ICRC

independent competition and regulatory commission

Issues paper

Review of contestable electricity infrastructure works

October 2003

The Independent Competition and Regulatory Commission (the commission) was established by the *Independent Competition and Regulatory Commission Act 1997* (ICRC Act) to determine prices for regulated industries, advise government about industry matters, advise on access to infrastructure and determine access disputes. The commission also has responsibilities under the Act for determining competitive neutrality complaints and providing advice about other government-regulated activities.

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Foreword

The Treasurer has issued a reference to the Independent Competition and Regulatory Commission (the commission) requesting that the commission investigate and provide advice on the public benefit associated with maintaining or removing restrictions on the contestability of work on selected areas of the electricity infrastructure in the Australian Capital Territory (ACT).

Currently, the ACT's electricity distributor, ActewAGL Distribution (ActewAGL), is the sole supplier of services associated with the operation of the electricity distribution network within the ACT. This inquiry will consider whether there are overall economic and public welfare benefits from making contestable certain services currently provided solely by ActewAGL. The services under consideration can be broadly defined as those that are provided by ActewAGL to third parties and for which a third party must pay a contribution directly. This potentially includes augmentations or alterations to the existing network , the installation of new infrastructure in greenfield developments, new connections, and other service arrangements undertaken at the request, and on behalf, of a third party.

ActewAGL provides these services on a fee-for-service basis. The commission does not regulate these fees, despite being the regulator of ActewAGL's network operations. The existence of a contestable market for these services would avoid the possible need for more regulatory oversight of the charges that ActewAGL currently makes for these services. However, there may be a number of legal, economic, social and technical reasons why it is not possible to open this part of the market to competition. In this inquiry, the commission will examine all aspects of these matters, and provide advice to government on what action if any it needs to take to ensure that the ACT economy is able to maximise its economic efficiency in this area.

The commission seeks to provide every opportunity to the community to be informed, and to comment, on the review and will be seeking views from as wide a range of people and groups as possible. This issues paper is the first step in the discussion of the potential for making selected parts of the electricity infrastructure contestable. The commission encourages

submissions and community views on the issues raised in this paper and will again be seeking submissions after the release of the draft report in November.

Those intending to make a submission should be aware that the commission publishes all submissions made to its inquiries, unless there is a specific claim for information to be treated as confidential and the commission agrees with that claim. Submissions are published on the commission's website and are available for scrutiny at the commission's office.

For further information about making a submission or about the investigation in general, please contact the Chief Executive Officer of the commission, Ian Primrose, on 6205 0779 or by fax on 6207 5887.

Paul Baxter
Senior Commissioner
10 October 2003

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1 Introduction

The commission is conducting an investigation into whether there would be a public benefit in making selected areas of work on electricity infrastructure contestable.

1.1 The commission's review process

The commission is a statutory body established under the *Independent Competition and Regulatory Commission Act 1997* (ICRC Act) with a range of functions, including regulating prices and access to infrastructure, licensing utility services and ensuring compliance with licence conditions, investigating competitive neutrality complaints and government-regulated activities, and other matters pertaining to regulated industries in the ACT.

1.1.1 Matters to be considered

The ACT Treasurer issued a reference to the commission to advise whether there is a net benefit to the community as a whole in introducing contestable electricity infrastructure works in the electricity distribution network. In particular, the reference requires the commission to consider:

- changes required to the existing network undertaken exclusively by the ACT electricity distribution network operator (ActewAGL); and
- augmentation of the ACT distribution network by works associated with new subdivision development and greenfield sites.

The reference is set out in full in Appendix A.

In addition to these terms of reference, the commission is required to give consideration to its objectives under the *Utilities Act 2000* (Utilities Act) and the ICRC Act. The objectives of particular relevance to this review are:

- to encourage the provision of safe, reliable, efficient and high quality utility services at reasonable prices
- to minimise the potential for misuse of monopoly power in the provision of utility services

- to promote effective competition in the interests of consumers
- to facilitate an appropriate balance between efficiency and environmental and social considerations.

In making its assessment, the commission is further required to take into account the competition policy considerations set out in Schedule 1A of the ICRC Act (see Appendix B).

In this investigation the commission has determined that its examination of the issues will be confined to services relating to the electrical network for which a third party must pay ActewAGL directly, either in part or in full ('potentially contestable works'). These services may range from the construction of new infrastructure on greenfield sites to modifying some aspects of the existing network, for example shifting the location of cabling. Currently ActewAGL is the sole provider of these services in the ACT. Elsewhere in Australia, parties other than the incumbent distribution network operator are able to provide customers with these services.

The commission has determined that it would be inappropriate in this investigation to examine maintenance and other works that ActewAGL undertakes on its own behalf on its network. The commission in its role as price regulator for ActewAGL's overall distribution services applies benchmarks to ActewAGL's operating and capital works costs to ensure that these services are performed efficiently and ActewAGL is already able to offer these works to contestable service providers. The commission also notes that it may be important for ActewAGL to maintain a 'critical mass' of core skills and resources to enable it to respond to emergencies, such as the January bushfires.

The commission would like to hear the views of interested parties as to whether there may be benefits from permitting contractors other than ActewAGL and its associated entities to undertake potentially contestable works as defined above. Such benefits may relate to the speed with which the works are commenced and completed, lower construction/installation costs, or more efficient use of resources. Similarly, the commission would like to hear views on what might be the detrimental impact or inefficiencies resulting from contractors other than ActewAGL and its associated entities undertaking these works.

1.2 Consultancies

The commission has engaged Maunsell Australia Pty Ltd (Maunsell) to provide expert engineering and economic advice. Maunsell has engaged John Raineri and Associates Pty Ltd, Norton White, and Dwyer Partners as subconsultants to provide specialist electrical engineering, legal and economic advice, respectively.

While the commission has appointed Maunsell to provide it with expertise, the commission alone will make the final recommendations.

1.3 Outline of paper

This section outlines the commission's process for conducting this review, and explains the context of the review and the key issues the commission will consider in making its recommendations. The structure of the paper is as follows:

- **Chapter 2** provides a general description of ActewAGL's network and the processes that are being considered in this review.
- **Chapter 3** considers the existing methods of payment for capital works, focusing on direct payment through capital contributions.
- **Chapter 4** sets out the legal framework and legal issues regarding electricity infrastructure contestability.
- **Chapter 5** sets out a preliminary assessment framework to evaluate contestability.
- **Chapter 6** provides some information on other states' experience of making electric ity infrastructure works contestable.

Particular issues on which the commission is seeking input are highlighted in boxes within the text of the paper. However, interested parties are not restricted to these issues and may comment on other issues provided they are relevant to the terms of reference.

The commission further asks that those making submissions explain how their preferred approaches for addressing the issues meet the principles and objectives set out in section 1.1.1 above.

1.4 Timetable for the review

The release of this issues paper creates the first opportunity for interested parties to make submissions on the issues under review. Other key dates in the consultation process are outlined below:

Event	*Date*
Issues paper released	10 October 2003
Submissions on the issues paper close	7 November 2003
Draft report	28 November 2003
Submissions on the draft report close	16 January 2004
Release of the final report	16 February 2004

2 The network

2.1 Description of the network

This chapter briefly outlines the major elements of the electricity network, namely:

- generation
- high voltage transmission
- zone area substations
- 11kV and 22kV high voltage reticulation
- distribution substations
- low voltage distribution
- final connections.

An appreciation of the network provides the framework for an understanding of the issues associated with making infrastructure works contestable. The chapter also describes potentially contestable works.

For the purposes of this paper, the following items have not been included for discussion:

- street lighting, as it is already contestable and does not form part of ActewAGL's network
- provision and connection of metering equipment.[1]

Table 2.1 provides an indication of the size of ActewAGL's network.

[1] The provision and installation of meter types 1–4 is already contestable. Under a derogation from the National Electricity Code the responsibility for the provision, installation and maintenance of meter types 5–7 rests with ActewAGL (the local network service provider) until 28 February 2006.

Table 2.1 Network size

Network component	Overhead	Underground
Mains in service (kilometres)		
132kV	160	3
66kV	8	–
22kV	24	2
11kV	1 355	1 333
Low voltage	1 300	989
Electricity substations	4 014	
Nominated kVA of transformers (in '000s)		
132kV	1 228	
66kV	58	
22kV	20	
11kV and below	1 565	

Source: 2001–02 figures from ActewAGL's annual report.

2.2 Generation

The ACT does not have significant generation facilities within its boundaries. There are two small, reclaimed gas fired generators at the Mugga Way and Belconnen landfill tips[2] and a mini-hydro generation plant in Stromlo. The total energy they generate is insignificant, accounting for less than 2 per cent of the ACT's total energy. The ACT sources electricity from the NSW electricity grid and the Snowy Mountains hydroelectric scheme. The peak consumption of electricity within the ACT occurs during the winter months and is in the order of 600 MW. The nature and size of the ACT market is such that, although consideration has previously been given to the establishment of a local generation station, it was concluded that the cost of construction, fuel and associated environmental impacts did not justify the venture, given the ease with which electricity supply became available after the NSW Electricity Commission completed its large generator construction program in the 1980s.

[2] The energy generated by the methane generators is used solely for street lighting.

2.3 High voltage transmission

The ACT is supplied with electricity through two bulk supply substations:

- Canberra substation (330kV / 132kV) at Holt
- Queanbeyan substation (132kV / 66kV) at Oaks Estate.

Both of these substations are owned and operated by TransGrid.

The Canberra substation is supplied by four incoming 330kV transmission lines and has three outgoing 132kV sub-transmission lines to the ACT. Other 132kV outgoing sub-transmission lines supply NSW areas.

The Queanbeyan substation is supplied by several incoming 132kV sub-transmission lines and has two outgoing 66kV subtransmission lines supplying ActewAGL's Fyshwick zone substation. Other 66kV outgoing sub-transmission lines supply adjacent NSW areas.

The two bulk supply substations and the incoming transmission / sub-transmission lines are owned and operated by TransGrid and are therefore outside the scope of this review.

The 132kV and 66kV sub-transmission system supplying the ACT are owned and operated by ActewAGL. Except for maintenance, the work on this system is limited.

2.4 Zone area substations

Voltage is further reduced from 132kV or 66kV to 11 kV at ActewAGL's zone substations and at one substation, boosted up from 11kV to 22kV. From the zone substations aerial or underground cables reticulate electricity throughout Canberra, each serving a population cluster of about 30 000 people.

ActewAGL builds these substations as needed to meet future growth. They also form an integral part of the control and monitoring system whereby ActewAGL monitors loads and current flow and carries out switching for maintenance, safety isolation, load sharing and shedding (as in emergencies such as the recent bushfires).

2.5 11kV high voltage reticulation

The 11kV high voltage system radiates from each zone substation to feed electricity supply into the suburbs and commercial centres. The reticulation includes underground and aerial conductors and a variety of smaller distribution substations that are required to further reduce the voltage to 415/240V.

These substations take the form of:

- single or multiple transformer chamber substations installed as part of commercial buildings
- pole-mounted substations for suburban and commercial distribution
- pad-mounted substations for suburban and commercial distribution.

2.6 Low voltage distribution

Once the voltage is reduced to 415V, it can be distributed and used for commercial and residential purposes. For underground residential developments a system of pillars is typically used to further reduce the scale of the distribution to a domestic supply.

The viability and economics of long distribution runs is limited, as there are substantial losses involved with the transmission of electricity at 415V. This distribution system is therefore best suited to residential and small commercial developments.

In Canberra's older suburbs, the low voltage distribution system is generally by aerial conductors along the rear spine of the blocks of land. Since the 1960s, electricity cables have been progressively put underground. Low voltage electricity lines are reticulated underground in all new residential areas.

In commercial areas a system of mini-pillars and underground feeders originating from local chamber/pad mounted/pole mounted substations provides the final reticulation. Industrial areas typically rely on aerial low voltage reticulation originating from pole-mounted transformers.

2.7 Final connections

Final connection of the electricity supply is made to most consumers at either 415V or 240V (three-phase or single-phase), although there are some larger consumers within the ACT that purchase power at 11kV.

For 415/240V customers the final connections take the form of:

- terminals of the dedicated low voltage switchgear within a substation
- fuses on a point-of-entry cubicle for commercial and large residential end users
- fuses within a residential meter panel
- house fascia connection points for residential or small commercial aerial supplies.

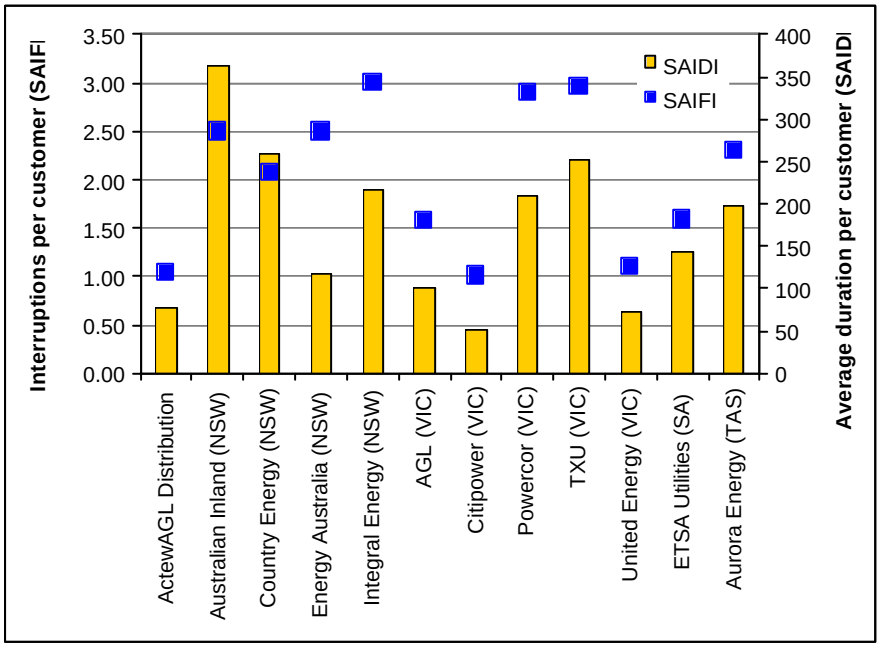
Typically, final cabling to the client's point of connection is free of charge if the connection point is within 8 metres of the block boundary for underground service, and within 22 metres for an aerial connection.

For high voltage customers the final connection point takes the form of the high voltage load side switchgear terminals at the customer's point of connection.

2.8 Quality and reliability of electricity supply

ActewAGL's electricity network is relatively new compared with those in other states and covers a small, mainly urban area. In terms of the quality and reliability of supply, ActewAGL's network is of a generally higher standard than those of electricity distributors elsewhere in Australia, as Figure 2.1 shows.

Figure 2.1 SAIFI and SAIDI, all (planned and unplanned) outages, electricity distribution, 2001–02



SAIDI = system average interruption duration index – the average number of minutes off supply by customer
SAIFI = system average interruption frequency index – the average number of interruptions per customer
Note: Victorian data based on 2001 calendar year. NSW data is for 2000–01.
Source: ESC, *Electricity Distribution Businesses Comparative Performance report for the Calendar Year 2001*, September 2002; OTER, *Tasmanian Electricity Supply Industry Performance Report 2002*, vol 2, December 2002, IPART, *NSW Distribution Network Service Providers – Price and Service report for 2000/2001*, September 2002.

For the purposes of this review, the commission starts from the premise that the public interest is best served by ensuring that electricity supply is provided at the least possible cost with no significant deterioration in quality or reliability of supply.

2.9 Potentially contestable works

A substantial part of all customer-initiated new works involves the extension, modification and augmentation of the 11kV distribution system and the low voltage system, for example by laying cable underground. Customers may also be required to pay the direct cost of final connections

and in some instances pay for work on substations.[3] These works are therefore potentially contestable works as defined in Chapter 1.

As part of any augmentation and alteration of the existing network and development of new works on behalf of a third party, ActewAGL currently provides the following potentially contestable works:

Table 2.2 Potentially contestable services currently undertaken by ActewAGL

Process	Service
Planning and design	• Planning and system design. • Selection and specification of equipment. • Definition of standards to be observed and complied with in design, construction and control of quality. • Timing and scheduling of work. • Planning of the system to minimise outages to other customers. • Integration of the new infrastructure with existing infrastructure and provision for future expansion of the network.
Approvals and liaison	• Liaison with planning and approving authorities and coordination of the work. • Liaison with other authorities for use of shared trenches.
Procurement	• Land acquisition as required. • Procurement of materials and equipment.
Construction and installation	• All behind-the-scene augmentation and diversions required to support the new infrastructure. • Installation of all infrastructure from substations, underground high voltage reticulation, underground low voltage reticulation, mini-pillars and final residential connections. • Quality control and quality assurance of the work.
Testing and commissioning	• Monitoring of existing infrastructure to guard against overload. • Commissioning, testing and connecting new work to the network. • Energisation of the system. • Asset recording, drawings, assignment of easements and the like.

[3] High voltage customers pay a capital contribution for the high voltage reticulation and substations. Typically they are large consumers with multiple buildings co-located; for example, a university campus. They purchase their electricity at 11kV, at a lower tariff, and are required to contribute to the full cost of the substations and 11kV reticulation within their allotment boundary. ActewAGL owns the substation and 11kV reticulation assets and maintains these assets at ActewAGL's expense.

The services outlined in Table 2.2 are grouped into various ‘process’ areas. The commission seeks input on whether specific process areas might be made contestable and which of the individual services identified for those process areas, when purchased by third parties, could be made contestable.

3 Payment for capital works

This chapter describes the existing cost recovery mechanisms for electricity infrastructure development.

3.1 Payment: how costs are recovered

Customers pay ActewAGL for electrical capital works either directly, in part or in full, or indirectly and over time as part of their electricity bill. The cost of assets or services that are part of ActewAGL's general distribution or connection service is recovered through network usage charges. However, in certain circumstances a customer may be required to pay a capital contribution, that is, to pay ActewAGL directly, in part or in full, for an asset or service as part of a connection, augmentation or alteration to the electricity network. A capital contribution may be required, for example, for:

- infrastructure in excess of the basic standard
- services or infrastructure at the basic standard of infrastructure such as excess cable, connection to uneconomic loads and other network connection services
- relocation or removal of infrastructure.

The payment for capital works by third parties is governed by the Electricity Network Capital Contribution Code, which is summarised below. The types of situations in which a third party is required to make a capital contribution are described in this chapter.

3.2 Capital contribution requirements under the Electricity Network Capital Contribution Code

3.2.1 General principle

ActewAGL may charge, and a customer must pay, for development or augmentation of the network undertaken at the request of the customer.

3.2.2 Basic standard infrastructure

ActewAGL will generally install the basic standard infrastructure applicable to a plot of land at no charge to the customer**.** The basic standard infrastructure comprises:

- overhead assets to:
  - extend the distribution system from the existing boundary of the network to or through the land being developed, and
  - provide a service connection, up to a maximum of 22 metres of overhead cable, from the distribution system into the land being developed

or

- underground assets to:
  - extend the distribution system from the existing boundary of the network to or through the land being developed, and
  - provide a service connection, up to a maximum of 8 metres of underground cable, from the distribution system into the land being developed

or

- a combination of such overhead and underground assets.

ActewAGL generally does not charge individual customers for these assets and services, the cost is recovered from the entire customer base over an extended period through ActewAGL's network usage charges.

3.2.3 Higher standard infrastructure

If a customer requires the construction of assets at a higher standard than applies to the relevant parcel of land, ActewAGL may charge the customer for the additional costs incurred (the capital contribution charge).

3.2.4 Rural customers

The capital contribution charge for rural customers is the difference between the actual connection cost and the average cost of connecting a residential customer in the Canberra urban area to the network.

3.2.5 Uneconomic loads

ActewAGL may also request a capital contribution charge if a customer's load is determined to be uneconomic.

ActewAGL may determine that a load is uneconomic if the connection cost and the costs of ongoing operation and maintenance over the life of the additional assets exceed the anticipated network revenue from that load.

ActewAGL levies capital contribution charges in these circumstances to help recover what would otherwise be an unprofitable connection. This is different from the levying of capital contribution charges for augmentations or alterations to the electricity network, and consideration of uneconomic loads is therefore beyond the scope of this review.

3.2.6 Substations

If a substation needs to be installed on a customer's land, the customer must provide space for the substation and must provide access to ActewAGL. The substation and any ancillary equipment belong to ActewAGL despite being installed on the customer's premises.

ActewAGL will also operate, maintain and repair the substation equipment at no charge to the customer.

If a low voltage customer has an economic load the substation is installed at no charge to the customer. If the customer's load is considered to be uneconomic the customer is required to pay a capital contribution. Likewise, if ActewAGL does not consider the substation necessary, but the customer requests it, the customer must pay for the cost of its installation.

High voltage customers pay a capital contribution equivalent to the cost of installing the substation less the cost of installing metering equipment, which would otherwise have been provided as part of the basic standard infrastructure.

3.3 Ownership of network assets

The payment of capital contributions does not confer on the customer any ownership in the asset to which the charge relates. In making a capital contribution, a customer is paying for access to the utility service, not the asset itself. The capital contribution portion of the assets is gifted to ActewAGL, which operates and maintains that part of the asset as its own. ActewAGL does not earn a rate of return or recover a depreciation allowance on the capital contribution portion of the assets for electricity pricing purposes. Rather the contributed portion is treated as a fully funded gifted asset for its economic life.

3.4 Customer-initiated alterations and augmentations: greenfield and brownfield works

Augmentations, alterations (removals and relocations) and new connections to the system occur in the following situations:

- *Greenfield* developments involve construction and connection of new electricity infrastructure as part of a new subdivision. The work is typically undertaken on behalf of a property developer, who pays a capital contribution for the difference between the cost of ActewAGL's basic standard of infrastructure (usually overhead reticulation) and the actual installation costs of the higher standard (underground reticulation) required under the Territory Plan or requested by the developer.

- *Brownfield* work is carried out in areas that have already been reticulated. It may be undertaken on behalf of a developer and involves augmentation of the network to accommodate the new or additional load, or alteration of the network (for example relocation of existing infrastructure). In these circumstances the customer may have to pay a capital contribution for the work, particularly if existing assets have to be relocated. Work may also be undertaken on behalf of an individual customer, for example to relocate power lines or to lay overhead power lines underground.

It should be noted that a customer is not required to pay a capital contribution for greenfield or brownfield work in all circumstances. Moreover, even if a capital contribution is made, it will not necessarily cover the cost of all the work undertaken.

The commission notes that there are a number of circumstances under which a third party is required to pay ActewAGL for work on the electricity network. These extend from augmentations and non-standard connections to new developments and uneconomic loads. The commission is seeking views on which, if any, of the services for which a third party must meet the direct cost should be treated as contestable.

4 Legal

This chapter outlines the legislative framework governing electricity distributors in the ACT and identifies legal issues regarding contestable electricity infrastructure works.

4.1 Utilities Act

The Utilities Act regulates the provision of utility services, namely electricity, gas, water and sewerage services. Only licensed (or exempted) utilities may provide these services. In order to be eligible for a licence, a utility must be able to satisfy the commission (which grants licences) that the utility can comply with the licence conditions and that it is a viable business.

The Utilities Act defines the following electricity utility services:

- distribution of electricity through an electricity network
- electricity connection service
- supply of electricity from an electricity network to premises for consumption.

4.2 Electricity distribution licence

ActewAGL was issued a licence to provide electricity distribution and connection services commencing on 1 July 2001. The licence remains in force unless cancelled or revoked. No other utility has been issued a licence to provide electricity distribution and connection services in the ACT[4] and accordingly ActewAGL is the sole licensed electricity distributor in the Territory.

[4] Country Energy has been granted an exemption from having to hold a licence to provide electricity distribution and connection services for the electricity distribution line that it owns and operates in the ACT. This line is approximately 12 km long and runs along the ACT–NSW border.

4.3 Contestability

The Utilities Act allows a degree of contestability by providing that a person other than an electricity distributor may connect customers' premises to the network or vary the capacity of the connection. The person must be accredited under the relevant technical code (Contestable Work Accreditation Code).

Because the Utilities Act expressly excludes augmentation, relocation or other alteration of the distributor's existing network from the work associated with a connection or variation, this work is currently not contestable.

Infrastructure development on greenfield sites is not specifically addressed in the Utilities Act. Within the strict definition of the Utilities Act such work is not work on the existing network and therefore is not expressly excluded from contestability. However, any infrastructure constructed in a greenfield development will ultimately be connected to, and become part of, the electricity distributor's network. To that extent, such work could be considered an augmentation to the network infrastructure and therefore not contestable. Consequently, it is unclear whether, and to what extent, contestability is allowed under the current legislation.

4.4 Codes of practice and guidelines

Provision is made for the development of industry codes and technical codes under Parts 4 and 5 of the Utilities Act, respectively. These codes set out the practices, standards and other practical matters relating to the provision by a utility of its services. The commission may also issue guidelines on particular matters.

Several codes and guidelines have implications for competition in the electricity network, dealing as they do with matters relating to safety, technical standards, electricity network boundaries and the allocation of capital costs. Codes and guidelines relevant to this inquiry are described below.

4.4.1 Electricity Network Capital Contribution Code

The Electricity Network Capital Contribution Code enables an electricity distributor to charge a customer a capital contribution charge for altering or augmenting its electricity network at the customer's request. The code makes it clear that a capital contribution does not confer any legal or equitable right of ownership and the ownership of the assets to which the charge applies remains with the utility. A summary of the Electricity Network Capital Contribution Code is provided in Chapter 3 of this paper.

> The commission seeks comments on whether changes need to be made to the Electricity Network Capital Contribution Code. In particular, does the code adequately take into account the potential for contestability of the services for which a third party must meet the direct cost?

4.4.2 Electricity Network Boundary Code

The Electricity Network Boundary Code defines boundaries between:

- an electricity transmission network and an electricity distribution network
- the electricity distribution networks of two utilities
- an electricity distribution network and a customer's premises.

The siting of a boundary largely determines who owns electricity assets and has responsibility for maintaining them. The code allows for the customer and the utility to determine the ownership of assets within the customer's boundary and to agree upon boundaries. However, this right is only a fail-safe right; the overriding provision of the code determines that the customer does not own any part of the electricity network.

> For the purpose of allowing greater contestability of services, the commission seeks comment on the appropriateness of the boundaries currently defined in the Electricity Network Boundary Code.

4.4.3 Contestable Work Accreditation Code

The Contestable Work Accreditation Code applies to electricity distributors (in addition to water utilities). It requires a utility to develop or adopt a scheme to enable persons to be accredited to perform contestable works on the utility's network. The purpose of an accreditation scheme is to provide the utility with a way of ensuring that another person possesses the necessary qualifications and training and complies with specified procedures and systems, and with any directions made by the utility. An effective accreditation scheme is necessary to support contestability.

> The commission seeks comment on the effectiveness of the Contestable Work Accreditation Code in facilitating greater contestability of electricity infrastructure works.

4.4.4 Technical Codes

A range of other technical codes addresses such matters as:

- protection of the integrity of the electricity network or network facility
- protection of the health and safety of persons who operate, work on, or are affected by the operation of an electricity network or network facility
- ensuring that an electricity network or network facility has particular design features or meets specified performance requirements
- protection of public and private property and the environment.

Although the codes themselves do not have any bearing on the question of whether or not selected areas of the electricity infrastructure should be made contestable, they are important because the utility is required to comply with their obligations regardless of who undertakes the work. Therefore, in considering the question of contestability, thought also needs to be given to any mechanisms needed to ensure that the utility can continue to meet its code obligations.

A list of relevant technical codes is provided in Appendix C.

The commission seeks comment on any particular mechanisms that are needed to ensure that an electricity distributor can meet the technical, safety and performance requirements of the technical codes, should selected areas of electricity infrastructure works and augmentation be made contestable.

4.4.5 Ring fencing guidelines

Ring fencing is the identification and separation of business activities, costs and decision making within an integrated entity (such as ActewAGL) where part of the entity is providing monopoly services and another is providing services in a competitive market. Its purpose is to ensure that businesses operating in regulated monopoly industries do not use their monopoly power, or collude with associated businesses, to give associated businesses an unfair advantage over their market competitors. Ring fencing is intended to reduce or eliminate both incentives and opportunities for such anti-competitive behaviour.

If selected areas of the electricity infrastructure are made contestable, there may need to be further separation between components of the electricity distribution business to reduce any potential for conflict of interest.

The commission seeks comment on whether further ring fencing within the electricity distribution business would be needed if selected areas of electricity infrastructure were made contestable and, if so, how this might be achieved.

5 Assessment framework

In this chapter the commission proposes an approach to assessing the net benefit of making selected areas of electricity infrastructure works contestable.

5.1 National Competition Policy and the public benefit test for exemption

Federal, State and Territory governments agreed in 1995 on the general principle that all regulation should be reviewed for anti-competitive impacts and the onus is on those wishing to retain anti-competitive elements to demonstrate a net public benefit. The public benefit test, referred to in clause 5 of the Competition Principles Agreement, allows legislative or regulatory restrictions on competition to be retained if there is a net benefit to the community as a whole. This approach is consistent with the general view in the Hilmer Report that, as part of microeconomic reform, competition should not be implemented for its own sake but to enhance social benefit by improving the efficiency of economic performance. In general, competition is the most efficient means for achieving such efficiencies, but in some circumstances competition may not maximise community benefits.

Restrictions to competition might include:

- restrictions on entry to or exit from a market
- controls on price or production
- quality constraints
- conferment of discriminatory advantages to one firm or sector over others
- imposition of rents or the capture of community wealth.

The costs of making selected areas of electricity infrastructure works contestable may include:

- higher costs associated with unreliable work that leads to more frequent and longer service outages, and higher operating and maintenance costs
- risks to public safety or health risks from poor or faulty work
- costs arising from more frequent repairs and maintenance
- costs arising from the shorter asset life of lower standard infrastructure
- additional administrative costs, such as tendering, approval and contract administration costs
- additional regulatory costs, such as accreditation, training, licensing and compliance costs
- unemployment costs (loss of income for families, social disruption and social support costs)
- loss of skills in the Territory, particularly where those skills are important for a quick and effective response to emergencies such as bushfires or other natural disasters.

On the other hand, benefits may include:

- reduction in infrastructure construction and installation costs and times
- reduction in electricity supply costs
- reduction in home purchase costs in greenfield developments
- more flexibility in the service
- choice of contractor for customers
- improvements in quality of work
- transparency of infrastructure construction and installation costs
- creation of additional employment opportunities

- development of new industries or investment in the ACT economy (broadening the Territory's economic base)
- reduction in opportunities for rent seeking
- improvements in network efficiency.

The public benefit test considers all the costs and benefits relating to the community as quantitative measures. Where costs and benefits are not easily quantifiable, they are measured qualitatively but scored to facilitate comparison. The costs and benefits are summed to produce a net cost or benefit.

The commission is seeking input from interested parties about the balance of costs and benefits that may occur as a result of making selected areas of electricity infrastructure works contestable. The commission seeks information not only on those costs and benefits that are readily quantifiable, but also on those that may be more readily expressed in qualitative terms.

5.2 Assessment framework

The commission recognises that the issues that need to be taken into account in this review, from the points of view both of the community and of ActewAGL itself, are numerous and far-reaching.

Table 5.1 shows a schedule of issues summarised under thirteen headings. The commission is seeking submissions on all aspects the issues outlined. However, the schedule is not necessarily exhaustive and the commission is willing to consider any other matters that should be included in its assessment.

Table 5.1 Possible assessment criteria

Assessment criteria	Sub-criteria
Safety	• Occupational health and safety (employees and contractors) • Safety of the general public • Provision of general emergency services
Reliability of the network	• Integrity of the network • Quality of design • Quality of network and critical elements • Quality control and assurance systems • Management and contract administration skills • Workmanship and pool of skilled labour • Quality of maintenance • Emergency responsiveness and ability to minimise the duration of outages during emergencies • Reliability of systems to control the network
Operation of the network	• Retention of core skills and knowledge in ActewAGL • Availability of skills and equipment • Ability to keep the system in balance and avoid power surges or power losses. • Maintenance of records, system registries and asset databases • Standardisation of equipment and the network • Control of connections and commissioning
Risks	• Risk of power outages • Consequences of outages • Measures and controls to mitigate risks • Cost increases
Efficiency	• Economies of scale and scope • Bulk purchasing efficiencies • Ability to maintain a core skill base and workforce large enough and flexible enough to be effective when required • Whole-of-network focus • Reduction or elimination of inefficient practices • Efficient allocation of resources
Complexity of processes	• Clarity and complexity of processes • Cost of administering processes • Tendering and procurement processes • Availability of resources to administer process • Responsiveness • Required training in processes • Accreditation and certification processes

Assessment criteria	Sub-criteria
Quality of service	• Asset recording and management • Customer focus • Customer choice • Timeliness • Flexibility • Contractor performance
Reasonable price	• Customer pays • Impact on valuation of capital asset base • Transparency of pricing • Cost of tendering and administration • Transparency of processes, in particular pricing • Perceived or actual abuse of monopoly position • Impact on home purchase prices in greenfield developments • Cost of ring fencing and other regulatory controls
Viability of competition	• Amount of contestable work • Availability of competitors • Resources and skills of competitors • Amount and attractiveness of contestable work (eg value of work, call for work, risk associated with the work) • Extent of regulation • Size of the market being exposed to competition • Uniqueness of the element being made contestable • Availability of labour, materials, plant and equipment • Contracting risks
Environmental issues	• Environmental impact • Environmental controls
Social issues	• Labour issues and industrial relations • Ability to contribute positively to the community • Regional development • Employment • Retention or increase in specialist skills within ACT • Equity • Investment growth • Interest of consumers generally, and of particular classes of consumer
Time to achieve benefits	• Short-term/immediate benefits • Long-term benefits

Assessment criteria	Sub-criteria
Implementation	• Amendments to legislation • Amendments to codes and development of new codes • Regulatory costs • Administrative costs to the utility • Transparency of tendering process

The commission seeks comment on the issues identified in Table 5.1 and any other issues considered material to the question of the benefits and costs of making selected areas of electricity infrastructure works contestable.

6 Experience elsewhere

Electric ity infrastructure works have been made contestable in other states in Australia and in other countries. However, it is unclear whether this has produced a net benefit to the public. The change to contestability is recent, infrastructure markets are still fluctuating, and it may be that the full consequences of the change will not be known in the short term.

A direct comparison with experiences in other areas may not be useful, as their operating environments may be different from the environment in the ACT. However, experience from other states may give a useful insight into likely outcomes in the ACT if infrastructure work is made contestable.

This chapter provides a brief summary of the situation in New South Wales, Victoria and Great Britain, as these appear to provide useful examples that may be applicable to the ACT.

6.1 New South Wales

In NSW, four electricity distribution network service providers (DNSPs) distribute electricity throughout the state. These businesses are Energy Australia, Integral Energy, Country Energy and Australian Inland. Generally, any work for which a customer pays a capital contribution is contestable.

The degree of contestability of infrastructure works varies between DNSPs according to the availability of competitors. Within urban areas about half the infrastructure work is undertaken by external service providers. The amount of work undertaken by these providers is still growing, suggesting that customers see that there are advantages to using such providers.

External service providers must be accredited to undertake work on the electricity infrastructure.

6.2 Victoria

In Victoria, five private distributors distribute electricity at high and low voltages (240V to 66kV) in their regions. The metropolitan distributors are

AGL Electricity, CitiPower and United Energy; the rural distributors are TXU (formally Eastern Energy) and Powercor.

For capital works worth more than $5000, the distributor must offer customers market testing of the capital costs, and such work is therefore contestable. Customers may elect to make work under $5000 contestable, but are then required to pay a $500 fee to cover the cost of administration and tendering, and this charge may outweigh any potential savings. Customers may also elect to run their own tender, in which case they must pay a $200 charge to cover the distributor's administration costs.

External service providers must be accredited to undertake work on the electricity infrastructure.

6.3 Great Britain

In Great Britain, electricity is transmitted across the high voltage national grid and the low voltage distribution network before being supplied to customers. This is a similar physical configuration to that in Australia. Distribution network operators (DNOs) are licensed to operate in one or more of the 14 distribution network areas in Great Britain and are regulated by the Office of Gas and Electricity Markets (OFGEM) under the provisions of the Electricity Act 1989 (United Kingdom). The distribution networks are similar to the infrastructure under consideration in this review.

OFGEM states that, where the provision of services within the distribution network can be delivered through a competitive market, this is preferable to introducing other forms of protection such as price controls. OFGEM continues to monitor the development of competition on a voluntary basis by the DNOs in this market. Work that is not open to competition is regulated by OFGEM's price reviews. External service providers claim that savings of 20 per cent in capital costs can be achieved as a result of the introduction of competition. This potentially represents a saving of £120 million per annum nationally.

6.4 Summary of experience in other states

A preliminary review of electricity works contestability in NSW and Victoria suggests the following advantages and disadvantages.

6.4.1 Advantages

- Customer focus has increased, with improvements in customer service in planning, design and installation.
- Quality of works has improved with the introduction of independent checks and audits.
- Cost savings have been made in some areas, particularly those with a competitive market. Not all works, however, are price sensitive.
- In areas where it is difficult for the utility to provide a service, for example trenching in rural areas, there have been direct savings to customers where there are local contractors available.
- Customers have choice of service provider.
- Customers have greater control over work, in terms of what can be done and timing.
- In competitive markets the industry has greater capacity than the utility, thereby reducing delays and backlogs of work.

6.4.2 Disadvantages

- Processes have become more complex.
- There are increased costs in documenting processes and administering contestable work.
- In some areas, particularly where there is insufficient competition, costs have increased.
- Performance of some contractors has not been satisfactory.
- Disagreements have arisen at the sign-off of works.
- Cultural change by utility companies has been difficult to achieve, but some significant changes have occurred.
- In NSW, where there is no lower limit on making infrastructure work contestable, the savings created by making low-cost work contestable

are sometimes outweighed by the cost of tendering and administering the work.

- There is an increased risk that unmetered connections will be made to the network.
- Conflicts of interest arise where the utility is fulfilling a number of roles, such as accreditor, designer, inspector and operator, and there is little separation between these functions. This can add to costs and cause delays and disputes.

6.4.3 Further issues

- Some work in NSW is non-contestable if it can be demonstrated that this is in the community's interest. For example, where the work is for large, complex projects and the amount of available work is unknown, it is often difficult to attract quotes from external service providers.
- In undertaking infrastructure works, DNSPs take the opportunity to replace or re-route existing infrastructure when problems are identified. It is suggested that these opportunities might be lost if the DNSP were not to undertake the work.
- In NSW, the supply of equipment is not always contestable and equipment is provided free of charge by the DNSP to contractors. This allows the benefits of the DNSP's purchasing power to be maintained and allows standardisation of equipment, which, in turn, has operational and maintenance benefits.
- In Victoria, smaller contractors have exited the market for infrastructure works and there has been some consolidation in the industry. This is probably due to the larger systems and increased overheads required to gain accreditation and conform to industry requirements that favour larger organisations.

The commission seeks input on the positive and negative outcomes from making electricity infrastructure contestable in other states, in particular NSW and Victoria, and in other countries.

Appendix A Reference issued by the ACT Treasurer

Independent Competition and Regulatory Commission (Reference for Investigation)

Determination 2003 (No 2): Disallowable instrument DI2003—182 made under the *Independent Competition and Regulatory Commission Act 1997*, s15 (Nature of industry reference) and s16 (Terms of industry references)

Reference for Investigation under s15

Pursuant to subsection 15(1) of the Act, I issue a reference to the Independent Competition and Regulatory Commission (the 'Commission') to investigate and provide advice on whether there is a net benefit to the community as a whole in the introduction of contestable electricity infrastructure works in the electricity distribution network.

Reference for requirements in relation to investigation under s16

Pursuant to subsection 16(1) of the Act, I specify the following requirements in relation to the conduct of the investigation:

1. In conducting the review, the Commission is to take into consideration:
   a. changes required to the existing network undertaken exclusively by the ACT electricity distribution network operator; and
   b. augmentation of the ACT electricity distribution network by works associated with new subdivision development and greenfield sites.
2. The Commission is to undertake this review and provide the final report by 12 December 2003.

Ted Quinlan
Treasurer
1 July 2003

Appendix B ICRC Act competition policy considerations

Below are extracts from Schedule 1A of the *Independent Competition and Regulatory Commission Act 1997.*

Competition policy considerations

1 (3) (d) government legislation and policies relating to ecologically sustainable development;

(e) social welfare and equity considerations, including community service obligations;

(f) government legislation and policies relating to matters such as occupational health and safety, industrial relations and access and equity;

(g) economic and regional development, including employment and investment growth;

(h) the interests of consumers generally or of a class of consumers;

(i) the competitiveness of Australian businesses;

(j) the efficient allocation of resources.

Competitive neutrality principles

3 (1) The objective of competitive neutrality policy is the elimination of resource allocation distortions arising out of the public ownership of entities engaged in significant business activities: Government businesses should not enjoy any net competitive advantage simply as a result of their public sector ownership. These principles only apply to the business activities of publicly owned entities, not to the non-business, non-profit activities of these entities.

(4) Subject to subclause (6), for significant Government business enterprises which are classified as 'Public Trading Enterprises' and 'Public Financial Enterprises' under the Government Financial Statistics Classification:

(a) the Parties[5] will, where appropriate, adopt a corporatisation model for these Government business enterprises (noting that a possible approach to corporatisation is the model developed by the intergovernmental committee responsible for GTE National Performance Monitoring); and

(b) the Parties will impose on the Government business enterprise:

(i) full Commonwealth, State and Territory taxes or tax equivalent systems;

(ii) debt guarantee fees directed towards offsetting the competitive advantages provided by government guarantees; and

(iii) those regulations to which private sector businesses are normally subject, such as those relating to the protection of the environment, and planning and approval processes, on an equivalent basis to private sector competitors.

(5) Subject to subclause (6), where an agency (other than an agency covered by subclause (4)) undertakes significant business activities as part of a broader range of functions, the Parties will, in respect of the business activities:

(a) where appropriate, implement the principles outlined in subclause (4); or

(b) ensure that the prices charged for goods and services will take account, where appropriate, of the items listed in

[5] Party is defined in the agreement (cl 1 (1)) to mean the Commonwealth, a State, the Australian Capital Territory or the Northern Territory of Australia, if the jurisdiction concerned has signed the agreement and has not withdrawn. The Australian Capital Territory has signed the agreement and has not withdrawn from it; thus it is a party.

subclause (4) (b), and reflect full cost attribution for these activities.

(6) Subclauses (4) and (5) only require the Parties to implement the principles specified in those subclauses to the extent that the benefits to be realised from implementation outweigh the costs.

(7) Subclause (4) (b) (iii) shall not be interpreted to require the removal of regulation which applies to a Government business enterprise or agency (but which does not apply to the private sector) where the Party† responsible for the regulation considers the regulation to be appropriate.

Legislation review principles

5 (1) The guiding principle is that legislation (including Acts, enactments, ordinances or regulations) should not restrict competition unless it can be demonstrated that:

(a) the benefits of the restriction to the community as a whole outweigh the costs; and

(b) the objectives of the legislation can only be achieved by restricting competition.

…

(9) Without limiting the terms of reference of a review, a review should:

(a) clarify the objectives of the legislation;

(b) identify the nature of the restriction on competition;

(c) analyse the likely effect of the restriction on competition and on the economy generally;

(d) assess and balance the costs and benefits of the restriction; and

(e) consider alternative means for achieving the same result including non-legislative approaches.

Appendix C Technical codes that apply to electricity distributors

- Contestable Work Accreditation Code
- Electricity Service and Installation Rules Code
- Electricity Distribution Supply Standards Code
- Emergency Planning Code
- Electricity Metering Code
- Management of Electricity Network Assets Code

Glossary and abbreviations

ACT	Australian Capital Territory
commission	Independent Competition and Regulatory Commission
DNOs	distribution network operators (Great Britain)
DNSPs	distribution network service providers (Australia)
ESC	Essential Services Commission (Victoria)
ICRC Act	*Independent Competition and Regulatory Commission Act 1997*
IPART	Independent Pricing and Regulatory Tribunal (New South Wales)
kV	kilovolts
OFGEM	Office of Gas and Electricity Markets (Great Britain)
OTER	Office of the Tasmanian Energy Regulator (Tasmania)
SAIDI	system average interruption duration index – the average number of minutes off supply by customer
SAIFI	system average interruption frequency index – the average number of interruptions per customer
Utilities Act	*Utilities Act 2000*
V	volts

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