their children and grandchildren will inherit.

The two largest retailers have turned their attention to renewable energy and more environmentally friendly sourcing. Energy Australia is piloting a program for a Zero Greenhouse energy tariff. Customers can elect to have 100%, 50% or 25% of their energy purchase from the Zero Greenhouse portfolio. Energy generated will come from solar, wind hydro and landfill gas. Those taking 100% of their energy from the portfolio will pay a premium of about 3¢ per kWh. Integral Energy is using energy generated from the waste methane gas of coal mines. This source of energy promises a reduction in greenhouse gas emissions of 50% compared with conventional coal-fired generation.

Businesses too have a role to play. The Bureau of Industry Economics (BIE), in a report on energy efficiency, (Bureau of Industry Economics, Energy efficiency and greenhouse gas abatement. The role of cooperative agreements in Australia, No. 96/5.) cites the results of an audit of 700 companies. Included in the group were 490 mining and manufacturing companies. The audit found energy efficiency improvements, using new technology, could be achieved in 98% of the firms surveyed. The payback period for the technology

investment is estimated at thirty months. In the mining and manufacturing sectors, estimates suggest that annual energy consumption could be cut by about 4%, on average.

Environmental groups have a vital role to play in "grass-roots" education. Awakening customers to the power they will hold in a competitive electricity market will provide another means of protecting the environment. If increasing numbers of customers demand "green" energy, retailers will be forced to respond. Too much government involvement can sometimes be counter-productive. There is the very real danger that too many people will adopt a "wait-and-see" attitude. For the environment, wait and see is too late.

The Taskforce considers that environmental improvements and competition (as proposed in NSW) are likely to coexist successfully. For one thing, developments in metering technology, prompted in part by competition in retail electricity supply, will have a significant impact on demand management. Ready and inexpensive access to load data allows customers to manage energy use. The technologies will also help retailers manage their load.

There is a shift in emphasis to marketing energy and related services, with potential reductions in the use of electricity. This will benefit both the retailer and the customer. New entrants from outside the traditional electricity supply industry will reinforce this marketing trend towards customised services. Furthermore, through SEDA the Government will assess properly structured requests from developers of energy-saving technologies for assistance in the commercialisation phase.

The Taskforce recommends that in June 1996, the Minister for Energy issue a statement setting out the application procedure for retail licences, accompanied by administrative guidelines indicating (among other things) how licensees will be assessed for compliance with the condition that they negotiate certain strategies/plans with the Minister, notably those relating to environmental outcomes.

4. TRADING SYSTEM ISSUES

4.1 Introduction

Threshold limits will be used to manage the removal of the franchise. The reasons for this decision were set out in the Interim Report (NSW Electricity Reform Taskforce, Interim Report: Retail Competition in Electricity Supply, February 1996, pp 14-16.). Under this approach, the criterion for contestability of a designated customer site is that the amount of electricity used at the site must be above a preselected threshold level. The removal of the franchise will be accomplished by lowering the threshold level, in stages over a period of years.

Issues affecting the choice of implementation path are complex and inter-related. Broadly speaking, they fall into two groups. There are issues of a legislative and regulatory nature and those which relate to the practical/technical side of the market arrangements. The issues concerning the practical market arrangements are those associated with trading arrangements and operational rules, eg metering and communications.

The timing of reductions in the threshold levels is influenced by metering system capabilities. This is, not only the functionality of the meter itself, but also the method and rate of data transfer to the body responsible for the financial settlements function of the electricity trading system. Consolidation (Aggregation as discussed in the Interim Report is a form of consolidation.) of electricity usage over different sites is another critical issue which impacts on the timing and phasing of implementation through its demand on the financial settlements function.

4.2 Metering Issues

4.2.1 Background

Metering issues involve metering, communications and data collection. Any customer wishing to trade in the wholesale market will require a half-hourly meter able to communicate in real-time with the Market and System Operator. Under proposed national market rules, a contestable customer who takes supply from a retailer other than the local retailer will also require a half-hourly meter with the associated communication system, even if that customer buys in the retail market.

Retailers associated with distributors pay the pool for purchases made in each half hour. Purchase volumes are measured as the energy flowing through the bulk supply points in their area. The purchases made by those customers who choose a supplier other than their local retailer are identified by reference to the customers' meters. Thus, for a particular distributor/retailer, the amount of electricity obtained from the pool is calculated by "netting out", that is subtracting from total supply (as measured through the bulk supply points) the total metered usage of those customers who are supplied by other retailers.

This approach removes the need to meter half-hourly customers remaining with the local retailer, including contestable and franchise customers. However, it does give an advantage to the local retailer, particularly where metering costs (Metering costs include the cost of the meter, the cost of the communications link to the data base and the cost of data analysis for calculating charges (settlement costs). There is an initial cost and then an annual cost.) form a significant proportion of a customer's annual bill. A contestable customer may feel the metering costs are too high and opt to remain with the local retailer.

4.2.2 Mandatory metering

Mandatory half-hourly metering for all sites using large amounts of energy, irrespective of retailer choice, makes good sense. The alternative, load profiling, (Forecasting or making assumptions of what the customer, either as an individual or a "typical" customer, uses in each period of the day.) is not suitable for the larger customers whose demand patterns vary significantly across the day. Profiles for these customers are generally far less accurate in absolute terms than those for smaller customers. Retailers purchasing for the contestable (non-franchise) portion of their load require half-hourly information on the larger sites to accurately

hedge the risks of purchases. As Table 4.1 shows, customers with an annual consumption of more than 4GWh account for a significant percentage (29% on a state-wide basis) of total load.

TABLE 4.1

HALF-HOURLY METERING IN PLACE, FEBRUARY 1996¹

Annual energy use	No of "customers" (sites)	Half-hourly meters			Percentage of total annual energy use ²
		Total	Communications:		
			yes	no	
>40GWh	47	39	34	5	14%
>4GWh	659	401	270	131	29%
>750MWh	3,545	1,823	785	1,038	40%
>160MWh	10,748	3,479	834	2,645	47%

1 The rate of installation of communications is increasing rapidly. It is likely that by October 1996 all sites with annual energy use above 4GWh will have half-hourly metering with communications in place. There will also be a significant increase in the next customer tranche.

2 This includes distributor contracts but not direct contracts with Pacific Power.

Source: NSW electricity distributors

Table 4.1 also shows that there is reasonable penetration of half-hourly metering in NSW at the upper end of the consumption scale.

In Victoria half-hourly metering is mandatory for 1MW+ (40GWh) contestable sites. However, in the national market half-hourly metering is proposed to be mandatory only for those contestable sites where the customer chooses to take supply from other than the local retailer. The Taskforce considers that in the interests of promoting equal market access, the same metering requirements should be applied to all contestable sites in each size bracket, regardless of the choice of retailer.

Based on the information in Table 4.1, it would seem appropriate that half-hourly metering with communications be mandatory for all sites with a total energy consumption greater than 4GWh per annum, or alternatively with demand in excess of 1MW.

While there is a strong case for requiring half-hourly meters for larger sites where metering penetration is significant, mandatory half-hourly metering for other sites is more contentious.

Meters provide a wide range of benefits to both customers and retailers:

For customers	For retailers
accuracy	better cashflow through implementation of more frequent billing
improved customer service through wider choice of tariffs	accurate data for system management
enhanced cost information	new business opportunities
	reduction in meter reading costs
ability to manage loads for energy efficiency	earlier detection of meter interference

Offsetting these benefits, there is a high initial cost of installation and there are ongoing meter interrogation costs. Table 4.2 compares the cost of conventional metering with the cost of electronic half-hourly metering.

Take as an example an industrial or commercial site with three phase electricity supply (columns 1 and 3 in Table 4.2). The customer at this type of site is looking at a capital cost of roughly \$1,885 for an installed electronic meter, compared to \$485 for a conventional meter, even less, where a serviceable conventional meter is already in place. In addition, there is the higher ongoing cost of data delivery via the communication link between the meter and the central data collection point operated by the Market and System Operator, since an electronic meter is read more frequently, to a maximum of half-hourly.

TABLE 4.2

ESTIMATED FUTURE METERING COSTS				
	Conventional Metering		Electronic Metering	
	Polyphase	Single Phase	Polyphase with dedicated PSTN line and modem	Single Phase with shared PSTN modem
Capital Cost (\$):				
Meter	300	65	700	150
Communications			1000	150
Meter board	20	20	20	20
Installation costs	165	50	165	50
Total Capital Cost	485	135	1885	370
Amortised over 5 years	130	37	500	100
Recurrent Cost (\$):				
Telecommunication rental			135	
Maintenance cost	40	9	40	9
Electronic meter reading			365	52
Tariff meter reading	50	50		
Total Recurrent Cost	90	59	540	61
<i>Total per annum cost</i>	220	96	1040	161
<i>Total per annum cost after capital costs are recovered</i>	90	59	540	61

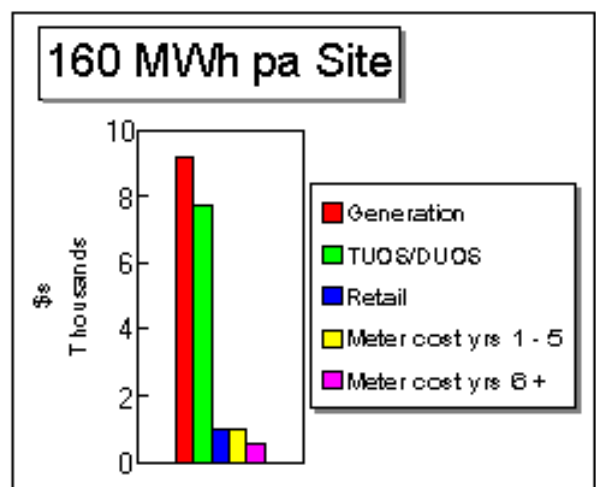
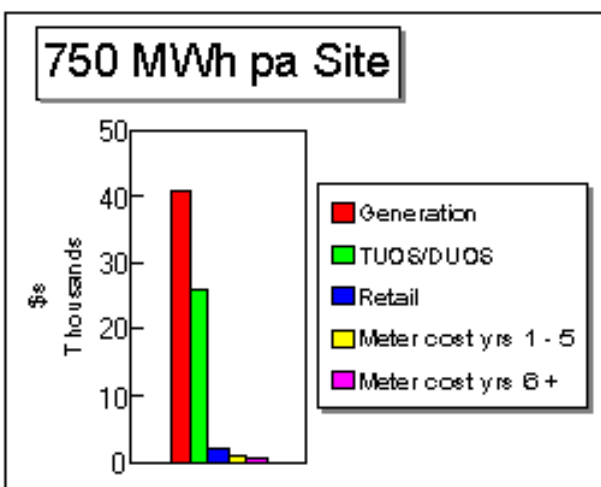
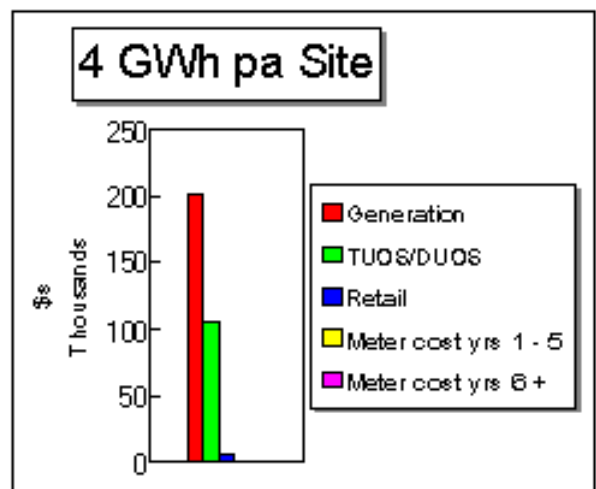
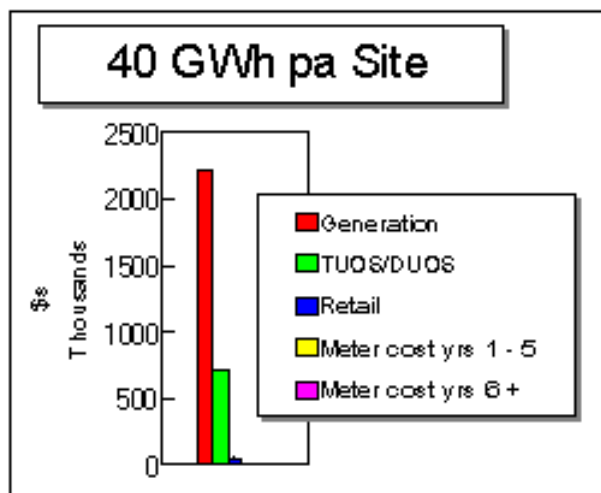
Note: Capital Cost amortised at 10% pa interest rate over 5 years.

Source: NSW Electricity Reform Taskforce

As can be seen from Table 4.2, the additional cost of moving to smart metering is a relatively insignificant part of the total bill for a site using more than 750MWh a year. The customer needs to achieve only a small saving in the energy bill, through competition, to justify the expense of sophisticated metering. For a site using around 160MWh a year, the assumed annual cost of full half-hourly metering just over \$1,000 is a somewhat larger percentage of total annual outlay on electricity, which is approximately \$15-16,000. However, assuming that the capital costs are fully amortised over a five year period, the ongoing annual cost of smart metering drops from around \$1,000 to around \$540. It is quite possible that the saving on a \$16,000 electricity bill would cover this cost.

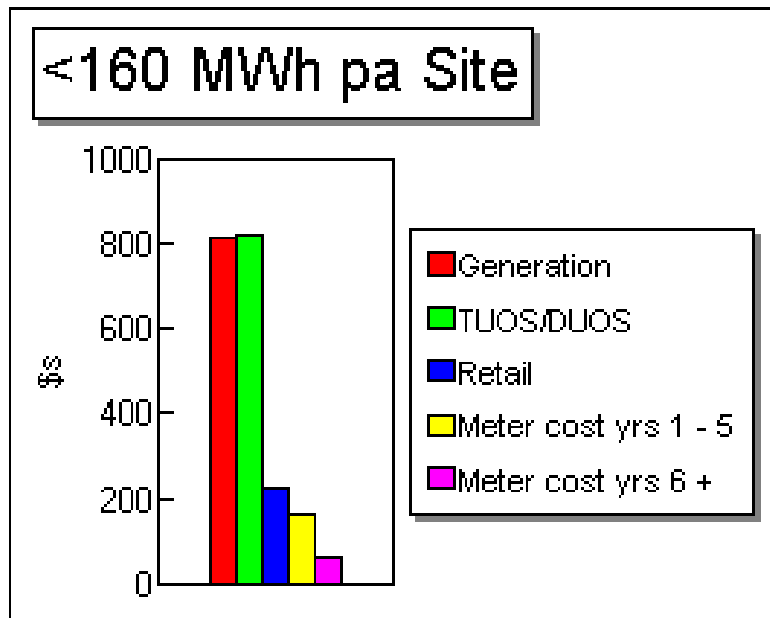
For a small business or residential site with a single phase electricity supply (columns 2 and 4 in Table 4.2), the capital cost of the installed meter is estimated to be \$370. The meter would be an electronic "half-hour" meter capable of storing meter readings and load profile information data, with a communication modem that could share the customer's existing telephone and transmit meter data at times which would not interrupt the customer's normal telephone service. An installed conventional meter costs \$135. The cost differential between manual quarterly meter reading and weekly remote reading is insignificant.

The following charts plot the cost elements of the total annual spending on delivered electricity against metering costs for sites using at least 160MWh a year. The charges are for energy purchase, labelled "Generation", for transportation (transmission and distribution) labelled TUOS/DUOS, (TUOS -Transmission Use of System (charges). DUOS - Distribution Use of System (charges).) for the retailer's margin and two metering costs. The first metering cost is the charge for the initial 5-year period, the second the charge post-five years when the cost of the meter has been fully amortised.



For a site using less than 160MWh per annum, the cost of sophisticated metering represents a much higher proportion of electricity expenditure. It is difficult to justify the expense of a half-hourly meter in today's climate.

For an average household with an annual electricity bill of \$555, the capital cost of \$370 for a half-hourly meter makes the proposition uneconomic. Even when this metering cost is considered on an annual basis, the proportion of total outlay attributed to metering remains high, being \$160 for half-hourly metering compared with \$555 for delivered electricity.



If the retail market is to have depth and all customers are to have effective choice of retailer, there must be a reduction in the cost of half-hourly metering for sites using less than 160MWh a year. The falling cost of electronic componentry, as seen in the computer industry, and the falling cost of telecommunication, provide some opportunity, but these developments alone are unlikely to bridge the gap. Alternative communication systems may provide a greater opportunity.

Fitting a radio transmission device to the electronic meter in place of the telecommunication modem, reduces the cost of the installed meter to an estimated \$320. This solution still provides many of the features of the sophisticated meter, namely its ability to store load profile data and to offer bi-directional communication. The meter could then be read by a range of devices including hand-held computers, a radio-equipped van, or cell control units (CCUs) fixed to poles or street lights. These units would act as collectors for radio signals sent from up to 100 meters away and would relay the information to the central database through a network of radio links or a combination of radio and telephone links.

A less sophisticated solution would be to add an electronic radio transmission (ERT) module to a conventional electromechanical meter. The ERT could be retrofitted to existing meters or installed in new meters. This configuration would not offer the functionality of the more sophisticated electronic meter, but would achieve the objective simply by reading the meter more frequently. It would be feasible only as the entry point of a fixed radio network. Mobile meter reading would not be feasible if meters were interrogated several times a day. The estimated cost of the installed meter is \$195, only \$60 higher than a stand-alone meter.

A drawback of using meters with ERT is that while it is possible to read these meters half-hourly, it is not possible to synchronise large numbers of readings on the half-hour. There would have to be a 5 to 10 minute timeband around the half-hour in which to interrogate the meters. This requirement would be inconsistent with pool settlement principles.

Table 4.3 compares the cost breakdowns of the two solutions discussed above with conventional single phase meter costs.

TABLE 4.3

ESTIMATED FUTURE METERING COSTS WITH ALTERNATIVE SYSTEMS			
	Conventional Single Phase	Electronic Single Phase	Conventional Single Phase
	Meter	Meter with Radio AMR	Meter with ERT
Capital Cost (\$)			
Meter	65	150	65
Communications		100	60
Meter board	20	20	20
Installation costs	50	50	50
Total Capital Cost	135	320	195
Amortised over 5 years	37	86	53
Recurrent Cost (\$)			
Telecommunication rental			
Maintenance cost	9	9	9
Electronic meter reading		36	36
Tariff meter reading	50		
Total Recurrent Cost	59	45	45
Total per annum cost	96	133	98
Total per annum cost after capital costs are recovered	59	45	45

Note: Capital cost amortised at 10% pa interest rate.

Source: NSW Electricity Reform Taskforce.

Whereas solutions based on telephone communication utilise the existing telecommunication network, radio based systems are able to utilise mobile receivers, either hand-held or in a van. Alternatively, they could use fixed networks, which would have to be constructed. Apart from the cost of the metering device, the upstream investment in a radio network infrastructure would be considerable and may be a barrier to utilising this technology. Where feasible, mobile receivers could be used until a fixed radio network could be established or as an alternative where population densities did not warrant investment in a fixed network. The technology for these systems exists, and has been employed by some utilities overseas, particularly in the United States.

An alternative to automatic meter reading via telephone or radio, is a power line carrier system. This system utilises the distribution network wires to transmit metering data from the meter over a short distance, to a low voltage substation where it is captured by a data concentrator. From the concentrator the data can be downloaded by either telephone or radio. The cost depends upon the number of households served by the substation, but with high customer densities, eg 300 customers per substation, meter costs could be expected to be around \$200 per customer.

These metering solutions point toward a lowering of the barrier to entry created by the requirement for half-hourly metering. The benefits of a device which has the potential for bi-directional communication and opens other opportunities for load control and management and other applications, must be weighed against the conventional meter, which is limited to providing rudimentary measurements of consumption.

Another emerging communications solution is to utilise the optic fibre network currently being laid by Optus and Telstra. An electronic meter could be connected to the home interface unit, which is the hub from which cable TV, telephone and other home services are provided. The cost of such a meter would be around \$220.

Bearing in mind the objective of promoting competition, it may be necessary to reassess the requirement of half-hourly metering with communications in relation to the domestic market and small business customers. It could be possible to reduce the cost barrier to entry, while retaining the benefits of sophisticated metering, by reducing the communications requirements. Electronic meters have the capacity to store 40 days of half-hourly data. They could therefore be read monthly utilising existing manual meter reading equipment and avoiding the cost of adding communication capability to the meter. However, if this solution was adopted, it would have implications for the pool settlement process. The customer's consumption would be based on an estimated load profile for settlement purposes, then adjusted once the actual monthly meter reading was taken. As a customer history was developed based on actual usage, the estimated load profile would become more accurate and the adjustment smaller.

As the number of installed meters increases and the cost of communication decreases over time, it may become economic to install automatic remote meter reading to replace manual meter reading and eliminate the need for load profiling.

The benefits of half-hourly metering are not limited to the area of energy supply. It is not so much the meter, but the two-way communication link which holds the key to a revolutionary future. Overseas, large electricity utilities are moving into telecommunications and vice versa. Within the Asia-Pacific region, Tokyo Electric Power Company in Japan, Tenaga in Malaysia and KEPCO in Korea are heavily involved in telecommunications. The convergence of telecommunications and electricity markets is already showing signs of spreading to Australia. In time, this will have profound effects on the structure of the retail electricity market.

Two significant messages that emerge from this review of metering issues are:

the introduction of competition in electricity retailing hinges on having metering rules that enhance opportunities for the development of metering systems to suit all customers

metering rules in electricity markets can either hasten or retard the emergence of a combined telecommunications and energy services market.

Hence, electricity market designers, through the metering rules they determine, wield considerable influence. There are three decisions that can and should be taken for NSW now, to secure the productive use of this influence.

The Taskforce recommends that:

- within each size bracket in the retail market, metering rules be applied uniformly across all non-franchise customers regardless of whether the chosen energy supplier is the retail arm of the local distributor or another retailer
- the NSW Market and System Operator submit recommendations to the Minister for Energy on retail market metering rules, with the rules for sites using under 4GWh a year to be defined according to the function which the meters and communication linkages will perform, without reference to the hardware which will perform these functions
- from a date to be determined by the Minister for Energy, but no later than 1 July 1997, the supply and installation of metering for sites converting to non-franchise status be a contestable activity, in line with the National Electricity Code, and that it be coordinated by the customer who may appoint as his agent the retailer chosen to supply energy to the site.

4.3 Consolidation and Resale within the Retail Market

4.3.1 Background

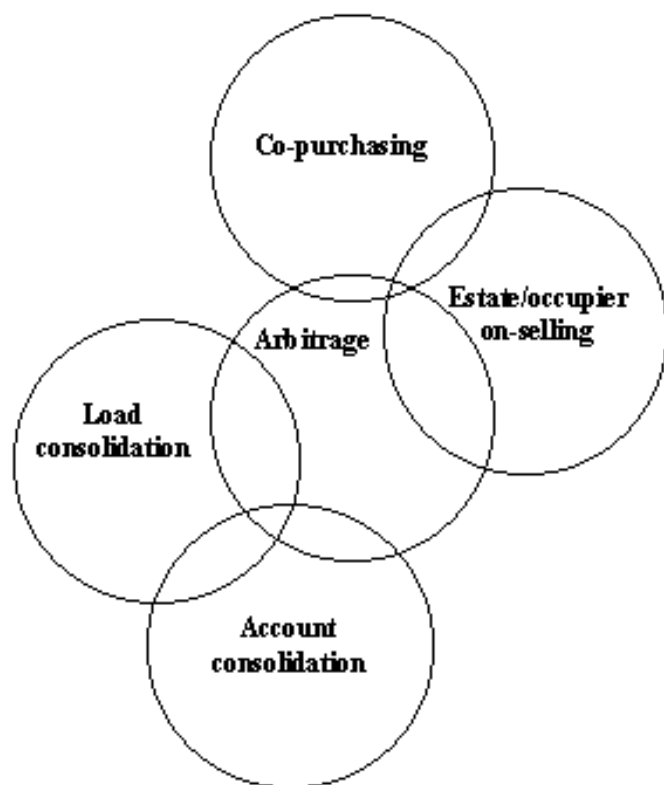
In the Issues Paper, and then again in the Interim Report, aggregation was discussed as a way of introducing earlier contestability to customers, by allowing the adding together of loads across sites. Subsequent discussions with various groups highlighted the need for clarification of what was meant by the term "aggregation". In searching for a definition, it was decided to adopt the more descriptive term "consolidation and resale" in place of aggregation.

A breakdown of activities which come under the general heading "consolidation and resale" follows. There are five activities, some of which overlap, as can be seen in Figure 4.1.

Account consolidation	A service provider adds together individual accounts from across sites to present a single account to the customer. The service provider could be a distributor, an independent electricity retailer, or a firm that does not sell electricity (some firms, known as "re-billers", specialise in consolidating customers' accounts including water, electricity and telephone).
Arbitrage	A service provider buys electricity at a favourable tariff that is available to one class of customer, and resells the electricity to customers who would not normally be offered this tariff (perhaps simply because they do not know about it).
Estate/occupier on-selling	<p>A form of consolidation and resale that occurs where there is a single metering point for a small private electricity distributor (such as the owner of a shopping mall or mobile home park), who on-sells electricity to multiple users. The users may not have their own separate meters.</p> <p>Under the Electricity Supply Act the landlord (owner or lessor of the premises) may impose a charge for electricity supplied if there is a separate meter and "the charge imposed for the electricity so supplied is no greater than the maximum allowable amount."</p> <p>(Electricity Supply Act, 1995, Part 6, Division 2, section 72.); The Act contains a definition of "maximum allowable amount". Alternatively, the charge for electricity can be bundled into a charge for the use of the facility.</p>
Load consolidation	A customer adds together the loads from one or more sites to negotiate a supply contract for total consumption.
Co-purchasing	<p>Two or more electricity users agree to pool their electricity purchasing as a means of exerting greater purchasing power.</p> <p>They may do this through an existing entity, which could be either non-profit (such as a credit union, employees association, motorists association or other club), or a commercial enterprise such as AGL or Optus.</p> <p>Alternatively, a number of electricity users may form a cooperative specifically to pool their electricity purchasing.</p>

FIGURE 4.1

CONSOLIDATION AND RESALE



4.3.2 Discussion

The question of whether to open the electricity market to consolidation and resale activity is crucial because consolidation and resale can help shape the market. The Taskforce envisages that all the activities described above will have a place in a fully competitive retail market. In the transition, however, considerable disruption could be caused by permitting all categories of consolidation and resale to proceed unchecked.

Consolidation, as distinct from resale, is a problem only in the transitional period; once the franchise has been removed, there will be no barriers to consolidation. However, total franchise removal will take many years and some customers will feel disadvantaged by even a short delay in gaining entry to the contestable market.

One group for which consolidation is a pressing issue is the so-called "distributed customers". These are commercial large users of electricity who operate across numerous sites, each of which individually does not use a large amount of electricity, but which in total amounts to a very large purchase. Purchase costs for these customers are significant and can run into many hundreds of thousands of dollars a year, and in some cases millions. In a competitive electricity market, a customer with a significant energy bill will not simply be offered a standard small customer tariff. There will be a negotiated contractual arrangement.

While distributed customers will benefit from being allowed to consolidate their loads, they will also benefit the market because they have considerable experience in negotiating supply contracts for various inputs in a market environment. By bringing that experience to bear as electricity and energy service purchasers, they will force electricity retailers to become more proficient in commercial negotiations. This will increase the effectiveness of competition between retailers for contestable loads.

In addition, since distributed customers are keen to gain entry to the market, they will have the impetus to design workable metering arrangements for their small sites and to obtain approval for those arrangements. These metering solutions will help to define the entry requirements for other types of consolidators and resellers as well as individual customers with small sites.

The strongest argument against immediate removal of controls on consolidation and resale is the capacity of consolidation to undermine the orderly opening up of the market. Permitting consolidation and resale adds

uncertainty to the determination of franchise customer numbers. If individual customers are able to consolidate loads across a single site, distributors have concerns about the possible difficulty of establishing responsibility in the event of non-payment.

In the transitional period, the arrangements for consolidation and resale can take into account the concerns of retailers, while recognising that customers with significant energy bills have a key role to play in opening up the market. Where the customer is a single legal entity, adding together loads at one or more sites may be permitted as a means of moving the load for the combined sites over the threshold limit for contestability.

It is possible that groups of unrelated customers may consider forming legal entities purely as a device to obtain entry to the market ahead of time. Such action would undermine the orderly opening up of the market. To avoid this, the arrangement for load consolidation could be restricted to customers with spending of at least \$500,000 a year on electricity.

Those customers who take advantage of the opportunity to consolidate their loads will also be responsible for equipping all the sites involved with metering that adheres to market rules. There should be scope for load consolidators to negotiate customised metering rules with the Market and System Operator.

The Taskforce recommends that there be no provision initially for customers to convert ineligible sites to contestable status via aggregation and that limited provision for this occur from July 1997. It should be restricted to sites using at least 160MWh a year, with the added requirement that the consolidator be an individual customer (a single legal entity) with an annual electricity bill in NSW of at least \$500,000.

5. IMPLEMENTATION PATH FOR NSW AND INTERSTATE TRADE

5.1 Overview

This chapter reviews the options for contestability as presented in the Interim Report (NSW Electricity Reform Taskforce, Interim Report: Retail Competition in Electricity Supply, February 1996.), and later modifications of those approaches. The review takes into account submissions received by the Taskforce and information gleaned from discussions with interested parties.

The Taskforce has considered the likely market consequences of the Government publicly committing to one particular timetable. These consequences have economic and financial dimensions, extending across the public and the private sectors. The Taskforce found it possible to estimate some of the financial consequences. For the most part, however, the assessment hinged on judgments based on qualitative information and an understanding of incentive structures.

The details and analysis of the options are set out in Sections 5.2 to 5.3. The Taskforce's proposal is described in Section 5.4. It is followed by a section providing further detail relating to the liberalisation of interstate trade in electricity.

5.2 Options Presented in the Interim Report

The Interim Report presented four options for introducing contestability into the retail market, as shown in Table 5.1. The main features of the various options are:

- Option A allows market trials to facilitate the introduction of competition at the domestic level
- Option B follows the Victorian implementation path
- Option C allows for aggregation
- Option D fast tracks implementation.

The "**customer**" **thresholds** represent the annual electricity consumption at a **single site**. Historically, the NSW electricity supply industry has used a geographic definition of a site.

TABLE 5.1

SHORT-LISTED OPTIONS¹

	Timing	""Customer" thresholds (MWh pa)	Handling of aggregation (ie consolidation and resale)
Option A			
Stage 1	Oct 1996	4,000	No aggregation for multi-site users
Stage 2	Apr 1997	750	Still no aggregation
Stage 3	Dec 2000 +	All customers	Aggregation disappears as an issue
Option B			
Stage 1	Feb 1997	750	No aggregation for multi-site users
Stage 2	Jul 1998	160	Still no aggregation
Stage 3	Dec 2000 +	All customers	Aggregation disappears as an issue
Option C			
Stage 1	Oct 1996	4,000	No aggregation
Stage 2	Apr 1997	4,000	Aggregation permitted
Stage 3	Jul 1999	All customers	Aggregation disappears as an issue
Option D			
Stage 1	Oct 1996	4,000	No aggregation
Stage 2	Apr 1997	750	Still no aggregation
Stage 3	Oct 1997	All customers	Aggregation disappears as an issue

1 As presented in the Interim Report.

Option A - the market trials strategy

This gives an estimated 0.1% of sites a choice of supplier by early-1997. These sites are energy-intensive, accounting for approximately 33% of energy used by all tariff customers. Wider customer involvement occurs via market trials in the lead-up to open customer participation which is tentatively scheduled for the end of 2000.

Option B - moves as quickly as practicable to the path taken by Victoria

This gives an estimated 0.4% of sites a choice of supplier by mid 1998. These sites account for approximately 40% of energy used by all tariff customers. Participation by other sites is closed off altogether, at least until the end of 2000.

Option C - allows for aggregation

This gives a wider range of sites a choice of supplier by early 1997 (through aggregation), and all sites a choice of supplier by mid 1999.

Option D - fast track

Like Option A, this gives an estimated 0.1% of sites a choice of supplier by early 1997. It then gives all sites a choice of supplier by the end of 1997.

A further option, Option X, was circulated for comment following the Business Forum held on 29 February 1996. This option is essentially a refinement of Option C, allowing consolidation to occur at an early date. The treatment of consolidation (aggregation) is more constrained in Option X than is the case in Option C.

One of the features of Option X is that it provides customers with "breathing space". Sites become eligible for contestability, but the customer does not have to decide immediately whether to take up the option. The customer has time to weigh up choices. A choice still has to be made at the "cut-off" date, even if this choice is to remain with the existing retailer.

At the cut-off date, or if a choice has been made sooner, the site is declared non-franchise. IPART ceases to regulate the retail electricity price applying to the site, but the network charge still remains subject to regulation. The electricity supply contract for the site is then open to negotiation. The customer may not be able to negotiate a tailor-made contract, but a retailer that does not offer the customer some choice of terms and conditions of supply is unlikely to keep the customer.

TABLE 5.2

OPTION X¹

	Timing	""Customer" thresholds (MWh pa)	Comments
Stage 1	Oct 1996	4,000	>4,000MWh customers may choose to become contestable
Stage 2	July 1997	750	>750MWh customers may choose to become contestable
			>4,000MWh customers must become contestable; failing other arrangements, the local retailer must arrange supply
			Aggregation permitted, total >4,000MWh with individual sites >750MWh
Stage 3	July 1998	160	>160MWh customers may choose to become contestable
			>750MWh customers must become contestable and failing other arrangements the local retailer must arrange supply
			Aggregation permitted, total >750MWh with individual sites >160MWh
Stage 4	Jul 1999	All customers	>160MWh customers must become contestable and failing other arrangements the local retailer must arrange supply
			<160MWh customers may choose to become contestable
Stage 5	[Jul 2000]		[Intermediate stage where the local retailer has some obligation to negotiate with <160MWh customer if the customer is seeking to enter the market and metering is an obstacle]
Stage 6	Dec 2000+		<160MWh customers must become contestable and failing other arrangements the local retailer must arrange supply

¹ This option resulted from the Business Forum.

5.3 Main Points Arising From Submissions and Discussions

In the consultative process, prospective market participants expressed views on the approach for the introduction of retail competition. They stressed the need to:

- have a customer-driven market
- allow consolidation
- have as short a timeframe as possible.

Market features

Customers are keen to have operational uniformity across states to facilitate contract negotiation, and thus capture the full benefits of competition. Proper incentives in the wholesale market are vital to attract new players in from outside. Vesting contracts (Vesting contracts are a form of financial instrument used to control the price path during transition. The contracts apply only in the wholesale market and are written between existing retailers and generators.) can close new retailers out of the wholesale market. If new entrants are not encouraged, there will be no benefit to customers in the retail market. The market should be customer driven. Customers are looking at quality and added-value services and want more than a "tariff only" contract.

Discussions with the NSW retailers highlight their eagerness to market total energy packages. Providing advice on energy efficiency and offering energy audits feature in marketing strategies. The potential for energy efficiency savings among larger customers is reported to be high. There is a new emphasis on selling electricity generated from renewable sources.

Consolidation

Customers supported arrangements that would permit the consolidation (aggregation) of loads across sites to pass the contestability thresholds. Individual customers who consolidate their electricity purchases are not the only potential beneficiaries of such arrangements. Smaller customers can benefit, although the commercial feasibility of this is questionable until metering becomes affordable. Electricity cooperatives are being explored as one means by which the small to medium customers will be able to exert buying power in the market. This, and other forms of co-purchasing, will facilitate new and more customer-responsive styles of electricity retailing.

Retailers request very specific guidelines on consolidation and resale. For example, the assignment of responsibility for payment must be clearly defined

Timetable

The volume of work required to get the systems in place, and functioning, within a relatively short time period is a focus of concern. Retailers are coping with internal restructuring and the newness of trading in the wholesale market. They prefer a slower implementation path. However, complacency will be a problem if time periods are not defined. A climate of some urgency can be a driver for progress.

NSW retailers feel there is another disadvantage in fast-tracking contestability. Opening up the NSW market ahead of other states would expose them to external competition while not allowing them equal opportunity to compete for customers who remain in monopoly franchises in other jurisdictions.

Another point made is the necessity of one-way exit for those customers who choose contestability. In other words, once a customer elected to become contestable there would be no return to franchise status and the regulated tariff. Option X goes further than this in specifying, for each tranche of customers, the time at which contestability is mandatory.

General feeling about the market is positive, with larger customers, in particular, seeing benefits in participation. Even though price will necessarily be a major consideration for these customers, a genuine desire for total energy packages is evident. Customers and retailers want to operate in a commercial

environment, and customers want this sooner rather than later. Nonetheless, there is acceptance that a managed realistically-phased transition may bring the most benefit in the medium to long term.

It is heartening that customers large and small have expressed a willingness to cooperate with retailers in finding innovative solutions to problems that may arise.

5.4 Proposed Timetable for Removing the NSW Retail Franchise

5.4.1 Basis for proposal

In assessing alternative timetables for removing the NSW retail franchise, the Taskforce weighed up the views expressed by prospective market participants. Experience in the UK electricity industry has shown that coping with the entry of large numbers of customers into the contestable market is no mean feat. An enormous strain is placed on market participants and systems alike. The disquiet expressed over the readiness of systems, and concerns about the general lack of familiarity with a market environment, are understandable.

The Taskforce is sympathetic to the pressures NSW retailers have faced in adjusting to corporatisation and market trading. However, the concerns of some retailers have to be balanced against the rights of customers and the preparedness of other retailers to give customers what they want. Business operates without regard for boundaries. NSW based companies should not be disadvantaged in purchasing electricity. Domestic customers should be able to choose between competing energy service providers as soon as possible.

The timing of franchise removal is critical. A slow path to competition can be just as problem-filled as an accelerated transition. The danger inherent in fast removal of the franchise is that neither retailers nor customers will be prepared. The stop-gap measures put in place would need replacement as the market developed, thus entailing unnecessary cost. On the other hand too slow an introduction of contestability could lead to customer dissatisfaction and frustration.

The Taskforce acknowledges that, while it is desirable to bring contestability to as many customers as possible in as short a time as possible suitable metering systems, particularly the communications systems, will not always be in place. In particular, the Taskforce is aware of the circumstances of rural retailers. Bringing communications to remote sites poses a special challenge.

The transition from open intrastate trade in electricity to open interstate trade, both wholesale and retail, also has the potential to impact on the timetable for removal of the NSW retail franchise. In May 1996, the Ministers responsible for electricity industry reform in NSW, Victoria and the ACT met to discuss the harmonisation of their jurisdictions' existing competitive electricity markets, ahead of the national electricity market. The Ministers agreed to certain principles that will guide the unifying of their jurisdictions' markets from October 1996 onwards, including the principle of equal effective access to customers in each jurisdiction (see Appendix B).

In framing its proposal for the removal of the NSW retail franchise, the Taskforce has considered all the issues and concerns mentioned above. The Taskforce's proposed schedule for removal of the NSW retail franchise may change in response to any decisions on harmonisation of state markets. Any changes to the timetable will affect the later stages of implementation.

The proposed NSW timetable is detailed in Section 5.4.2. Section 5.5 contains a brief discussion of the possible steps involved in harmonising the NSW and Victorian retail electricity markets. The Taskforce's recommendations on the NSW implementation path and the move from open intrastate trade to open interstate trade are listed at the end of Section 5.5.

5.4.2 Description of proposal

Key dates

The proposed schedule for introducing choice of electricity supplier follows the approach of Option X in allowing a period of time in which the customer **may choose** a retailer to provide supply. This allows the customer time to shop around. There is a date at which the customer may elect to have the relevant site(s) become contestable and then, somewhat later, a date by which the sites must become contestable. This time period is generally a year, but for sites with annual electricity usage in the 440GWh (Alternatively, whose demand is in the range 1-10MW.) range, the period is shorter. It is not anticipated that these customers with such sites will be inconvenienced, since the negotiation of supply contracts can start prior a site becoming contestable.

Customers with sites using less than 160MWh per annum, (ie spending on electricity is under \$15,000 a year), also have one year in which to consider making their site(s) contestable. A somewhat different process for this group of customers is envisaged. The approach takes into account the large numbers in the group, the greater need to increase customer awareness and the difficulty of determining metering rules that will facilitate a smooth financial settlement process while keeping the cost of metering down to an acceptable level.

As soon as a customer opts for contestability for his site, the customer will no longer be entitled to obtain electricity for that site at a regulated tariff. At the mandated contestability dates, relevant customer sites will be declared non-franchise. From then on, they will be excluded from regulated retail supply tariffs. However, network charges for all sites will remain subject to regulation.

TABLE 5.3

PROPOSED TIMETABLE FOR REMOVAL OF NSW RETAIL FRANCHISE¹:

DATES FOR *ELIGIBILITY*

Timing	Site thresholds	Number of "customers"	Percentage of total electricity traded by NSW distributors ²
1 October 1996	>40GWh pa	47	14
1 April 1997	>4GWh pa	660	29
1 July 1997	>750MWh pa (>160MWh for load consolidators, subject to additional conditions)	3,500	40
1 July 1998 ¹	>160MWh pa (zero threshold for load consolidators, subject to additional conditions)	10,800	47
1 July 1999 ¹	zero threshold	2,700,000	100

1 The timetable, as it applies to sites using under 160 MWh pa, is subject to modification in the light of discussions with Victoria on the alignment of state electricity markets.

2 The percentages are calculated in energy units, including tripartite contracts, but excluding direct contracts between customers and generating companies. The percentages do not make allowance for load consolidators. The percentages are cumulative.

TABLE 5.4

PROPOSED TIMETABLE FOR REMOVAL OF NSW RETAIL FRANCHISE¹:

DATES FOR MANDATED CONTESTABILITY

Timing	Site thresholds	Action required
1 October 1997	>40GWh pa	Customers must become contestable.
	>4GWh pa	If they have not made other arrangements, the local retailer is obliged to provide
1 July 1998	>750MWh pa	supply and is obliged to ensure that the customer has metering that adheres to
1 July 1999	>160MWh pa	the rules of the retail market.
1 July 2000 ¹	zero threshold	Subject to there being no significant technical or economic constraints.

¹ The timetable, as it applies to sites using under 160 MWh pa, is subject to modification in the light of discussions with Victoria on the alignment of state electricity markets.

To become contestable at the earliest date, the so-called *date for eligibility*, a customer must:

- satisfy the site energy consumption threshold
- ensure that the site is equipped with metering that adheres to the market rules
- have found a retailer willing to supply the site.

Eligibility for the greater than 4GWh per annum tranche of customers requires that a customer have total consumption, at the site nominated, of more than 4 Gigawatt hours (GWh) in any continuous 12 month period commencing, on or after, 1 January 1995. Similar eligibility requirements will hold for other tranches.

An orderly, expedited migration path for franchise removal is important. At no time should there be more players seeking information, advice or offers of supply, than people who can deal with them. In addition, the systems must be able to cope with the numbers. Although it was hoped to set the initial threshold level at 4GWh per annum, discussions with the Market and System Operator have indicated that this could pose problems. Although only a small fraction of the 600+ customers in the tranche of customers using more than 4GWh per annum can be expected to switch supplier on 1 October 1996, ideally systems should be there to cope with several hundred additional customers. Thus, the initial energy threshold is set at 40GWh annual energy consumption (equivalently 10MW demand).

Customers with annual energy consumption between 4GWh and 40GWh will be eligible for contestability on 1 April 1997. This tranche of customers are declared non-franchise, along with those using greater than 40GWh per annum, on 1 October 1997.

Consolidation and resale

The Taskforce has sought to limit eligibility in the transition to companies which have a demonstrated commitment to the process of consolidation. Consolidators and resellers who can act on their own authority, have commercial knowledge that will benefit the market. In the transition, consolidation and resale will be limited to account consolidation, on-selling and load consolidation.

Retailers routinely provide, as a service, consolidation of accounts for customers with multiple sites. Account consolidation could be provided by firms not selling electricity. On-selling will be limited to that allowed by the Electricity Supply Act 1995.

Customers will be allowed to consolidate loads that satisfy the threshold limits for the next stage of the implementation process. This is the approach described in Option X. Unrestricted consolidation could disrupt

the market. The Taskforce has sought to limit its impact by placing two restrictions on the process. First, the individual loads must be the responsibility of a single customer who is responsible for payment, that is, a single legal entity. Second, load consolidation will be restricted to customers whose annual spending on electricity in the previous financial year was at least \$500,000.

In summary, the proposed requirements for load consolidation are:

- customer must be single legal entity
- customer's annual spending must be over \$500,000
- individual sites in the consolidated load must exceed minimum threshold limits.

Metering requirements

As detailed in Section 4.2, the Taskforce considers it appropriate to have mandatory half-hourly metering for sites with annual energy usage greater than 4GWh. The metering will conform to national market requirements. However, the appropriate metering rules for other sites will depend upon metering costs, the availability of meters and the communications facilities in place. Rather than determining rules for those sites now, the Taskforce has provided for the Market and System Operator to announce the metering rules for each customer tranche a minimum of eight months in advance.

TABLE 5.5

PROPOSED TIMETABLE FOR REMOVAL OF NSW RETAIL FRANCHISE:

METERING RULES TO BE ANNOUNCED

Timing	Site thresholds	Notes
31 July 1996	>4GWh pa	
31 October 1996	>750MWh pa	Metering rules may include rules for estimating unmetered quantities
31 October 1997	>160MWh pa	(eg interpolation between meter readings, backed by
31 October 1998 ¹	zero threshold	validation methods)

¹ Dates are subject to the adoption of the proposed timetable for removal of the NSW retail franchise, including the caveat regarding sites using under 160MWh pa.

Special arrangements for customers in the <160MWh tranche

Customers with sites using less than 160MWh a year, (ie the vast majority of commercial customers and all domestic customers) will also have at least a one year breathing space before contestability. During this period, an ongoing education program will focus in on the needs of this customer group. Lessons learnt from the implementation process for the other groups will be taken on board when looking at systems design for this most important of all groups which buys more than half the electricity sold in NSW.

Proposed changes in status of sites using less than 160MWh pa are summarised in Table 5.6. Smaller customers will benefit from the adoption of the timetable Customer protection measures set out in Chapter 3 will be put in place. The ongoing consultative process will ensure that customers have a voice in the details of the approach to implementation. Customers will be able to set up a dialogue with retailers to make both their concerns and requirements known.

Sites using under 160MWh per annum will not be required to have half-hourly meter with the communications capabilities stipulated for the wholesale electricity market. The metering requirement will be decided and announced in advance, by the Market and System Operator. The metering rules may allow for some form of load profiling.

Retailers have an important milestone, 1 July 2000. From then, a customer wishing to take up the option of contestability will have retailers' help in ensuring that metering for the site adheres to the market rules. As the retail supplier of last resort under the Electricity Supply Act 1995, the retail arm of the local distributor will have a special responsibility in this regard.

In brief, there will be a clear expectation that retailers will be in a position to provide metering solutions during the process of making small sites contestable. This will help to sustain the momentum of change.

TABLE 5.6

PROPOSED TIMETABLE FOR REMOVAL OF NSW RETAIL FRANCHISE¹

CHANGES IN STATUS OF SITES USING <160MWh pa

Timing	Status	Comments
1 July 1999	Eligible for contestability	Sites equipped with metering that adheres to market rules for sites in the 160-750MWh pa tranche, will be eligible to convert to non-franchise status.
1 January 2000 ¹	Eligible for contestability. Retailers will be expected to focus on facilitation of metering	Sites will be eligible to convert to non-franchise status, at the customer's discretion. If the customer exercises this option, it is envisaged that the retailer of choice will work with the customer to ensure that metering for the site adheres to the market rules for the <160 MWh pa tranche.
1 July 2000 ¹	Mandated contestability	Subject to there being no significant technical or economic constraints

¹ The timetable, as it applies to sites using under 160MWh pa, is subject to modification in the light of discussions with Victoria on the alignment of State electricity markets.

The recommended implementation approach is one which calls for flexibility and adaptability. There should be no locking-in of technology or systems in advance. Those managing the process must learn to look for solutions beyond the narrow confines of the electricity industry. However, there must be targets to ensure the process does not stall.

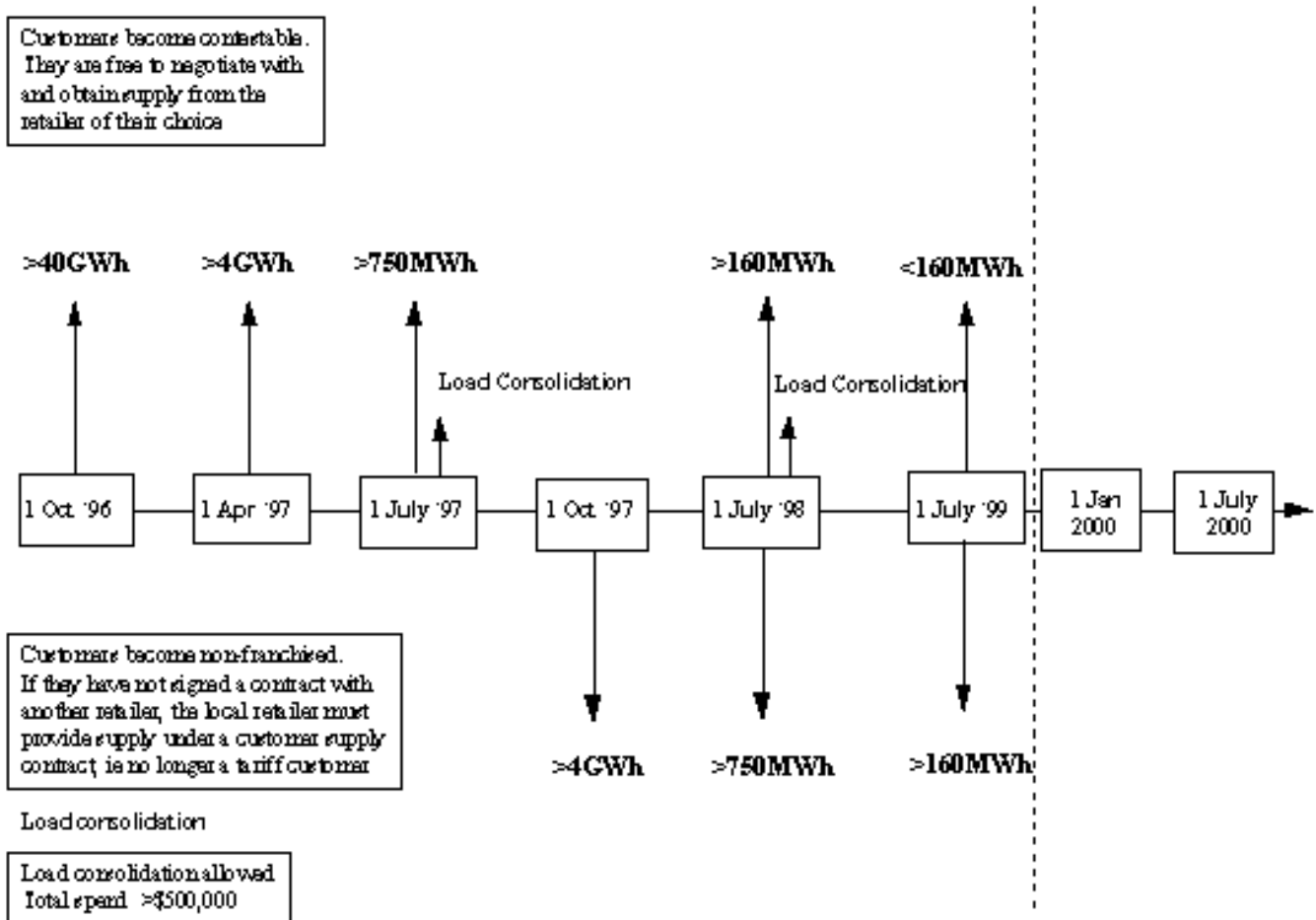
Implementation path timeline

The description above has key dates tabled for each of the individual processes. To provide a united view, Figure 5.1 is a timeline highlighting key dates in the overall implementation program.

FIGURE 5.1

NSW ELECTRICITY REFORM TASKFORCE PREFERRED POSITION

IMPLEMENTATION PATH



5.5 Harmonisation of Interstate Trade

Ministers from NSW, Victoria and the ACT anticipate that interstate trade will commence prior to installation of the National Electricity Code systems, and that individual jurisdictions will operate under modifications to the codes presently governing their markets.

The three jurisdictions have agreed that this harmonisation of markets would commence around 1 October 1996. NSW and Victoria have also agreed to:

- adopt common transitional steps to introduction of retail competition by 1 July 1997
- consult on further alignment of steps to full retail competition after 1 July 1997
- move to dispatch of generation plant on the basis of an integrated market across the three jurisdictions by 1 July 1997.

The ACT has yet to determine its position on these matters.

The agreement is conditional on its adoption by the participating Governments. Further detailed technical investigations and appropriate regulatory approvals are required before the agreement comes into effect.

By 1 July 1997, the proposed NSW implementation path will have lowered the contestability threshold level to 750MWh, with a further reduction to 160MWh by 1 July 1998. This means from July 1997 through to at least June 1999 there will be alignment with the Victorian timetable for retail franchise removal. The relevant part of Victoria's timetable is shown below. However, there are important differences in market rules applying in Victoria and those proposed for NSW.

TABLE 5.7

TIMETABLE FOR THE INTRODUCTION OF RETAIL COMPETITION IN VICTORIA

Date for introduction of competition	"Customer Load Level"
1 July 1996	"Customers" with loads in excess of 750MWh/year
1 July 1998	"Customers" with loads in excess of 160MWh/year
1 January 2001	All remaining customers subject to there being no significant technical or economic constraints

The following boxes highlight some of the differences between the Victorian approach and that preferred by the Taskforce. Information on the operation of the Victorian market is taken directly from *Choice of Electricity Retailer: For customers with consumption greater than 750MWh per year*, Office of the Regulator-General, Victoria, February 1996.

Victorian Contestable Customers

The *Electricity Industry (Non-franchise Customers) Regulations 1995* provide that, from 1 July 1996, a customer is contestable in respect of a supply point if the customer's aggregate consumption of electricity from that supply point has been more than 750 megawatt hours (MWh) in any year after 1 January 1995 (or is likely to exceed that limit, in case of a new supply point).

A customer is already contestable in respect of a supply point if the average electricity demand at the supply point (as measured over a 15 or 30-minute integration interval) has exceeded 1 megawatt (MW) at least 3 times in any year after 1 July 1994, with each occasion separated by at least 10 days (or is likely to exceed that limit, in the case of a new supply point).

Victorian Customer Options

Customers who become contestable on 1 July 1996 will have to decide whether they want to buy their electricity -

- under a retail contract with their host retailer;
- under a retail contract with another retailer; or
- wholesale through VicPool.

Contestable customers who choose the retail option will need to negotiate a contract with their preferred retailer. Negotiations should be started sooner rather than later, to ensure that a contract is in place on 1 July 1996.

Taskforce Position

Customers:

- will not initially have access to the state wholesale market
 - will usually have 12 months to "shop around" for supply.
-

Taskforce Position

The preferred course for larger customers is to have a smart meter set up with communications.

Metering rules will apply uniformly across all non-franchise customers, irrespective of whether the chosen energy supplier is the retail arm of the local distributor or another retailer.

Victorian Metering Requirements

750MWh/year customers who wish to change retailer will be required to have a smart meter installed and a telecommunication link between the meter and Victorian Power Exchange (VPX)

Customers who do not wish to change retailer are not required to have a smart meter installed. However they may choose to do so in order to -

- obtain a half hourly load profile on which to obtain quotes
- improve demand management
- negotiate a contract price based on their half hourly consumption.

Where a customer is not required to install a smart meter but chooses to do so, they may be able to save more than half of the normal change by not having their meter read remotely - thus avoiding the cost of telecommunications and VPX's meter reading charge.

Safety Net - Tariff H

The [Victorian] Government has provided a safety net for customers who were charged according to Tariff H at 2 October 1994. Those customers may remain on Tariff H rather than elect to move immediately to the contestable market.

Once a Tariff H customer moves into the contestable market the decision is irrevocable; they no longer have access to Tariff H. Tariff H is indexed annually for inflation and will expire on 31 December 2000.

Customers who moved to Tariff H after 2 October 1994 cannot take advantage of the safety net and will be required to make a choice as outlined above.

Taskforce Position

Contestability will be determined at the level of a geographic site which may have multiple supply (metering) points.

Taskforce Position

There is no option of remaining on a regulated tariff beyond the date at which customers are declared non-franchise, ie are contestable.

Aggregation - some examples

Shopping centre - in the case of a shopping centre, typically supply is taken from a single sub-station (owned by the wires business) to shopping centre tenants through the shopping centre's wiring. The supply point for each tenant is the wires business' sub-station, not the point where they take supply from the shopping centre's wiring.

Individual tenant loads below 750MWh/year may not be combined for the purpose of making the tenants into contestable customers. Nor can a shopping centre owner or tenant's co-operative combine the loads of individual tenants for this purpose.

Large customers on a single site with multiple supply points - A customer may have several supply points at one site. Each supply point is treated as a discrete supply relationship. A customer may be contestable in respect of some supply points and non-contestable in respect of others.

The customer may, at its own cost, physically re-configure the multiple supply points so that the customer is contestable in respect of the entire site. In deciding whether to do that, the customer would have to weigh the cost against the temporary benefit, given the timetable for competition.

Taskforce Position

In NSW, under the provisions of the Electricity Supply Act 1995, on-selling is permitted (eg by shopping centre owner).

The preferred course is to permit controlled entry of customers who consolidate loads over a number of sites.

Any customer with a single site and multiple metering points is treated as a single site customer.

Setting aside the different definitions of "customer" and the treatment of load consolidators, there is commonality of thresholds between the Taskforce's proposal for NSW and Victoria from July 1997 through to June 1999. Beyond June 1999, however, the NSW Taskforce's preferred mechanism for entry of "small-site" customers into the retail market differs quite markedly from that proposed in Victoria.

Customers using less than 160MWh per annum represent by far the largest group by number (approximately 2.7 million in NSW). They also account for the largest proportion of energy consumed, approximately 60% of electricity traded by NSW distributors, and 50% of the total trade in NSW including direct sales by generating companies.

Small-site customers in NSW who are ready for competition in mid-1999 will be able to enter the market. Similar Victorian customers will not be eligible to enter until 1 January 2001, or possibly later. Victoria's arrangement is likely to be particularly vexing for businesses who have some sites above and some below the 160MWh per annum threshold level.

In NSW, small-site customers who do not feel sufficiently prepared for competition in mid-1999 will have a period of at least one year to prepare for entry. Customer education programs will be able to draw upon experiences of customers who have chosen immediate entry. The extended timeframe and the customer

education program will ensure a greater degree of customer awareness and minimise the pressure placed on customers. This should result in customers making better decisions.

Moreover, the NSW proposal to set an initial eligibility date of 1 July 1999 will maintain the momentum toward implementing a fully competitive retail market. Pressure will be maintained on retailers and those providing the trading systems.

The Taskforce recommends that:

- the removal of the NSW retail franchise proceed in tranches, commencing with sites using 40GWh or more per annum becoming eligible to convert to non-franchise status from 1 October 1996; sites using 4 to 40 GWh becoming eligible to convert from 1 April 1997; sites using 750MWh to 4GWh per annum becoming eligible to convert from 1 July 1997; and sites using 160 to 750 MWh per annum becoming eligible to convert from 1 July 1998
- arrangements for extending contestability to sites using under 160MWh be determined after consultation with other jurisdictions, adhering to the principle of providing equal effective access to customers within each jurisdiction, with a possible start date of 1 July 1999
- the metering rules be determined by the dates shown in Table 5.5 (Section 5.4.2) subject to adjustment in line with decisions on the contestability timetable for sites using under 160MWh a year, as detailed in the recommendation above.

6. LOOKING FORWARD TO RETAIL COMPETITION

Competition in the retail market must be introduced in a way that ensures customers have a choice and encourages them to take advantage of that choice. Customers will participate if they have confidence in the system and are aware that there are proven benefits which can be accessed easily. The proposed approach has been documented; the next step is to translate this into reality. Once the framework has been defined and accepted, the practical tasks follow.

In many ways, mapping out the approach for the introduction of retail competition is the easier part of the process. Actual implementation is much more challenging. Basic precepts will assist the process. These are to:

- introduce competition in an orderly fashion, giving full and careful consideration to all the identified issues
- be flexible to allow for and accommodate the unforeseen
- set and adhere to timetables
- coordinate activities
- monitor progress.

A sense of purpose is a prerequisite for successful implementation. Putting in place a market structure that will lead the way to the future demands a sense of vision. This means being receptive to new ideas and movements coming from within the electricity supply industry and from outside. The free flow of ideas across industries will be the catalyst for transformation. Within the electricity supply industry itself, there are signs of change. The traditional preoccupation with technical aspects is waning as the emphasis is, ever increasingly, concentrating on the customer. The future focus will be on the interface between the customer, the retailer and the network service provider, in the retail market.

The electricity supply industry has moved away from being a monostructure only recently. In the very near future ESI will stand for energy services industry. However, there can and should be more changes. The way forward lies with a "full services network". Information and the transmission of information must be an essential and integrated part of electricity supply.

An electricity industry which provides competition in the wholesale and retail markets is only the first stage in this advance. Achieving this first step in the retail market requires adopting an implementation program that enables all customers to enter the retail market as quickly as possible and to derive full benefit from that move.

6.1 Managing the Implementation

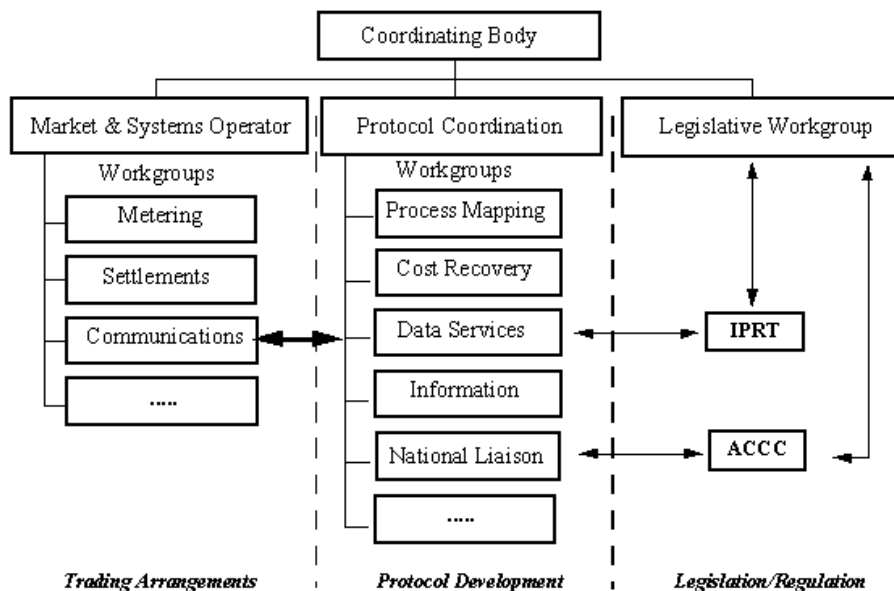
The final choice of commercial and technical arrangements will be influenced by existing solutions. However, it is vitally important to the effectiveness of the final result that the implementation focus on objectives and outcomes rather than processes. This will ensure innovative solutions and allow consideration of 21st century technology.

A project management approach is needed to cope with the nature and quantity of the work involved and to ensure retail competition is introduced in an effective and efficient manner. The Interim Report proposed that a high level group take on responsibility for the implementation.

An indicative Implementation Structure is illustrated in Figure 6.1.

FIGURE 6.1

IMPLEMENTATION STRUCTURE



As can be seen from Figure 6.1, there are three strands to the work involved in implementation. Broadly speaking, decisions will be required on operational, commercial and regulatory matters. The workload in each area will vary across time. Initially, some areas will require a heavy commitment of time and effort, while others, notably those related to domestic customers issues, will find the workload increasing as time progresses. Setting up three separate groups to coordinate work in the areas described above will facilitate the implementation process. These groups will be accountable to the Coordinating Body.

Operational matters will require decisions on the practical, technical side of the implementation, that is, the trading arrangements. Many of these issues have strong connections with wholesale trading and it is sensible to continue with existing arrangements. The Market and System Operator will assume overall responsibility for this area. As the national electricity market develops, that role may be transferred to a national body.

The existing Legislative Workgroup will continue to coordinate activities of a legal and regulatory nature. The regulatory approach being introduced via the licensing and contractual regime is designed to allow the industry to react and adapt to emerging technologies and changing community expectations. The Department of Energy will convene the Legislative Workgroup.

Then, there are issues of a more commercial nature. These tend to relate to the arrangements between customer, retailer and distributor during the transition and in the fully competitive market. It is a mistake to regard any decision made about such arrangements as purely commercial. Indeed, these interfaces must also be considered in trading arrangements. More importantly, the legal implications of the arrangements must be taken into account, particularly in their impact on customers. It is for these reasons that this "commercial" grouping of issues lies at the heart of the implementation structure.

Top priority is the immediate establishment of a series of workgroups with responsibility for specific areas. These workgroups will be accountable to the relevant coordinating group. It is important that workgroups **represent both rural and metropolitan interests.**

In Figure 6.1 areas of concern are identified, but these are by no means exhaustive.

The Taskforce recommends that:

- the Minister for Energy establish a program implementation structure under the Electricity Reform Taskforce, after due consultation with market participants (customers and prospective suppliers alike) and with relevant organisations pursuing public interest objectives
- the Taskforce be assigned responsibility for overseeing the establishment of the program to introduce competition in electricity retailing and a project manager be appointed for that purpose.

Some of the issues requiring immediate attention are discussed below. Many of these will be ongoing throughout the implementation process. The issues may well change as the number of customers becoming contestable increases and will change further as customers' requirements alter.

6.1.1 Trading arrangements

Background

Early decisions on trading arrangements are crucial to the introduction of retail competition. Practical issues associated with trading arrangements cover metering, data collection and settlement. Trading arrangements manage information flows, and cover the physical arrangements for transfer of information and the assignment of responsibility for that transfer. The practical activities that come under this general descriptive umbrella form the link between energy flows and financial flows. Electricity usage data from the customer is collected for verification and initial processing. This information undergoes further processing for account management. At this last stage, settlement accounts for market participants are determined.

Communication systems

Communication systems link the various activities described above. Various options for communication links are available. For instance, meter interrogation can be via dedicated or shared phone lines, cellular radio or distribution line carrier. Communication systems using different media have strengths and weaknesses in dealing with different data exchange requirements. These requirements are functions of geographic terrain, customer density and data exchange needs.

Developing a communications strategy necessitates identifying the functional needs of the customer and the retail, network and generation sectors of the industry, currently and in the future. Speculation about the role of the industry and the value added services likely to be provided will help justify the cost of communications. There are many prospective and emerging technologies. It is desirable not to constrain solutions any more than is absolutely necessary.

The workgroup assisting the Market and Systems Operator to formulate the communications strategy will have as its major task:

to develop a trading system communications strategy that allows cost effective utilisation of current and future technology.

Following this dictum will enable multimedia communications structures to be developed to utilise the benefits of each medium in the most efficient and effective way with regard to complexity, reliability, security and cost. Membership of the workgroup must not be limited to those involved in the electricity supply industry. There should be representatives from the telecommunications sector and customers who, in their own businesses, are involved in utilising large-scale communication networks.

While innovation may result in proprietary solutions in communications, it is desirable to ensure compatibility with other elements of a communication structure. It is important that interfaces and protocols in the transmission of data accord with principles developed by Standards Australia. The Taskforce suggests that the workgroup with responsibility for communications systems maintain close liaison with Standards Australia.

Metering rules

Metering is the provision, installation and ongoing maintenance of meters. The Taskforce recommends that the supply and installation of metering for those sites entering the non-franchise market be designated a contestable activity (see Section 4.2.2). Accreditation arrangements have yet to be developed. Assessment of personnel availability and experience, current and predicted, has to be made to determine whether transitional arrangements may be necessary.

Although half-hourly, single-phase meters are readily available, the cost to the domestic customer could be high. Cost reduction will accompany increased production and it may be possible to simplify the design to achieve further reductions. In order to increase meter penetration, half-hourly metering could be mandatory in new buildings and in replacement programs.

For the domestic and small commercial customer, the costs of metering are high. It may be that allowing some form of load profiling would provide a more acceptable solution for these customers. Half-hourly meters could be installed without associated communications links. Data would be stored and read manually, monthly. For settlement purposes a profile based on previous data could be assumed and corrected with the next account. Across a number of identical installations, one could be metered and the others deemed to have the load profile of the metered site.

A number of issues must be resolved if load profiling, in whatever form, is considered. Some of the areas that need investigation are: choice of profiling approach, the introduction of a mechanism for dispute resolution, frequency of meter readings. On a macro level, there are various approaches to using profiles in the settlement procedure. These are either assigning profiles to all, or assigning profiles only to those who choose other than the retailer in their distribution area. As is the case with the requirement for half-hourly metering, an advantage may be given to the incumbent retailer. All these issues must be considered.

The workgroup responsible for metering will report to the Market and System Operator which has overall responsibility for determining and publishing the metering rules. One of the major tasks of the metering workgroup will be:

to assist in the development of metering rules to apply to each customer tranche. This task will include assessing the availability and costs of half-hourly metering, and examining the feasibility of including load profiling as part of the metering rules.

It is appropriate that members of this workgroup include representatives of meter manufacturers and customers. There must be close liaison with the communications workgroup. Standards Australia has several groups already working in the areas of metering and communications.

Data collection & verification and retail settlement

As the cost of metering hardware is driven down, the ongoing cost of meter interrogations and data transmission becomes more significant.

In a competitive market, customers can choose a contract with a pricing structure related to pool prices or a tariff-style contract. For customers with a tariff-style contract, daily data collection may not be necessary. Less

sophisticated, and hence less costly, communications systems could be used. However, the introduction of weekly or monthly data collection would send large volumes of data to be processed at a date in the future, not on the day in question. This would have to be accommodated in the settlements process.

As with metering, the functions of data collection and settlements could be provided by an independent body. This would ensure that the provider of the service was independent of the user of the service. Benefits will flow from this. A body that is independent of the retailer or network operator, and provides metering supply, installation, reading and data transmission through its own communication infrastructure, opens up the opportunity for multiple-utility data collection.

The workgroup, whose task it is to examine the settlements process, will have to monitor developments in the national market.

Contestability in the retail market impacts on wholesale market settlements. To settle at the wholesale level requires knowing the loads of those contestable customers who are no longer taking supply from the local retailer. With the advent of the national market it may be appropriate for the National Market Management Company (NEMMCO), to take over responsibility for retail settlement. In the national market, NEMMCO must provide a financial settlements services which includes billing and clearance for all *market* trading (Draft National Electricity Market Code.).

The Taskforce recommends that:

- NSW seek the agreement of other jurisdictions in the National Grid Management Council to assign responsibility for the entire settlements process (wholesale and retail) to the National Electricity Market Management Company (NEMMCO); precise arrangements be subject to agreement between the participating jurisdictions, with NSW seeking to ensure that meter reading and transmission and dissemination of data become contestable activities
- NSW Government agencies' responsibilities under recommendations in the previous chapters (for example, metering, customer information) be reviewed in the event of any proposal emerging for NEMMCO to assume those responsibilities either in whole or in part.

6.1.2 Commercial framework

Allocation of responsibility

Deciding upon the trading arrangement is the first of many decisions. In order for the implementation to move forward, responsibility for the various stages in the trading arrangement must be assigned. This is necessary for the proper development of system specifications and for the tendering process.

Cost of implementing trading arrangement

Implementation will incur costs. There are the twin issues of costs and cost recovery. A percentage of the costs will be borne by the customers directly concerned. The remainder will be borne by customers in general. Costs must be monitored to ensure that the benefits of competition outweigh the costs for customers. A specific example is the cost of metering at the domestic level. The trading arrangements and settlement system should focus on delivering the benefits of competition to the customer, rather than an inward focus of meeting the technical and commercial requirements of the energy services industry. Therefore alternatives to daily reading of half-hour meters for domestic customers should be explored.

Two important tasks for the workgroups set up to oversee the introduction of the trading arrangement will be:

to resolve the issue of who is to bear operational responsibility for the various activities of the trading arrangements

to monitor the costs of the trading arrangement and examine the allocation of costs.

6.1.3 Developing a protocol for retail market operation

Practical arrangements for customers in the retail market will have to be developed. For example, what happens when a customer changes retailer? What notification period has to be given and to whom? Is it the customer's responsibility to notify the network? Finding answers to such questions indicates the need for a commercial protocol for the retail market.

A further issue requiring resolution is that of access to data. The issue of data ownership and the associated issue of confidentiality of data are of great concern to market participants. A register will be kept of meters, but what information will be required and who will be able to access the data base? Who will own the meter? While the code of conduct for the national market, and that for the interim state wholesale market deal with some of these issues others need to be resolved within the context of the retail market. Given that customer interests are involved, it is appropriate that representatives of customer groups be involved in the process. The special needs of rural communities are recognised in the representation of the Customer Consultative Groups. This practice should be followed in establishing other workgroups.

The development of a retail market protocol will be a major undertaking. It is appropriate that work on this task begin as soon as possible. The guideline for protocol development is:

to develop a protocol for conduct of the retail market referenced to the national market code of conduct and consistent with retail market licence conditions.

A project management approach is essential. It is imperative that customers and the industry know broadly, well in advance, what is going to happen and when. Uncertainty in the public sector is no friend of businesses operating in the private sector.

6.2 Future Directions

Change is the order of the day in electricity supply industries across the world. There is much speculation as to where the future lies. The one constant in this discussion seems to be that technological developments hold the key. As competition intensifies, the way generators, distributors, retailers and customers think about technology will change. Retailers with serious intentions of staying in the market, will need to harness the advantages technology can provide to give them a competitive advantage.

In the new environment there will be more reliance on information technology and data management. For a single half-hourly metered customer 17,520 energy consumption readings require processing each year. Consider this multiplied by the two million plus customers in New South Wales. There is growing awareness of the benefits that will flow from looking at solutions found in other areas. A natural alliance could be forged with the finance industry, where the processing of huge amounts of data is commonplace.

Collecting the data from electricity requires a communications link, which suggests another alliance, with the telecommunications industry. The link to the meter provides two-way communication. There is no reason why communication must be limited to areas concerned specifically with electricity. This is the thinking behind the "full services network" initiative.

Bi-directional communication with the customer's premises does not simply permit frequent meter reading to take place, it expands the horizon for services provided to the customer. It facilitates load management and energy efficiency, thereby reducing the cost to the customer. For example, some appliances could be switched on automatically when demand is low and consequently price is lower. This is the same concept that off-peak hot water uses today. As appliance manufacturers build more electronic controls into their 'smart' appliances, these opportunities will expand.

At the individual customer level there is great potential for energy efficiency gains through the mechanisms described above, and without sacrificing lifestyle convenience. There are additional benefits outside the energy sphere. Bilateral communication opens the opportunity for new customer services such as back-to-base home security and alarms, and interactive services such as banking and shopping, (in the case of domestic households), or purchasing (in the case of business organisations).

From an industry-wide perspective this has a substantial environmental benefit, In the long term it means lowering the capital investment in the industry. Flattening the load profile means less investment in power generation, where capacity is geared to meet peak demand. Similarly, there would be less investment in transmission and distribution assets and a deferral of expenditure on system augmentation.

The following observations (Douglas E Oelsen, Unprecedented Competition, Fabulous Technologies: A Whole New Ballgame for the Energy Industry, Energy Policy Forum 1995, Aspen Institute Colorado.) were made at the Aspen Institute's Energy Policy Forum held in 1995 where one of the conference themes was the role of technology in shaping the future of the competitive electricity industry. It was felt that strategy development would pass through three definable stages, interlinked and not necessarily sequential.

The stages to a technology strategy are

- i. Competition will force a move away from major technology investments.
- ii. The focus will shift to increasing productivity, cutting operating costs and improving asset utilisation which will justify looking at "near-commercial" technologies.
- iii. Readily accessible technology will be used to improve customer service.

Eventually, retailers will see that none of these strategies differentiates them. A move into serious technology investment for new products and services will follow. The interesting observation made was that some of the new directions will have the aim of reducing costs, but many will not. More and more competition among retailers will be based on the value and quality of the services they can provide for customers.

The "fabulous" technologies of the title, those that will bring benefit to the customer and the environment, are:

i. **Powerful electronics and ultra-low-cost sensors**

Developments in this area will lead to the creation of intelligent, real-time delivery systems and tailored services.

ii. **Information technology**

Advances in this area will lead to an exponential growth in communications and the collection of data required for new businesses and services.

iii. **New materials**

These could lead to new fuel cells or portable high-density energy sources.

iv. **Clean technologies**

This area will play an important role in the success of generators and retailers. Clean technologies may include natural gas fuelled generating technologies, like aero-derived turbines, mass-produced internal combustions engines, and fuel cells.

v. **Microscale technologies and distributed generation**

This could become the most significant technology and one that will help overcome environmental concerns. There is a move away from central generation to siting near the source of demand. Microscale technologies promise breakthroughs in power conversion, heat dissipation and chemical processes.

There is no doubt that customers will benefit from improvements in technology, but that is not the only area where change will bring benefits. More immediate will be the benefits from a change of focus in the electricity supply industry. For too long the customer has just been the entity at the other end of the wire, particularly

when the big decisions were being made. At an individual level there have been varying degrees of customer interface, but the provision of customer services has had little bearing on the decision making process.

As the technological means are developed to provide a range of choices, customer service will increasingly distinguish one retailer from another, and from other competitors. Competition is likely to be broad-based. There will be retailers whose core business is electricity, and others who have a name long associated with providing quality customer service. The latter could well buy from an energy trader and sell under their brand name, or possibly associate with a retailer to provide the packaging and customer interface.

Experience in the UK in the past few years suggests that improvements in customer service can be achieved through new technology, better management and changed priorities, at no additional cost or even as part of an overall program aimed at lower costs and greater efficiency. In order to benefit from the changes, customers must make their requirements known. The recommended implementation process requires input not only from those in the electricity industry, but from customers, large and small.

The future lies in applying novel approaches to problem solving. This means using new ideas that are more effective, yet less expensive to implement than traditional methods. There will be new ways of adding value by applying fresh insights. Intellectual capital will replace physical and financial capital. The energy services industry will be people-oriented, decentralised, choice-filled, competitive and highly-creative.

The Government has stated its commitment to giving "retail customers in New South Wales real choices between competing suppliers". While the report sets out the recommended program by which this commitment will be honoured, the proposal documented is just the beginning of the process. The hard work is still ahead. Ensuring that competition is viable, and its benefits are available to all, requires the commitment of customers, environmental groups, consumer groups and, above all, those who will be providing retail services, whether they are existing retailers or new entrants.

APPENDIX A

NSW GENERATORS AND DISTRIBUTORS

GENERATORS

First State Power

- Mount Piper
- Munmorah
- Vales Point
- Wallerawang

Macquarie Generation

- Bayswater
- Liddell

Pacific Power

- Eraring subject to clarification

DISTRIBUTORS

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

Energy Australia

- Sydney Electricity
- Orion Energy

Integral Energy

- Prospect Electricity
- Illawarra Electricity

NorthPower

- Namoi Valley Electricity
- New England Electricity
- NorthPower
- Northern Rivers Electricity
- North-West Electricity
- P-CCC Electricity
- Tenterfield Shire Council Electricity Division

Advance 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

Australian Inland Energy

Broken Hill Electricity

APPENDIX B

AGREEMENT REACHED FOR

INTERSTATE TRADE IN ELECTRICITY

AGREEMENT REACHED FOR EARLY START FOR INTERSTATE TRADE IN ELECTRICITY

Ministers from New South Wales, Victoria and the Australian Capital Territory have agreed to harmonise their existing competitive electricity markets so that the benefits of interstate competition can be obtained at the earliest possible date. Ministers anticipate that interstate trade will commence prior to installation of the National Electricity Code systems by modifications to the codes presently governing the markets in these jurisdictions.

The three jurisdictions agreed to harmonise their markets commencing around 1 October 1996. New South Wales and Victoria agreed to:

- i. adopt common transitional steps to introduction of retail competition by 1 July 1997
- ii. consult on further alignment of steps to full retail competition after 1 July 1997
- iii. move to dispatch of generation plant on the basis of an integrated market across jurisdictions by 1 July 1997.

The Australian Capital Territory is still to determine its position on these matters.

(The agreement is conditional on adoption by the participating Governments which the Ministers agreed to recommend to their respective Governments. Further detailed technical investigations will be necessary to give effect to this agreement and appropriate regulatory approvals are required).

Implementation of the national electricity market in accordance with the National Electricity Code developed by the National Grid Management Council, requires:

- finalisation of the public consultation process presently being coordinated by the NGMC;
- approval of the Code by the participating jurisdictions;
- submission of the Code for Authorisation by the Australian Competition and Consumer Commission; &
- development and installation of the information and trading systems that give effect to the Code.

The Agreements signed by the participating jurisdictions, establishing the national market organisations, NEMMCO and NECA, and the process for putting in place the legislation to support the Code, will greatly facilitate the achievement of these steps.

However Ministers believe that harmonisation of their State markets is a means of providing benefits to customers as early as possible, allowing a smooth adjustment from intrastate to interstate competition and facilitating the adoption of the National Code.

The principles guiding harmonisation of the State markets are to bring jurisdictions closer to implementation of the National Code, provide equal effective access to customers within each jurisdiction and that there is to be common regulatory oversight for interstate trade.

Ministers acknowledged the need to gain the approval of State and Federal regulatory bodies, in particular the Australian Competition and Consumer Commission.

APPENDIX C

SUBMISSIONS RECEIVED

WRITTEN SUBMISSIONS RECEIVED

AGL

Australian Competition and Consumer Commission

Australian Consumers Association

Australian Co-operative Foods Ltd

Australian Paper

BOMA

Consumer Electric Co-operatives Options

Department of Energy

Department of Fair Trading

Department of School Education

Electric Power Consulting Pty Ltd

Email Meters

Energy Australia

Energy South

First State Power

Greenpeace

Charles Halton

Integral Energy

Macquarie Generation

NSW Farmers' Association

NSW Minerals Council

NorthPower

Pacific Power

Shell Australia Ltd

Testing & Certification Australia

GLOSSARY

ACCC Australian Competition and Consumer Commission (successor to the Trade Practices Commission and the Prices Surveillance Authority) which came into existence on 6 November 1995.

COAG Coalition of Australian Governments, comprising the Commonwealth, States and Territories.

Code of Conduct The code of conduct developed by the NGMC for the regulation of the national electricity market.

Commonwealth The avenue by which access to a grid may be sought from

Access Regime the Commonwealth Assistant Treasurer (on the advice of the NCC).

Contestable customer means a customer who is eligible to buy electricity from its *local retailer*, another *retailer* or through the wholesale market. A contestable customer is also known as a *non-franchise customer*.

Distribution network means the network used to transport electricity from the high-voltage *transmission grid* to end-use customers; the distribution network is also used to transport electricity to end-use customers from generators that are so placed as to bypass the transmission grid.

ESI Electricity Supply Industry

ETA Electricity Transmission Authority, the entity responsible in NSW for transmission, as well as market and system operation, trading as TransGrid.

Franchise customer means a customer who may buy electricity only from the customer's *local retailer*. The prices are regulated by the Independent Pricing and Regulatory Tribunal. Franchise customers are also known as *non-contestable customers*.

Half hour meter means a meter which records a customer's electricity consumption every 30 minutes and may have communication facilities through which that information may be transmitted to a remote computer.

Independent retailer means a retailer **not** part of a NSW *distribution business*.

IPART Independent Pricing and Regulatory Tribunal, formerly the Government Pricing Tribunal, the entity responsible in NSW for review of pricing of government services.

Local distribution includes the *wires business* and the *retail arm* of the local

business distributor (see below).

Local retailer means the retail arm of a customer's *local distribution business*.

Local wires business means the *wires business* of a customer's *local distribution business*.

Load profile means a customer's electricity consumption as measured periodically (usually every half hour) over a length of time such as a day, a week or a year.

NCC National Competition Council, the entity responsible for providing advice and recommendations on designated competition matters to relevant Ministers, established on 6 November 1995.

Network tariffs are charges for the use of the *transmission grid* and a *distribution network* to transport electricity from the generators to a customer.

NGMC National Grid Management Council

Non-contestable means a customer who may buy electricity only from its

customer local retailer. Non-contestable customers are also known as *franchise customers*.

Non-franchise means a customer who is eligible to buy electricity from its

customer local retailer, another *retailer* or through the wholesale electricity market. Non-franchise customers are also known as *contestable customers*.

ORG Office of the Regulator-General, the body responsible in the State of Victoria for independent regulation of the ESI.

Retailer means a company which is licensed to sell electricity. A retailer may be the retail arm of a *distribution business* or an *independent retailer*.

Supply point means a point where a supply of electricity last leaves a facility owned or operated by a *wire business* before being supplied to a customer. In most cases, the supply point is located near the meter.

TPA Trade Practices Act 1994 (Commonwealth).

Transmission grid means the high-voltage grid used to transport electricity from generators to the *distribution networks*, or in a few instances direct to major electricity users. The NSW transmission grid is owned, maintained and operated by TransGrid.

Wires business means the component of a *distribution business* which conveys (transports) electricity between points of entry to the *distribution network* and points of supply to end-use customers. A wires business is operated under a distribution licence.

Inquires regarding the Policy Paper on Retail Competition in Electricity Supply should be directed as follows:

Industry and public inquiries

NSW Electricity Reform Taskforce
Level 23, Governor Macquarie Tower
1 Farrer Place
SYDNEY NSW 2000

Telephone: 61 2 228 5893 Facsimile: 61 2 228 3173

Media inquiries

Office of the Minister for Energy
Level 33, Governor Macquarie Tower
1 Farrer Place
SYDNEY NSW 2000

Telephone: 61 2 228 3535 Facsimile: 61 2 228 3476