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The fiscal, efficiency and service quality implications of the proposed sale of ACT Electricity and Water

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Abbreviations

ACTEW	Australian Capital Territory Electricity and Water Corporation
CEO	Chief Executive Officer
CSL	Commonwealth Serum Laboratories
EBIT	Earnings before interest and tax
ESAA	Electricity Supply Association of Australia
GBE	government business enterprise
GDP	Gross Domestic Product
GWh	gigawatt hours
IPARC	Independent Pricing and Regulatory Commission
IPPs	Independent power producers
kWh	kilowatt hour
MWh	megawatt hours
NEC	National Electricity Code
NEM	National electricity market
NEMMCO	National Electricity Market Management Company
ROI	return on investment
SECV	State Electricity Commission, Victoria
SMHEC	Snowy Mountains Hydro-Electricity Corporation
WACC	weighted average cost of capital

Executive Summary

The ACT Government proposes to privatise ACTEW through the sale of electricity assets and the sale and long-term lease of water and sewerage assets. The arguments that the Government has used to support privatisation include:

- ACTEW will not be able to compete in the national electricity market;
- failure to sell will mean an effective loss of up to $500 million in the value of ACTEW;
- privatising ACTEW will see improvements in price and service quality for ACT electricity and water consumers; and
- there is a major fiscal problem associated with the government's unfunded superannuation liability and the best way to solve the problem is to provide for all of this liability through the sale of ACTEW.

The ACT Government commissioned a study of the financial and efficiency impacts of the proposed sale as against retention in public hands by the consulting firm ABN AMRO/DGJ Projects. The Government has used the results of this study to support its case for the sale of ACTEW.

This report evaluates the impact of the privatisation of ACTEW on the financial position of the ACT public sector. In so doing, it examines the structure of ACTEW and the impact of the competitive electricity market on ACTEW's profitability. It also assesses the options for dealing with the government's unfunded superannuation liability.

ACTEW and the National Electricity Market

The introduction of the national electricity market has resulted in far-reaching changes to the electricity sector. The generation, transmission, distribution and retailing of electricity are now seen as separate business activities. ACTEW's electricity business is in fact two quite separate and markedly different businesses – energy networks (distribution) and electricity retailing.

The energy networks business is, and will remain, a regulated natural monopoly. This business currently contributes about half of ACTEW's gross margin and earnings. It is a business from which a steady stream of dividends can be expected.

The retail electricity business, by contrast, is an unregulated business facing many competitors. It currently contributes relatively little to ACTEW's gross margin and earnings. A realistic appraisal of the medium term outlook suggests that this modest contribution is likely to fall significantly over the next five years because of the extremely low margins being experienced by every Australian electricity retailer. There is no functional requirement for electricity retailing to be combined in a single business with electricity distribution.

While the competitive market carries risks for ACTEW's electricity retailing operations, its networks business will be little affected. Over the three years 1996-1998, electricity retailing contributed an average of 10.6% of ACTEW's earnings before interest and tax, and it is only this part of the Corporation's profits that is under threat from competition.

ACTEW's water business

Water and sewerage services are natural monopolies and it is not possible to introduce competition into their supply. Sale of these assets would simply convert a public monopoly into a private one. The ACT Government suggests that a lease over water and sewerage assets would allow contestability, but the proposed 50-year lease (or even a 25-year lease) would be effective monopoly ownership for the successful tenderer.

If ACTEW's water and sewerage supply assets were privatised or subject to long-term lease, the government will continue to be held responsible for the supply of safe water services and the environmental impacts of water and sewerage. The 'threat of bankruptcy' that a private provider may be subject to will not solve the problems Canberrans would face in the case of system failure.

Evidence on efficiency impacts of privatisation

There is an extensive international literature on the effects of privatisation on the efficiency of businesses. It is now generally agreed, even by the Industry Commission, that privatisation is neither a necessary nor a sufficient condition for improving the efficiency of government business enterprises. The efficiency of an enterprise is determined by the management and operating environment, not by its ownership.

The research evidence indicates that in industries where there is a natural monopoly – notably in electricity distribution and water supply – public ownership performs as well or better than private ownership. Thus, in situations of natural monopoly, privatisation often results only in a transfer of wealth from public to private hands with little if any gain in efficiency.

The ABN AMRO report, on which the Government's case for privatisation of ACTEW rests, explains the large financial returns from privatisation by efficiency gains that are possible under private ownership but not under continued public ownership. However, the study on which this assumption is based is confidential so that the public is being asked to accept the sale of its largest asset on faith. In addition, another study commissioned by the ACT Auditor General suggests that potential cost savings are much less than claimed by ABN AMRO. The international evidence contradicts the ABN AMRO assumption that ACTEW would be more efficient under private rather than public ownership, with the possible exception of the electricity retailing operations which make up a relatively small part of ACTEW's operations.

Assessing the value of public assets

In deciding whether to sell ACTEW, or any public asset, the most important initial question is whether it will lead to an overall improvement or an overall decline in the financial position of the owners, the ACT public. There are two main technical issues that must be resolved in the valuation of public assets:

- the choice between cash-based accounting and accrual accounting; and
- the use of private sector or public sector discount rates.

On the first question, it is now generally recognised that accrual accounting provides a more realistic picture of the government's fiscal position than traditional cash-based measures. All governments throughout Australia, including the ACT Government, are implementing accrual accounting. However, the case for the sale of ACTEW in the ABN AMRO report is based on cash-flow analysis.

The case for privatisation put forward by the ACT Government is internally inconsistent because it uses a mixture of cash-based and accrual accounting methods. Rather than applying a consistent analysis, the Government has arbitrarily selected measures that make its current fiscal position look as bad as possible and the benefits of privatisation as large as possible. In particular, the ABN AMRO report has used cash-based methods to value the Government's major commercial asset, ACTEW, while the Government has used an accrual method to value its largest liability, the obligation to pay superannuation benefits to public servants.

On the second question, ABN AMRO's treatment of discounting is even less satisfactory. ABN AMRO have counted the risks associated with public ownership twice, using a private sector discount rate (which incorporates risks) *and* adding an additional risk premium. At the same time, public sector discount rates are applied to make the superannuation liability appear as large as possible. The case for privatisation put forward by the Government is, therefore, based on serious accounting errors.

The value of ACTEW under sale and retention by the public

Using consistent accounting methods, this report assesses the financial value of ACTEW under continued public ownership by comparing the earnings that would be forgone as a result of privatisation with the proceeds of the sale anticipated by ABN AMRO.

Using ABN AMRO's worst case or cost blowout scenario, consistent application of accounting methods shows that the value of ACTEW in public hands is $1144 million (see the table below). If ABN AMRO's sale price range of $970-1140 million is accurate then, in the worst case, the public would be no better off from privatisation of ACTEW.

On the other hand, if we take ABN AMRO's central projection (i.e. without a cost blowout) then, using consistent accounting methods, the value of ACTEW in continued public ownership is estimated to be $1327 million, or around $270 million more than the sale price expected by ABN AMRO. Thus, even using ABN AMRO's revenue and cost

projections, proper accounting shows that ABN AMRO's valuation of ACTEW in continued public ownership at $530 million is a serious underestimate, and the claim that the public will lose at least $500 million if ACTEW is not sold is based on accounting errors.

Estimates of the value of ACTEW in public and private ownership

Valuation method	Total value ($m)
If sold to the private sector	970-1140
If retained in public hands	
using ABN AMRO low projection	1144
using ABN AMRO central projection	1327
using best estimate projection	1766

The first two scenarios adopt the very conservative revenue and cost estimates used by ABN AMRO. The low earnings projected under public ownership result in lower estimates of the value of ACTEW. A third scenario is based on less conservative (but still cautious) estimates of future revenues and costs under public ownership. The cost estimates are the same as in ABN AMRO but real revenues are slightly higher. In this 'best estimate' scenario, ACTEW's total value is $1766 million, so that privatisation of ACTEW would reduce public sector net worth by approximately $700 million (depending on the sale price achieved).

Financing the unfunded superannuation liability

This report analyses a proposal for ACTEW to make a $400 million payment to the ACT government along with an annual dividend of $25 million to be allocated to the Superannuation Provision Account. The analysis shows that it is feasible to use such a capital repayment and income from ACTEW to fund the superannuation liability, resulting in repayment within the next 12-21 years (after which ACTEW is still publicly owned). The credit rating of ACTEW remains strong with such a capital injection.

It is worth noting that this option would not be available if a previous government had already sold ACTEW. From a fiscal point of view, the responsible course is to maintain public ownership of essential services and to insist that those services generate an adequate financial and social return to the community.

Because of its partial and inconsistent application of accrual accounting procedures, the ACT Government has presented a misleadingly negative picture of its financial position. Moreover, the claim that the ACT government's unfunded superannuation liability can only be addressed by the sale of ACTEW is false.

Service quality after privatisation

Water and sewerage are essential services the quality of which are important for health and environmental amenity. Profit motives may be inconsistent with maintaining a reliable, high quality water and sewerage system and experience shows that it may not be possible to enter into contracts that maintain sufficient flexibility to ensure that changes in technology and standards can be accommodated.

ACTEW currently provides the most reliable and cheapest electricity supply in Australia. The price of this reliability is slightly higher maintenance costs. While much has been made of the impact of privatisation of electricity generation and distribution in Victoria, there is no evidence that privatisation has improved either price or service quality in the electricity market in Victoria. However, there is evidence that the disaggregation of electricity distribution and generation into competing enterprises has improved reliability and price.

ABN AMRO believe a commercial operator of ACTEW can cut maintenance costs to average Australian levels. If this occurs then service quality will tend towards average Australian levels including a substantially higher rate of blackouts.

Conclusions

In contrast to the ACT Government's arguments in favour of privatisation of ACTEW, this report demonstrates the following points.

- Competition in the electricity industry will not have a marked effect on ACTEW's overall viability because the great bulk of ACTEW's operations will never be subject to competition.

- The claim that the ACT will be better off financially as a result of the sale of ACTEW is based on accounting errors. Rather than experiencing a loss of up to $500 million if ACTEW is not sold, correct application of accounting principles leads to the conclusion that, even in the worst case, there would be no benefit from the sale. In a more realistic assessment, the sale of ACTEW would result in a loss to the ACT public of around $700 million.

- There is no reason to believe that privatising ACTEW will result in improvements in price and service quality for ACT electricity and water users. Some evidence suggests that privatisation may result in a decline in the extent and quality of some services provided by ACTEW.

- The problem of unfunded superannuation liabilities has been overstated by the Government. Rather than selling ACTEW to solve the problem, a better solution would be to use the financial strength of ACTEW to provide a capital transfer to the government plus an annual dividend payment which would fully provide for the superannuation liability and leave the ACT with a valuable asset at the end of the process.

1. Background

ACT Electricity and Water (ACTEW) Corporation is responsible for the provision of electricity, water, sewerage and drainage services throughout the ACT. ACTEW owns most of the assets associated with the supply of these services. In addition, ACTEW is one of the two dozen or so retailers with a licence to sell electricity in the ACT. It also operates in NSW and Victoria. Furthermore, ACTEW is involved in a number of international projects in Fiji, China, Cambodia, Tonga and Samoa, establishing commercial markets and exporting ACTEW's technical expertise.

ACTEW Corporation was established in 1995 from the ACT Electricity and Water Authority through the *Electricity and Water (Corporatisation) (Consequential Provisions) Act 1995*. The latter was originally formed in 1988 through the amalgamation of the ACT Electricity Authority and Water Branch of the ACT Administration, and this body was transferred the ACT Department of Urban Services with the advent self-government.

On the 8th of October 1998, the ACT Chief Minister Kate Carnell announced plans to privatise the Corporation. The main argument the ACT Government has used to justify such a proposal is that ACTEW will be unable to compete in an increasingly competitive electricity market, and the associated risks should not be borne by the Canberra ratepayers (Gary Humphries, *Canberra Times* 31 October 1998). Furthermore, the Government believes ACTEW will lose around half its value over the next few years if retained in public ownership, whereas a quick sale (before other States sell their electricity assets) will maximise the public benefit. The Government has also attempted to justify the sale of ACTEW according to the need to meet the Territory's unfunded superannuation liability. However, the Deputy Chief Minister Gary Humphries has told the ACT Legislative Assembly that he would want to sell ACTEW regardless.

The Chief Minister has said that 'government control of power utilities is becoming a thing of the past' and ACT should be one of the first, rather than the last to privatise its electricity assets (Kate Carnell, *Canberra Times* 5 November 1998). Gary Humphries has suggested that the ACT Government is powerless to ignore the 'growing body of expert advice and all the warning signs' (*Canberra Times* 31 October 1998).

The ACT Government's preferred option is to sell the Corporation, together with all of the electricity assets and part of the water and sewerage infrastructure. It intends to lease the dams, the water itself and the sewage treatment plants to the purchaser of the other assets. The Government proposes a leasing period of 50 years, effectively meaning these assets will be operated as though they were privatised for that period.

The ACT Government's position is based on the findings of two reports commissioned in 1998 to examine options for the future of ACTEW. These reports, produced by merchant bankers Fay-Richwhite and ABN AMRO/DGJ Projects, have so far been subject to little systematic scrutiny. The ABN AMRO/DGJ Projects report[1] presents a series of options

[1] Hereafter referred to as the ABN AMRO report.

available to the Government and quantifies the value to the Territory under each option. ABN AMRO claims that the value of ACTEW in public ownership could be as low as $530 million, whereas privatisation under the Government's preferred option could realise as much as $1.14 billion. These figures have generally been accepted by the Government.[2] On the basis of the ABN AMRO findings the ACT Chief Minister has declared that 'taxpayers were likely to lose more than $500 million on the value of ACTEW if it were retained in full government ownership' (Press Release, 8 October 1998). The Fay-Richwhite report identifies a large number of risks associated with the operation of utilities, especially under continued public ownership.

This report evaluates the impact of the privatisation of ACTEW on the financial position of the ACT public sector. In so doing, it considers the impact of the competitive electricity market on ACTEW's profitability. This in turn is dependent on the structure of the water and electricity industries in the ACT, the bulk of which are not subject to competition and will remain regulated monopolies irrespective of whether they are publicly or privately owned.

The core analysis in this report is contained in Section 7. This section builds on the discussion in Section 6 of the correct method for valuing public assets, and the discussions of Sections 2-5 on the structure and efficiency of ACTEW, to provide an assessment of the fiscal implications of the sale and retention options. Section 8 comprises an analysis of the Government's emerging superannuation liability and Section 9 and 10 assess the likely impacts of privatisation on service quality in the water and electricity sectors.

[2] ABN AMRO include a disclaimer in their report indicating that information contained therein should not be relied upon as being either accurate or complete.

2. The competitive electricity market

Throughout the 1990s the Australian electricity supply industry has been undergoing massive restructuring. The objective of this process, which will not be completed until the early years of the next decade, is to introduce market competition to the supply of electricity. The restructuring of the electricity supply industry forms part of the wider process of National Competition Policy reform, which has been endorsed by the Commonwealth and all State and Territory governments.

Responsibility for regulating and controlling the supply of electricity lies predominantly with State and Territory governments. The process of restructuring electricity supply arrangements has proceeded in different ways and at different rates in different jurisdictions. It has gone furthest and fastest in the five jurisdictions which make up the National Electricity Market (NEM) – NSW, Victoria, South Australia, the ACT and Queensland. The first four of these form a single physically interconnected electricity transmission grid. The connection between Queensland and NSW will be completed within a year or two.

The basic structure of the electricity industry is illustrated in Figure 2.1. There are two key components to the structural change to the industry within the NEM:

- the disaggregation of the electricity supply industry into its four major functional components – generation, transmission, distribution and retailing; and

- the introduction of competition into generation and retailing.

We discuss each of these in turn.

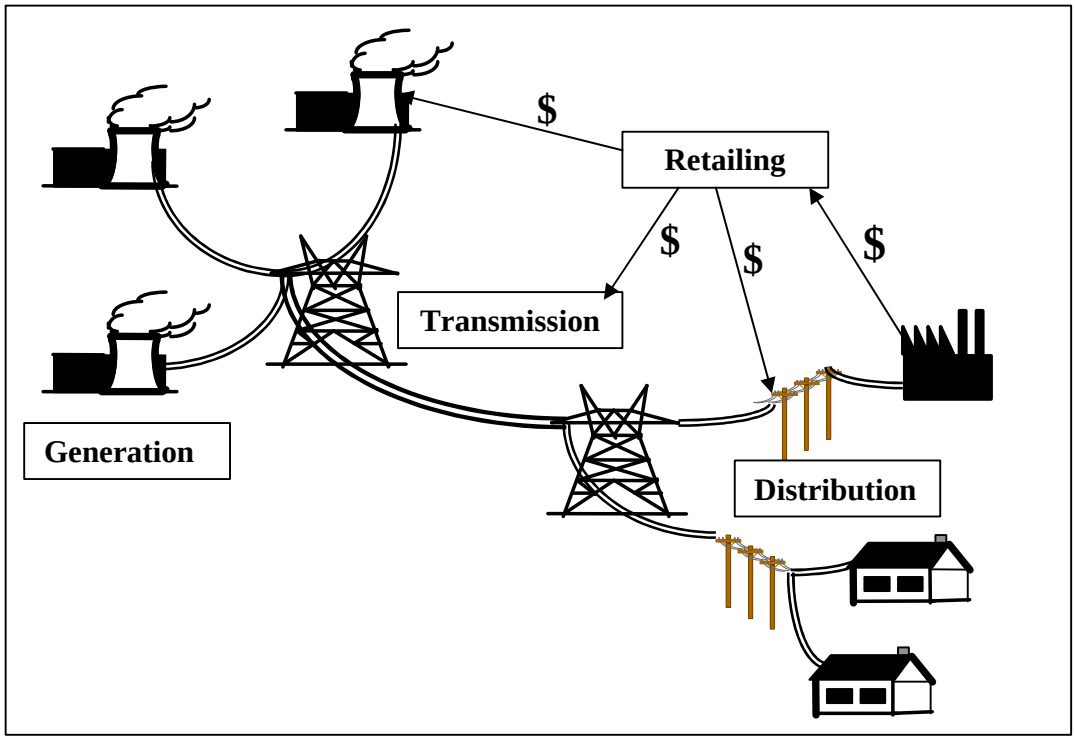
2.1 Vertical disaggregation

Prior to restructuring, the electricity industry in each of Victoria and South Australia comprised a single publicly owned entity which undertook all of the four functions mentioned above. In each of NSW and Queensland there was one entity which undertook generation and transmission, plus a series of separate entities which undertook distribution and retailing within specified geographical monopoly areas. ACTEW functioned essentially as one of the NSW distribution and retailing entities.

With the structural change, generation has been separated from transmission (and in Victoria and South Australia from distribution and retailing). Within each State (except South Australia) generation has itself been broken up into a number of separate businesses – 3 in NSW, 6 in Victoria and 3 in Queensland (for the moment). The Snowy Mountains Hydro-Electric Corporation (SMHEC) stands alone as an additional generator owned jointly by the Commonwealth, NSW and Victoria. In addition, a number of smaller specialist generation businesses have established themselves; these are termed independent power producers (IPPs) because they did not emerge from the break-up of the former monopoly Electricity Commissions, but as independent businesses. A single specialist transmission business has been set up in each State.

A series of regional electricity distribution businesses have been established: 6 in NSW (by amalgamating the numerous small distribution authorities), 5 in Victoria (by breaking up the single distribution activity of the old SECV), 7 in Queensland (retaining the pre-existing structure) and one in South Australia. ACTEW is the distribution businesses for the ACT, which represents no change in function or structure.

Figure 2.1 The electricity network



Competition exists in the generation and retailing sectors. Transmission and distribution occur through natural monopolies. Retailers buy electricity from generators and sell it to individual customers, paying a fee to the owners of the distribution and transmission networks.

At the outset of the restructuring process, each distributor was granted a licence to retail electricity by the relevant government, along with a franchise, i.e. a monopoly right, to retail electricity to all customers within the region served by its distribution business. However, a timetable has been set for the progressive removal of the franchise right and the opening of the retail market to competition.

Finally, any business which is able to meet the strict requirements imposed by the National Electricity Code (NEC), the National Electricity Market Management Company (NEMMCO) and the retail electricity licence conditions of the relevant jurisdiction, has been allowed to gain a retail electricity licence and to compete for customers. As at September 1998, 27 businesses held a retail electricity licence in NSW, 24 in Victoria, 20 in the ACT and 17 in Queensland. South Australia has yet to open up its retail market.

2.2 Competition

Within the NEM there is competition at both the wholesale and the retail level. Competition is made possible by requiring open access to the essential monopoly infrastructure of the transmission and distribution businesses (see Figure 2.1). The prices paid for use of this infrastructure are set by various regulatory agencies.

The wholesale market consists of a number of generators competing to sell to retailers. Large end-users of electricity are also permitted to buy at wholesale, provided that they meet the various conditions imposed by the NEC and NEMMCO. However, in the approximately two years since the opening of NEM registration, only one user has chosen to register as a wholesale buyer. The operation of the wholesale market takes the form of a 'pool'. Generators bid into the pool at 30 minute intervals, each generator's bid being the price at which it is prepared to supply electricity during the next 30 minute period. The market operator determines how much electricity will be required to meet demand during the same period and then schedules generators according to the price they bid, starting with the lowest priced. The price which all generators receive for the period is set by the bid price of the last scheduled generator, i.e. the generator whose output, when added to the output of all the lower priced generators, was just sufficient to meet demand. Wholesale buyers, i.e. predominantly retailers, take their requirements from the pool at the pool price for the period.

At present, because of difficulties experienced in developing the very complex computer systems needed, the full national market is not operating. Instead, there are a series of State wholesale markets. ACTEW is part of the NSW pool.

It is a fundamental characteristic of electricity supply that at all times instantaneous supply must precisely match instantaneous demand. This means that wholesale prices can sometimes be exceedingly volatile, rising to extreme heights at certain times, such as in Victoria a few days after the gas explosion, when a cold snap hit. In order to reduce exposure to this volatility, both buyers (i.e. retailers) and sellers (i.e. generators) in the wholesale market enter into financial hedging contracts. The essential function of such contracts is to provide generators with a guaranteed minimum selling price and retailers with a guaranteed maximum buying price, thereby enabling them to plan their respective commercial strategies with a greater degree of certainty than would otherwise be the case. As is well known, ACTEW has a hedging contract with the Victorian generator, Yallourn Energy, for approximately 70% of its total requirements.

The retail market for electricity has been created by the progressive introduction of what is termed retail contestability. This means, in essence, the stripping away of the protection provided by the retail franchise for successive tranches of consumers until eventually even the smallest consumers, i.e. households and very small businesses, have the right to buy their electricity from the retailer of their choice. In the ACT the timetable for retail contestability is shown in Table 2.1.

It is apparent from Table 2.1 that, at present, customers accounting for 40.7% of electricity sold in the ACT can now choose their supplier. Prices which franchise customers (the remaining 59.3%) must pay their local retailer for electricity are set by

regulatory agencies in each jurisdiction. These agencies also set the prices which retailers pay the generators for this same electricity, under so-called vesting contracts. In general terms, the vesting contracts, which provide generators with some protection from the rigours of full competition, are timed to end at the same time as retail franchises, a date still to be decided in the ACT.

Table 2.1 Timetable for contestability of the ACT electricity market

Annual site consumption	Date for mandated contestability	Estimated no. of customers	Estimated % of total energy (cumulative)
> 20 GWh	21 Dec 1997	5	7.4%
> 4 GWh	1 Mar 1998	40	18.1%
> 750 MWh	3 May 1998	247	32.2%
> 160 MWh	28 Jun 1998	781	40.7%
all sites	to be decided	126,730	100.0%

Source: *ESAA, Electricity Australia 1998*

How has ACTEW faired in the competitive electricity market to date? The Chief Minister has released information on the number of customers ACTEW has lost. Most of the contracts ACTEW has lost can be attributable to a small number of large companies finding other suppliers.[3] According to ACTEW's Marketing Manager the Corporation has lost customers accounting for over 15% of ACTEW's contestable electricity sales (or around 6% of total sales). However, recent contracts have resulted in ACTEW recovering around 8% of its contestable market over a very short period (ACTEW 1998, *pers. comm.*).

Experience of the NEM to date

The single most important characteristic of the physically interconnected national market is that, in the period it has been operating, potentially available generating capacity is considerably greater than demand. This situation is a legacy of decisions taken by developmentalist State governments in the early 1980s which convinced themselves that a massive growth in demand for electricity was coming to their States. Excess of supply over demand means low prices, and that has indeed been the experience of the State pool prices. Average prices have consistently been well below long-run marginal cost, i.e. the cost of generating electricity from a new power station. Such low prices cannot continue indefinitely. When demand grows to approach supply available, prices will rise. To some extent these very low prices may be an effect of the vesting contracts, which provide generators with a price which is above long-run marginal cost for more than half of their output. As vesting contracts expire, it is reasonable to expect some increase in

[3] Information supplied by ACTEW. Customers lost include Telstra, Optus, Westfield, McDonalds, KFC, Pizza Hut, the Commonwealth Bank, Coles, Woolworths, the AIS and the CSIRO.

wholesale prices, though it is also reasonable to expect that some generators may find themselves in financial difficulties.

Low wholesale prices are passed through to contestable retail customers because of strong competition between the very large number of retailers. There can be no doubt that not all the current holders of retail licenses can possibly survive as significant players. At present they are jostling for market position, many of them by 'buying' contestable customers by offering prices on which they make little or no profit. Again, the ability to compete strongly in this part of the market is underpinned by the guaranteed revenue stream from franchise customers. It is highly likely that, as in the wholesale market, as contestability spreads the larger contestable customers will see a gradual rise in average prices. Nevertheless, retail competition can be expected to remain strong.

2.3 Summary

The introduction of the national electricity market has resulted in far-reaching changes to the electricity sector. The generation, transmission, distribution and retailing of electricity are now seen as separate business activities. ACTEW is involved in the distribution and retailing of electricity. Retailing is subject to competition and over time all customers in the ACT will be contestable.

Reform of the national electricity market has seen prices fall sharply as a result of competition for market share and excess supply. However, these low prices for electricity are unsustainable, and prices will rise. ACTEW will continue to have a monopoly over around 60% of its electricity sales for the next few years. Contestability has seen ACTEW lose customers accounting for around 15% of contestable electricity sales (or 6% of total sales), but around half have been won back. Success it retailing relies heavily on negotiating and timing contracts, and not on ownership.

3. Implications of the NEM for ACTEW

3.1 ACTEW's electricity business

ACTEW's electricity business is in fact two quite separate businesses. It is the supplier of electricity distribution infrastructure and associated services for the ACT (the so-called 'wires' business, which ACTEW calls its 'energy networks' business) and it is an electricity retailer. The debate over the future of ACTEW has been deeply confused by the lack of understanding of the differences between these two businesses.

Even the most dogmatic advocates of competition accept that the provision of electricity distribution and transmission services is a natural monopoly, a view reinforced by the chastening consequences of the absurd competition between Telstra and Optus in building parallel cable networks along the same streets. Provision of electricity distribution services is also absolutely essential for the functioning of modern urban societies, even when they are not the national capital, as was demonstrated earlier this year in Auckland. As a distributor, ACTEW has, or perhaps had, the reputation in some circles for 'gold-plating', i.e. over-building. Whether or not this reputation is deserved, it would not be inconsistent with other aspects of the provision of public infrastructure in Canberra, at least up until the last ten years. ACTEW has the advantage of relatively new infrastructure, though this benefit is less marked than in the case of water, since water infrastructure has a much longer life than electricity infrastructure.

As a business, electricity distribution is distinctly unglamorous. There is no competition, prices are fixed by a regulatory agency, and the only degrees of freedom available arise in taking advantage of the options for cost reduction without proportionate price reduction (and without sacrifice of service quality), which will be limited if the regulator is sufficiently skilled and imaginative. Except when things go wrong, as in Auckland, electricity distribution is a safe, low-margin business, whose essential service and monopoly characteristics make public ownership highly appropriate, if coupled with arms-length regulation.

Retailing, by contrast, is new and glamorous. Operationally, its main activities are meter reading and billing. In addition it comprises the far more exciting functions of buying and selling electricity in a complex and dynamic market. It also has elements of mass marketing and it provides opportunities for complex trading and financial transactions, involving hedging, arbitraging and so on. It is presumably for this reason that NEMMCO registered some retailers with no previous association with the electricity industry, such as Ferrier Hodgson, an accountancy firm, and RMB, a merchant bank.

3.2 ACTEW's recent performance

The ABN AMRO report presents financial performance information for each of ACTEW's four core businesses (electricity retail, energy networks, water and sewerage). The data presented covers three 'actual' years (financial years 1996, 1997, 1998) and five 'forecast' years (1999 to 2003). In Table 3.1 we present the gross margin and EBIT (earnings before interest and tax) for each of the four business areas for 1996-98. The

meaning of 'gross margin' varies according to the business and has the following meanings:

- in *electricity retail*, it is the difference between total revenue and cost of sales, which comprises cost of bulk electricity (paid to generators), Network Use of Service Charges (paid to providers of transmission and distribution providers, including ACTEW electricity networks) and market operator costs (paid to NEMMCO etc.);

- in *electricity networks*, the gross margin is the difference between total revenue and Transmission Use of Service Charges; and

- in *water* and *sewerage*, the gross margin is total revenue only (since these are fully vertically integrated businesses, cost of sales is zero).

Table 3.1 Gross margins and earnings in each of ACTEW's business areas

Business area	1996		1997		1998	
	Gross margin ($m)	EBIT ($m)	Gross margin ($m)	EBIT ($m)	Gross margin ($m)	EBIT ($m)
Retail electricity	-1.6	-9.7	23.1	14.4	30.8	18.9
Energy networks	98.8	41.6	99.7	40.7	89.5	37.8
Water	37.8	4.5	42.4	8.0	53.3	18.3
Sewerage	50.6	13.9	53.8	13.0	56.3	19.7
TOTAL	**185.6**	**50.3**	**219.0**	**76.1**	**229.9**	**94.7**

Source: ABN AMRO 1998, Table 4.4, 4.7, 4.11, 4.15

It can be seen from Table 3.1 that the energy networks business, i.e. electricity distribution, accounted for well over half of total EBIT, except in 1998 when drought conditions greatly increased both revenue and profit from the water business.[4] The relative shares of the various businesses in 1998 were also affected by the reduced revenue and gross margin from the energy networks business, as a result of the Independent Pricing and Regulatory Commission's (IPARC) pricing determinations. However, IPARC still allows ACTEW to generate revenue of $99 million from the network alone (ACTEW 1998a, p. 21).

While over half of ACTEW's earnings are generated from electricity distribution (networks), electricity retail, by contrast, is relatively unprofitable. The particularly bad

[4] Note that this result does not mean that ACTEW would be more profitable if it sold much more water every year; to do that it would need to make major new investments in water storage capacity, at great cost. The existing infrastructure is able to provide good service in occasional drought years, but would be quite inadequate for the equivalent of continuous drought.

result in 1996 is mainly attributable to the large increase in the regulated cost of Snowy electricity, which, because of the lead times in the regulatory process, ACTEW was not able to pass through to its franchise customers until the following year. Note that the financial results for this business area include both the regulated gross margin from sales to franchised customers and a market determined gross margin from sales to contestable customers. As the ABN AMRO report states, the former has been set at $5 million for 1999 by IPARC.

Overall, the striking feature of these profit and loss figures is the very small contribution which electricity retailing makes to ACTEW's gross margin. This reflects two key facts:

- electricity retailing is a high volume/low margin business in both the contestable and the regulated parts of the total market; and

- it is a business which employs very few assets, so there is a very small return on investment (ROI) component in regulated prices.

In Appendix 1 we outline ACTEW's earnings under the 'worst-case' situation in which all retail customers are lost to other retailers. This is the scenario that the ACT Government is concerned will arise through ACTEW's inability to compete effectively. Even in this extreme and currently impossible situation, ACTEW will continue to generate earnings from electricity distribution before interest and tax (EBIT) of $32.6 million in 1999 rising to over $40 million by 2003 (and continuing to grow). These earnings are relatively risk-free (although subject to regulatory risk) and are generated on monopoly assets. When combined with the earnings from water and sewerage, EBIT in 2003 is estimated to be over $75 million even if all retail electricity customers move away from ACTEW.

In other words, while the Government bases much of its case for privatisation on the threat to ACTEW from competition in electricity retailing, the loss of all retail customers would still leave ACTEW's earnings largely unaffected.

3.3 Near-term outlook for ACTEW's performance

As noted above, the ABN AMRO report includes five-year forecasts of revenue and profit from each of the four business areas.

For the *energy networks business*, IPARC decisions will be the major determinant of both revenue and profit. ACTEW's operating costs will also be important. There is a strong tendency towards stability in both gross revenues and profit from this business, because fixed assets are large and change only slowly; both depreciation and ROI will also therefore change only slowly. Key uncertainties in determining future profitability include the following:

- What will be the flow-on impact of the recent gas distribution network pricing ROI decision in Victoria? The final decision, allowing a 7.75% return on monopoly assets, came after the ABN AMRO report was completed, and the authors appear not to have

taken account of the earlier draft determination in preparing their forecasts for the ACTEW energy networks business.[5]

- To what extent will the regulatory regime imposed by IPARC require ACTEW to share some of the operating cost savings that might be made in the energy network businesses with consumers? There is no evidence of any allowance for this effect in the ABN AMRO report's highly optimistic forecasts of cost savings achievable under private ownership, save for the general references to regulatory risk.

Assuming, as is reasonable, that a stable regulatory regime will be applied, profit from electricity networks will be very stable, irrespective of ownership.

For the *retail electricity* business, the outlook is almost the exact opposite. ABN AMRO forecast that the profitability of electricity retail will be much lower from 1999 onwards than in 1997 and 1998. For the reasons explained in Section 2, this is a view with which we broadly agree. Moreover, as the proportion of contestable customers increases, revenues and profitability can be expected to become more volatile, all other things being equal.

The ABN AMRO report implies in passing (p. 38) that there may be significant economies of scale in electricity retailing, and that ACTEW, with less than 150,000 customers, is well below optimum size. This view has some support from recent experience in the USA, where retail contestability is gradually being introduced. The Chairman and CEO of Entergy, a large US utility which owns, among other businesses, the Melbourne-based electricity distributor and retailer CitiPower, has been quoted as saying 'You need to have 4 or 5 million customers' (*Energy Informer*, June 1998, p. 3). Certainly, it would seem fairly obvious that many of the currently registered electricity retailers in the NEM cannot possibly stay in the business over the long term, even as exploiters of niche markets.

Finally, we note that we have been unable to find anywhere in the ABN AMRO report any reference to economies of scope which might be available to so-called multi-utility businesses such as ACTEW. It seems likely that these are smaller than may have been hoped at the time of ACTEW's establishment.

3.4 Summary

We conclude from this review of ACTEW's electricity business in the competitive market that it is in fact two quite separate and markedly different businesses.

The energy networks business is a regulated natural monopoly, the sound operation of which is essential for the reliability, safety and security of the supply of electricity to every consumer in the ACT. This business currently contributes about half of ACTEW's gross margin and EBIT. It is a business from which a steady stream of dividends can be expected, derived largely from the return on the substantial physical assets employed. It

[5] Interestingly, Energy Australia (a large NSW distributor) is arguing for a return of 10%.

is fairly clear that in future, irrespective of ownership, the allowed rate of return will be one which is imposed in concert by all relevant Australian regulatory authorities, and one which private sector investors consider sufficient to justify their investment in these types of fixed assets, i.e. electricity distribution lines and gas pipelines.

The retail electricity business, by contrast, is an unregulated business facing many competitors. It currently contributes relatively little to ACTEW's gross margin and EBIT and a realistic appraisal of the medium term outlook suggests that this modest contribution is likely to fall sharply over the next five years because of the extremely low margins being experienced by every Australian electricity retailer. There is no functional requirement for electricity retailing to be combined in a single business with electricity distribution; this simply happens to be the model adopted in Australia for the transition to a competitive market.

The proliferation of 'out of town' holders of retail licences in all Australian jurisdictions where retail competition has been introduced shows that ownership of a local distribution network is not a requirement for retail success, though status as the incumbent retailer naturally affords some competitive advantage. In the USA, where many States are introducing retail competition, electricity retailing is increasingly being seen as a distinct and specialised business which has more in common with conventional retailing than with the traditional 'poles and wires' electricity supply business.

While the competitive market carries risks for ACTEW's electricity retailing operations, its networks business will be little affected. Over the three years 1996-1998, electricity retailing contributed an average of 10.6% of ACTEW's earnings before interest and tax, and it is only this part of the Corporation's profits that is under threat from competition.

4. The water industry and ACTEW's water services

4.1 Natural monopoly and its implications

Natural monopolies exist where it is much more efficient to have a service provided by a single supplier than by a number of competing suppliers (Neutze 1997, Chapter 3). Economies of scale usually create the conditions for natural monopolies. In relation to urban services in general there are three particular aspects of economies of scale that give rise to natural monopolies: the size of the market, the cost of infrastructure and the cost of transporting a product or service from one city to another.

Regarding the size of the market, it is more efficient to have one company maintaining an electricity network in a small city (if it is a small network), whereas in a larger city it may be more efficient to have a number of firms.

The conditions for a natural monopoly also depend on the cost of transporting a product or service from one city to another. For instance, electricity can be transmitted over relatively long distances at acceptable cost so that the economies of scale in the generation of electricity do not imply that there should be a single generator of electricity for the Canberra market. ACTEW is, of course, not a generator of electricity but simply a distributor and retailer. In contrast, the cost of piping water very long distances is much higher, so that where suitable water sources are available locally it is generally much cheaper to tap those sources than to import water from distant sources. Indeed, the need for large cities to draw their water from further afield as they grow is a reason for *diseconomies of scale* in their water supply systems. Similarly, sewerage systems are almost invariably provided for individual urban areas or for parts of such areas.

There are significant economies of scale associated with the cost and nature of infrastructure. In the provision of water and sewerage services large economies of scale exist within the distribution and collection systems, leading to a natural monopoly. Pipe capacity increases in proportion to the square of the circumference of the pipe, and there are large overhead costs of installing the pipes. Intuitively it is obvious that having multiple water or sewerage pipes in each street so that users can choose their supplier is inefficient. The same argument applies to electricity where all producers, wholesalers and retailers use the same network of mains and substations. Hence there is rarely competition within electricity transmission or distribution, although wholesalers, generators and retailers compete to supply electricity through distributors' networks. Competition of that kind can be efficient in the supply of electricity, though it causes a good deal of difficulty in assessing what the natural monopoly owners of the distribution system should be permitted to charge for distributing the electricity being sold by competing suppliers.[6]

[6] Such disputes have become public in relation to telecommunications where Telstra, which owns the network, is accused of over-charging other suppliers of telephone services for the use of its networks.

The great majority of the costs of water supply and sewage are incurred in providing, operating, maintaining and eventually replacing the water mains, sewer mains, pumping stations, service reservoirs and customer connections. The actual costs of collection, storage and treatment of water are relatively small, as is the cost of sewerage treatment as a proportion of total cost of providing sewerage services. Because the network costs of water supply and sewerage are a large proportion of total costs, ACTEW collects only 7.6 cents of revenue per dollar of water network assets and only 10.1 cents per dollar of sewerage network assets (compared with 62.4 cents per dollar of electricity network assets[7], Neutze 1997, p. 20).[8] Since so much of the price paid by consumers would have to be paid in rents for the use of the network infrastructure, as well as the high cost of transporting the products, competition of the kind that is developing in relation to supply of electricity is not appropriate in the provision of water and sewerage services in Canberra. Even in much larger cities such as Melbourne where there are three water distributors, each supplies a regional monopoly franchise, and the only competition is for the custom of a few large industrial users of water. There is no competition in the provision of sewerage. This highlights the natural monopoly characteristics of water and sewerage services that preclude competition.

There are two historical reasons for the provision of water and sewerage services by governments rather than by private suppliers. One is the importance of both services for public health and environmental protection. The other is the fact that they are natural monopolies and communities did not want to be hostage to private monopoly suppliers of such essential services. These arguments still apply, although there are ways in which some of the advantages of competition can be introduced into the provision of these services – through making supply of the services contestable – and some of the risks of private monopoly supply reduced through regulation.

4.2 The sale of ACTEW

Contestability refers to a situation in which competition *within* the market is inefficient, but competition *for* the market may be quite efficient. The sale of the water and sewerage arms of ACTEW will not introduce competition *within* the market for these services. The same applies for the electricity distribution network. However, the ACT Government is proposing a degree of competition *for* the market through a process of tendering for the purchase of the right to supply water and sewerage services in Canberra. The ACT Government would set the conditions for tendering and the highest bidder for both the assets and the right to supply services conforming to the tender requirements would become the new supplier. The sale of the assets of a monopoly results in a one-off competition for the assets and right to supply the services. Once a tender is accepted, there is no further competition.

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[7] Unlike water and sewerage, however, ACTEW must purchase electricity from outside the ACT for sale to customers. Hence there is a cost of sales which should be taken into account and ACTEW is generating revenue on the assets of the generators and distributors outside the ACT who supply electricity. Consequently, only around 31 cents of ACTEW's revenue is generated per dollar of ACTEW's own electricity assets.

[8] These are 1992 numbers.

Such a process does not introduce genuine contestability, which requires periodic competition for the market. There cannot be competition for the market where one of the competing suppliers owns assets that are specialised and immobile.[9] Water and sewerage assets that are buried in the ground are one such asset. There cannot be subsequent rounds of competition to supply water if one private supplier owns the assets since the sitting owner can refuse to sell or can demand a price up to the full replacement cost of the assets. The supplier could, of course, be taken over or become bankrupt, a matter to which we return.

To obtain periodic competition *for* the market, many governments in other countries that have decided to privatise the supply of water and sewerage services have adopted a different strategy from that favoured by the ACT Government. They have retained public ownership of all of the assets and contracted out or franchised the operation and management for a period, usually 10 to 20 years. An Australian example is the South Australian Government's contracting out of the operation and management of water and sewerage services for Adelaide for a period of 15 years.[10] Not only does this permit periodic competition for the market, it also permits the relevant government more readily to change the conditions under which it wishes the services to be supplied, a matter to which we return. Such an approach for ACTEW would not, of course, produce the large capital return which seems to be a major objective of the ACT Government in this exercise.

It is notable that the ACT Government has not quite gone as far as to propose the sale of the main storage dams and their catchments (Corin, Bendora, Cotter and Googong). Rather it proposes to issue a 50-year franchise for their operation and management to be negotiated with the successful purchaser of the remainder of the business. After 50 years the franchise terms can be renegotiated but it would not be practicable for the next franchise to be granted to other than the owner of the remainder of the business. Fifty years is too long to wait to correct any mistakes made the first time, and even then it will not be possible to test the market for a better operator.

The argument in favour of privatisation depends heavily on exposing the supply of services to the discipline of the competitive market. The proponents believe that failures of the market are less important than the inefficiencies of government suppliers. That, in itself, is solely a value judgement as there is no way of proving conclusively which are the worse, and attempts to do so by comparing situations in different countries have been inconclusive. But the case for privatisation becomes much weaker where competition cannot be introduced and reliance has to be placed on regulation of price and performance. When even the attenuated form of competition represented by contestability is not achieved the case for privatisation becomes very weak indeed. The

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[9] For example there can be competition for the market for bus services even when the supplier owns the buses because they can readily be sold if the supplier is not successful in winning the right to supply the next time it is opened for competition.

[10] The tender documents for the Adelaide lease disallowed Australian-based enterprises from competing for the franchise. Apparently, this was to attract the head office of an international infrastructure management company to Adelaide.

ABN AMRO report provides no evidence that privatisation would increase the efficiency of water and sewerage services. ABN AMRO's estimates of efficiency gains to be realised through privatisation are based on the secret UMS report, and dealt primarily with electricity supply.

The ABN AMRO report claims that the discipline of competition will continue because the suppliers will be subject to bankruptcy and to takeover. Both of these forms of competitive discipline are greatly weakened by the fact that one of the objectives of price regulation is to ensure that the supplier can make a reasonable return on its investment but no more.[11] The regulator will also be able to take into account benchmarks of performance from other suppliers in Australia and elsewhere. Such benchmarks, however, are at best a crude indicator of efficiency for services whose costs are so heavily influenced by the demand density, geography, geology and climate of the supply area and catchments, and the configuration of the existing supply system.[12] Bankruptcy seems a rather weak discipline given the protection afforded by price regulation and the fact that the most likely tenderers will be multinational supply companies.

It is not proposed to sell the stormwater drains that currently are the responsibility of ACTEW. Drainage will continue to be the responsibility of the ACT Government. This creates several potential problems because water supply, sewerage and drainage interact in a number of ways. One of the major causes of urban water pollution in Australia is the leakage of sewers into drains, resulting in sewerage entering creeks, lakes and rivers. Another is that during storms rainwater gets into sewers, causing them to overflow, again into drains, creeks, lakes and rivers. A more positive interaction is that stormwater can be collected into urban lakes and used for irrigation, as has occurred in Canberra.

Although Canberra's sewers are quite new and appear to leak very little in either direction, a significant number of properties have drains illegally connected to sewers. Consequently, sewer overflow is a potential problem and the capacity of sewers is limited by their ability to cope during rain storms.

These interactions have been handled effectively within ACTEW but may create difficulties when an ACT Government responsible for drainage has to deal with a private provider of water and sewerage services. One such problem is taken up in Section 9.

Sale or franchising

Although the ACT Government is proposing to sell most of the water and sewerage assets of ACTEW under a contract which includes performance monitoring and price regulation, in reality it is really franchising the provision of the services. There is no way

[11] However, the value of the assets depends on the price the supplier is permitted to charge, so the whole process of regulation based on rate of return based on capital is circular. This also applies to the electricity business.

[12] For example, alleged inefficiencies in ACTEW's sewage treatment can be attributed entirely to the higher quality treatment necessary to protect downstream users of Murrimbidgee water (Auditor General (ACT) 1995, p. 15).

that any government can avoid responsibility for the provision of safe and reliable water and sewerage services. This can be readily seen if one considers the outcome of a breakdown of the services that might occur if the supplier did not perform satisfactorily or went out of business. The Government would have to take over responsibility to ensure that the services continued or to find another operator. The right to supply water and sewerage services is valuable in itself. While this can be franchised to a private supplier, the Government cannot pass on to a private provider the responsibility for ensuring that the services continue to be provided at an acceptable quality and price. From this point of view the long list of risks that ABN AMRO propose be passed on to a private supplier (ABN AMRO Supplementary Report 1998, p. 53-8) is partly fictitious.

Nowhere else in Australia have the assets of water and sewerage services been offered for sale to a private company. Nor is such a proposition being considered. In all other cases the assets are being kept in public ownership and being managed either by public bodies or by private operators. Despite the attractions of the expected sales price, the alienation of services that are so important for the protection of health and well-being cannot be ignored (discussed further in Section 9). The option proposed by the ACT Government has been described as 'the most extreme privatisation of any urban water resource in Australia' (D. Smith, *Canberra Times*, 23 October 1998).

4.3 Summary

Provision of water and sewerage services is a natural monopoly for a number of reasons. It is not possible to introduce competition into the supply of these services. Sale of these assets would simply convert a public monopoly into a private one. The ACT Government suggests that a lease over water and sewerage assets would allow contestability, but the proposed 50-year lease (or even a 25-year lease) would be effective monopoly ownership for the successful tenderer.

If ACTEW's water and sewerage supply assets were privatised or subject to long-term lease, the government will continue to be held responsible for the supply of safe water services and the environmental impacts of water and sewerage. The 'threat of bankruptcy' that a private provider may be subject to will not solve the problems Canberrans would face in the case of system failure.

5. Efficiency impacts of privatisation of ACTEW

5.1 Efficiency and privatisation

It is now understood that the efficiency of a public enterprise depends on the objectives that the organisation is required to pursue as well as on the incentives and the constraints faced by management. Due to the presence of natural monopoly or regulation, public enterprises are usually somewhat isolated from competitive pressures in product markets. In addition, management is not faced with the disciplines of the capital market, notably takeover and bankruptcy. In the absence of the incentive to maximise profits, management may not minimise costs, especially if the government subsidises any deficits. The lower priority given to cost minimisation by GBEs may be due to the fact that public enterprises are generally required to pursue other, non-commercial, objectives (Hamilton 1995).

This suggests that there may be scope for substantial increases in efficiency of GBEs that remain in public ownership either through exposing them to competition or through changing the incentives and constraints faced by managers. Several surveys have reached the conclusion that it is the transformation of operating conditions rather than change of ownership which brings about substantial improvements in productive efficiency (see e.g. Domberger and Piggott 1986).

Many authors stress that when discussing the efficiency of public enterprises, a clear distinction should be made between privatisation and measures that promote efficiency. Based on a substantial body of empirical work, it is now generally agreed that privatisation is neither a necessary nor a sufficient condition for improving the efficiency of GBEs. Even the Industry Commission comes to this conclusion: 'a key factor determining the efficiency of an enterprise is how it is managed – not whether it is publicly or privately owned' (Industry Commission 1994).

Evidence on efficiency gains

These observations suggest that privatisation of many GBEs, even some which have not faced competitive conditions, would not lead to any gains in efficiency, and that where there are efficiency gains to be made privatisation is not necessary to achieve them.

The evidence internationally and for Australia on the efficiency gains from privatisation is inconclusive. It has been reviewed by, among others, the Industries Assistance Commission (IAC, 1989) in an appendix to its inquiry into government charges. The evidence indicates that in industries where there is a natural monopoly – notably in the distribution of electricity and in water supply – public ownership actually performs *better* than private ownership. The Commission also observed: 'The conclusion seems also valid in circumstances where public and private firms directly compete with each other under a regime of extensive regulation. .... In less regulated environments where the potential for competition is greater, the results ... seem to indicate that private firms exhibit greater internal efficiency than public firms' (IAC 1989, p. 20).

On this basis, we would expect that the electricity retailing business of ACTEW may perform better under private ownership, but that electricity distribution, water supply and sewerage – which account for the great majority of ACTEW's services measured by revenue and earnings – will perform better under public ownership.

International benchmarking studies by the Bureau of Industry Economics indicate that in some sectors Australian GBEs approach world best practice. Results of a study of Australia's electricity supply industry in the early 1990s show that 'after accounting for scale and other external factors, the technical efficiency of the Australian industry is within 3 percentage points of the world best-practice benchmark' (Whiteman and Bell 1994).

In a recent 'progress report' on the changes to the UK electricity market, Newbery (1998) argues that there have been significant efficiency improvements, amounting to a permanent reduction in generating costs of around 5%. However, the explanation is to be found in competition rather than privatisation. Indeed, the principal impact of privatisation was the transfer of wealth from the public to private share-holders, with the previous owners (the public) losing about £4 billion (in present value terms discounting at 6%) while shareholders gained a profit stream of £24 billion. However, some of this wealth transfer was due to the lack of competition in the UK.

In summary, the evidence indicates that the efficiency of GBEs depends more on the incentives and constraints faced by their managers than on privatisation. These incentives and constraints are in turn influenced by the competitive environment of the enterprise. The competitive environment includes not only rivalry or potential rivalry from competing firms, but the set of internal incentives faced by managers as determined by the corporate culture, the structure of the enterprise and the formal and informal relationships with government masters. The incentives of managers of GBEs are likely to be broader than those driving managers in the private sector, and traditionally have included a desire to contribute effectively to public service.

5.2 Efficiency improvement in ACTEW

The ABN AMRO report bases its recommendations on calculations of the forecast financial returns to the community from the sale of ACTEW as opposed to keeping it in public ownership. These calculations in turn depend heavily, but not exclusively, on estimates of the efficiency improvements that privatisation is expected to bring about over and above those that could be expected under continued public ownership. Clearly, the case for privatisation will be stronger if the sale of ACTEW leads to larger efficiency gains than would otherwise occur.

More specifically, the ABN AMRO analysis makes the following assumption:

> Under the retention option we assume that management will achieve approximately half of the cost reductions identified in the UMS Benchmarking Study. Under the trade sale option we have assumed that a private sector owner would achieve all of the cost reductions identified by

> UMS and an additional 5% reduction in operating (including corporate overhead) [costs] (ABN AMRO 1998, p. 179).

The study has therefore relied heavily on the UMS Benchmarking Study of the cost savings available for ACTEW. The UMS study was commissioned by ACTEW, but the Government has said it is unable to make it available to the public. This is regrettable as it provides information that is crucial for assessing the credibility of ABN AMRO's estimates of the financial benefits of privatisation.

According to ABN AMRO, the UMS study 'concluded that ACTEW's electricity business has operating and maintenance … costs between 40-50% greater than the Australian average after making certain adjustments to normalise costs' (ABN AMRO 1998, p. 34). The forecast earnings used in the analysis of the sale of ACTEW incorporate these cost reductions in the electricity business. In addition, ABN AMRO assume even *larger* reductions in operating costs for water and sewerage '*despite UMS suggesting there was little scope for such reductions in water and sewerage*' (ABN AMRO 1998, p. 34, emphasis added). No reason is given for the assumption that water and sewerage costs would be sharply reduced under privatisation, and we can only conclude that the decision was *entirely arbitrary*.

It is apparent that the case for privatisation, which depends largely on estimates of the value of ACTEW under public and private ownership, hinges on estimates of efficiency improvements, and that these estimates require critical assessment. As we have said, the ABN AMRO report does not discuss the efficiency issues at all, except for reference to other studies in two short paragraphs in Section 4.4.1. ABN AMRO refers to a second study of the efficiency of ACTEW carried out by London Economics[13] in 1995 at the request of the ACT Auditor General. ABN AMRO note that the UMS and London Economics studies reached 'diverging conclusions' but, despite finding this divergence 'interesting', make no further mention of the London Economics study.

What does the London Economics study conclude? This study used the established international benchmarking technique to assess the technical and allocative efficiency of four components of ACTEW – water supply, water reticulation, sewage treatment and electricity distribution. Excluding factors beyond ACTEW's control, the London Economics study estimated maximum and minimum efficiency improvements achievable by ACTEW compared to international best practice. The minimum improvements exclude various factors beyond ACTEW's control, except in the very long run. The estimates are reported in Table 5.1.

It might be noted that ACTEW challenged these estimates at the time, arguing that they exaggerate the levels of inefficiency of ACTEW's operations and fail to account adequately for the higher levels of service quality (such as environmental protection) provided by ACTEW. Nevertheless, it is apparent that the UMS study estimates substantially higher cost savings than the London Economics study. ABN AMRO gives

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[13] ABN AMRO incorrectly refer to it as the 'London School of Economics' or LSE study. LSE is part of the University of London while London Economics is a consulting firm, and the two are unconnected.

no reason for preferring the higher figures from UMS over the lower estimates of London Economics, but there is no doubt that the selection increases the calculated benefits of privatisation.

In Section 5.1 we reviewed Australian and international evidence which indicated that there are no strong grounds for the supposition that privatisation is necessary in order to achieve available efficiency improvements. Despite this consistent evidence from international and Australian studies, ABN AMRO have decided to assume that ACTEW under private ownership could achieve the full cost savings while under public ownership could achieve only 50% of the available cost savings. No justification for these assumptions is provided by ABN AMRO, yet this clearly inflates the benefits of privatisation.

Table 5.1 London Economics' estimates of potential cost savings by ACTEW

Area of operation	Minimum-maximum potential cost savings
Water supply	12-36%
Water reticulation	29-40%
Sewage treatment	0
Electricity distribution	Not estimated but technical efficiency is very high

Source: Auditor General 1995

5.3 Summary

There is an extensive international literature on the effects of privatisation on the efficiency of businesses. It is now generally agreed, even by the Industry Commission, that privatisation is neither a necessary nor a sufficient condition for improving the efficiency of government business enterprises, but that the efficiency of an enterprise is determined by the management and operating environment, and not by its ownership.

The research evidence indicates that in industries where there is a natural monopoly – notably in electricity distribution and water supply – public ownership performs as well or better than private ownership. In situations of natural monopoly, privatisation often results only in a transfer of wealth from public to private hands with little, if any, gain in efficiency.

The ABN AMRO report, on which the Government's case for privatisation of ACTEW rests, explains the large financial returns from privatisation by efficiency gains that are possible under private ownership but not under continued public ownership. However, the study on which this assumption is based is confidential so that the public is being

asked to accept the sale of its largest asset on faith. In addition, another study commissioned by the ACT Auditor General suggests that potential cost savings are much less than claimed by ABN AMRO. The international evidence contradicts the ABN AMRO assumption that ACTEW would be more efficient under private rather than public ownership, with the possible exception of the electricity retailing operations which make up a relatively small part of ACTEW's operations.

6. Assessing the value of public assets

6.1 Inconsistent accounting by ABN AMRO

There are two main questions which must be resolved in the valuation of public assets. The first is the choice between cash-based and accrual-based methods of accounting. The second is the choice between discount rates based on private sector comparisons and discount rates based on the government's actual cost of funds.

As will be argued in this section, it is now generally recognised that accrual accounting provides a more realistic picture of the government's fiscal position than traditional cash-based measures. The debate surrounding the choice of discount rate is more complex, but, it is argued, the appropriate approach is based on a risk-adjusted measure of the cost of funds to the government.

However these issues are resolved, a crucial requirement for any evaluation is that it should be internally consistent. That is, it should not use a mixture of cash-based and accrual-based measures or a mixture of public and private discount rates. The case for privatisation put forward by the ACT Government fails this test. Rather than applying a consistent analysis, the government has arbitrarily selected measures that make its current fiscal position look as bad as possible and the benefits of privatisation as large as possible. In particular, the ABN AMRO report has used cash-based methods to value the Government's major commercial asset, ACTEW, while the Government has used an accrual method to value its largest liability, the obligation to pay superannuation benefits to public servants.

The treatment of discounting is even less satisfactory. A private sector discount rate (that includes all risks) is used to value income flows, but these flows are then subject to discounts for public sector risks. Meanwhile, public sector discount rates are applied to make the superannuation liability appear as large as possible.

The result of this logically inconsistent procedure is to make the Government's current fiscal position look worse than it would be with a consistent application of either cash-based or accrual-based accounting methods. The case for privatisation put forward by the Government is, therefore, based on accounting errors. The estimates of the benefits put forward by ABN AMRO are internally inconsistent, as well as being inconsistent with the Government's approach to valuation of its superannuation liabilities.

6.2 Cash-based and accrual-based accounting methods

Until recently, Australian governments have prepared budget statements on a cash-flow basis, covering only the general government sector of their activities and excluding government business enterprises (GBEs). Within the general government sector, capital and current expenditure and income have been lumped together. The income and expenditure of government business enterprises has been ignored, except insofar as dividend and tax-equivalent payments have been remitted to the general government sector.

The primary purpose of these cash-based budget statements was one of accountability. The statements were designed to ensure that public funds were not spent without appropriation and that funds were spent for the purposes for which they were appropriated. Although satisfactory for this purpose, cash-based budget statements do not provide an accurate picture of changes in public sector net worth, nor are they useful as guides for management of the government's fiscal position. Among the difficulties that have been encountered with the use of cash-based methods are:

1. asset sales show illusory improvements in the budget balance;

2. no account is taken of contingent liabilities;

3. reductions in capital expenditure (or investment) appear to improve the budget balance; and

4. the budget balance can be manipulated by changing the timing of income and expenditure.

The Hawke-Keating Labor government regularly used revenue from asset sales to generate spurious improvements in the budget balance. As a result, the 'headline' Budget balance was largely discredited as a measure of the government's fiscal position and attention was focused on the 'underlying' balance, excluding revenue from asset sales.

However, this *ad hoc* adjustment did not address the fundamental deficiencies of cash-based accounting. For this reason, most Australian governments have now made plans to abandon cash-based budget accounts in favour of the system of accrual accounting, already adopted in New Zealand and advocated by the Howard Government's National Commission of Audit (1996). The ACT Government has also committed itself to, and recently adopted, the use of accrual accounting (Chief Minister's Department 1996, p. 25; ACT Budget Papers 1998). The Commonwealth 1999-2000 budget will be based on accrual accounting.

The central principle of accrual accounting is that income and liabilities should be taken into account when they first accrue rather than when they are realised. This implies the need for a clear distinction between capital and current expenditures. A particularly important application of accrual accounting is the valuation of superannuation liabilities on a fully-funded basis, rather than the 'pay-as-you-go' basis employed under cash-flow budgeting. The ACT Government's case for privatisation relies heavily on the need to reduce the unfunded superannuation liability, and is therefore reliant on accrual accounting.

Accrual accounting is not a panacea. There are significant conceptual difficulties in applying accrual accounting to government activities, such as environmental preservation, where monetary valuation is problematic. The government's principal asset, its power to tax, is difficult or impossible to value, as are liabilities such as the obligation to provide social welfare benefits.

However, in the valuation of government business enterprises, accrual accounting is clearly superior to the traditional cash-flow approach. Using cash-flow budgeting, the sale of assets always appears to improve the budget balance, even if the assets are sold for much less than their market value, as was the case, for example, with the Commonwealth Bank (Quiggin 1994). Using accrual accounting, the sale of an asset will increase public sector net worth if the sale price is greater than the present value of future earnings. Conversely, the sale of an asset at a price lower than the present value of future earnings will decrease public sector net worth.

The valuation of retained earnings

One of the most important defects of cash accounting methods in relation to government business enterprises such as ACTEW is the failure to take account of retained earnings. By convention, government business enterprises are located in the 'non-budget' sector of government. The earnings of these enterprises are therefore not counted as part of the government's budget income. Instead, budget income includes only dividends paid by government business enterprises into the government budget. In general, dividends are less than earnings since some earnings are retained to finance future investments. However, in some circumstances dividends can exceed earnings. As an example, in 1997-98 ACTEW paid the ACT Government $183 million dollars, well above the earnings before interest and tax (EBIT) of $80 million. This special dividend comprised a $100 million return of capital[14] (ACTEW 1998b, Attachment 4).

A common, but fallacious, argument for privatisation is based on this budget convention. It is argued that if the interest savings from using the proceeds of privatisation to repay debt are greater than the dividends forgone, the public is better off as a result of privatisation.

The simplest way to refute this fallacy is to observe that the government, as majority owner, can set ACTEW's dividend at any level it chooses. If the government so desires, it could require dividends of $183 million every year, just as it did in 1997-98. Of course, to the extent that dividends exceed earnings, the value of the government's holding in ACTEW would decline (and ACTEW would have to borrow from elsewhere to maintain its capital base). Conversely, to the extent that dividends are less than earnings, the retained earnings increase the value of the government's holding.

This simple observation ought to be sufficient to refute the idea that public holdings in ACTEW should be valued in terms of dividends rather than earnings. However, since a fallacious analysis in terms of dividends has been presented by ABN AMRO and relied upon by the ACT Government in arguing for privatisation, it is worth analysing in more detail.

The fallacy that a private enterprise should be valued by its owners solely in terms of the flow of dividends it generates and that retained earnings are in some sense 'locked up',

[14] It could, or course, be argued that the ACT Government did not ever put any capital into ACTEW, and in fact this 'return of capital' should be seen as a tax on customers of ACTEW.

and inaccessible to the owners, was popular until the 1950s. This fallacy was refuted by the economists Modigliani and Miller (1958), both of whom received the Nobel Prize for their work. Modigliani and Miller showed that, in the absence of differential tax treatment, and assuming that capital markets work smoothly, the value of shares in an enterprise is unaffected by the dividend policy adopted by that enterprise. The interests of shareholders are not affected whether the enterprise pays out all its earnings in dividends, using new issues of equity and debt to finance new investments, or pays no dividends, using retained earnings to finance new investment. In the latter case, shareholders who wish to realise the income associated with retained earnings can do so by borrowing against the increased value of their shares or they could sell their shares.

Acceptance of the need to take account of retained earnings marks a significant change in the stance of the Commonwealth Department of Finance. In evidence to the 1996 Senate inquiry into the partial privatisation of Telstra, the Department claimed that the Modigliani-Miller proposition was 'an academic theory with no practical relevance to the real world' and that retained earnings were 'locked up for ever and never used' (Official Hansard Report, 26 July 1996, p. 747). The Department therefore endorsed the view that privatisation would lead to an improvement in the Commonwealth's fiscal position.

In the 1998 Senate inquiry into the proposal for full privatisation of Telstra, the Department's Office of Asset Sales and Information Technology Outsourcing abandoned the position taken in 1996 and presented a position consistent with the 'equivalence proposition' described above. As the Senate Environment, Recreation, Communications and the Arts Legislation Committee (1998, p. 13) summarised the evidence:

> If perfect markets with full information exist, the proceeds the government receives from an additional sale of Telstra shares would be equal to the stream of dividends plus retained earnings in Telstra. Therefore the net effect would be neutral.

6.3 The choice of discount rate

Ownership of an asset gives rise to a stream of income over time. To compare the stream of income arising from ownership with the capital sum that can be realised by selling an asset, it is necessary to convert the stream of income to a present value. To do this, it is necessary to choose a discount rate, i.e., a compound rate of interest used to convert future income into present value.[15]

In valuing private sector firms, it is normal to use an estimate of the weighted average cost of capital (WACC)[16] adjusted to take account of the riskiness of the income from the

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[15] For example: Suppose the discount rate is 10 per cent. Then $100 today would be worth $110 in one year, $121 (= 110 per cent of $110) in two years and so on. Conversely, $110 to be received one year in the future or $121 to be received two years in the future is worth $100 today.

[16] The WACC for the market portfolio as a whole is the average of the cost of debt (or the interest rate on borrowings) and the cost of equity (or rate of return demanded by investors), weighted by the average proportion of capital derived from these two sources. For an asset that is riskier than the market portfolio

asset in question, as compared to the riskiness of the assets taken as a whole. Infrastructure assets are generally less risky than the average for all assets.

The WACC for the private sector is considerably higher than the rates of interest at which the public sector can borrow (bond rates). ABN AMRO estimates a nominal WACC for the components of ACTEW of between 8 and 12 per cent, whereas bond rates are near 6 per cent. A small part of this gap is due to the fact that the interest rate on high quality corporate debt is higher than the bond rate. However, most of the gap is attributable to the fact that holders of private equity (i.e. shares) demand a rate of return well in excess of the bond rate. ABN AMRO estimate the rate of return on equity at 11.2 per cent, approximately 5 percentage points above the bond rate. This gap is generally referred to as the 'equity premium'.

Supporters of privatisation such as Domberger (1995) have argued that the difference between the bond rate and the private WACC reflects the fact that GBEs are effectively guaranteed by the public who are therefore bearing additional risk. Thus, in Domberger's view, the equity premium reflects the additional riskiness associated with lending to, or investing in, private firms. Governments and GBEs can borrow at low interest because they absorb the implicit costs of public ownership, i.e. public enterprises are not permitted to go bankrupt and there is no risk of default on bonds (in the terminology of ABN AMRO, this is referred to as 'unlimited liability'). Hence, Domberger argues that to take account of these implicit costs public assets should be valued using the private sector WACC instead of the bond rate as the discount rate.

An alternative approach is to use the public sector discount rate but to make explicit adjustments for any additional risks associated with public ownership. As is argued below, even if relatively high levels of risk aversion are assumed, the risk-adjusted bond rate is less than the private sector WACC. This suggests that private capital markets are not perfectly efficient, as supporters of privatisation have implicitly assumed. More importantly for present purposes, the valuation of public enterprises produced by the use of a risk-adjusted bond rate is higher than that produced by the use of the private WACC as a discount rate.

It will be argued below that the appropriate procedure for valuing public enterprises is one based on a risk-adjusted bond rate. However, it should be observed that this issue is still being debated by economists. Hence, it is appropriate to consider valuations based on the private WACC. It is clearly inappropriate, however, to use a private WACC in place of the bond rate actually faced by government and then to make *additional* adjustments for implicit costs of public ownership. In effect, these costs are being counted twice. Unfortunately, this is precisely the procedure adopted by ABN AMRO/DGJ and endorsed by the ACT Government.

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as a whole, the proportion of equity capital must be higher than average and the discount rate is adjusted upwards accordingly.

6.4 Risk and the public sector discount rate

To compute the appropriate public sector discount rate for valuation of the earnings of a government business enterprise it is necessary to take account of the following risks.

1. The risk of default. This is the expected value of costs imposed on the public by virtue of the risk that the enterprise will default on its debts. These include the direct expected loss from this low probability event and the costs of any change in credit rating for the government as a whole; and

2. The risk associated with the variability of the earnings of the enterprise (the pure risk premium).

Assessment of the expected value of default risk is relatively straightforward. A number of State Treasury corporations borrow on behalf of government business enterprises and charge them a fee designed to reflect this cost. For electricity enterprises this charge is usually around 0.5 per cent. Taking account of a charge of 0.5 per cent, the interest rate faced by government business enterprises is close to the rate of interest on high-quality corporate debt.

Simple calculations show that the suggested adjustment of 0.5 per cent in the discount rate reduces the present value of the future stream of ACTEW earnings by around $90 million. This figure is comparable to the $100 million adjustment suggested by ABN AMRO to take account of the 'special risks' associated with public ownership (1998, p. 186). That is, the use of the rate of interest on corporate debt as a discount rate for government business enterprises makes a full allowance for the special risks associated with government ownership. By applying a $100 million risk adjustment *and* using private sector discount rates, ABN AMRO counted the risks *twice*, a procedure that will result in an undervaluation of ACTEW in continued public ownership. The analysis in the next section avoids double-counting errors.

The estimation of an adjustment for pure risk may be undertaken using a representative agent model similar to that presented by Mehra and Prescott (1985), who show that, for an enterprise with average risk characteristics, the pure risk premium should be less than 1 per cent. Utilities such as ACTEW, which operate mainly as natural monopolies, are less exposed to systematic risk than the market as a whole. Accordingly, an appropriate allowance for pure risk is 0.5 per cent, which can be considered more than generous.

Applying both adjustment factors discussed above (pure risk and government risk) to the nominal bond rate of 6 per cent, the estimated public sector discount rate is 7 per cent. This is exactly consistent with the rate used in the ACT Government's evaluation of its superannuation liabilities (Towers Perrin 1998, p. 8). In other words, in assessing its superannuation liabilities the ACT Government has used the same discount rate as the one we propose to use to value ACTEW.

6.5 Summary

There are two main questions which must be resolved in the valuation of public assets:

- the choice between cash-based accounting and accrual accounting; and
- the use of private sector or public sector discount rates.

On the first question, it is now generally recognised that accrual accounting provides a more realistic picture of the government's fiscal position than traditional cash-based measures. All governments throughout Australia, including the ACT Government, are implementing accrual accounting. However, the ABN AMRO report has employed a cash flow analysis in valuing ACTEW, analysis that ignores retained earnings used to enhance the assets owned by ACTEW.

The case for privatisation put forward by the ACT Government is internally inconsistent because it uses a mixture of cash-based and accrual accounting methods. Rather than applying a consistent analysis, the Government has arbitrarily selected measures that make its current fiscal position look as bad as possible and the benefits of privatisation as large as possible. In particular, the ABN AMRO report has used cash-based methods to value the Government's major commercial asset, ACTEW, while the Government has used an accrual method to value its largest liability, the obligation to pay superannuation benefits to public servants.

On the second question, ABN AMRO's treatment of discounting is even less satisfactory. ABN AMRO have counted the risks associated with public ownership twice, using a private sector discount rate *and* adding an additional risk premium. Meanwhile, public sector discount rates are applied to make the superannuation liability appear as large as possible.

The result of this logically inconsistent procedure is to make the Government's current fiscal position look worse than it would be with a consistent application of either cash-based or accrual-based accounting methods and with a consistent treatment of risk. The case for privatisation put forward by the Government is, therefore, based on serious accounting errors. The estimates of the benefits put forward by ABN AMRO are internally inconsistent, as well as being inconsistent with the Government's approach to valuation of its superannuation liabilities.

7. The value of ACTEW under retention *versus* sale

The object of this section is to assess the financial value of ACTEW under continued public ownership. The section begins by presenting projections of ACTEW's revenues, expenses and earnings, consistent with those put forward in the ABN AMRO report. It is shown that earnings forgone as a result of privatisation consistently exceed the savings to be obtained by using the proceeds of privatisation to repay debt. In other words, selling ACTEW would result in a decline in the ACT government's financial position. Using the risk-adjusted public sector rate of discount, it is concluded that the value of ACTEW in continued public ownership is between $1.04 billion and $1.67 billion.

The valuation of a publicly owned ACTEW at $530 million put forward by ABN AMRO and relied upon by the ACT Government is considered and shown to be erroneous. When the private sector valuation assumptions made by ABN AMRO are applied consistently (as in the comparable company analysis in Chapter 10 of their report), a range of values from $665 million to $1 billion is obtained for the retention value of ACTEW. This range overlaps the valuation projected for the Government's preferred option of a trade sale for electricity and a combined sale-concession for water and sewerage. *That is, even using private sector valuations, there are no grounds for supposing that privatisation will yield a net financial benefit*. Using methods of valuation appropriate to the public sector, the analysis shows that privatisation will lead to a clear loss.

7.1 Estimates of the value of ACTEW

To compare the likely effects of privatisation and continued public ownership, three projections of earnings and expenses have been considered:

1. ABN AMRO's central profit projection;

2. ABN AMRO's low profit projection, involving an increase in operating and maintenance costs; and

3. a best estimate projection.

The first, the ABN AMRO central profit projection, is as close as possible to that used in the ABN AMRO cash flow analysis. It therefore incorporates ABN AMRO's assumptions about efficiency savings in public and private ownership as per the discussion in Section 5.2 above. (We take the view that this presents an unduly pessimistic assessment of earnings in public ownership.) Revenues and costs are assumed to grow in line with the published ABN AMRO projections up to 2003 (ABN AMRO 1998, Chapter 4) and at a nominal rate of 1 per cent per year thereafter.[17] Debt

[17] This growth rate was selected to yield projections of earnings for the year 2020 and beyond similar to those published by ABN AMRO. Additionally, assuming an inflation rate of 2 per cent, and real output growth of 2 per cent, the projection is consistent with productivity growth at a rate of 3 per cent per year, all of which is passed on to consumers.

and interest are calculated on the assumption that 60 per cent of net earnings are paid out as dividends.[18]

The second projection, referred to as the ABN AMRO low profit projection, is also based directly on the ABN AMRO report. It incorporates the possibility, discussed in Chapter 6 of their report, of a failure to control operating costs, resulting in lower earnings under public ownership. It therefore represents the most pessimistic outlook for ACTEW.

The third projection is referred to as the 'best estimate' projection. This is based on our view – explained in Sections 2, 3, 4 and 5 – that ABN AMRO have been excessively conservative in their assessment of the future earnings of a publicly-owned ACTEW. While this scenario incorporates the cost reductions assumed by ABN AMRO, it does not accept their assumption of slowly declining real revenues, instead assuming real revenues remain more or less constant. [19] (Revenue is assumed to grow at the same rate as inflation (2%), implying no real growth in revenue.) In addition, most of the benefits of productivity growth are passed on to consumers, rather than kept as profits. Hence, this best estimate projection is quite conservative but less so than the very negative projections presented by ABN AMRO.

In all projections, it is assumed that ACTEW makes a capital return of $250 million to the ACT Government at the end of 1999. This is consistent with the assumption in the retention analysis put forward by ABN AMRO. The nominal interest rate is assumed to be 7 per cent, as in the Government's analysis of its superannuation liability.

Capital investment in the first two scenarios is assumed to maintain the nominal value of capital stock, that is, capital expenditure after 2003 is set equal to depreciation. In the preferred scenario, the nominal value of capital stock rises at 1 per cent per year. These assumptions are consistent with total factor productivity growth of 3 per cent per year, in line with historical trends (Industry Commission 1995). The implied rate of return on assets, which would be determined by regulation, is in all cases less than the real rate of 7.75 % recently applied to the gas industry by the Victorian Office of the Regulator-General.

Table 7.1a shows estimates of revenue, costs and profits for ACTEW under the ABN AMRO central profit projection. Columns 2 and 3 show projected revenues and costs

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[18] As noted in Section 6, the choice of dividend policy has no effect on the net worth of the public sector as a whole. All that is affected is the distribution of net worth between the budget and non-budget sectors. The ABN AMRO report is inconsistent in its discussion of dividend policy. In Chapter 6.5 of their report, it is suggested that the existing policy of paying out 100 per cent of post-tax profits as dividends should be maintained. In their Discounted Cash Flow analysis of Chapter 10, dividends are projected to be between 50 and 60 per cent of post-tax profits.

[19] Most of ACTEW's revenue will continue to be generated on regulated monopoly assets. In general, regulators have set the allowable rate of return on these assets as a percentage of the asset value. Assuming the value of the ACTEW's electricity and water assets is maintained in real terms, then real revenue will be maintained (assuming the return on regulated assets is not changed). Similarly, ABN AMRO have recommended that returns generated from ACTEW's electricity franchise customers be fixed at a percentage of total sales.

(excluding interest) for the financial year shown in Column 1. Column 4 shows earnings before interest and tax (EBIT) and Column 5 shows pre-tax profits.

The final three rows of Table 7.1a show calculations of the present values of revenue, costs and EBIT from 1999 to 2020, the discounted terminal value of ACTEW's earnings from 2020 onwards and the total value. The present value is calculated using a discount rate of 7 per cent as described in Section 6. The terminal value represents the discounted value of earnings after 2020, calculated on the same basis. Total value is the sum of the present value of earnings between 1999 and 2020 and the discounted terminal value in 2020. Calculations of present value for pre-tax profits are not presented because these depend on assumptions about dividend policy and ACTEW's debt level.

Table 7.1a Projections of ACTEW revenue and earnings – ABN AMRO central profit projection

Year ending 30 June	Revenue ($m)	Costs ($m)	EBIT[a] ($m)	Pre-tax profit ($m)
1997	332.1	215.6	76.1	76.1
1998	326.1	193.3	94.7	94.7
1999	295.8	188.2	69.4	62.4
2000	305.0	194.2	72.9	48.4
2001	310.3	199.0	72.7	48.0
2002	312.1	197.1	76.0	51.6
2003	316.1	199.7	77.2	53.4
2004	319.3	201.7	78.4	54.9
2005	322.5	203.7	79.5	57.6
…	…	…	…	…
2020	374.4	236.5	98.7	104.6
Present value	**3631.1**	**2298.9**	**901.3**	na
Terminal value	**1506.9**	**952.0**	**425.7**	na
Total value	**5137.9**	**3250.9**	**1327.0**	na

a: Earnings before interest, tax and abnormal and extraordinary items.
na: not applicable.
Source: ABN AMRO 1998, Tables 4.4, 4.7 and 4.11 for period to 2003, with 1 per cent nominal growth assumed thereafter.

The critical variable is EBIT, since it is the earnings of ACTEW that will be forgone as a result of privatisation. The EBIT forgone may be compared to the interest savings that would be achieved as a result of privatisation. ABN AMRO estimate the sale price under the Government's preferred option to be between $970 million and $1140 million. This

sale price assumes that ACTEW's 'existing debt …[is]… stripped out and the entity sold unencumbered' (ABN AMRO 1998, p.148). Additionally, the ACT Chief Minister's Department confirms that the proceeds will be used to retire the debt associated with ACTEW; debt which was used to fund water infrastructure and the $100 million capital repayment made in 1997-98 (ACT Chief Minister's Department 1998, *pers. comm.*). Accordingly, the debt of the public sector as a whole will be reduced by the sale amount of between $970 million and $1140 million.[20] With a risk-adjusted nominal interest rate of 7 per cent, the associated interest savings are between $68 million and $80 million per year. For sale prices at the lower end of the range estimated by ABN AMRO, the interest savings from reductions in debt consistently fall short of the EBIT forgone through privatisation (Column 4 of Table 7.1a). Even using the upper bound estimate of $1140 million sale proceeds, the interest saving of $80 million is marginally greater than earnings forgone under privatisation until 2004-5 and is less than EBIT forgone thereafter.

The estimated total value of EBIT is $1327 million. Since this value is higher than the upper estimate of the sale price given by ABN AMRO, the analysis yields the conclusion that the public will be worse off as a result of privatisation.[21] It should be emphasised that these projections are entirely consistent with those used by ABN AMRO. The ABN AMRO conclusion that the public will benefit from privatisation is the result of the analytical errors noted above which resulted in ACTEW's earnings being incorrectly measured and discounted at an excessive rate.

It is also valuable to assess the impact of retention versus sale of ACTEW on financial flows to the ACT Government budget sector. In Table 7.1b, the division of income between the budget and non-budget sectors is described in detail. Column 2 shows dividends paid by ACTEW on the assumption that 60 per cent of earnings are paid out as dividends. Column 3 shows the interest saving of $17.5 million per year realised in the budget sector by using ACTEW's capital repayment of $250 million to reduce debt at the assumed interest rate of 7 per cent. Column 4 shows the total cash flow to the budget sector of the ACT government.[22] Column 6 shows the total income flow to the public sector.

Table 7.1b illustrates the extent to which the case for privatisation depends on the use of inappropriate and outdated cash flow methods instead of accrual accounting on a whole of government basis. Assuming a risk-adjusted interest rate of 7 per cent, sale of ACTEW for a price between $970 and $1140 million (and adjusting for transfer of ACTEW's $100 million existing debt to the Government) will yield savings to the budget sector of between $61 million and $73 million per year. Cash flow to the budget sector

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[20] The proceeds can be regarded as reducing public sector debt, even if used for other purposes (assuming that otherwise those purposes would have required borrowing).

[21] Both valuations ignore the existing ACTEW debt. If this debt is included, the total value of EBIT is $1227 million, whereas the net reduction in debt resulting from privatisation is $1040 million.

[22] The cash flow for 2020 includes $6.2 million in tax-equivalent payments. ACTEW is not expected to begin making such payments until at least 2008 due to the significant deferral of income tax allowed as a result of the depreciation of ACTEW's substantial assets.

will increase compared to the retention option. However, this apparent benefit arises only because of the failure to take into account the retained earnings reinvested in ACTEW. Column 6 includes retained earnings and it is clear that public sector income under retention exceeds interest savings from the proceeds of the sale.

Table 7.2 reports results from the ABN AMRO low projection, based on the cost blowout projection described in Chapter 6 of the ABN AMRO report in which ACTEW's planned reductions in operating costs are not achieved.[23] Even under this unfavourable projection, the EBIT forgone as a result of privatisation consistently exceeds $64 million, compared to the interest saving as a result of privatisation of $68 million when the sale price is at the low end of the range estimated by ABN AMRO. For higher sale prices there is a more substantial initial benefit, but EBIT forgone eventually exceeds income saved. The present value of EBIT under the ABN AMRO low projection is $1144 million, just above $1140 million, the upper range of the sale prices estimated by ABN AMRO.[24] Hence, even on this most pessimistic projection, the public would be worse off as a result of privatisation.

Table 7.1b Income flows to ACT public under retention option – ABN AMRO central profit projection

Year ending 30 June	Dividends received ($m)	Interest saving ($m)	Budget sector cash flow ($m)	Retained earnings ($m)	Public sector income ($m)
1997	76.1	0.0	76.1	0.0	76.1
1998	94.7	0.0	94.7	0.0	94.7
1999	37.4	0.0	37.4	25.0	62.4
2000	29.0	17.5	46.5	19.4	65.9
2001	28.8	17.5	46.3	19.2	65.5
2002	30.9	17.5	48.4	20.6	69.1
2003	32.1	17.5	49.6	21.4	70.9
2004	33.0	17.5	50.5	22.0	72.4
2005	34.6	17.5	52.1	23.1	75.1
…	…	…	…	…	…
2020	62.7	17.5	86.2	35.8	122.1

[23] Income flows to the ACT public sector under the low profit projection are shown in Appendix 2, Table A2.1.

[24] Allowing for existing debt, the net EBIT value of ACTEW is $1044 million and the net sale proceeds are $1040 million.

Table 7.3 presents the best estimate projection in which ACTEW maintains constant real revenues, while achieving gradual reductions in real operating costs.[25] That is, total factor productivity is improved in line with past experience in the electricity and water industries (Industry Commission 1995). Under the preferred projection the EBIT forgone as a result of privatisation rises by 2020 to be $160 million, twice the interest saving achieved through privatisation. This projection, which is based on quite conservative assumptions, illustrates the risk of large losses to the public as a result of privatisation. Such losses have been incurred in a number of previous privatisations, such as those of the Commonwealth Bank and CSL (Quiggin and Hamilton 1995; Quiggin 1994). Conversely, the rejection of some previous proposals, such as the proposal in *Fightback!* to sell Telstra for $20 billion, may have saved the public from large losses.

Table 7.2 Projections of ACTEW revenue and profit - ABN AMRO low profit projection

Year ending 30 June	Revenue ($m)	Costs ($m)	EBIT[a] ($m)	Pre-tax profit ($m)
1997	332.1	215.6	76.1	76.1
1998	326.1	193.3	94.7	94.7
1999	295.8	194.5	63.1	56.1
2000	305.0	200.5	66.6	42.1
2001	310.3	207.3	64.4	39.6
2002	312.1	208.9	64.2	39.3
2003	316.1	211.7	65.2	40.7
2004	319.3	213.8	66.2	41.7
2005	322.5	216.0	67.3	43.9
…	…	…	…	…
2020	374.4	250.7	84.4	81.4
Present Value	**3631.1**	**2424.6**	**775.5**	NA
Terminal Value	**1506.9**	**1009.2**	**368.9**	NA
Total Value	**5137.9**	**3433.8**	**1144.4**	NA

a: Earnings before interest, tax and abnormal and extraordinary items

The key results from the analysis are summarised in Table 7.4. For each of the three projections, the first column shows the present value of EBIT for the period from 1999 to 2020, discounted at a rate of 7 per cent. The second column shows the terminal value in

[25] Income flows to the ACT public sector under the low profit projection are shown in Appendix 2, Table A2.2.

2020, that is the value of earnings in 2020 discounted back to the present at a discount rate of 7 per cent. The third column shows the total value obtained by summing the first two columns and subtracting ACTEW's current debt of $100 million.

Using a discount rate of 7 per cent, consistent with the approach of the ACT Government in valuing its liabilities, this analysis shows that even under ABN AMRO's most pessimistic projection involving an operating and maintenance cost blowout, privatisation would still result in a loss to the public. Even assuming ABN AMRO's high sale price of $1140 million, after adjusting for the transfer of ACTEW's debt to the ACT Government, the loss to the public may be as high as $625 million. The ABN- AMRO central profit projection implies a loss of $187 million. Using the median sale price for the Government's preferred option, $1055 million, the loss from the sale of ACTEW ranges from $90 million to $710 million with the ABN AMRO central profit projection implying a loss of almost $280 million.

Table 7.3 Projections of ACTEW revenue and profit - Preferred profit projection

Year ending 30 June	Revenue ($m)	Costs ($m)	EBIT[a] ($m)	Net profit ($m)
1997	332.1	215.6	76.1	76.1
1998	326.1	193.3	94.7	94.7
1999	295.8	188.2	69.4	62.4
2000	305.0	194.2	72.9	48.4
2001	310.3	199.0	72.7	48.0
2002	312.1	197.1	76.0	51.6
2003	316.1	199.7	77.2	53.4
2004	322.4	201.7	81.1	57.7
2005	328.9	203.7	85.2	62.4
…	…	…	…	…
2020	442.6	236.5	159.7	159.9
Present Value	**3819.2**	**2298.9**	**1068.2**	NA
Terminal Value	**2138.0**	**952.0**	**697.4**	NA
Total Value	**5957.2**	**3250.9**	**1765.6**	NA

a: Earnings before interest, tax and abnormal and extraordinary items

Table 7.4 Estimates of the value of ACTEW in public ownership (after deducting current debt of $100 million)

Projection	Income flow value ($m)	Terminal value ($m)	Adjusted total value ($m)
ABN AMRO low	775.5	368.9	**1044.4**
ABN AMRO central	901.3	425.7	**1227.0**
Best estimate	1068.2	697.4	**1665.6**

7.2 The approach to valuation in the ABN AMRO report

The ABN AMRO report contains a wide range of valuations of ACTEW under the Retention Option. The discounted cash flow analysis undertaken by ABN AMRO yields a range of values from $530 million to $740 million. The Government's case for privatisation rests on the choice of the lower bound estimate. Attention will therefore be focused on the procedures used to derive this estimate.

It is easy to see that the estimate of $530 million is a gross underestimate of the value of ACTEW in public ownership. The Government could, if it chose, direct ACTEW to make a capital repayment of $530 million immediately. Since ACTEW's June 1998 assets are estimated at $1.2 billion, the resulting increase in debt would leave ACTEW with net assets of approximately $670 million and the debt could be serviced from the (very low-risk) earnings of the water and sewerage division alone. The implied debt/asset ratio of 53% would be consistent with an A minus credit rating on ACTEW debt based on Standard & Poors' criteria for water utilities.[26] Other criteria for water utilities suggest a rating of BBB or A (ABN AMRO Table 6.4). That is, even after a capital return of $530 million, ACTEW would be a moderately-geared enterprise with net earnings of around $30 million per year. Yet the ABN AMRO lower-bound valuation of $530 million implies that such a capital return would render the enterprise worthless. Clearly, this is wrong.

The calculation of the ABN AMRO lower bound incorporates two major errors. First, the calculation values only cash flows (dividends and taxes). This is inconsistent with the accrual accounting approach accepted by all Australian governments and relied on by the ACT Government in its arguments about superannuation liabilities. As has already been argued, the correct approach is to value the entire business.

The use of traditional cash-based valuations is clearly inappropriate in considering sales or purchases of income-generating assets. It is even more clearly inappropriate to mix

[26] NSW Government-owned electricity distributors also have average gearing levels (liabilities:assets) of around 55% (Attachment 1.1, Auditor-General's submission to the LC General Purpose Standing Committee Inquiry into the Impact of National Electricity Market on the Finances of NSW Govt., Friday 30/10/98).

cash-based valuations of assets, such as ACTEW, with accrual-based valuations of liabilities, such as the obligation to pay superannuation benefits.

The other major error in the ABN AMRO analysis has already been noted – the use of a private sector discount rate plus an additional risk factor. ABN AMRO discounts cash flows using the weighted average cost of capital to the private sector, rather than the lower bond rate actually faced by the government. The standard justification for this procedure is that the difference between the private and public sector rates takes account of certain implicit costs of public ownership, such as the unlimited liability associated with public guarantees extended to government business enterprises and the related effect on the cost of borrowing for the ACT government as a whole. But having taken these factors into account through the use of a private sector discount rate, ABN AMRO counts them again, by making a deduction of $100 million from the estimated present value of earnings.[27]

The errors in the ABN AMRO are amplified further by the ACT Government which uses a nominal discount rate of 7 per cent to value its unfunded superannuation liability. In this mess of inconsistency, a single consistent feature may be observed. Whenever, public assets are being valued, assumptions are consistently chosen so as to minimise the value of those assets. Whenever the privatisation option is being considered, assumptions are consistently chosen so as to make it appear as attractive as possible.

7.3 Consistent approaches to private sector valuation

While analysis of the three scenarios above has employed the public sector discount rate of 7%, the ABN AMRO report is based on the assumptions that public sector assets should be valued using private sector methods. This assumption is not substantiated in their report. Nevertheless, for comparison with the analysis in the following section, it is useful to consider the valuation that emerges if this method is applied consistently, without errors of double counting such as those discussed above.

Before we do so, it should be noted that ABN AMRO present after-tax nominal WACCs for each ACTEW division, the weighted average of which is very close to 8% (ABN AMRO 1998, Table 10.6). Thus, applying ABN AMRO's preferred private sector methods would not markedly affect our estimates of the value of ACTEW in public hands derived using a discount rate of 7%.

A number of the valuations presented in the body of the ABN AMRO report, but not discussed in the Executive Summary or presented by the ACT Government in their case for privatisation, are free of accounting errors. In particular, it is interesting to examine the assessment of the value of ACTEW based on capitalisation of earnings multiples, as presented in Tables 10.8 and 10.9 of the ABN AMRO report. As ABN AMRO note (p.

[27] It is typical of the approach taken by the ABN AMRO/DGJ paper as a whole that, having estimated a range of possible costs from $60 million to $100 million, the maximum value (which maximises the gain from sale) is considered to be 'more realistic' although no justification of this assessment is presented.

182), this method 'is a useful tool for highlighting broad discrepancies which may lead to a revision of the theoretical valuations derived using the DCF [discounted cash flow] technique'.

The range of retention values derived by this method may be compared with the ABN AMRO range of estimates for the returns from the policy option preferred by the ACT Government, namely the sale of the electricity assets and a sale-concession for water and sewerage assets. As has already been observed, ABN AMRO estimates the net return from this option at between $870 million and $1040 million.

Table 7.5 shows the value of estimates made by ABN AMRO using the capitalisation of earnings multiples method. The estimated range (which excludes the value of the electricity retailing segment of ACTEW) is $665-1002 million, a range that more or less overlaps the estimated net proceeds from the sale of ACTEW. Thus, if the ABN AMRO report had taken the capitalisation of earnings estimates seriously, it could not have supported its conclusion that the option of a combined trade sale and lease was preferable to retention in public ownership.

Table 7.5 Value ranges using capitalisation of earnings

Division	Earnings Multiple Value Range ($m)
Energy Network	389 – 529
Water	105 – 225
Sewerage	171 – 248
Total	**665-1002**[a]

Source: ABN AMRO 1998, Table 10.9

[a] The ABN AMRO report did not present total values. Totals have been computed to provide a basis for comparison with the sale option.

Consistent application of private sector valuation techniques, without the double counting inherent in the ABN AMRO discounted cash flow analysis, yields the conclusion that the value of the enterprise under the retention option and the combined trade sale-concession option are roughly similar. The increases in operating efficiency assumed by ABN AMRO to arise under privatisation are offset by the loss in value which would result from the use of a concession rather than a trade sale. The political unacceptability of the trade sale option for water assets in turn reflects the natural monopoly character of those assets, a factor ignored throughout the ABN AMRO report.

7.4 Summary

In this section we assess the financial value of ACTEW under continued public ownership by comparing the earnings that would be forgone as a result of privatisation with the proceeds of the sale anticipated by ABN AMRO.

The ABN AMRO analysis on which the ACT Government has based its case for privatisation of ACTEW contains significant inconsistencies and errors. Inconsistent methods and assumptions are employed which result in double counting. We show that consistent application of private sector valuation methods, combined with the assumptions used by ABN AMRO for efficiency savings from privatisation, yields the conclusion that privatisation is at best neutral, with any gains in operating efficiency being wiped out by the costs of the Government's decision to lease water assets. In other words, even using ABN AMRO's questionable assumptions about efficiency gains under private ownership along with private sector assumptions for valuing public assets, consistent application of accounting methods shows that the public would be no better off as a result of the privatisation of ACTEW.

However, it is argued that it is more appropriate to use public sector valuation methods for assessing the value of ACTEW. This involves the use of a 7% discount rate to adjust the future stream of earnings, rather than the higher rates used by ABN AMRO. This is mainly because private sector investors expect a higher rate of return on shares than the government bond rate (a difference known as the equity premium).

If we take ABN AMRO's central projection (i.e. without a cost blowout) then the value of ACTEW in continued public ownership is around $270 million more than the sale price expected by ABN AMRO. Thus ABN AMRO's valuation of ACTEW in continued public ownership at $530 million, and the claim that the public will lose at least $500 million if ACTEW is not sold, are based on accounting errors.

When the public sector valuation method is combined with a more realistic (but still conservative) assessment of cost and revenue streams, the analysis shows that ACTEW's total capitalised value is up to $1766 million and, accordingly, privatisation of ACTEW will reduce public sector net worth by approximately $700 million depending on the sale price achieved.

8. ACTEW and the ACT Government's superannuation liability

8.1 The superannuation liability

The ACT Government's proposal to sell or lease ACTEW has been justified, at least in part, by the need to deal with the government's obligation to pay superannuation to retiring public employees. As in most other Australian jurisdictions, the ACT government has until recently dealt with such obligations on a 'pay as you go' basis, but is now moving to operate superannuation on a fully funded basis.

A number of observations should be made before analysing the implications of the sale or retention of ACTEW for the superannuation liability. First, because of its partial and inconsistent application of accrual accounting procedures, the Government has presented a misleadingly negative picture of its financial position. In applying accrual accounting, it is necessary to take account of all government assets and liabilities, including the capital stock of the general government sector (roads, schools, hospitals and so on) and the value of government business enterprises such as ACTEW. A complete analysis on these lines would show the government to have substantial positive net worth. By applying accrual accounting to liabilities and not to assets, the Government has generated results with little value except as the basis of a political scare campaign.

Second, even in the context of a narrow focus on financial assets, the ACT government's position is quite sound. The ratio of debt to the ACT Gross Product of around 10 per cent is considerably lower than that maintained by State governments for most of the period since Federation (even ignoring unfunded liabilities). Because the allocation of debt between the State/Territory and Federal governments has varied over time, it is more useful for comparisons to consider the combined debt of the two levels of government, currently around 30 per cent of GDP. This compares to levels of around 60 per cent for most OECD governments and is well below the level which has prevailed for most of Australia's history as a nation.

Finally, except in extreme cases, the level of general government debt has very little bearing on the desirability or otherwise of the sale of income-generating assets such as ACTEW. Such a sale is desirable only if it generates an increase in the net worth of the public sector sufficient to offset any adverse social consequences. Whether the proceeds of the sale are used to repay debt or to finance new capital expenditure will not affect the desirability of a sale.

Provided this fact is borne in mind, however, no harm is done by evaluating the alternative options for sale or retention of ACTEW on the assumption that, in either case, the flow of income to the government is used to finance the superannuation liability. In fact, the Government's claim that ACTEW is worth only $500 million in public ownership can be refuted by showing how the income of ACTEW can be used to finance the government's superannuation liability.

8.2 Accounting for the superannuation liability

There are two main types of superannuation scheme – accumulation schemes and defined benefit schemes. In a defined benefit scheme, the retirement payment received by a given employee is determined by years of service, final salary and so on, and is not directly related to contributions. In an accumulation scheme, contributions from a given employee and their employer are made into a superannuation fund which invests the contributions. On retirement, the accumulated value of the contributions is paid to the employee as a lump sum, annuity or some combination of the two.

Defined benefit schemes may be operated on a 'fully funded' basis, under which the employer makes a contribution equal to an estimate of the future liability for retirement payments accrued in a given year. Alternatively, and more commonly, such schemes may be operated on an unfunded or 'pay as you go' basis, in which the employer pays benefits to retired employees as they fall due. Accumulation schemes, by their nature, are fully funded.

Under a 'pay as you go' scheme, the employer has a liability to pay future benefits. For a government employer, such as the ACT government, it is most useful to consider this liability as a proportion of gross (national, state or territory) product, since this is the tax base from which the government draws its income. If the number of employees (relative to the total workforce) and the level of defined benefits (relative to wages) is stable, so is the liability, expressed as a proportion of gross product.

In recent years, Australian governments have sought to move from the 'pay as you go' basis to a fully funded basis. This move has been accompanied by a shift from defined benefit to accumulation schemes, and by some reduction in the employer contribution. As part of the move towards fully funded schemes, the unfunded liability associated with previous schemes has been taken explicitly into account. Although the calculation of the unfunded liability has been accompanied by alarmist rhetoric in many cases, it is important to recognise that the liability was always there and that an explicit computation of its value makes no difference to the government's true financial situation.

More generally, the inclusion of unfunded liabilities in the government's balance sheet is normally part of a process of accrual accounting which includes the valuation of a wide range of public assets (government business enterprises, roads, schools, hospitals etc.). The inclusion of these previously unvalued assets offsets the recognition of liabilities such as the requirement to pay superannuation, so that consistent adoption of accrual accounting procedures rarely leads to large changes in 'bottom line' measures of the government's net financial position.

The alarm generated by the ACT Government over unfunded superannuation liabilities reflects a partial and inconsistent application of accrual accounting procedures. Not only have large components of the asset base been ignored, but the Government has used high discount rates to evaluate assets such as ACTEW and much lower rates to evaluate liabilities such as superannuation. The result is that the value of assets has been understated and the value of liabilities overstated.

Discount rates

To compare the stream of income arising from ownership of an asset with the capital sum that can be realised by selling that asset, it is necessary to convert the stream of income to a present value. To do this, it is necessary to choose a discount rate, i.e., a compound rate of interest used to convert future income into a present value. This has been discussed in Section 6.2.[28] The higher the discount rate used, the lower the present value of any stream of payments.

Discounting is complicated by the need to take account of inflation, which means that the purchasing power of a given sum of money declines over time. As a result, in determining the return to an investment, it is necessary to focus on the *real* rate of return, obtained by subtracting the rate of inflation from the nominal (or face value) rate of return. For example, if the nominal rate of return is 5 per cent and the rate of inflation is 2 per cent, then $100 invested for a year (beginning say in 1998) will yield a nominal return of $105, but the purchasing power will be only equivalent to $103 in 1998 dollar values). Hence the real rate of return is 5-2 = 3 per cent.

In the Towers Perrin (1998) analysis of the ACT government superannuation liability, the inflation rate for the period from 2001 onwards is assumed to be 4 per cent (2.5 % for 1999-2000, 2% for 2000-01). The nominal discount rate used is 7 per cent. Subtracting the inflation rate of 4 per cent, the real rate of discount is only 3 per cent, a rate lower than that commonly used in public sector financial analysis. This choice of discount rate results in a large estimate of the present value of the superannuation liability.

By contrast, in its evaluation of the retention of ACTEW, ABN AMRO used a nominal discount rate of 11 per cent, and an inflation rate of 2 per cent, yielding a real discount rate of 9 per cent. The use of one real discount rate for liabilities (3%) and a different much higher rate for assets (9%) leads to a misleading and logically incoherent picture of the government's fiscal position.

8.3 Using income from ACTEW to meet the unfunded superannuation liability

Here we propose a method of providing for the ACT's unfunded superannuation liability whilst retaining public ownership of ACTEW. The proposal is that ACTEW should make an immediate payment of $400 million to the ACT government, to be allocated to the Superannuation Provision Account (SPA) and that dividends from ACTEW of $25

[28] To quickly recap, the need for discounting arises from the fact that money can be invested at a positive rate of return. For example, if the rate of interest is 10 per cent, then $100 can be invested to yield $110 in one year, $121 (= 110 per cent of $110) in two years and so on. This means, $110 received one year in the future or $121 received or paid two years in the future is worth $100 today. In general, the *present value* of an amount of money to be received or paid at a specific date in the future is the amount that would have to be invested today to yield the required amount of money at the future date. The calculation of the present value of a future payment is called discounting. The value of a stream of future payments can be calculated by discounting each of the future payments to yield its present value, then adding the present values.

million per year (in 1998 dollar values), should be allocated thereafter until the liability is fully funded.

There are two main reasons for proposing an initial lump-sum payment. First, ACTEW's debt-equity ratio is currently very low and the proposal would make ACTEW's capital structure comparable to that of other utilities. The ABN AMRO report argues that ACTEW should take on an additional $300 million in debt in order to makes its debt:equity ratio similar to other utilities. Second, where the rate of return on investment exceeds the discount rate, the present value of total payments is lower if payments are made early. In order to analyse this proposal, we use the inflation rate and discount rate scenarios used by Towers Perrin. The discount rate is 7 per cent, while the rate of return on investment is 7 per cent in Towers Perrin Scenarios 1 and 2, and 9 per cent in Scenario 3. On the assumption of a 4 per cent rate of inflation, Scenario 3 seems more plausible. In the analysis below, both 7 and 9 per cent rates of return will be considered.

Table 8.1 Value of a $400 million payment from ACTEW plus $25 million per year used to offset the existing unfunded liability

Year ending 30 June	Contributions from ACTEW[a]	7 per cent rate of return		9 per cent rate of return	
		Accumulated value[b]	Present (discounted) value[c]	Accumulated value[b]	Present (discounted) value[c]
1998		0.0	0.0	0.0	0.0
1999	400.0	400.0	400.0	400.0	400.0
2000	25.6	453.6	423.9	461.6	431.4
2001	26.1	511.5	446.8	529.3	462.3
2002	27.2	574.5	469.0	604.1	493.1
2003	28.3	643.0	490.5	686.8	523.9
2004	29.4	717.4	511.5	778.0	554.7
2005	30.6	798.2	531.9	878.6	585.4
2010	172.2[d]	1316.6	625.5	1556.6	739.5
2015	209.6[d]	2086.3	706.7	2644.1	895.7
2020	255.0[d]	3217.8	777.1	4371.4	1055.8

a: nominal dollar values shown. In real terms $400 million in 1998-99, and $25 million per year thereafter
b: nominal dollar values.
c: 1999 present value assuming 7 per cent nominal discount rate.
d: over 5 year period

To complete the proposal, it is necessary to consider the contribution from consolidated revenue to the government's superannuation liability. The simplest policy is for the government to fully fund liabilities accruing in the future, so that the contribution from ACTEW is applied solely to a special fund dedicated to eliminating the existing unfunded liability. A present value analysis, presented in Table 8.1, shows the time taken to accrue funds equal to the current unfunded liability of $770 million as at June 1998 (ACT Superannuation Provision Unit 1998). Columns 2 and 3 are calculated assuming a 7 per cent rate of return on investment and a 4 per cent rate of inflation. Column 2 shows the accumulated value of the fund, expressed in 1999 dollar values, and Column 3 shows the discounted present value of the fund. As shown, the value of the fund reaches that of the unfunded liability just before 2020.

Columns 4 and 5 show the analysis for the case when the rate of return on investment is 9 per cent. This permits a more rapid accumulation of funds with the unfunded liability being matched soon after 2010.

The analysis above shows that, under the ACTEW retention option, a combination of an initial capital repayment and subsequent dividends can be used to finance the elimination of the unfunded superannuation liability in a period of between 12-21 years depending on the rate of investment return achieved. Thereafter, the earnings of ACTEW would be available to the ACT government to finance public expenditures or reductions in taxation. In addition, the proposal allows for ACTEW to retain earnings of around $10 million per year (1997 dollar values) to finance new investments or to retire ACTEW debt. By contrast, under the sale option, the earnings of ACTEW would be lost forever.

Feasibility

ABN AMRO consider the implications a range of capital repayment options for ACTEW's debt rating and provide information on comparable companies (ABN AMRO 1998, Tables 6.6 and 6.13). As shown in their Table 6.13, a $400 million capital return would leave ACTEW with a debt/equity ratio lower than that of most comparable utilities, and would be consistent with an A minus credit rating. The ABN AMRO analysis shows that, in the absence of a blowout in costs, this rating would be expected to improve over the period 2000-2010 (ABN AMRO 1998, Figure 6.2). That is, ACTEW would be a moderately-geared utility by national and international standards, with only a small risk premium attached to its debt.

Under the cost blowout scenario considered by ABN AMRO, ACTEW's credit rating would decline initially before recovering. If such an increase in costs eventuated, damage to ACTEW's credit rating could be avoided by temporarily lowering the dividend ratio required of the enterprise. This would delay the elimination of the unfunded liability accordingly. However, the capacity to manage risks in this way indicates, contrary to claims made by ABN AMRO, that the ACT government is well equipped to handle the moderate risks associated with ownership of ACTEW.

The dividend policy required of ACTEW, under which 70 per cent of earnings are paid out as dividends, is similarly moderate. Initially, over 90 per cent of capital investment would be financed internally. Since the low growth projection put forward by ABN

AMRO implies a gradual reduction in capital expenditure, the dividend policy would be consistent with a medium-term reduction in ACTEW debt and with further improvements in ACTEW's credit rating.

8.4 Summary

Because of its partial and inconsistent application of accrual accounting procedures, the Government has presented a misleadingly negative picture of its financial position. Moreover, the claim that the ACT government's unfunded superannuation liability can only be addressed by the sale of ACTEW is false. This section analyses a proposal for ACTEW to make a $400 million payment to the ACT government along with an annual dividend of $25 million to be allocated to the Superannuation Provision Account. This analysis shows that it is feasible to use a capital repayment and income from ACTEW to fund the superannuation liability, resulting in repayment within the next 12-21 years (after which ACTEW is still publicly owned).

It is worth noting that this option would not be available if a previous Government had already sold ACTEW. Even proponents of privatisation admit that the proceeds of past privatisations have been dissipated and that, in many cases, public assets were sold at inappropriately low prices. It is claimed that the lessons of past mistakes have been learned and that future privatisations will be handled more responsibly. But a strategy of financing government activity by 'selling the family silver' always generates the temptation to pork-barrel and encourages fiscal laxity. The responsible course is to maintain public ownership of essential services and to insist that those services generate an adequate financial and social return to the community.

Water issues after the sale of ACTEW

9.1 Service quality after privatisation

The ACT Government seems to be pre-occupied with its ability to get a large capital sum from the sale of assets. It also claims to believe that sale to a private operator will increase the efficiency with which the services are provided. However, the ACT Government defines efficiency very narrowly, using private profitability, and hence the price offered by a buyer, as its preferred indicator. Other objectives in the provision of these services, including public health, protection and enhancement of the environment, and responsible use of resources are at least as important, and arguably more important, than cost efficiency.

While the generation of electricity produces greenhouse gases, its distribution creates relatively few environmental externalities. The main ones are the aesthetic effects of overhead wires on the amenity of residential and commercial areas.[29] The water and sewerage services, together with stormwater drainage, however, are major determinants of the quality of water consumed by residents and in waterways in and around urban areas. Protection of catchments and appropriate water treatment are the main determinants of the quality of the water we drink. The amount of water we take from rivers for urban use can have a significant impact on environmental flows, particularly in periods of low rainfall. Pollution of waterways in and around urban areas results mainly from soil, chemicals, garbage and other material finding their way into drains, leaking from sewers or overflowing from sewers during periods of high rainfall.

Reliability is an important determinant of service quality, and one on which many private providers of infrastructure services have fallen down. Given that they have a captive market, there is no need for them to ensure highly reliable services. Profit maximisation may lead to reduction of the spare capacity needed to deal with unusual demand or supply conditions.

Experience in other countries, especially Britain, has shown that private operators have neglected maintenance and capital expenditure and have been prepared to take the risk of occasional failure of supply (Neutze 1997, pp. 227-31). The private operator of the Adelaide system has experienced failure in the sewerage treatment system. It is very difficult even for the supplier to monitor the condition of water and sewerage mains and impossible for any regulator to do so.

The quality of water and sewerage services is another issue. It will be necessary for the ACT Government to establish independent water quality monitoring agencies, unless the

[29] However, electricity retailers have an important role to play in promoting wise and efficient use of electricity, so as to minimise the quantity used to achieve the required energy services; many retailers have made formal commitments to do just this in their Greenhouse Challenge agreements.

private operator is given this responsibility.[30] Monitoring conducted solely by the private operator is liable to decline to the lowest level specified in the sale contract.[31] Additionally, the access by the public to any information regarding water quality may be limited, particularly if such information is regarded as commercially sensitive.

The technology and capacity of the Lower Molonglo Water Quality Treatment Plant makes Canberra the only city in Australia to have 100% tertiary treatment of its sewage. Recently, ACTEW has invested significant amounts of money installing overflow dams to ensure as little raw sewerage as possible is discharged into the Molonglo-Murrumbidgee Rivers. The main beneficiaries of this investment have been downstream users of Murrumbidgee water, including recreational, agricultural and domestic users, most of who are outside the ACT and not customers of ACTEW. A private operator would be unlikely to make such investments unless required to do so, since there is no commercial reason to maintain the amenity of non-customers, or the environment of the Murrumbidgee Corridor.

ACTEW currently fulfils a number of community service obligations including providing cheap electricity, water and sewerage to schools, hospitals, pensioners, the disabled, churches, sporting clubs and the like. These are funded by the government (at a cost of $7.5 million for 1998-99) and will continue following privatisation. However, ACTEW also supplies water for fire fighting and maintains fire hydrants free of charge. A private operator will probably expect some form of subsidy from the ACT government to continue to provide these services. Furthermore, a private operator may be unwilling to bear the full costs of fluoridation of the water supply, believing this to be the responsibility of the government. Accordingly, such issues will have to be built into the sale contract.

9.2 The effect of a long-term lease

The Government, of course, recognises the objectives of maintaining public health, enhancing the environment, and encouraging responsible resource use, but gives them less weight by treating them as constraints rather than objectives. As long as minimum standards of public health, service reliability and environmental protection are achieved, they can be ignored in the pursuit of the (implicitly) more important goal of maximising the financial return. The ABN AMRO report sees all of these being handled by the terms of the sale contract and regulation to ensure that the terms are fulfilled. It might have been more appropriate to propose a tender process in which a minimum sale price was specified and the criteria for selection of a successful tenderer were: the most reliable

[30] If government takes the responsibility, the costs of establishing and running a new water quality monitoring agency should be considered as a cost of privatisation. Alternatively, if the Government buys these services from the supplier the annual cost should be debited against the returns from privatisation.

[31] For example, in Victoria the reading of flood gauges was determined to be 'non-core' business and was discontinued by the recently corporatised water businesses. As a result, the quality of flood forecasting declined sharply.

service; the best environmental health outcomes; and the greatest enhancement of environmental quality in the ACT.

Such a tender process would still not ensure continued high quality operation. Our knowledge of the impacts of various aspects of water quality, both drinking water and water in our creeks and rivers, on public health and the quality of the environment is improving continuously. This has been spectacularly evident in Sydney in recent months. The conditions that are built into a contract in 1999 may be quite inappropriate a few years later, for example when we know the best way to control *Cryptospiridium*. Then we will have the difficult task of renegotiating the terms of the contract of sale by including additional requirements, and perhaps having to meet claims for compensation. A public supplier of water and sewerage services can be required much more readily to change its collection and treatment procedures in line with changing public health and environmental knowledge, without any requirement for compensation.[32]

One serious problem with a tender process that relies heavily on price is that the likely winner will be the one that has the greatest ability to expand the market for the products, or in the terms used in the ABN AMRO report 'exploit growth options' (p. 122). But from the point of view of environmental quality it is highly desirable that consumers in Canberra are encouraged to economise on the use of water rather than expand it. ACTEW has been remarkably successful in its demand management both through increasing the proportion of the revenue it receives from user charges and through demonstration of the possibilities of developing gardens that use little water. Community involvement has been central to the success of these initiatives. As a result the need for an additional water storage in the Brindabellas, originally expected to be needed by 2003, has been postponed for many years, perhaps indefinitely. A private provider would have no incentive to encourage less use of water (and hence the production of less sewage and greater environmental flows).[33] Similarly, a private owner motivated entirely by profit may be less interested in community consultation, particularly regarding what it sees as commercially sensitive decisions.

The most likely scenario for future development of environmentally responsible water and sewerage services is for much greater use of rainwater that falls in the urban area itself and re-use of locally treated sewage. ACTEW is a world leader in the development of small sewage treatment plants that are ideal for milking re-usable water from sewerage mains in urban areas. Together with other parts of the ACT government it has pioneered the use of stormwater by collecting it in urban lakes and using it for irrigation of public open space. These kinds of innovations appear to have blossomed within a public authority collaborating closely with urban planners.[34] A public authority, responding to the demand of members of the community it serves to protect the environment and public health and to ensure that service is reliable, seems more likely to respond creatively to

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[32] Though, or course, it would have to either raise its prices or reduce its profits.

[33] It may have an incentive to increase the price per unit of volume, but may be inhibited from doing so by the price regulator; this has occurred already in both Canberra and Sydney.

[34] ABN AMRO consider these new technologies and initiatives to be non-core business and suggest they should be discontinued (p. 63).

such opportunities as ACTEW has done. A private supplier on the other hand has no incentive to do more than meet the minimum standards laid down in a contract and in regulations. In addition, such development could make some of the assets of the existing systems obsolete and be difficult for a buyer who had paid a price that assumed a continued use of established technologies.

9.3 Summary

Water and sewerage are essential services, the quality of which are important for health and environmental amenity. ACTEW currently undertakes explicit and implicit community service obligations, maintaining high quality water and sewerage, protecting the environment, and maintaining stormwater and fire hydrants.

ACTEW plays a valuable role in co-operating with urban planners and the community such that decisions are made on grounds other than profit maximisation. Profit motives may be inconsistent with maintaining a reliable, high quality system and experience shows that it may not be possible to enter into contracts that maintain sufficient flexibility to ensure that changes in technology and standards can be accommodated.

10. Electricity service quality after the sale of ACTEW

Recent experiences in Auckland, Queensland and Victoria have brought home the importance of having highly reliable utility services. These services are not only considered necessities for maintaining human health and wellbeing, but are essential for a region's economic performance. For example, the Victorian gas crisis cost the companies throughout Victoria up to $1 billion and reduced growth by one percentage point (*The Age*, 14 October 1998), in addition to causing considerable hardship and suffering.

ACTEW supplies most of the essential services to residents of the ACT. The future reliability of these services in the advent of privatisation of ACTEW needs to be assessed. This section investigates the service quality implications of privatisation, examining specifically the supply of electricity.

10.1 Privatisation in Victoria

Supply quality and price

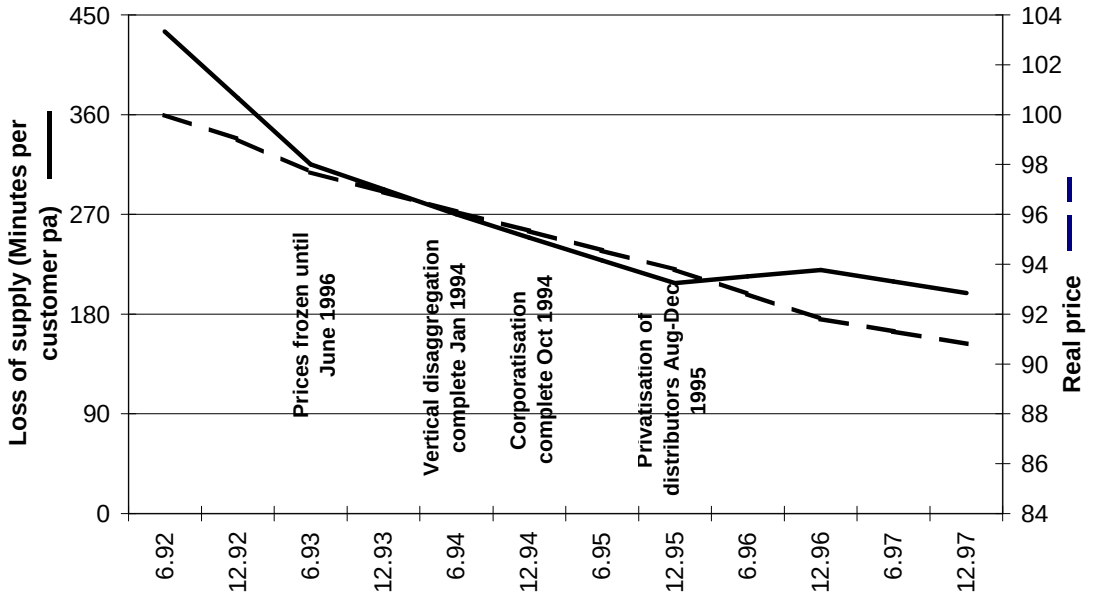
The Victorian electricity industry underwent significant reform and restructuring over the period July 1993 to June 1997, culminating in the sale of most electricity assets. Victoria is the only State in which electricity generation and distribution assets have been privatised. The process of reform has had a significant impact on electricity service and price, with the overall result being a significant improvement in affordability and quality of electricity service for Victorians. A report from the Energy Projects division of the Victorian Department of Treasury and Finance indicates that the average loss of electricity supply per customer has decreased from over 500 minutes in 1989-90 to less than 200 minutes in 1997 (VDTF 1998, Figure 3; ORGV 1998, Graph 5). A report from the Victorian Regulator-General indicates that the residential price of electricity has decreased by over 9% in real terms from November 1992 to the end of 1997 (ORGV 1998, p. 34). At first glance these results appear to suggest a win-win outcome from privatisation.

However, on closer examination the situation is revealed to be more complex. Figure 10.1 illustrates the reductions in the price of electricity and improvements in supply reliability occurring in Victoria since 1 July 1992. The Figure also indicates when various reforms to the Victorian electricity industry took place. Importantly, privatisation of distributors took place towards the end of 1995.[35] By this stage, other reforms of the electricity industry, coupled with a legislated price freeze, had produced many benefits (VDTF 1998, Chapter 9). The price had fallen by approximately 6% and supply interruptions had dropped to just over 200 minutes per customer per year. The price has continued to decrease since privatisation, although it should be noted that these price reductions are legislated, and did not occur as a result of competition or privatisation

[35] ACTEW is a distributor – owning the wires, but also marketing electricity as a retailer. Sale of Victorian generation businesses did not commence until May 1996 (VDTF 1997, Table 1).

alone. Regarding the quality of electricity supply, since the end of 1995 when privatisation occurred, the Victorian Regulator-General has noted an increase in unplanned interruptions to service (ORGV 1998, Graph 6).

Figure 10.1 Victorian electricity reform



In other words, most of the improvements in electricity prices and reliability of supply have been due to features of the reform process other than privatisation.

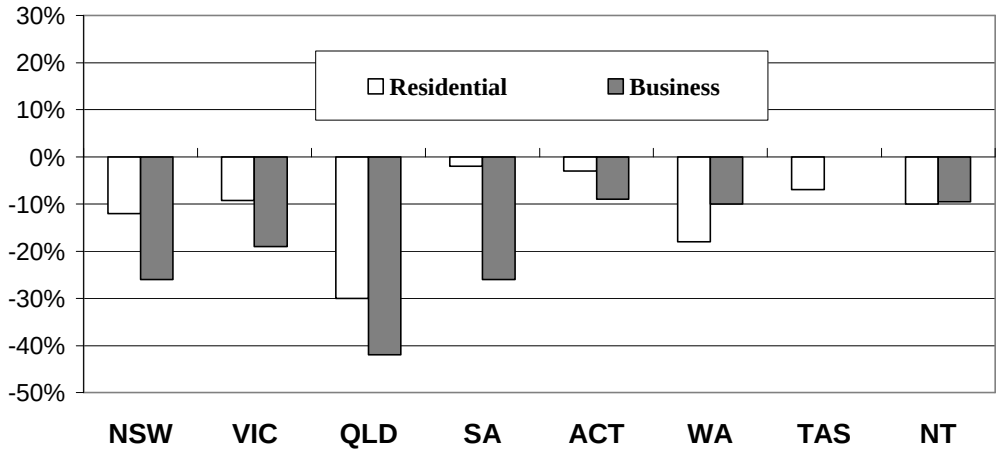
Victoria compared to other States

It is interesting to compare the change in electricity service quality and price in Victoria *following privatisation*, with that in other States over the same period. No other State has privatised electricity assets during this period, although many have initiated significant reforms (Productivity Commission 1998, Table 2.1).

In Victoria, the price of electricity was frozen between July 1993 and the end of June 1996. In July 1996 the price was legislated to fall by 2% and then 1% per year thereafter to July 2000. The result has been a 9.2% decrease in the real price of electricity between Nov 1992 and the May 1997 (VDTF 1998, Figure 4). Over the same period, legislated decreases in the cost of electricity for small and medium businesses have resulted in a real price decrease of around 18-19%. However, when compared to other States these decreases are unexceptional, with prices over the same period falling by more in NSW and Queensland for both residential and business customers (Figure 10.2). Accordingly, the affordability of electricity can improve significantly, and may even improve more, in the absence privatisation.

It is worth noting that the decrease in the price of electricity for customers of ACTEW has not been as great as customers in some other States.[36] It must be appreciated that ACTEW already has some of the lowest retail prices for electricity in the country. The price of domestic electricity for an average consumption of 8,900 kWh in Melbourne is almost 50% higher than for the same amount of electricity supplied by ACTEW (ACTEW 1998a, p. 23).

Figure 10.2 Change in real price of electricity 1992-1997



Source: Productivity Commission 1998; ACTEW 1998a; Victorian ORGV 1998

It is important to note that the Victorian electricity industry was running 'well short of world's best practice' (VDTF 1997) with electricity prices significantly higher than Australian benchmarks before electricity reforms were introduced. For the period 1991-1994 the average loss of supply per Victorian customer was at least twice that of NSW, Queensland and South Australia and 5-15 times that of the ACT. Accordingly, the Victorian electricity industry has been catching up with the rest of the Eastern States and South Australia.[37] Even by the end of 1997, the average Victorian customer still experienced 199 minutes of lost supply per year, compared to between 110 and 150 minutes for NSW, Queensland and South Australia, and just over 50 minutes per year in the ACT. Figure 10.3 shows how various States have performed from 1991-92 to 1996-97.

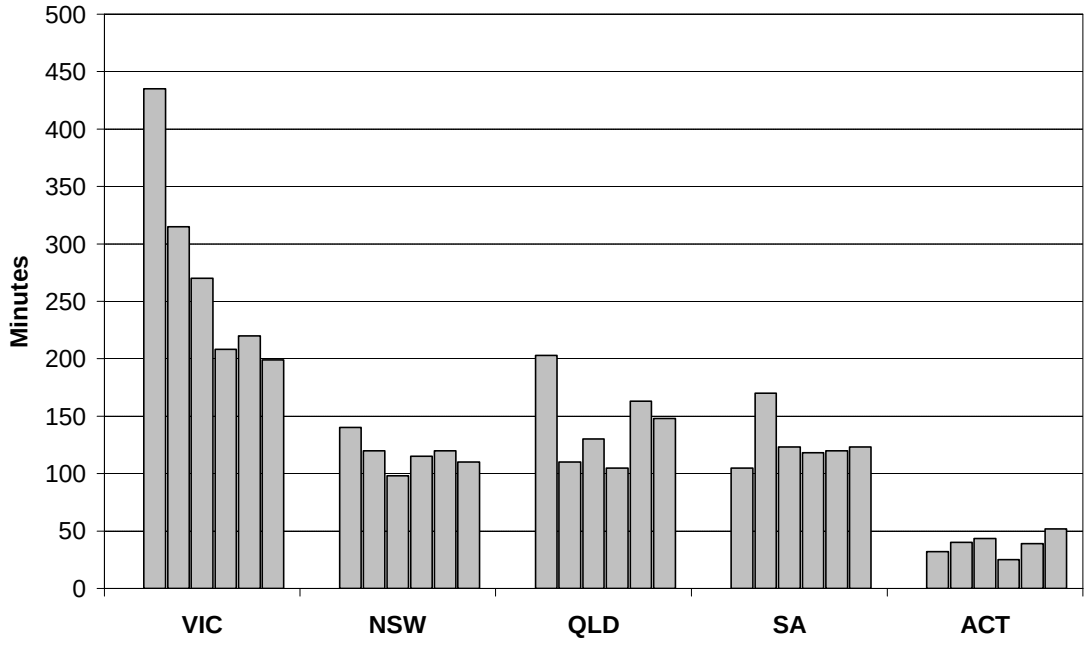
[36] The failure of ACT electricity prices to drop as much as other States can also be attributed to the fact that during the period ACTEW sourced electricity from the Snowy Mountains Hydro, the price of electricity from which actually increased. ACTEW now obtains electricity from Yallourn in Victoria.

[37] Western Australia and the Northern Territory are considered too remote to participate in the NEM, and although Tasmania's entry is anticipated, there exists no transmission link across Bass Strait to facilitate participation in the NEM.

10.2 Implications for the sale of ACTEW

It is apparent from Figure 10.3 that the ACT has by far the most reliable electricity service among all States. Additionally, ACTEW supplies the cheapest domestic electricity. It would be unreasonable to expect privatisation to result in any marked improvement in prices or reliability. Privatisation was unable to improve supply quality in Victoria although a slight decrease in total disruptions was experienced from 1995 to 1997. This was principally attributable to a reduction in planned interruptions (from close to 50 minutes per year to around 30). In contrast, unplanned interruptions increased over the same period (from around 160 minutes per year to 170). It could be argued that cost rationalisation and reductions in spending on maintenance have caused both effects. A drop in planned interruptions could be an indication that necessary routine maintenance has been scaled back, ultimately leading to an increase in unplanned interruptions. As a comparison, the average ACTEW customer experienced 38 minutes of unplanned interruptions and 6 minutes of planned interruptions in 1997/98. Obviously, regional differences affect supply quality, but importantly, ABN AMRO suggest that after accounting for special features ACTEW spends up to 50% more on maintenance than the Australian average (ABN AMRO 1998, p. 34). This may well be reflected in ACTEW's significantly higher reliability standards.

Figure 10.3 Loss of supply per customer 1991/92-1996/97[a]



a. Victorian numbers are 91/92-93/94, then calendar years.
Source: Productivity Commission (1998), Figure 2.2; ORGV (1998), Graph 5.

The level of ACTEW's maintenance costs will have a major impact on profitability, and hence on the value of ACTEW, since they account for the great majority of controllable costs in the energy networks business. In other words, if a private buyer of ACTEW is to

make the sort of cost savings suggested by ABN AMRO, most of the savings will need to come from the maintenance budget (including scheduled replacement of worn-out assets).

ABN AMRO's estimate of the trade sale value of ACTEW is based on the assumption that the acquirer is able to achieve maintenance and operating costs 5% below the Australian average (ABN AMRO 1998, p. 189). However, intuitively it seems that if spending on maintenance is cut to average Australian levels, then ACT customers should expect a level of service reliability similar to the Australian average of over 120 minutes disconnected per customer per year (Productivity Commission 1998, Figure 2.2). Accordingly, if privatisation of ACTEW's electricity business goes ahead and the cost savings envisaged by ABN AMRO are realised, then ACT customers should expect to suffer at least a doubling in supply interruptions.

10.3 Summary

ACTEW currently provides the most reliable and cheapest electricity supply in Australia. The price of this reliability is slightly higher maintenance costs. While much has been made of the impact of privatisation of electricity generation and distribution in Victoria, there is no evidence that privatisation has improved either price or service quality in the electricity market in Victoria. However, there is evidence that the disaggregation of electricity distribution and generation into competing enterprises has improved reliability and price.

ABN AMRO believe a commercial operator of ACTEW can cut maintenance costs to average Australian levels. If this occurs then service quality will tend towards average Australian levels, including a rate of blackouts more than double that currently experienced in the ACT.

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Appendix 1

The estimates in Table A1 are based on ABN AMRO's financial performance figures and assume ACTEW continues to receive network fees from whoever supplies electricity to ACT customers, and that the retail arm is shut down completely (i.e. there are no costs associated with running the retail arm after it has lost all its customers). These figures ignore the fact that ACTEW holds a monopoly franchise over small (<160 MWh) customers to at least 2001 and are estimated to generate revenue of over $100 million to at least 2003 from these customers.

Table A1 ACTEW loses all retail customers

	1998	**1999**	**2000**	**2001**	**2002**	**2003**
EBIT from Electricity						
- Networks	37.8	32.6	35.0	36.8	39.7	40.8
- Retail	0	0	0	0	0	0
EBIT from Water	18.3	11.5	11.9	12.4	13.3	13.5
EBIT from Sewerage	19.7	21.1	21.1	21.2	21.9	22.3
EBIT Total	**75.8**	**65.2**	**68**	**70.4**	**74.9**	**76.6**
EBIT Total ABN AMRO	*94.7*	*69.4*	*72.9*	*72.7*	*76.2*	*77.2*

Appendix 2

Table A2.1 Income flows to ACT public under retention option - ABN AMRO low profit projection

Year ending 30 June	Dividends received ($m)	Interest saving ($m)	Budget cash flow ($m)	Retained earnings ($m)	Total public cash flow ($m)
1997	76.1	0.0	76.1	0.0	76.1
1998	94.7	0.0	94.7	0.0	94.7
1999	33.7	0.0	33.7	22.4	56.1
2000	25.3	17.5	42.8	16.8	59.6
2001	23.7	17.5	41.2	15.8	57.1
2002	23.6	17.5	41.1	15.7	56.8
2003	24.4	17.5	41.9	16.3	58.2
2004	25.0	17.5	42.5	16.7	59.2
2005	26.4	17.5	43.9	17.6	61.4
…	…	…	…	…	…
2020	48.8	17.5	72.3	26.6	98.9

Table A2.2 Income flows to ACT public under retention option - Best estimate profit projection

Year ending 30 June	Dividends received ($m)	Interest saving ($m)	Budget cash flow ($m)	Retained earnings ($m)	Total public cash flow ($m)
1997	76.1	0.0	76.1	0.0	76.1
1998	94.7	0.0	94.7	0.0	94.7
1999	37.4	0.0	37.4	25.0	62.4
2000	29.0	17.5	46.5	19.4	65.9
2001	28.8	17.5	46.3	19.2	65.5
2002	30.9	17.5	48.4	20.6	69.1
2003	32.1	17.5	49.6	21.4	70.9
2004	34.6	17.5	52.1	23.1	75.2
2005	37.4	17.5	54.9	25.0	79.9
…	…	…	…	…	…
2020	95.9	17.5	119.4	57.9	177.4