ELECTRICITY PRIVATISATION IN AUSTRALIA

A RECORD OF FAILURE

John Quiggin Opinion and Consulting

Report Commissioned by the Victorian Branch
of the Electrical Trades Union

February 2014

ABOUT THE AUTHOR

John Quiggin is an Australian Laureate Fellow in Economics at the University of Queensland. He is prominent both as a research economist and as a commentator on Australian economic policy. He is a Fellow of the Econometric Society, the Academy of the Social Sciences in Australia and many other learned societies and institutions.

He has produced over 1200 publications, including six books and over 200 refereed journal articles, in fields including decision theory, environmental economics, production economics, and the theory of economic growth.

He has also written on policy topics including climate change, micro-economic reform, privatisation, employment policy and the management of the Murray-Darling river system. His latest book, *Zombie Economics: How Dead Ideas Still Walk Among Us*, was released in 2010 by Princeton University Press, and has been translated into eight languages.

CONTENTS

List of Charts and Tables

FOREWORD

Having experienced all the detrimental impacts of electricity privatisation in Victoria over 20 years, the members of the ETU wanted to commission an independent report that sheds light on the economic failings of the privatisation reforms.

Nothing is more important to Australia's future economy or wellbeing of society than accessible, affordable, reliable and safe electricity supply.

Yet international and Victorian evidence on 'free market' models of electricity supply demonstrate that it not only fails to improve electricity affordability and reliability – it often does the extreme opposite.

As such, it is critical that the voices of the vested interests who want to profit from selling publicly owned assets do not drown out the facts about electricity privatisation.

In Victoria, the majority of our electricity networks are owned by Singapore and Chinese Government-owned entities. These governments are understandably acting in the interests of their citizens, industries and economies.

It is the motives of our own governments and spokespeople, who are advocating selling our assets, that need to be questioned.

Professor John Quiggin has asked, analysed and answered the major questions about the motives and outcomes of electricity privatisation and reforms in this Report.

The Report summarises the major relevant 'fundamental and incurable flaws' in the arguments for electricity privatisation and free-market regulation.

The evidence in the report supports the conclusion that free-market electricity reforms have been 'a spectacular failure' and there is no fiscal or economic justification to continue the sell-off.

This conclusion supports the experience of Victorians – particularly our members, who are dealing with the real impacts of 20 years of under-investment in the sector on a daily basis.

We are thankful to John Quiggin for his efforts to subject classical free-market rhetoric to academic rigour and independent data, to reveal the economic truth.

Troy Gray
Secretary
Electrical Trades Union, Victorian Branch

EXECUTIVE SUMMARY

The record of failure for electricity privatisation in Australia has its genesis in 'market liberalism' and 'economic rationalism' that drove reforms in the Thatcher and Reagan eras in the 1980s & 1990s.

Whilst these theories conflicted with all the evidence showing that public ownership of essential services that are natural monopolies is optimal, the theories are nonetheless used to justify selling off public assets.

Actual fiscal analysis does not support that there any long-term benefits to governments from the sale of assets to pay down debt.

Performance

Real electricity prices in Australia fell markedly from the 1950s until the mid 1990s, following integration and State ownership, to be among the lowest in the world.

So despite these favourable prices, reforms based on 'free market' and 'competition' theories were introduced in the 1990s. This included a National Electricity Market (NEM) and a National Grid.

Failure of the National Electricity Market

Prices – have reversed their declining trend, and are highest in privatised States. Since the NEM was introduced, prices from 2005 have risen sharply.

Quality – customer dissatisfaction has risen markedly since the NEM, profoundly for privatised States, where complaints to the relevant energy ombudsmen have grown from 500 per year to over 50,000.

Reliability – has declined across a wide range of measures in Victoria, notwithstanding increased 'physical audits' and expensive financial 'market incentive' programs.

Efficient investment – has not occurred, as the pricing mechanisms have not delivered coherent signals for optimal investment.

Efficient operation – resources have been diverted away from operational functions to management and marketing, resulting in higher costs and poorer service.

Labour costs and productivity

The NEM and privatisation have reduced real labour productivity, as employment and training of tradespeople have been gutted and the numbers of less productive managerial and sales staff have exploded.

Private rates of return

The high rates of return to private owners for the low investment risk is unjustifiable and irresponsible. The private owners of price- regulated distribution assets have outperformed almost all investment classes, by making post-tax real rates of returns close to 10% annually since 2006.

Private cost of capital

In privatised States, customers' bills include the cost of almost 10% per annum interest on the corporate owners' debt on the electricity assets. This compares to government borrowing costs of closer to 3%. The NEM has mimicked these exorbitant borrowing costs to all customers.

Options for the future

It is time to admit that the reform process, as a whole, has been a failure. Economic principles and international experience indicate that a more centralised system, with public ownership of the critical infrastructure, is the only sensible response.

01 INTRODUCTION

The electricity industry has undergone radical market-oriented reforms in Australia. From World War II until the early 1980s, electricity in Australia was provided by public monopolies owned primarily by state governments, and operated as statutory authorities.

Although the arrangements differed in their details, the electricity industry in each state was characterised by a high degree of vertical and horizontal integration and a substantial degree of autonomy.

Over the past thirty years, the electricity industry has been transformed beyond recognition. Electricity authorities have been first corporatised and then partially or wholly privatised in several states. A system of electricity supply based on statutory obligations to ensure a safe, and reliable supply has been replaced by a National Electricity Market that is supposed to achieve the same outcome at lower cost and with more choice for consumers.

These policies have failed spectacularly. Prices have risen sharply particularly for households. Investment has been haphazard and investment failures have led to avoidable blackouts. Consumers have been barraged with competing offers from retailers, but have found all to be inferior to the reliable low-cost supply they formerly enjoyed.

The greatest failure of all has been privatisation. Public assets built up over generations have been sold off at a fraction of their real value. The proceeds of asset sales have been dissipated, while those states that have resisted the pressure for privatisation have enjoyed a steady flow of dividends and capital appreciation.

Despite this record of failure, the push for privatisation continues, in large measure, from those responsible for the failures. Despite the comprehensive failure of market-oriented reform, and despite the failure of privatisation more generally, they continue to argue that the problems of the electricity industry can only be fixed by yet more reform, and particularly by the sale of publicly owned enterprises

In this paper, the experience of electricity privatisation and market-oriented reform in Australia is examined in detail. It is shown that these policies have consistently failed to deliver on the promises made by their advocates, leaving consumers, workers and the public in general, worse off.

The report is organized as follows. Section 1 provides background information on the broader context of privatisation, including the National Competition Policy process of which electricity reform was part. Section 2 describes the development of the publicly owned electricity supply industry over the course of the 20th century, during which access to electricity was made almost universal and prices declined consistently in real terms, without imposing any net financial burden on governments. Section 3 deals with the creation of the National Electricity Market, and the associated restructuring of the electricity industry. Section 4 presents an analysis of the experience of electricity privatisation in Australian jurisdictions. It is shown that states that privatised their electricity sectors in the 1990s (Victoria and South Australia) were financially disadvantaged compared to those that retained public ownership. Section 5 shows how the National Electricity Market has failed to produce the promised outcomes, and demonstrates that this failure cannot be attributed to public ownership. Section 6 deals with options for the future, including renationalisation of the electricity grids and the creation of more appropriate forms of governance. Finally, some concluding comments are offered.


SEC

02 BACKGROUND

The push to privatise the Australian electricity industry is part of a broader movement variously referred to as neoliberalism, the Washington Consensus and, in Australia, economic rationalism. Quiggin (2010) uses the term 'market liberalism'.

The central thrust of market liberalism is away from public intervention in the economy, and towards a marketised economy in which most major decisions are made in financial markets. The rise of market liberalism began in the 1970s, with the breakdown of the postwar system of fixed exchange rates. The dominance of market liberalism became clearer in the 1980s when the Thatcher government in the United Kingdom began a program of radical market-oriented reform, much of which was imitated by governments in Australia, New Zealand and other English-speaking countries.

Economic rationalism and micro-economic reform in Australia

The policy program referred to in Australia as 'economic rationalism' reflected the same ideas, under the banner of 'micro-economic reform'.[1] Most notably, privatisation was adopted with a degree of enthusiasm close to that of the Thatcher government in the United Kingdom. Thatcher was much admired by politicians of both major parties (though mostly off-the-record in the case of Labor). More importantly, the privatisation measures of the UK government, including outright sale of public enterprises, contracting out of public services and public-private partnerships in the infrastructure sector, formed the model for similar initiatives in Australia.

The leading proponent of micro-economic reform within the Commonwealth bureaucracy was the Industries Commission, later to become the Productivity Commission. The Commission produced a series of reports claiming that micro-economic reform would produce large increases in productivity. In particular, highly optimistic claims were made with respect to the potential gains from reform in the infrastructure sector.

The arguments of the Commission were backed up by a proliferation of right wing think tanks, the most notable of which were the Centre for Independent Studies and the Institute of Public Affairs, there were also a large number of 'astroturf' groups including the HR Nicholls Society, Bennelong Society, Samuel Griffith Society (all established by Ray Evans of the Western Mining Company). The IPA, in particular, promoted both privatisation and marketisation of the electricity sector.

In 2005, these groups were joined by Infrastucture Partnerships Australia, which replaced the politically neutral Australian Council for Infrastructure Development. As the name indicates, Infrastucture Partnerships Australia is primarily devoted to the promotion of Public Private Partnerships, a form of privatised infrastructure provision that originated in the United Kingdom under the Thatcher government. PPPs have been most notable in the road sector where they have produced a series of spectacular failures. The Chairman of Infrastucture Partnerships Australia is Mark Birrell, Minister for Major Projects in the Kennett government and a strong advocate of privatisation. Patrons include Nick Greiner, former NSW Premier and chairman of the consortium responsible for the failed Cross-City Tunnel and Tony Shepherd, President of the Business Council of Australia and Chairman of Transfield Services, recently appointed to head the Abbott government's Commission of Audit.

Micro-economic reform began as, and has remained, a project of the political elite. However, during the economic recovery from the economic crises of the 1970s and early

1. The term 'reform' is commonly used to imply 'reform for the better', with the result that critics often use descriptions such as 'so-called reforms'. In this paper 'reform' will be used neutrally to mean 'change of form' without any implication of improvement. Quiggin (1996) gives an evaluation of the micro-economic reform program as a whole.

1980s, micro-economic reform enjoyed some popular support, or at least, acquiescence. The process was seen as helping to insulate the economy from the cycle of boom and bust.

Following the deep recession that began in 1989, the Australian public lost faith in micro-economic reform. It was at this time that the term 'economic rationalism', which had mostly been a positive description used by policy insiders, came to be widely used by ordinary Australians, almost always as a term of opprobrium. An important step was the success of Michael Pusey's book, *Economic Rationalism in Canberra*.

National Competition Policy

The reformers circumvented popular resistance to reform through the introduction of National Competition Policy (NCP), and other agreements made behind closed doors in the Council of Australian Governments (COAG).

The central tool was National Competition Policy, which began with a deliberately obscure inquiry into the operation of the *Trade Practices Act 1974 (Cwlth)*, a topic that had until then been of interest only to a tiny coterie of lawyers and economists, focused on business practices such as bid rigging and retail price maintenance. The Hilmer Committee, as it was called after its chairman Fred Hilmer, held no public hearings, and its members were chosen to ensure that the report would advocate a market liberal agenda. Its recommendations focused entirely on attacks on the existing system of public provision of infrastructure:

The Hilmer Committee's report was delivered to the Heads of Government on 25 August 1993; it advocated six policy proposals, all of them attacking the public sector:

- extending the reach of the *Trade Practices Act 1974 (TPA)* to unincorporated businesses and State and Territory government businesses so that the competitive conduct rules (contained in Part IV of the Act) apply to all business activity in Australia
- provision for third party access to nationally significant infrastructure
- introduction of competitive neutrality so that government businesses do not enjoy unfair advantages when competing with private businesses
- restructuring of public sector monopoly businesses to increase competition; review of all laws which restrict competition; and
- extending prices surveillance arrangements to State and Territory government businesses to deal with those circumstances where all other competition policy reforms prove inadequate.

The proposals of the Hilmer Review were adopted in their entirety by the Council of Australian Governments in 1994, with little if any public discussion. They were 'locked in' by a set of Commonwealth payments, which were supposed to compensate the states for the loss of any competitive advantage associated with government business enterprise. However, these payments were conditional on certification by the Commonwealth-controlled National Competition Council that the states had complied with the conditions of National Competition Policy.

As a result, by the time most voters became aware of the existence of National Competition Policy, it was a *fait accompli*, effectively beyond the reach of any kind of democratic accountability. Among other things, NCP effectively required corporatisation of most government business enterprises. Although privatisation was not required, it was encouraged. Since the adoption of NCP it has been repeatedly claimed, contrary to assurances made at the time, that privatisation is a necessary consequence of NCP particularly in relation to electricity.

NCP and the privatisation spectrum

National Competition Policy did not require privatisation. However, its advocates assumed that, once government enterprises were forced to comply with the requirements of NCP, privatisation would be the ultimate outcome. The Productivity Commission (1998) viewed government provision of marketed services in terms of a spectrum. At one end is the traditional departmental structure of national, state and local governments. At the other end is a privatised firm, subject only to normal commercial regulation. The points on the spectrum include:

i. full cost pricing;
ii. competitive tendering;
iii. commercialisation;
iv. corporatisation; and
v. privatisation.

Each step along the reform spectrum involves an increase in reliance on profit as the primary guide to management decisions, and a reduction in direct public accountability. These two changes are directly linked: increases in profitability arise precisely because managers are not subject to constraints imposed through public accountability, and are therefore free to manage enterprises so as to increase revenues and reduce costs.

From the perspective of advocates of micro-economic reform, the object of reform was to move as far towards privatisation as possible, subject to constraints arising from potential market failures or political restrictions. Under National Competition Policy, traditional arrangements were considered, *prima facie*, to be anticompetitive, and governments are required to consider options such as commercialisation and corporatisation.

Fiscal outcomes

The most common reason governments in developed countries have privatised assets is because of the illusory belief that the money raised in this way will allow them to increase public spending, cut taxes or repay debt. This illusion has its basis in the way governments have, until recently, presented their financial accounts.

Traditionally, the main object of the Budget was to ensure that ministers were accountable for public money, rather than to present an accurate picture of the government's financial position. Hence, accounts were presented in cash flow terms without any distinction between current and capital outlays. As a result, the proceeds of asset sales were treated exactly like current revenue (or, in some cases, as a reduction in expenditure) and, as far as the Budget was concerned, available for spending in the year in which they are realised.

This kind of dodgy accounting was employed extensively by governments in the 1980s, including the Thatcher government in the United Kingdom and the Hawke–Keating government in Australia. It was gradually recognised that a policy of selling assets to finance current expenditure was unsustainable.

Economists, at least when they were thinking clearly and speaking honestly, were as one in rejecting the most popular political reasons for privatisation: as source of cash for governments or a way of financing desired public investments without incurring public debt.

On the first point, it is a basic principle of economics that the value of a capital asset is determined by the flow of earnings or services it generates. The cash gained from selling public assets comes with the cost of forgoing the earnings it would have generated in continued public ownership. In a world where both governments and markets were perfectly efficient, the cost would be exactly equal to the benefit and privatisation would not change anything. As will be shown, see below, things are more complicated in reality. That doesn't make the idea that selling assets as a source of free cash any more sensible.

A more sophisticated version of the same error is to suppose that governments facing debt constraints that restrict investment in desirable projects can get around those constraints by bringing in private investors. Once again, the problem is that the returns (such as proceeds from toll roads) needed to attract private investors, represent money that could have been used to service public debt. The more private money is used to finance public infrastructure, the smaller the amount governments can invest without running into the same problems that would have arisen if they had taken on the debt themselves. As the exasperated secretaries of Australian state treasuries once put it, privatisation and public private partnerships create no new 'pot of money' to spend on public infrastructure.

Privatisation will yield net fiscal benefits to governments only if the price for which the asset is sold exceeds its value in continued public ownership. This value depends on the flow of future earnings that the asset can be expected to generate, and on the discount rate used to evaluate those earnings.

In some sectors of the economy, particularly those best suited to small and medium-sized business, privately owned firms have advantages that enable them to operate profitably, where publicly owned enterprises cannot generate sufficient returns to operate sustainably. Where the public sector has undertaken such activities for one reason or another, privatisation will yield a net social benefit.

In the case of infrastructure industries, however, the differences between the earnings of private and public firms are relatively small. On the other hand, the cost of capital for private firms is substantially higher than for governments. Over very long periods, and in many different countries, investments in equity have yielded much higher returns, in the long run, than investments in bonds. The annual rate of interest on U.S. government bonds, adjusted for inflation, has averaged between one and two per cent since the late nineteenth century. Over the same period, returns on stocks (dividends and capital gains) have averaged around eight per cent.

In the case of privatisation, the implications of the equity premium arise from the fact that governments can finance investments entirely by issuing bonds, with the guarantee of repayment based on their capacity to raise revenue from taxes. Private corporations must rely on a mixture of equity and debt with the result that, on average, their cost of capital is around six per cent, compared to around two percent for governments. That is, investors value both a government bond returning a safe two dollars each year at one hundred dollars and on a typical investment in company bonds and stocks generating an average of six dollars a year.

This creates a problem for privatisation, which can be illustrated by an example. Suppose a government business enterprise is generating earnings of $60 million each year. At an interest rate of two per cent, that is enough to service the interest on $3 billion in public debt (two per cent of $3 billion is $60 million). Now suppose that the government decides on privatisation. Equity investors will want a return of six percent. If potential buyers don't see any opportunity to increase profits, they will only be willing to pay $1 billion (since six per cent of $1 billion is $60 million). So, if the government uses the sales proceeds to repay $1 billion in debt, saving $20 million a year in interest, it will need to find another $40 million a year to replace the lost earnings of the enterprise they have sold.

On the other hand, if private buyers expect that they can increase annual profits to, say $300 million, they will be willing to pay $5 billion for the enterprise. If the government uses the proceeds to repay debt the interest saving will be $100 million a year, yielding a net fiscal benefit of $40 million a year.

Application of this analysis to Australian privatisations, including those in the electricity industry shows that, in general, they have worsened the fiscal position of the public sector. The main exceptions are cases where private buyers overestimated future profits and paid too much, subsequently selling at a loss. Similar cases have

arisen in recent PPP road deals. On the other hand, there have been many more cases where the public sector has lost badly. Provided private investors accurately estimate the value of future earnings, the sale of government business enterprises will worsen the long-term fiscal position of government.

Effects on consumers

A purely financial analysis of the kind set out above is only a first step in an evaluation of privatisation. If privatisation is accompanied by improvements in service to consumers, or better working conditions for employees, it may be beneficial to society as a whole even if it generates a financial loss to government. Unfortunately, privatisation has rarely produced favourable outcomes for consumers, and never for employees, with the almost invariable exception of senior managers, whose salaries have increased greatly.

The impact of privatisation on prices and service quality has varied, depending particularly on the nature of regulatory changes introduced at the time of privatisation.

In some cases, governments have sought to increase the sale price of assets by raising costs to consumers in the lead up to privatisation, or by allowing price increases after privatisation. The Kennett government imposed price increases of around 10 per cent before the privatisation of the Victorian electricity industry. An example of post-privatisation price increases was the leasing of Australian airports, which was accompanied by large increases in landing charges (up to 100%), increases in other charges, such as parking fees, and the introduction of a range of new charges, such as taxi levies.

However, the price impact of privatisation is more often a delayed effect, arising when privatised firms are able to demand price increases as a condition for new investment. This has been particularly evident in relation to the electricity sector. After an initial period of underinvestment, blackouts and other problems made it evident that an expansion of network capacity was needed. The high rates of return granted on the associated investment resulted in sharp increases in prices.

The application of the principles of competitive neutrality has meant that similar rules are applied to private firms and to corporatised government business enterprises. Thus, increases in the price of electricity have occurred regardless of whether the industry in question has been privatised or merely corporatised. The underlying problem is the application of the principles of market liberalism inherent in the design of the National Electricity Market.

Privatisation of monopolies, when combined with price regulation, has typically led to a reduction in service quality, as monopoly firms seek opportunities to reduce costs and raise profits. Over time, the introduction of steadily more intrusive regulation has reduced both the incentives for lower service quality and the differences in operational efficiency between private and public monopolies.

Privatisation has generally been accompanied by a decline in the safety and reliability of infrastructure services, particularly when account is taken of exogenous technological trends, which have generally improved the reliability of equipment of all kinds. The cost reductions associated with privatisation and, to a lesser extent, corporatisation, have focused particularly on reductions in overstaffing in areas such as maintenance and on the elimination of redundant capital capacity, frequently referred to as 'gold plating'. Other things being equal, cost savings achieved in this way must involve some loss of reliability and, in some cases, safety.

The shift from public to private ownership reduces incentives for safety and reliability. The political costs of failures in infrastructure systems can be severe. By contrast, the costs to private infrastructure owners of occasional breakdowns are relatively modest. Hence, if such outcomes are to be avoided, intrusive regulation is likely to be necessary.

Effects on workers

Like other aspects of micro-economic reform, privatisation has imposed costs on workers in the form of increased stress and a faster pace of work. Although anecdotal evidence of increases in work intensity abounds, statistical evidence is limited. The Australian Workplace Industrial Relations Survey undertaken in 1995 found that a majority of employees reported increases in stress, work effort and the pace of work over the previous year, while less than 10 per cent reported reductions in any of these variables (Morehead et al 1997).

Dawson et al (2001) examine the increase in working hours for full-time workers and conclude (p. 4) that:

> ***For many Australian workers, their families and communities, extended working hours have lead to increased levels of fatigue and decreasing levels of social support. This in turn has the potential to compromise safety and the long-term health and wellbeing of workers and the organisations that employ them.***

Reform of the infrastructure was associated with a substantial reduction in the number of employees. First, the pace and intensity of work was increased in line with general trends in the Australian labour market.

A second factor was the replacement of direct employment by the use of external contractors. The use of competitive tendering and contracting may reduce costs in a variety of ways, but savings commonly arise from reductions in wages and working conditions.

A third factor in reductions in employment in infrastructure service was a reduction in the frequency and comprehensiveness of maintenance. Even though the inherent reliability of mature infrastructure technology has generally improved over recent decades, the period

since the introduction of competitive reforms saw a number of spectacular system failures, such as the Auckland blackout and the Longford gas explosion, Such failures may be attributed, at least in part, to declining maintenance standards.

Public opposition

Privatisation has been, from the start, an initiative of policy elites, with no popular groundswell of support. Nevertheless, in the 1980s, the majority of the general public did not have strong views on the subject one way or another. A study by Jonathan Kelly and Joanna Sikora (2002) showed that in 1986, views on the privatisation of Telstra were about evenly divided.

Advocates of privatisation assumed that the benefits of competition and private ownership would be obvious, and that what they saw as 'emotional' attachment to iconic assets would fade over time. In fact, the reverse has been the case. Public opinion against privatisation has hardened steadily over time, and with experience. By 2002, when the privatisation of Telstra was complete, Kelly and Sikora found that 70 per cent were opposed and only 16 per cent in favour. Similar views applied even to firms like the Commonwealth Bank and Qantas that had been privatised for years.

Opposition was even stronger in the case of Australia Post, the only business in the study still in full public ownership. This position has not changed. After briefly flirting with privatisation, the newly elected Abbott government was forced to repudiate the idea, even though it is almost certain to be recommended by the government's promised Commission of Audit.

Opposition has only grown since then. Polls taken under the Bligh government in Queensland showed opposition by 80 per cent of the public to asset sales. In regional Queensland, over 90 per cent of the public opposed the sale of the QR rail freight business.

Numerous Australian elections have been fought primarily on the issue of privatisation, with invariably catastrophic outcomes for supporters of the policy. A brief listing:

- Queensland 2012: The Bligh Labor government, which undertook an asset sales program in defiance of its own 2009 election commitments was defeated, losing all but seven seats in a Parliament of 89.
- NSW 2010: The Keneally Labor government, which privatised electricity assets, was defeated, losing 32 of its 52 seats in Parliament.
- NSW 1999: The Liberal Opposition, proposing privatisation of the electricity industry, was defeated in a landslide losing 13 of 46 seats and receiving only 33 per cent of the popular vote. The Liberals did not regain office until the 2010 election, when the parties had switched sides on this issue.
- Tasmania 1998: The Rundle government, proposing privatisation of the HEC, was defeated. The Liberals have yet to regain office.
- South Australia 2002: The Liberal government, which had privatised the electricity industry, was defeated. The Liberals have yet to regain office.

Other elections in which unpopular privatisation proposals played a role include the 1993 Federal election (along with the GST, privatisation was a central element of the Coalition policy) and the 2001 ACT election (the Liberal government had sought to privatise the electricity and water provider ACTEW).

Australians are not unusual in their opposition to privatisation. Throughout the English-speaking world, privatisation has been imposed by policy elites on an unwilling public. In the UK, for example, 70 per cent of the public support renationalisation of electricity, gas and water services, and similar proportions support complete renationalisation of the railway industry (the rail track industry has been renationalised, and a PPP arrangement for the London Underground abandoned).

New Zealand is about to hold a referendum initiated by citizens seeking to stop privatisation. Opposition to privatisation is similarly strong in Canada. Even in the United States where public ownership of business enterprises is rare, proposals for the privatisation of the Social Security system were so politically toxic that they had to be rebranded as 'choice' and still proved to be politically unsalable.

A striking irony of Australian privatisation is that many publicly owned assets have been sold to corporations owned by foreign governments, from countries which would not themselves allow foreign ownership of critical infrastructure. Examples from the electricity sector include Singapore, France and China.

Summary

A survey of Australian and international experience yields the following conclusions:

- Privatisation does not improve, and usually worsens, the fiscal position of the governments that undertake it.
- Privatisation has always been politically unpopular, and public opposition has hardened with time and experience of private ownership of public infrastructure.
- Privatisation does not, in general, lead to better outcomes for consumers.
- Privatisation almost always leads to bad outcomes for employees.

THE ELECTRICITY SUPPLY INDUSTRY BEFORE 1992

03

As described by the Australian National Committee of Cigre (1996), the electricity supply industry in Australia developed in the late 19th century, with a mixture of public and private provision.

However, private provision proved uniformly unsatisfactory. Private provision persisted until after World War II in South Australia, with the result that its failure is better documented than in other states.

The private operators of electricity enterprises were unwilling to take the necessary risks to develop public infrastructure and demanded excessive returns when they did so. This was reflected in the key finding of the Royal Commission set up in 1948 by the conservative Playford government to examine the performance of the privately owned Adelaide Electric Supply Company. The Royal Commission (quoted by Linn 1996, p. 47) observed:

> ***Over the period of the last 24 years [to 1948], the Company has paid in dividends and interest nearly two million pounds more than if the Treasury rate had been paid. Future capital costs at Treasury rates would result in reduced capital costs and lower charges.***

On the basis of this and other findings of inadequate performance, Playford nationalised the industry and established the Electricity Trust of South Australia (later ETSA). The point made by the Royal Commission about the relative costs of private and public capital remains at the core of the privatisation debate today, as does the relevance of the statutory authority model adopted by ETSA.

The statutory authority model

The term 'governance' is used to describe the processes by which institutions, including governments and corporations, are made accountable to those whom they are supposed to serve, such as citizens or shareholders.

The period of expansion of government was also, in general, one of improvements in governance, including innovations in organisational design and improvements in accountability.

One such innovation was the statutory authority, developed to provide public services without a requirement for direct ministerial control. Statutory authorities were governed by a board of directors, typically constituted to incorporate representatives of what are now called 'stake-holder groups', including consumers, employees and community organisation, as well as directors chosen for their professional expertise. It is notable that the statutory authority model flourished well before private corporations began to consider relationships with stakeholders as a necessary part of sustainable long-term governance.

The development of statutory authorities provided an organisational form for the production and provision of goods and services by government. Decision-making processes within statutory authorities were less rigid than in the traditional public service, since day-to-day decisions were the responsibility of the board, but they were nevertheless ultimately responsible to governments.

Statutory authorities in the electricity supply industry were constituted with the primary objective of delivering reliable supplies of electricity to the entire community at low cost. A variety of secondary social objectives, such as industry development, were also pursued. Statutory authorities were normally required to cover the full cost of provision through charges for electricity supply, including an amount sufficient to service the cost of capital, and with sufficient surplus to fund new investment.

The benefits of the statutory authority model, relative to the more bureaucratic public service model, can be illustrated by the replacement of the Postmaster-General's Department by two statutory authorities, Telecom Australia and Australia Post, dealing with telecommunications and postal services respectively. This change led to substantial productivity gains, considerably larger than those associated with subsequent corporatisation (Industry Commission 1992).

Integration and natural monopoly

Although the structure of the electricity supply industry varied from state to state, the most common pattern was that of a single, vertically integrated monopoly, covering all aspects of the industry from electricity generation to retail functions such as connections and billing. This structure is consistent with the economic theory of monopoly, which emphasizes the key concepts of natural monopoly, economies of scale and economies of scope.

An industry is a natural monopoly when the services it provides can be produced most efficiently by a single firm. For any given region, the activities of electricity transmission and distribution are generally recognised as having the characteristics of a natural monopoly by virtue of economies of scale. It would be extremely costly to build multiple networks of poles, wires, substations and so on, to serve a single district.

Economies of scope arise when two different activities are most efficiently undertaken by a single firm. The clearest example is that of electricity generation and retail functions. In a market system, the wholesale price of electricity varies greatly over time, depending on the state of demand. In the National Electricity Market, for example, prices can vary from zero to $10 000/MWh. On the other hand, retail prices are generally fixed in advance. In a system where retail and generation firms are separate, both face substantial price risk, which must be hedged at a substantial cost that is ultimately passed on to consumers. On the other hand, with integrated generation and retail firms ('gentailers') the risks wash out – high wholesale prices benefit the generation component of the firm but harm the retail component. Hence, integration of the two makes sense.

The economic benefits of integrating generation-retail and transmission-distribution activities are more subtle. They arise, for example, when it is necessary to choose between building new generating capacity in a given region, or expanding the transmission and distribution network to allow electricity generated elsewhere to be imported. More recently, a range of issues have arisen with the integration of intermittent renewable generation sources, such as solar photovoltaics into grids, and associated pricing systems, designed for coal, which is characterized by a fixed supply of electricity. These difficulties could be resolved directly in an integrated industry.

Criticisms

The main criticism of the statutory authority model was that it gave too much power to workers, and particularly to unions. This criticism was sometimes phrased in the technical terminology of 'total factor productivity' and sometimes in the more explicitly anti-worker rhetoric of 'feather-bedding'. Large reductions in employment in the 1980s and 1990s appeared to confirm the claim that previous employment levels were too high.

The same criticism was applied with respect to capital investment. The old statutory authorities were dominated by engineers, concerned above all with reliability of supply. Critics argued that this led to overinvestment in redundant generating capacity and high-cost distribution networks, pejoratively referred to as 'gold plating'.

In the early period of micro-economic reform, it seemed that these criticisms were validated. The deep recession of the early 1990s depressed demand with the result that there was spare capacity in most states. Interconnection through the National Grid implied a lower need for redundancy in individual states, and therefore heightened the problem of oversupply. Privatised and corporatised enterprises responded by scaling back their investment programs, and slashing their workforces.

In retrospect, reading these criticisms is an exercise in irony. Many of the technical employees sacked in the name of reform were eventually rehired as, or replaced by, contractors, often at a higher cost to the public. More importantly, the savings achieved by dismissing workers responsible for keeping the lights on were entirely offset by increases in the number of highly paid managers and marketers, as well as administrative staff needed to manage the multiplicity of retail operations.

On top of that was the creation of publicly funded regulatory bodies, most importantly the Australian Energy Regulator. The AER is part of the Australian Competition and Consumer Commission, which has an annual budget of over $150 million. Other Commonwealth funded agencies have include the Australian Energy Market Commission (AEMC) and the Ministerial Council on Energy. In addition, state-level regulators continue to regulate electricity distribution. Although no data is available, expenditure by regulated firms seeking to influence the outcomes of the process massively outweighs that of the regulators.

Performance

The history of the Australian electricity sector prepared by the Australian National Committee of Cigre (1996), shows a record of sustained, and sometimes dramatic, improvements in the extent, quality, and cost-efficiency of electricity supply under public ownership. During the decades after World War II, the publicly owned electricity supply industry undertook a massive expansion, extending electricity supply to the great majority of the Australian population and increasing generating capacity from around 3 GW in the early 1950s to 35 GW at the beginning of the reform period in 1990. Over the same period, real electricity prices fell by half, and were among the lowest in the world when the reform process began.

Chart A: Installed generating capacity – Australia

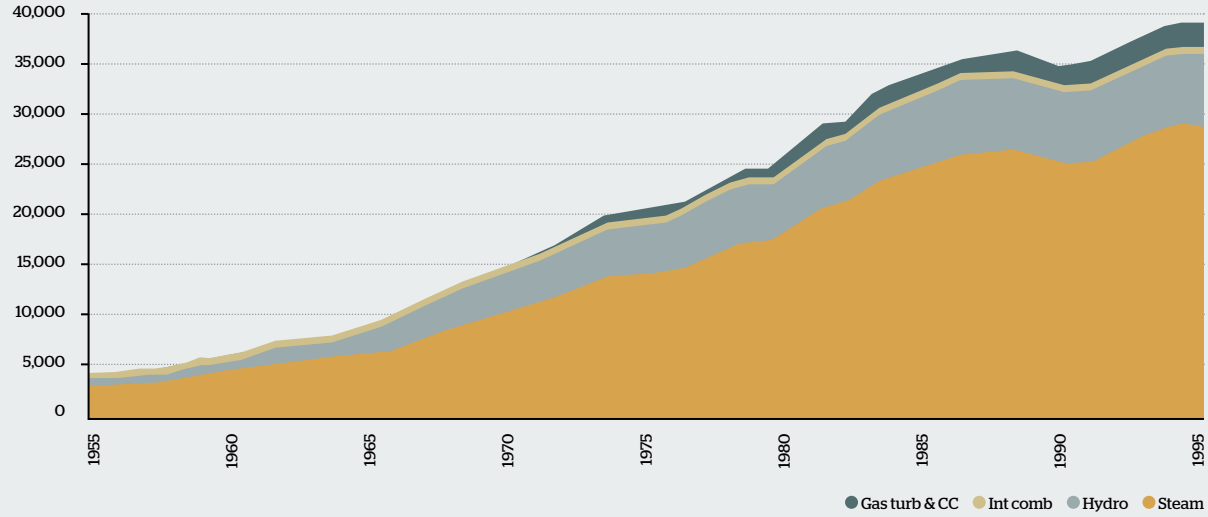


Chart B: Real electricity prices – Australia

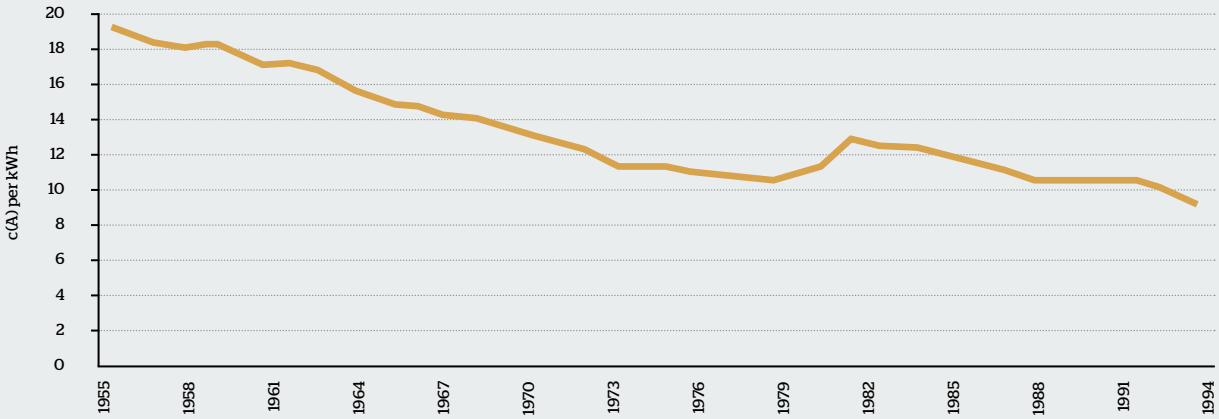
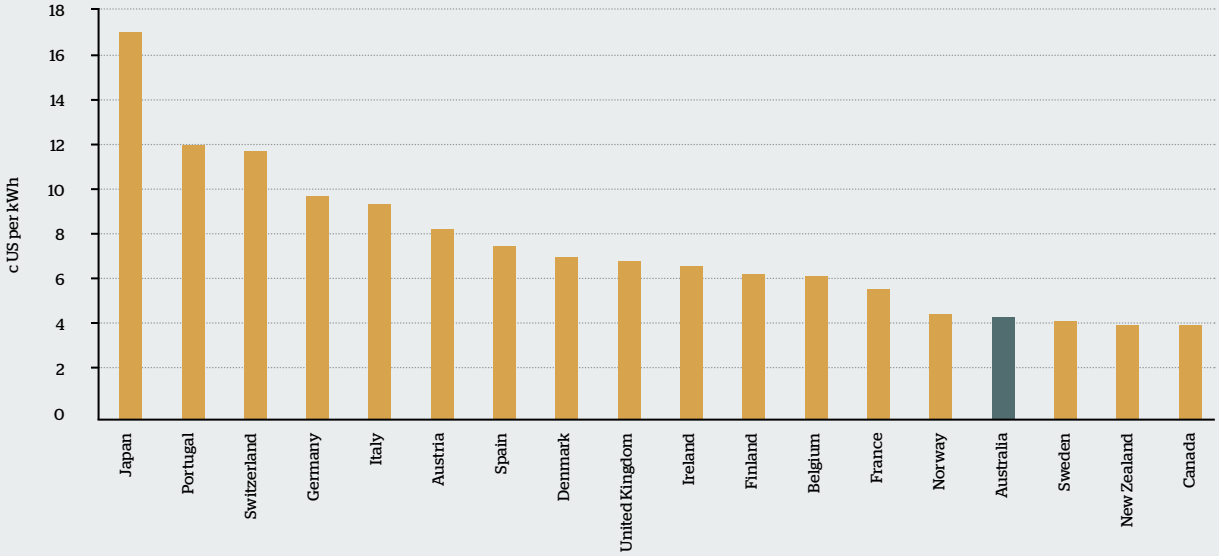


Chart C: Industrial average prices for 1995, compared with other OECD countries



Source: CIGRE (1996) – all charts above.

THE NATIONAL ELECTRICITY MARKET

04

As was observed by the Australian National Committee of Cigre (1996, p11), 'Despite the favourable comparative position disclosed by the statistics there emerged in the early 1990s a political consensus on the need for 'reform' in the industry'.

The National Electricity Market (NEM) was implemented in the context of National Competition Policy at a time when faith in competitive markets was at its peak. The design flaws that have led, over 20 years, to the failure of the NEM were not anticipated.

The reforms of the 1990s were designed to change almost every aspect of the pre-reform institutional framework. It was hoped that the integrated, state-owned and bureaucratically run electricity monopolies would be replaced by a profit-oriented, privately-owned industry, operating in a competitive national market characterised by a clear separation between the activities of generation, transmission and distribution, and retailing. Consumers would be able to choose their supplier in a competitive retail market.

This section describes the process leading up to the creation of the National Grid and the National Electricity Market. A more detailed chronology is given by the Industry Rann (1998).

The National Grid

As was economically rational in the light of Australia's geography, separate electricity supply industries were initially established in each state. Limited connections between Victoria and New South Wales were established as part of the Snowy Mountains Hydro-electric Scheme, which also created a new generator, the Snowy Mountains Hydro-electric Corporation. A link between Victoria and South Australia was added subsequently.

In physical terms, plans for the National Grid involved the expansion of existing interstate links and the creation of a range of new links, including Riverlink between New South Wales and South Australia. The plans for the National Grid also allowed scope for private initiatives to construct additional links. In practice, most of the additional links ran into political and environmental difficulties. In particular, the South Australian government rejected Riverlink when it appeared likely to reduce the sale price that could be realised in the privatisation of ETSA. The creation of a fully operational National Grid is still some years away.

The creation of a National Grid is a necessary condition for the creation of a National Market, but it does not necessarily imply the creation of such a market. In a different policy environment, the decision to build a National Grid could have been the precursor to the establishment of a unified national electricity supplier comparable to Telecom Australia. More realistically, the existing arrangements for trade between the states could have formed the basis for the more frequent and extensive trading made possible by the National Grid.

The National Market

Following the agreement to construct a National Grid in 1991, attention turned to the design of a National Electricity Market, modelled primarily on that of the United Kingdom. Although it was already evident that the British model had serious flaws, it was hoped that Australia could learn from the British experience. The process of designing and implementing the National Electricity Market was undertaken jointly by the National Grid Management Committee and the Council of Australian Governments (COAG). This process was part of the broader agenda of National Competition Policy (NCP).

The core of the Market was the creation of a continuous-time auction market, in which generators and users enter bids on a half-hourly basis. Each bid takes the form of a supply or demand schedule, indicating willingness to supply or demand electricity. These bids are combined to form aggregate demand and supply schedules.

Because available capacity and consumption can fluctuate, market clearing is undertaken at five-minute intervals. The intersection of the aggregate demand and

supply schedules determines the dispatch price required to equate demand and supply for the given five-minute period. All generators with bids less than or equal to the dispatch price have their bids accepted, and, conversely, all users with bids greater than or equal to the dispatch price have their demand met. These prices are averaged over a half-hour period to determine a spot price, which is the price received by generators and paid by purchasers. In addition to spot purchases, participants in the market may enter into long-term bilateral contracts or trade in a forward market. The Australian spot and forward markets were operated by a private limited-liability company — the National Electricity Market Management Company (NEMMCO). The Australian Energy Market Operator (AEMO) replaced NEMMCO and related bodies in the gas industry in 2009.

Disaggregation

Before the reforms, the electricity industry displayed a high degree of vertical and horizontal integration. The supply of electricity was, in most cases, an integrated monopoly, which provided all electricity services, from generation, transmission and distribution to metering and billing, and even mined some of the coal used for generation.

A crucial element of the reforms was vertical and horizontal disintegration of the industry. Vertical disintegration was undertaken by separating the industry into separate components of generation, transmission, distribution and retailing. Each of these components was horizontally disaggregated into separate firms to encourage competition.

An aggressive approach to horizontal disaggregation was consistent with the policy atmosphere of the early 1990s, which saw, for example, the construction of parallel optical fibre telecommunications networks in several Australian cities. It was also encouraged by a critical evaluation of the British electricity market. Green and Newbery (1992) examined the British market design, and concluded that the market structure would allow for the extraction of substantial monopoly rents.

The designers of the Australian National Electricity Market sought to avoid the anti-competitive features of the British market, and therefore encouraged the breakup of state electricity generation enterprises on horizontal as well as vertical lines. As part of this process, ETSA was broken into separate enterprises providing generation (Flinders, Optima and Synergen, transmission (ElectraNet), distribution (ETSA Utilities) and retail (ETSA) services.

The restructuring of the electricity industry was based on the presumption that economies of scale and scope are relatively unimportant. The vertical separation of generation, transmission and distribution eliminates any economies of scope that might have arisen with an integrated supplier. Moreover, the creation of a number of small generators implies the loss of economies of scale that might be achieved by larger firms. An alternative interpretation of the restructuring process is that the breakup of state electricity monopolies is a prelude to reintegration of the industry through mergers between companies operating in different states, most of which, in turn, would be subsidiaries of multinational electricity enterprises.

Retail contestability

Initially electricity consumers were supplied by the existing distribution enterprises at prices fixed by regulation. The final stage of implementation of the NEM involved a gradual shift to retail 'contestability' in which consumers would be able to choose a retailer for their electricity. The retailer would be responsible for purchasing wholesale electricity, paying the distributor for the use of the network and for services such as billing and metering. Distributors were allowed to continue to provide retail services, but were required to undertake elaborate 'ring fencing' exercises to ensure that their retail services did not obtain unfair advantages as a result of joint ownership.

Retail contestability was initially introduced only for large and medium-sized consumers. Because the NEM was introduced at a time of excess supply, prices in the wholesale electricity market at this time were well below their long-run average level. These price reductions were passed on to contestable customers, while retail consumers continued to pay fixed prices set roughly equal to long-run average cost. It was widely suggested that, when full retail contestability was introduced, ordinary consumers would enjoy the benefits of competition, previously confined to large businesses.

In reality, the period of excess supply was short-lived. Even before the introduction of full retail contestability, wholesale prices had risen and there was considerable pressure to pass these increases on to households as well as to contestable customers.

The separation of retailing and distribution was based partly on the belief that consumers would benefit from a choice between competing packages of electricity pricing and billing, and partly out of concern to limit, as far as possible, the natural monopoly component of the industry. However, for most households, and particularly in the absence of sophisticated metering, electricity is a fairly simple commodity. Many householders would have preferred to continue buying their electricity from the distributor, as they have done in the past, at stable prices. Despite the rhetoric of choice, this simple option was not available, or was subjected to steep price increases.

The organisation of the National Electricity Market and the retail electricity market also implied the creation of a wholesaling function in electricity. Since electricity is purchased in five-minute blocks in the market, while retail consumers face constant prices over periods of a month or a quarter, it is necessary that some market participant

should undertake the function of buying electricity at the spot price and supply it in wholesale quantities at a stable wholesale price. This function is conceptually distinct from the retail activity of providing metering and billing services in return for a mark up on the wholesale price. In much discussion of the electricity market it seems to be assumed that wholesaling will be integrated with retailing. However, as is argued below, the wholesaling function must be primarily concerned with risk management, while the retailing function is concerned with customer service. The joint provision of wholesale and retail services worked poorly, and retailers were eventually separated or acquired by generators.

Pool markets and price risk

The core of the NEM was the creation of markets in which generators sold electricity to wholesalers and retailers or directly to customers. Prices are highly variable, ranging from zero to $10 000 a megawatt hour (MWh).

The problem of price risk in the National Electricity Market is associated with the more general issue of prices as market signals. Prior to the introduction of the National Electricity Market, state electricity enterprises normally set prices so as to recover the average cost of production including a return to capital invested in the enterprise.

In a competitive electricity market, by contrast, generators will normally be willing to supply electricity whenever the price exceeds the marginal cost of generation. However, in the short run, generating capacity is fixed. When there is excess capacity, the competitive equilibrium price will be equal to marginal cost for the marginal generator, and will normally be less than the long-run average cost of production. By contrast, when generating capacity is fully used, the price will be determined by the amount customers are willing to pay for an additional unit of electricity. This amount will normally be more than the long-run average cost of generation and sometimes much more. In situations of excess demand, the pool price can reach up to $5000 per megawatt-hour, and would rise higher if this price were not set as a maximum.

The pool price is therefore variable over time, with long periods in which prices are below average cost being offset by relatively brief peak demand periods with very high prices. However, if new investment is to be undertaken in the industry, the average price received over the long run must be equal to the average cost of generation including a return to capital invested in construction of new plant.

Because investment will not take place while prices are consistently below the level required for profitability, price fluctuations will tend to cancel out in the medium term. Sustained periods of low prices will result in the cessation of new investment. Growth in demand and aging of existing plant will increase the frequency of peak demand periods with associated high prices.

Although price variations will tend to cancel out, this will not fully eliminate risk. Under the pool system, the profitability of generators depends heavily on the relatively small number of periods of peak demand. A single hour in which the price is at the maximum of $5000 per megawatt-hour produces the same gross returns as ten days during which the price is $20 per megawatt-hour. When fuel costs are taken into account, the disparity is even greater. Hence, the net return to generators over a given period may be significantly affected by the occurrence of a few more (or less) hot days than average. Such random shocks will eventually cancel out, but only over periods of five to ten years or more.

The introduction of the National Electricity Market took place at a time when there was some overcapacity in New South Wales and Victoria. This effect was exacerbated because the National Electricity Market has been introduced in stages. Initially, only large and medium-sized users have access to the pool and generators can sell part of their output to residential users at a fixed price. With a captive market, generators will be unwilling to close down their plant, even if some output must be sold into the pool at very low prices.

Residential consumers missed out on price reductions, which, because of falling fuel prices and interest rates, they would have received under average cost pricing. By the time the market became fully contestable, much of the current excess capacity had been absorbed and high peak prices became more common.

Privatisation and the NEM

The implementation of the NCP reforms did not require privatisation. Indeed, the terms of reference of the Hilmer Committee required them to identify policies that would enable public and private enterprises to compete on equal terms. Similarly, the Industry Commission a strong advocate of NCP, stated:

> ***The South Australian Government would not be prevented from continuing to own the various businesses that would be created by restructuring ETSA along the lines proposed.***
>
> *(Industry Commission, cited by Spoehr and Quiggin 1998)*

Nevertheless, the need to comply with competition policy has been used as a pretext by governments wishing to privatise government business enterprises in the electricity industry and elsewhere.

The idea that the NEM necessitated privatisation was first put forward in South Australia. The alleged risk of losing Commonwealth 'competition payments' to the value of $1 billion was central to the early debate on whether ETSA should remain in public ownership.

This argument was shown to be spurious in an analysis by the Auditor General, but the push for privatisation continued. In response to the release of the Auditor General's Report released in December 1997, the Government claimed that the financial risks to the State of retaining the South Australian electricity industry in

public ownership were so great that it was necessary to sell the industry.

International experience

Advocates of privatisation and competitive deregulation of electricity markets have relied heavily on the existence of an international trend in favour of these policies. However, recent developments have undermined many of these arguments.

Competitive electricity markets broadly similar to the Australian National Electricity Market have been established in a number of countries. None have delivered on their initial promise of competitive energy markets delivering stable supply at low cost. Most have experienced market manipulation, sometimes leading to a total meltdown of the system, as in California. Markets have performed particularly poorly in generating incentives for new investment and in dealing with the challenges posed by climate change, including renewable energy and energy efficiency initiatives.

In most countries, the experience of competitive electricity markets has been broadly similar to that in Australia. The introduction of competition into systems with reserve margins sufficient to deal with unexpected failures in supply or surges in demand has permitted an immediate reduction in prices. In combination with regulatory incentives such as 'CPI-X' price mechanisms, this has resulted in a sharp drop in investment. Under conditions of growing demand, inadequate investment has resulted either in price spikes or in system failure. Political pressure has then forced regulators to offer more generous incentives for new investment, particularly in distribution, leading to increased prices. Incentives for renewable energy have increased prices further, but have also served as a scapegoat for cost increases unrelated to renewable energy.

United Kingdom

The UK system introduced in the early 1990s allowed for electricity to be sold both through long-term contracts and through a spot market or 'Pool'. Serious problems soon emerged. To maintain high sale prices, the generating component of the former public monopoly was divided into only two main firms. In combination with design features of the Pool, this gave rise to opportunities for the two main suppliers to extract monopoly rent through strategic bidding. In 1998, the Pool was abolished.

California

The Californian market, like that in Australia, was established at a time of excess supply of electricity, and took the opposite approach to that embodied in the 1998 reforms in the United Kingdom. Long-term contracts were prohibited and all sales were required to go through the spot market. Moreover, retail prices for most consumers remained fixed.

Problems with the Californian system did not become evident until the (northern) summer of 2000, when the system was barely able to meet peak demands. By the end of 2000, the market price of electricity had risen from $50/MWh to $500/MWh. The main distributors, Pacific Gas and Electric and Southern California Edison, who were required to buy electricity at market prices and sell it at fixed retail prices, faced bankruptcy. On January 8, 2001, the State Governor announced that the deregulation scheme, which he called a ' colossal and dangerous failure', would be abandoned (Davis 2001).

Supporters of the Australian electricity reforms have generally sought to play down the difficulties experienced in the United Kingdom and to argue that the failure of the Californian system was due to incomplete deregulation. But this assumption should be subject to important qualifications.

First, as will be argued below, any system of electricity markets faces a tension between the short-term function of electricity prices in allocating a scarce and non-storable resource and the long-term function of providing appropriate investment signals. Neither in the United Kingdom nor in California have these roles been properly reconciled.

Second, many Australian advocates of electricity reform have relied on short-term experience of declining prices to argue that the reforms have been beneficial. As the Californian experience shows, an excessive focus on reducing prices in periods of excess supply can contribute to system failure in periods of excess demand.

Third, the Californian electricity crisis gave rise to numerous allegations of collusive or otherwise monopolistic behaviour by market participants. There is no reason to suppose that similar market manipulation is not feasible in Australia.

Fourth, domestic criticism of the Californian arrangements was led by the Enron Corporation, the leading participant in, and most prominent advocate of, the deregulated energy trading system. Enron itself has now collapsed, primarily as a result of large losses from related-party transactions, casting doubt on its claims that existing regulations were unduly restrictive. Implications for Enron's Australian energy trading operations remain unclear.

Finally, it is always possible, ex post, to explain the failure of a system in terms of inappropriate implementation. A crucial feature of system design is that systems should be able to absorb minor errors and unexpected shocks. Repeated failures, no matter how easily explicable in retrospect, are evidence that the system as a whole is flawed.

The failure of the NEM

The National Electricity Objective, as stated in the National Electricity Law is:

to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to:

1. price, quality, safety, reliability, and security of supply of electricity; and
2. the reliability, safety and security of the national electricity system.

This objective has clearly not been met by the existing system. The main failures are:

a. **Pricing:** electricity prices have risen greatly, reversing a long-term declining trend under the previous system of integrated publicly owned electricity supply systems.

b. **Reliability:** the shift to market-based systems was followed by a series of supply failures, which necessitated costly investment in distribution networks at high cost to consumers.

c. **Quality:** competition has led to substantial churn in retail markets, but customer satisfaction is very poor, as bad as that for banks.

d. **Efficient investment** – the pricing system has not delivered coherent signals for investment. In particular, the existing system has failed to cope with the entry of renewables.

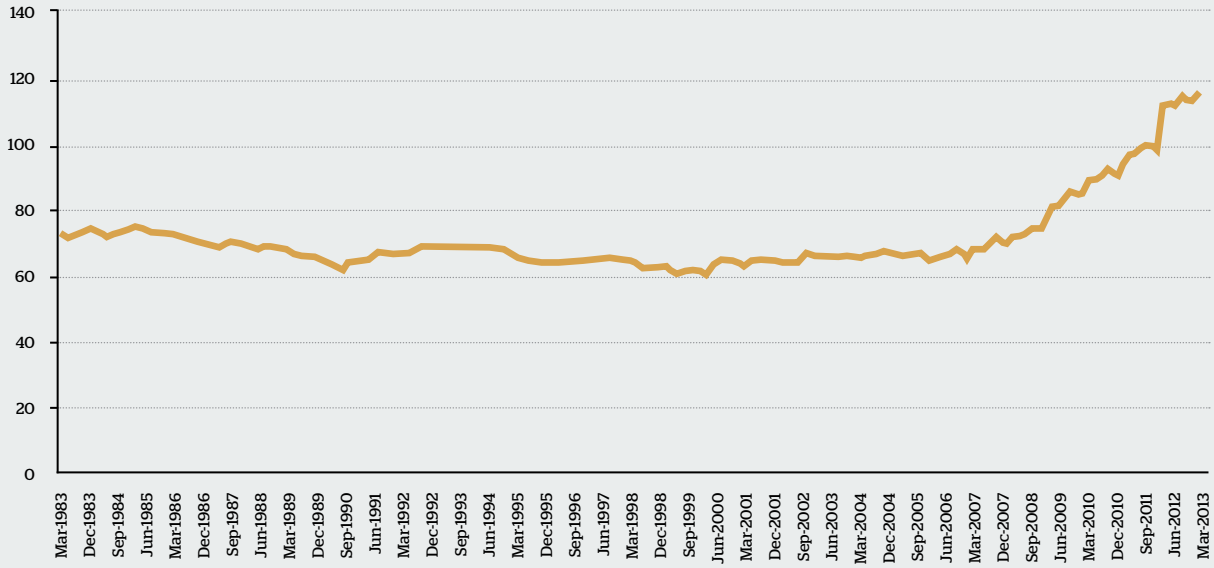
e. **Efficient operation** – resources have been diverted from operational functions to management and marketing, resulting in higher costs and poorer service.

These failures are not accidental. Rather they can be explained by fundamental and incurable flaws in the NEM model of pricing, regulation and incentives for investment. Marginal adjustments such as those being proposed at present will inevitably prove inadequate. The only satisfactory option is a substantial shift away from reliance on artificial markets and the introduction of strategic and operational planning for the national grid.

Retail price outcomes

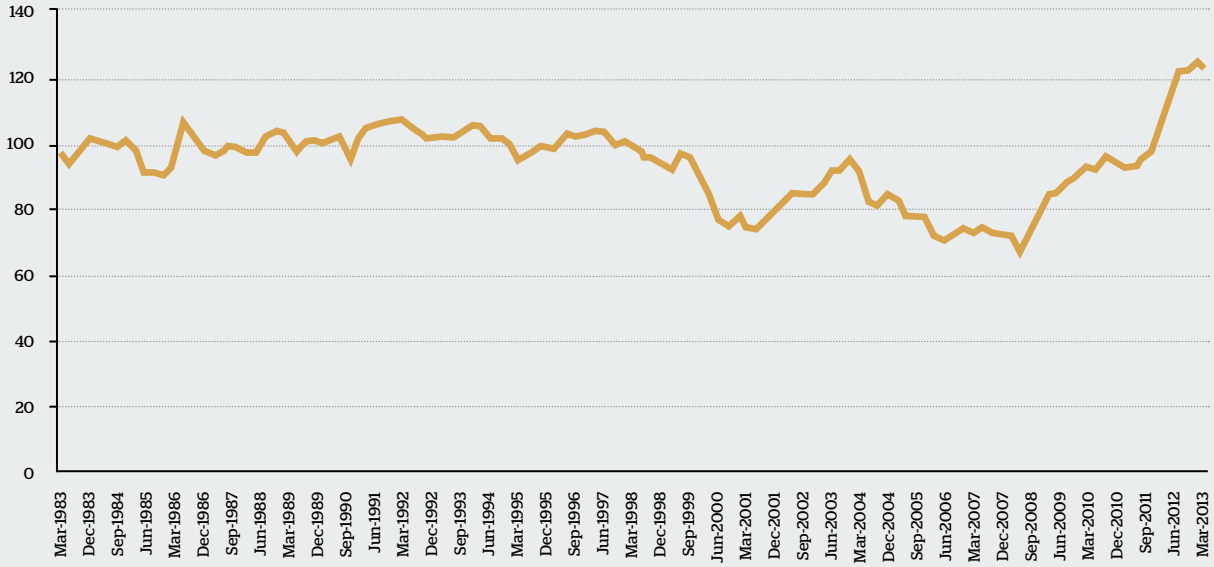
In the early years of the NEM, prices retail fell modestly. This reflected both the long-term downward trend over the 20th century, and the fact that, at the commencement of the NEM, the industry had significant reserve capacity, which was mistakenly viewed as excess capacity. However, from 2005 onwards prices have risen sharply.

Chart D



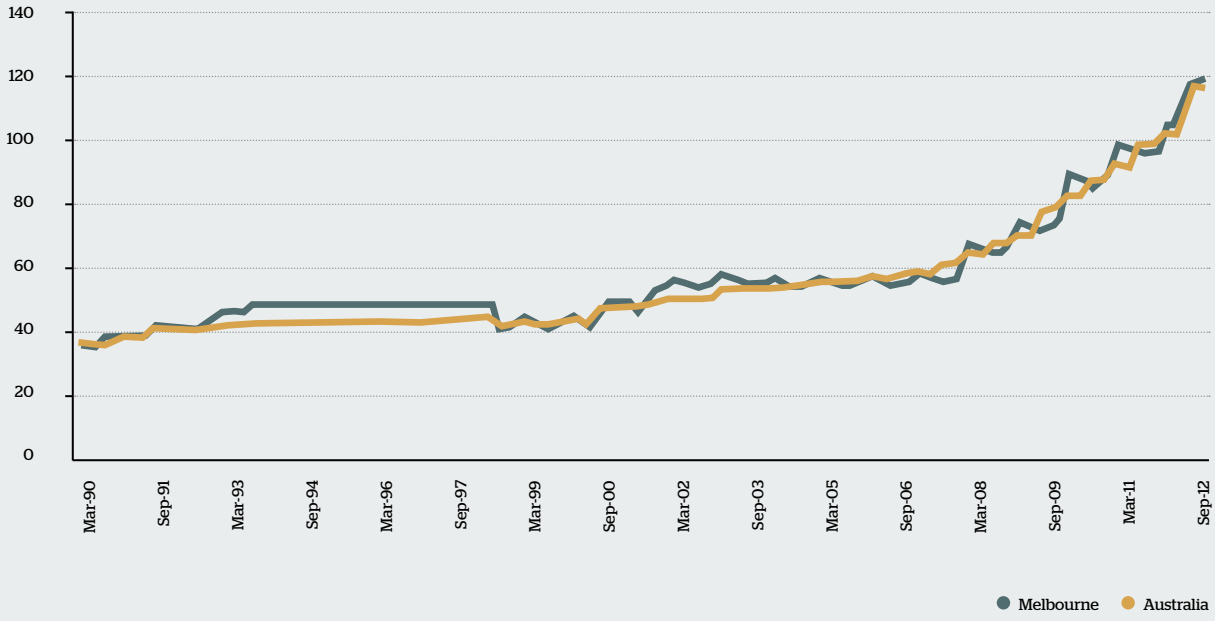
The main early beneficiaries of the NEM were large users, who were the first to gain access to unregulated prices. Because of the perceived excess of capacity, electricity generators were willing to offer discounted prices to these users. However, as with general retail customers, these gains were eroded over time, and electricity prices have now risen relative to the general cost of inputs to manufacturing.

Chart E: Larger-user price outcomes



Advocates of privatisation sometimes claim that the increase in prices is due to public ownership and that Victoria, which was the first state to undertake privatisation, has experienced smaller price increases than other states. This claim is often supported by selective reporting of data.

Chart F: Melbourne and Australian electricity indices compared



Source: ABS (2013a) Consumer Price Index, Australia, Dec 2012, Cat no 6401.0, 23 January.

Labour costs and productivity

One of the primary aims of the NEM reforms was to drive improvements in labour productivity. Efforts to reduce perceived overstaffing and 'feather bedding' were directed primarily at technical and trade workers, who experienced successive waves of redundancies over the past decade. However, these reductions in employment have been more than offset by increases in the number of managers, sales workers and marketing professionals needed to operate in the new market framework.

A study of the electricity, gas and water industries undertaken by the Australia Institute found that the number of technical and trades workers employed in these industries had grown by less than the workforce as a whole between 1997 and 2012 (28 per cent as opposed to 37 per cent). By contrast, the number of managers had more than doubled, HR and marketing professionals had more than tripled, and the number of sales workers had risen by 500 per cent. At the beginning of the period, technicians outnumbered managerial and retail staff. By the end, the reverse was true. In particular, 'in 1997 there was a manager for every 13 workers, but by 2012 there was a manager for every nine workers'.

The failure of the pricing model

In a theoretically ideal competitive market, prices perform at least four distinct functions.

- Prices provide a signal to consumers about the social cost of the product they are consuming. Consumers will buy the product if, and only if, its value to them exceeds the price, which represents the value of the resources used to produce it.
- Conversely, prices provide a signal to producers about the value of their product. Firms will produce more (or less) if the price is greater (or less) than their cost of additional production.
- In addition, prices provide a signal to firms on whether to invest in additional production capacity. If prices are high, and expected to remain so for some time, the industry will attract new investment. If prices are low, there will be no new investment and existing capacity will be scrapped or allowed to run down.
- Finally competitive prices ensure that, in the long run, firms earn the market rate of return on the capital they have invested, no more and no less.

The designers of electricity markets have attempted to reproduce all of these outcomes but have failed. There are several critical problems.

First, there are problems generic to network infrastructure industries. The physical network is a natural monopoly, which means the market is best served by a single set of wires or pipes. In the absence of regulation, a monopolist will charge prices that are too high, with the result that they will not perform their signalling functions properly. Consumers will get less than they should at a higher price, profits will be excessive and investment will be distorted.

These problems can be reduced, though not eliminated completely, by comprehensive price regulation. But when privatised firms are regulated in this way, their primary incentive is to 'game' the system to secure higher returns. This often entails delaying investment (a pattern seen with Telstra on broadband.

Another problem is specific to electricity. Because electricity can only be stored at high cost, using batteries or pumped storage, the cost of additional generation can fluctuate wildly. When all available generation capacity is in use, additional demand can only be met by such measures as 'load-shedding'. The Australian pool market price of power can rise as high as $10 000/MWh, and even this is not high enough for the market to perform as it is supposed to. On the other hand, the price can be zero or even negative on nights when demand is low and operators prefer to keep their plants running than to shut them down and restart the next day.

On the demand side, most consumers face fixed prices, and therefore take no account of the actual cost of the electricity consumed at any given time. Attempts to address this problem through 'smart meters' have so far had little, if any, success.

Private rates of return

Electricity networks are highly capital-intensive. As a result, the cost of electricity is predominantly determined by the capital value of the network and the rate of return earned by its owners. In the pre-reform era, public electricity enterprises funded their investment by issuing bonds, normally at a small premium to the government bond rate. In some cases, governments guaranteed these bonds.

However, the primary reason for the low rate of return demanded by investors is that, under normal conditions, the risk of these investments is very low. The only major default by a publicly owned electricity utility in a developed country was the collapse of the Washington Public Power Supply System in the early 1980s, following the failure of a massive project to build five nuclear power stations.

By disaggregating the industry, the National Electricity Market created new sources of risk. Most notably, fluctuations in the pool price created risks for generators (who lost money when prices were low) and for retailers (who lost money when prices were high). Under the previous integrated system, these gains and losses netted out automatically. By contrast, the NEM required either a complex system of hedging markets or the integration of generators and retailers to form 'gentailers'. Neither worked perfectly and the resulting costs were passed on to consumers.

Source: ABS (2013a) Consumer Price Index, Australia, Dec 2012, Cat no 6401.0, 23 January.

By contrast, the risk associated with the regulated monopoly components of the industry, transmission and distribution, remained low. The standard method of regulation involved fixing allowable revenue based on an estimate of the efficient costs of operation.

The dominant component of efficient costs was the need for a return to capital. Under National Competition Policy, regulators were required to set a rate of return derived from private enterprises. This normally involved setting a 'Weighted Average Cost of Capital', which was substantially higher than the true cost of capital for private firms, let alone the government bond rate that had previously formed the basis of electricity pricing.

The result of the requirement for excessive rates of return is that distributors have had a strong incentive to 'game' the system. This is a two-step process. First, distributors make arguments that the required level of capital investment, to which the rate of return is applicable, is very high. Then, to the extent possible within a given regulatory period, they under-invest and claim to have made gains in efficiency. The success of this process can be seen from the fact that the market value of distribution assets is substantially greater than the value imputed by regulators.

The Victorian AER recorded the following fairly typical experience for 2006-10. In assessing the Tables note that the typical post-tax real rate of return on government bonds is around one per cent. The regulators expected to give returns of six to seven per cent, but the actual returns were closer to 10 per cent.

Table 1: Real pre-tax return on DNSPs assets (per cent)

	2006	2007	2008	2008	2010
Jemena					
Actual	10.0	10.9	10.8	8.6	10.0
Forecast	8.0	7.2	6.5	5.2	6.8
CitiPower					
Actual	9.8	9.4	8.5	8.9	8.8
Forecast	7.6	7.0	6.6	5.9	6.7
Powercor					
Actual	9.6	9.4	9.0	9.2	9.9
Forecast	7.5	6.9	6.2	5.3	6.4
SP AusNet					
Actual	10.0	8.9	8.0	5.0	6.9
Forecast	8.5	7.6	6.7	5.5	5.6
United Energy					
Actual	8.8	9.1	8.4	7.3	8.5
Forecast	7.3	6.8	6.0	6.2	7.2

Table 2: Regulated expected real pre-tax return on assets 2006-2010 (per cent)

	After-tax return	Tax allowance	Efficiency carryover	Total
Jemena	5.9	0.5	0.3	6.7
CitiPower	5.9	0.5	0.3	6.7
Powercor	5.9	0.4	0.0	6.3
SP AusNet	5.9	0.5	0.4	6.8
United Energy	5.9	0.4	0.5	6.7


for
sale

FISCAL ANALYSIS OF ELECTRICITY PRIVATISATION 05

Over the past 20 years, proposals for partial or complete privatisation of the electricity industry have been put forward in most Australian state and territories by both conservative and Labor governments.

Some of these proposals have been implemented (in Victoria and SA, and partially in Queensland and NSW), while others have been rejected (in Tasmania, the ACT and in NSW in the 1990s). This variety of experience allows for a more comprehensive assessment of the costs and benefits of experience than is usually feasible.

In particular, it is possible to assess the effects of privatisation on public finances by comparing the flow of financial benefits received from asset sales to the flow of earnings received under continued public ownership. The key observations to emerge from such an exercise are:

- Contrary to claims made in the course of privatisation campaigns that public enterprises represented a burden on the public, these enterprises have been consistently profitable.
- Although the relative profitability of generation, distribution and retail components has fluctuated, the profitability of the industry as a whole has increased steadily in all jurisdictions.
- In all cases, the option of continued public ownership yielded long-term returns as good as, or better than, the option of selling assets and using the proceeds to repay debt.

Victoria

The election of the Kennett government in Victoria coincided with the development of the National Electricity Market, and the broader process of National Competition policy. Kennett's election followed the deep recession of 1989-91, which led to the collapse of the State Bank of Victoria and other state-regulated financial institutions such as the Pyramid Building Society. The recession hit Victoria particularly hard, and was associated with a substantial increase in state debt. Thus, Kennett was seen as having a mandate to undertake asset sales and reductions in public expenditure.

Before beginning the privatisation process, the Kennett government imposed a 10 per cent increase in electricity prices. As a result, the profitability of the industry and the attractiveness of assets to buyers, were enhanced. In line with the requirements of NCP, structural separation was imposed on the industry, breaking the integrated State Electricity Corporation of Victoria (SECV) into a large number of separate firms.

The major power stations, Loy Yang A and B, Yallourn and Hazelwood were sold separately. The distribution and transmission sector was broken up into six firms: Eastern, Powercor, Solaris, CitiPower, United, Powernet. In common with the approach used elsewhere in the NEM, retail activities were initially allocated to the distributors.

Initial evaluations of the privatisation were generally positive, reflecting both the dominance of market liberal thinking and some apparently favourable short-term outcomes (Institute of Public Affairs 2000). The prices received for the electricity assets higher than was expected on the basis of past privatisations. Moreover, deregulated prices offered to large customers were well below those that had been charged by the SECV. The expectation was that full contestability, introduced in 2002, would extend similar benefits to small business and household customers.

In reality, the low prices offered in the early stages of market contestability proved to reflect the incentives inherent in the NEM to run down reserve capacity (criticised at the time as 'gold plating'). Private owners cut back on new investment, particularly in system reliability. By the time full contestability arrived in 2002, there was little excess capacity left. Household and small business consumers, who lost access to publicly regulated prices at this time, faced increases in prices, which accelerated over time.

In the subsequent decade, outcomes for consumers have become steadily worse, as elsewhere in Australia. Under privatisation and corporatisation, electricity distributors

have been unwilling to invest in new network infrastructure unless they are guaranteed high rates of return.

The same pattern has been observed in other privatised infrastructure industries, such as ports, airports and telecommunications. Private owners have been able to realise cost savings in operating capital assets purchased from the public sector (often by reducing wages and working conditions). But they have consistently failed to deliver new capital investment at a cost comparable to that of the public enterprises they displaced.

Quiggin (2003) concluded that estimates of the fiscal benefits had been overstated, and that the sale was at best neutral in fiscal terms. The core of the analysis in Quiggin (2003) involved projecting the earnings of the SECV under continued public ownership based on its published business plan for the first ten years, and constant earnings thereafter. The discounted value of earnings was estimated at between $20 billion and $30 billion, compared with a sale price of $20 billion.

Using the information in the SECV business plan, it is possible to estimate the value of the earnings the SECV would have generated in continued public ownership. For this purpose it is assumed that the productivity and price changes in the business plan would have applied for a period of ten years, after which earnings would have remained constant in real terms. The net present value of earnings is calculated using a real discount rate of 4 per cent, which is about equal to the average real interest rate on government bonds for the period, though slightly higher than that used by the Regulator-General. (The effect of using a higher rate is to reduce the value of the enterprise in continued public ownership.) To test the sensitivity of the analysis to the discount rate, an alternative rate of 6 per cent is also used.

At a real discount rate of 4 per cent, the present value of the earnings of the SECV under the business plan scenario would have been around $30 billion. At a discount rate of 6 per cent, the present value falls to $21 billion, a little more than the amount actually realised when the assets were sold This is consistent with the observation in the introduction that the reduction in interest payments on public debt achieved as a result of privatisation was about equal to the earnings foregone.

Quiggin (2003) concluded that the fiscal results of privatisation was roughly neutral, and observed:

> *Compared to other instances in which governments have sold public infrastructure or government business enterprises providing infrastructure services the neutral impact observed from the privatisation of the Victorian electricity industry is relatively favourable. Most such privatisations and private infrastructure deals, including Victorian examples such as the CityLink project, have generated substantial losses in public sector net worth.*
>
> *Three main factors explain the relatively favourable outcome of electricity privatisation in Victoria. First, the privatisation process was designed to maximise fiscal returns, whereas many privatisations have been focused on a range of political objectives, some of which are mutually inconsistent. Second, the Commonwealth government subsidised the deal. Finally, and most importantly, the buyers paid too much. In particular, the buyers of regulated transmission and distribution assets clearly expected more favourable treatment from regulators than they actually received.*

Subsequent experience suggests that the losses from privatisation have increased since the analysis of Quiggin (2003) was undertaken. Most importantly, the regulated charges for distribution monopolies, which were held down in the early years following privatisation, have been increased drastically, with the aim of encouraging new investment. As a result, retail prices have risen sharply, as have the profits of electricity distributors.

South Australia

Before the reforms, the electricity industry in South Australia, as in other states, displayed a high degree of vertical and horizontal integration. ETSA was an integrated monopoly, which provided all electricity services, from generation, transmission and distribution to metering and billing, and even mined some of the coal used for generation.

A crucial element of the reforms was vertical and horizontal disintegration of the industry. As part of this process ETSA was broken into separate enterprises providing generation (Flinders, Optima and Synergen, transmission (ElectraNet), distribution (ETSA Utilities) and retail (ETSA) services.

On 17 February, 1998, the South Australian government announced that it intended to privatise the state's electricity industry, thereby abandoning a commitment made during the 1997 election campaign. Although the necessary legislation was initially blocked by the Legislative Council, the defection of two Labor members enabled the government to sell a long-term lease on the assets of the electricity industry.

On 12 December 1999, the government announced the long term lease of its distribution company ETSA Utilities and the sale of retail company ETSA Power for a total of $3.5 billion (later increased to $3.55 billion when ETSA was resold by the leaseholders). The remaining parts of the industry (the three generation companies Flinders, Optima and Synergen, and the transmission company ElectraNet) were leased or sold during 2000.

The Olsen government's case for privatisation was based on claims that private investors would be willing to pay a price for ETSA that exceeded its value in continued public ownership, and on arguments about the financial and other risks associated with participation in the National Electricity Market. In essence, the Olsen government's case was the opposite of that argued by the 1948 Royal Commission.

Quiggin and Spoehr (1998) criticised the government argument for failing to take account of retained earnings and other income derived from ETSA, and argued that a sale price of between $6 billion and $7 billion would be needed to offset the loss of income to the State associated with the sale or lease of electricity assets. Quiggin and Spoehr also criticised the government's claims regarding financial risks, and argued that the majority of electricity income was derived from the distribution and transmission sector, a low-risk natural monopoly. Projections of revenue, costs and profitability were presented.

It is now possible to evaluate many of these arguments in the light of experience since 1998. As will be shown below, the estimates of Quiggin and Spoehr (1998) were fairly accurate, while many of the claims made by the Olsen government have been proved false.

Finally, the government argued that the projections of earnings growth presented in Risky Business for the period after 1998-99 were over-optimistic. The government claimed that the estimates of one per cent and three per cent real growth used in the central and high projections were too high, but did not offer any alternative estimate.

Subsequent performance has vindicated the analysis presented in Risky Business on a number of points. Given the multiple changes of ownership following privatisation, it is only possible to consider the distribution business, ETSA Utilities. By 2012, EBIT for ETSA Utilities (now renamed as SA Power Networks) had risen from $350 million in 2000 to $642 million, an annual rate of increase of five per cent. Adjusting for inflation of two to three per cent, this implies that earnings have risen at a real rate of two to three per cent per year, consistent with the upper range estimates of Quiggin and Spoehr (1998).

The observed outcome supports the conclusion of Quiggin and Spoehr (1998) that the privatisation of ETSA has cost the South Australian public between $1 billion and $2 billion, and that an outcome at the upper end of this range is likely.

NSW

The Carr government in the 1990s first raised proposals for privatisation of the NSW electricity industry. The government commissioned reports from consultants (the Allen Group and Ord Minnett) and a committee chaired by former ALP National President Bob Hogg, all of which supported privatisation. The estimated sale price for the NSW electricity industry was around $20 billion. However, the proposal was rejected by the Labor Party conference, with the result that the industry remained in public ownership until 2010 when it was partially privatised.

In the first stage of privatisation, electricity retailers Country Energy and Integral Energy, and the output from power generator Eraring were sold to Origin Energy for $3.3billion.

Energy Australia, the output from the Delta West generator, the Mount Piper Extension and two Marulan development sites, were all sold to the Hong Kong company TRUenergy for $2 billion.

These deals were highly controversial, with the majority of board members of Delta and Eraring resigning in protest, and allegations that the sale price was only half the true value.

(Read more: http://www.smh.com.au/nsw/sold--state-gets--53b-for-electricity-assets-20101214-18wwe.html - ixzz2hl74mXMP)

In 2012, the O'Farrell LNP government announced the sale of the remaining generation assets, with an expected price of $3 billion. However, based on the sale price achieved for the assets of Eraring ($50 million) and Delta West ($160 million), the NSW Government is likely to fall well short of its stated $3 billion sale price.

It is possible to compare the actual outcomes with what would have occurred if the proposed sale had gone ahead in 1997, yielding $20 billion in net proceeds. Assuming (over-optimistically) that all the sale proceeds were used to repay public debt, and that the resulting interest savings were compounded at six per cent, the $20 billion would have a 2010 present value of around $50 billion.

By holding on to the assets, the government received dividend and tax equivalent payments averaging around $1 billion a year. In addition, a capital restructure yielded around $5 billion in equity repayments. Converting these flows to 2010 present values yields about $25 billion. So, if privatisation had been undertaken in 1997, the state's debt would be lower by around $25 billion in 2010. On the other hand, the state retained ownership of the generation and retail assets, which realised a sale price of $8 billion (including the government's conservative estimate of $3 billion for the sale of remaining assets). So, the reduction in debt, relative to the current situation, is around $17 billion.

Against that, the public has retained ownership of the transmission and distribution sector, by far the most profitable component of the industry. The value of transmission and distribution assets is estimated by Infrastructure NSW at $26 billion, implying that the decision not to sell has left the NSW public better by almost $10 billion*.

* Almost $10b calculated by taking current value $26b - reduction in debt $17b = $9b better off.

Queensland

At present, the electricity industry in Queensland remains predominantly under public ownership, including the distribution enterprises, Energex and Ergon and most electricity generation. Most coal-fired electricity generation is in the public sector, while recent investments in gas-fired generation have mainly been private.

The 1996 Commission of Audit appointed by the Borbidge LNP government proposed privatisation, and estimated

the value of the industry at $12.5 billion. However, this recommendation was not acted on.

The Beattie Labor government sold the retail operations of the publicly owned distribution enterprises in 2007.

The sale price was more than $1 billion, a surprisingly large amount for a function which, in the pre-reform period, amounted to little more than reading meters and sending out bills, and which would normally be assumed to generate little or no profit. The high value placed on retail assets by the market reflected the extent to which higher margins could be extracted from consumers under the supposedly competitive NEM. Reflecting on the Bligh government's disastrous asset sales program, Beattie later concluded that the retail privatisation was a mistake, at least in political terms.

Following the electorate's repudiation of the Bligh government's asset sales policy, the Newman LNP government promised not to undertake privatisation before taking the policy to an election. As regards the electricity sector, this commitment has not been violated.

However, the Costello Commission of Audit recommended privatisation, and senior members of the government, including Treasurer Tim Nicholls, endorsed that recommendation. In addition, Infrastructure Partnerships Australia has recently proposed the privatisation of the Queensland electricity industry, estimating the market value of publicly owned assets at $40 billion.

As yet, there is no fully developed proposal for the privatisation of the industry. It is, however, possible to compare the proposals of the 1996 and 2012 Commissions of Audit, and the estimated sale prices of $12.5 billion and $40 billion. At these prices, the Queensland government has accrued capital gains at a rate of nearly six per cent a year by continuing to own the industry rather than undertaking the privatisation recommended in 1996. That gain alone is equal to the benefit that would have been received if the industry had been privatised and all the proceeds used to repay debt.

In reality, the state has not only accrued the capital gain, but has received a steady flow of dividend income and tax-equivalent payments, recently in the order of $1 billion a year. The estimated total for the electricity sector for 2012-13 was $938 million. Privatising the industry in 1996, as recommended at the time, would have resulted in the loss of these dividends, as well as forgoing capital gains. The total loss to the public would have been around $15 billion.

Tasmania

In Tasmania, the Rundle Liberal government proposed the privatisation of the Hydro-Electric Corporation (HEC) in 1998. In preparation for this, the HEC was broken up, as in other states. The components were Hydro Tasmania, responsible for electricity generation, Transend (transmission) and Aurora (distribution and retail)

Initially, the government proposed to sell only the natural monopoly components of the HEC (distribution and transmission). However, as the 1999 election approached, the government changed course and advocated privatisation of the entire enterprise. The government was defeated, and the Liberal party has remained in opposition for 15 years.

Quiggin (1999) analysed the proposed sale and estimated the value of the electricity industry in continued public ownership at $2 billion, compared to an estimated sale price of $1.3 billion. As in other cases, the performance of the industry under continued public ownership has validated this analysis. The publicly owned industry generated pre-tax profits of approximately $220 million in 2012-13 (Hydro $100 million, Aurora 70 million, and Transend $50 million). This is substantially more than could have been obtained by selling the assets and using the proceeds to repay debt.

ACT

In 1998, the Carnell Liberal Government in the ACT proposed to privatise the publicly owned utility ACTEW (formerly ACT Electricity and Water) through the sale of electricity assets and the sale and long-term lease of water and sewerage assets. The arguments that the Government used to support privatisation included that:

- ACTEW would not be able to compete in the national electricity market;
- failure to sell would mean an effective loss of up to $500 million in the value of ACTEW;
- privatising ACTEW would see improvements in price and service quality for ACT electricity and water consumers; and
- there was 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 and used the results of this study to support its case for the sale of ACTEW.

Quiggin et al (1998) evaluated the impact of the privatisation of ACTEW on the financial position of the ACT public sector. In so doing, Quiggin et al examine the structure of ACTEW and the impact of the competitive electricity market on ACTEW's profitability and also assesses the options for dealing with the government's unfunded superannuation liability.

Quiggin et al concluded that:

ACTEW, this report demonstrates the following points.

- Competition in the electricity industry would not have a marked effect on ACTEW's overall viability because

the great bulk of ACTEW's operations would never be subject to competition.

- The claim that the ACT would be better off financially as a result of the sale of ACTEW was 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 was no reason to believe that privatising ACTEW will result in improvements in price and service quality for ACT electricity and water users. Rather, privatisation might 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.

The ACT Assembly rejected the planned privatisation. Instead, the government undertook a joint venture with the gas operations of AGL, which began operations, as ACTEW-AGL in 2000. In June 2012, ACTEW Corporation did not renew ACTEW-AGL's contact for the management and operation of the water and sewerage network of the ACT and surrounding area, managed since 2000. ACTEW estimated that the cost savings from ending the contract would offset the transitional costs of $2.5 million within the first year. ACTEW-AGL continues to operate electricity and gas retail and distribution services.

In addition, when the privatised telecommunications monopoly Telstra, and its main competitor Optus failed to extend fibre optic cable to Canberra, ACTEW established a subsidiary, TransACT, which used the poles of the ACTEW distribution network to support its own cable network. Having succeeded where the dominant private firms had failed, ACTEW sold the Transact network to private firm iiNet in 2011.

The outcome showed that the analysis of Quiggin et al was conservative. The ABN-AMRO report estimated the sale price of ACTEW at around $1 billion. Instead, the ACT government received an immediate capital repatriation of $300 million and a continued stream of dividends of around $60 million a year. The total flow of payments has already exceeded $1 billion, and the ACT public retains full ownership of ACTEW, which is now (using the same approach as ABN-AMRO) worth around $2 billion on the private market.

In summary, the rejection of the Carnell government's privatisation proposal has generated financial benefits for the ACT public of between $1 billion and $2 billion. In addition, ACTEW has maintained public accountability and undertaken innovative projects.

Commonwealth (Snowy Hydro)

Snowy Hydro, the operator of the Snowy River hydro-electric generation system is jointly owned by the Commonwealth, NSW and Victorian governments. A proposal for the privatisation of Snowy Hydro was put forward in 2006, with support in principle from all three governments. However, it proved to be impossible to reach an agreement acceptable to all parties.

One of the factors making the asset sale difficult was the iconic status of the Snowy River Scheme, which generated strong support for the idea that the asset should be sold to Australian buyers. Under the Australia-US Free Trade Agreement, which had come into effect the previous year, such a restriction would have been subject to challenge under the investment chapter, which prohibits discrimination against US investors.

OPTIONS FOR THE FUTURE

06

Since the beginnings of the National Electricity Market in the early 1990s, the direction of movement has been inexorably in the direction of more private ownership, higher consumer prices, and more inappropriate patterns of investment.

These tendencies have fed on each other. As prices have increased, and investment has stagnated, the advocates of reform and privatisation have claimed that the only solution is more reform and further privatisation. The repeated rejection of privatisation by the public has had no effect on the determination of policy elites to pursue a process that offers massive financial benefits to those involved, and even larger costs to consumers and workers.

It is time to admit that the reform process, as a whole, has been a failure, and that a return to a more centralised system, with public ownership of critical infrastructure, is the only sensible response. Given the development of a national grid, it makes little sense to attempt a return to the pre-reform system of separate vertically integrated systems in each state. Ultimately, the national grid should be a national responsibility.

The ideal outcome is one in which the entire grid is publicly owned and investment decisions are made in order to optimise the performance of the system as a whole. Unfortunately, there is no easy path back from the mess that has been created by two decades of failed reforms. So, it will be necessary to make incremental changes to reverse the damage caused by the failure of the NEM.

The major steps should be:

- Nationalising the National Grid;
- Retaining and extending public ownership of distribution networks;
- A mixture of generation including public enterprise, private generating corporations and distributed generation by households and small business;
- Replacement of the NEM pool market with a system of long-term contracts and a single public manager matching demand and supply on an order-of-merit basis;
- Adoption of new models of governance to replace corporatisation, with a general public interest objective in place of profit-maximization under regulation.

Nationalising the National Grid

The first priority should be to achieve unified national ownership and control of the key elements of the National Grid, namely the major power transmission lines and the organisations that manage the flow of electricity between the state systems that are linked by the grid.

Effective renationalisation of infrastructure has taken place in a number of countries as the failures of privatisation have been recognised. In the UK, the rail network operator Railtrack was renationalised by the Blair government, and there is strong public support for full renationalisation. In NZ, railways and ferries, privatised in 1993, were renationalised in 2008. The creation of the NBN, and the subsequent effective purchase of a substantial part of the Telstra network was, in effect a renationalisation.

There are substantial political obstacles to a program of renationalisation. Spurious claims about the dangers of public debt have been made repeatedly by governments of both political parties. More seriously, there is a substantial imbalance between the Commonwealth and state governments, with the result that state governments are consistently under more financial stress than the Commonwealth.

The financial strength of the Commonwealth government suggests that it should be the one to take the lead in renationalisation. Equally importantly, the whole idea of a National Grid and National Electricity market implies

that the core infrastructure decisions should be made on a national basis rather than state by state. (The analysis here is not applicable to WA, which is physically separate from the rest of the national electricity network.)

The first step in renationalisation ought to be the acquisition by the Commonwealth of the entire electricity transmission network, including interconnectors between states. Subsequent investment decisions would then be made to optimise the performance of the grid as a whole, rather than on the basis of profitability to the firm making the investment.

Although some of the transmission network has been privatised, much is state-owned. A transfer to the Commonwealth would help to reduce the imbalance between the Commonwealth, which has massive revenue but limited assets and low debt, and the states with lower revenue, but a much larger stock of assets and higher debt levels.

The result would be a situation similar to that prevailing in rail transport where the publicly owned Australian Rail Track Corporation operates most of the interstate rail network under a variety of ownership and long term leasing networks.

Public ownership of the transmission network will be important both for the continued development of the national grid, which has made only limited progress over the past 20 years, and for the integration of new generation sources such as geothermal, wind and utility-scale solar power.

Distribution

Restoring public ownership of distribution monopolies is equally important, but likely to take longer. The first step should be a reduction in the regulated rates of return for distribution monopolies to reflect the fact that these returns carry little or no risk.

The excess profits associated with current regulatory practices are reflected in the fact that market valuations of distribution monopolies show a substantial premium over the valuations of the regulated asset base used in determining allowable prices. This implies that the appropriate rate of return for regulated monopolies should be lower than that implied by the private sector model.

Reductions in the rate of return allowed for distribution assets will imply a loss of income for state governments that own those assets. Again, the best response is to investigate how a transfer of assets from the states to the Commonwealth may occur.

Generation

The NEM, like the integrated public systems it displaced, was designed for an electricity generation system based primarily on large coal-fired power stations. This design has been rendered obsolete by changes in technology and by the environmental imperative to reduce reliance on coal-fired electricity. Investments in electricity generation now involve a mix of gas-fired power plants, wind turbines, large-scale solar photovoltaic and small-scale rooftop solar photovoltaic plants. Future sources may include concentrated solar power and geothermal electricity.

Unlike the case with transmission and distribution, it is clearly neither feasible nor desirable to seek comprehensive public ownership of such a diverse system. On the other hand, there is no good reason for further privatisation, and no reason not to consider new public investment in large-scale generation technologies.

A new approach to electricity markets

The most promising direction of reform has been suggested in New Zealand, which implemented reforms similar to those of the NEM in the early 1990s, and which has experienced similarly disastrous outcomes. Labour is proposing to replace the pool market with a single buyer for electricity.

In such a system, the grid operator would be the primary purchaser of electricity. Generators would tender to supply electricity to the grid in return for a payment schedule that would include a fixed base payment for availability and a variable payment for the amount of power supplied, adjusted for time of day and other factors. The grid operator would be responsible, as in the pre-reform integrated system, for determining an order of merit in which particular sources would be used.

In this context, households could participate in the market by supplying excess power from rooftop PV or by agreeing to install various forms of interruptible supply. Such systems are already being examined for air conditioners. A possible future application would be charging systems for electric cars, which could be turned off at times of high network demand.

New models of governance

The idea that public enterprises are best run as if they are private corporations has been one of the central elements of the reform process. This idea is self-contradictory, as is admitted by some advocates of reform, who advocate corporatisation merely as a step towards privatisation.

If, however, public enterprises have broader objectives, then they need governance structures different from those of a private corporation. An obvious starting point is to consider the management of statutory corporations. Traditionally, these were managed on a pluralist model with various stakeholders (consumers, employee unions, government representatives) appointed to the board with a mandate to represent their constituencies. This model was inconsistent with the idea that directors have a fiduciary responsibility to the corporation rather than to outside groups, and was therefore abandoned in the process of corporatisation.

The idea of a responsibility to the enterprise rather than to particular stakeholders has considerable merit even when the pursuit of a public interest objective is restored to its rightful primacy, with profitability playing an important but secondary role.

The feasibility of such an approach is reflected in the widespread adoption, by private firms of 'corporate social responsibility' or 'triple bottom line' approaches. While such measures are sometimes mere window-dressing, the approach has produced some genuine changes in corporate behaviour.

A governance model for public enterprises would not simply replicate these corporate approaches since the public interest goal, rather than profitability, would be paramount. But it would share the approach of pursuing multiple objectives as opposed to the simplistic assumption that firms should maximise profit subject to external regulation.

CONCLUDING COMMENTS

07

After twenty years, it is evident to everyone that the electricity reform program that began in the early 1990s has not delivered the promised outcomes. Privatisation, corporatisation and the creation of electricity markets were supposed to give consumers lower prices and more choice, to promote efficiency and reliability in the electricity network, and to drive better investment decisions for new generation and improved transmission and distribution networks.

None of these promises have been delivered.

Prices have risen dramatically. 'Consumer choice' has meant the removal of the secure low-cost supply consumers previously enjoyed, and its replacement with a bewildering array of offers, all at costs inflated by the huge expansion in marketing and managerial costs. Investment policies first ran down capacity inherited from the statutory authority system, then replaced it at massively higher costs.

In the face of this record of failure, the response of reformers has been to claim that the only option is to push on with yet more privatisation. As has been shown in this report, this argument is baseless. Privatisation has produced no benefits to consumers, but has resulted in large fiscal losses to the public.

It is time to admit that the reform process, as a whole, has been a failure, and that a return to a more centralised system, with public ownership of critical infrastructure, is the only sensible response.

REFERENCES

ABC SA Stateline (2003), 'Higher Electricity Prices in the Pipeline', http://www.abc.net.au/stateline/sa/content/2003/s984889.htm.

Australain Bureau of Statistics (ABS) 6401.0 – *Consumer Price Index, Sub-Groups – Electricity – Melbourne*, Australia, June Quarter 2013.

Australian Energy Market Commission (AEMC), *Electricity Price Trends Report*, 2013.

Australian Energy Regulator (AER) *Victorian Electricity Distributors' Comparative Performance Report*, 2012.

CIGRE, Australian National Committee. (1996), 'A Dictionary on Electricity: Contribution on Australia'.

Davis, G. (2001), 'State of the State address, January 8, 2001'.

Dawson, D., McCulloch, K. and Baker, A. (2002), 'Extended Working Hours in Australia: Counting the Costs', The Centre for Sleep Research, The University of South Australia.

Energy and Water Ombudsman of Victoria (EWOV) *Annual Reports* 1997–2013.

Essential Services Commission (ESC) Victoria, *Analysis of Electricity Retail Prices and Retail Margins* 2006–2012, published 2013.

Hilmer, F., Rayner, M. and Taperell, G. (1993), 'National Competition Policy', Report by the Independent Committee of Inquiry.

Hilmer, F. (1995), 'Report of the Generation Reform Working Group on Reforming Electricity Generation to the Premier of New South Wales, Mr Bob Carr MP'.

Infrastructure NSW (2012), *State Infrastructure Strategy 2012–2032*.

Kelley, J. and Sikora, J. (2002), 'Australian public opinion on privatisation, 1986–2002', *Growth*, 50, 54-58.

Linn, R. (1996), *ETSA – The Story of the Electricity Trust in South Australia*.

Morehead, A., Steele, M., Alexander, M., Stephen, K. and Duffin, L. (1997) *Changes At Work: the 1995 Australian Workplace Industrial Relations Survey*, Addison Wesley Longman Australia, Melbourne.

Productivity Commission (1998), 'Annual Report 1997-98: Microeconomic Reform by Australian Governments 1997-98'.

Quiggin, J. (1996) *Great Expectations: Microeconomic Reform and Australia*, Allen & Unwin, St. Leonards, NSW.

Quiggin, J. and Spoehr, J. (1998), 'ETSA', pp. 63-87 in *Risky Business: An independent assessment of the implications of the privatisation of public enterprise in South Australia*. (Ed, Spoehr, J.) Public Service Association of South Australia and the Centre for Labour Research, University of Adelaide, Adelaide.

Quiggin, J. (1998), 'Options for privatisation of the HEC: A supplementary report', Report to Public Accounts Committee, Parliament of Tasmania.

Quiggin, J. (1998), 'Options for privatisation of the HEC: An economic assessment', Report to Public Accounts Committee, Parliament of Tasmania.

Quiggin, J., Saddler, H., Neutze, M., Hamilton, C. and Turton, H. (1998), 'The privatisation of ACTEW: the fiscal, efficiency and service quality implications of the proposed sale of ACT electricity and water'.

Quiggin, J. (2010) *Zombie Economics: How Dead Ideas Still Walk Among Us*, Princeton University Press, Princeton.

Quiggin, J. (2012) *Zombie Economics: How Dead Ideas Still Walk Among Us (Australian Edition)*, Princeton University Press, Princeton.

Rann, A. (1998), 'Electricity Industry Restructuring-A Chronology'.

Spoehr, J. and Quiggin, J. (1999), 'ETSA and the privatisation panacea', in *Beyond the Contract State – policies for social and economic renewal in South Australia*, (Ed, Spoehr, J.) Wakefield Press, Adelaide.

(Ed.) (2003) *Power politics: the electricity crisis and you*, Wakefield Press.

Spoehr, J. (1998), 'Risky business? An independent assessment of the implications of the privatisation of public enterprise in South Australia', Public Service Association and the Centre for Labour Market Research, University of Adelaide.

NOTES

John Quiggin Opinion and Consulting

Report Commissioned by the Victorian Branch
of the Electrical Trades Union

February 2014