

**SUBMISSION TO THE ENERGY  
MARKET REVIEW**

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BY DR ALAN MORAN



Institute of  
Public Affairs Ltd  
Lvl 2, 410 Collins Street  
Melbourne Vic 3000  
Tel: (03) 9600 4744  
Fax: (03) 9602 4989  
Website: [www.ipa.org.au](http://www.ipa.org.au)

## Submission to the Energy Market Review by the Institute of Public Affairs (IPA)

### Introduction and summary

#### Our approach to the Review

The Energy Market Review Issues Paper sets out six priority issues. Three of these<sup>1</sup> are not addressed in this submission, which concentrates on

1. Identifying any impediments to the full realisation of the benefits of energy market reform;
2. Identifying strategic directions for further energy market reform;
3. Examining regulatory approaches that effectively balance incentives for new supply investment, demand responses and benefits to consumers;

In addressing these matters we wish to offer information that:

- stresses the importance of private ownership and secure property rights in promoting greater efficiency;
- examines how to ease the tension between competitive prices and minimal regulation on vertically non-integrated or effectively ring fenced companies;
- explores how to facilitate access pricing regulation that avoids excessive intrusion and inflexibilities, reduces the current enormous paperburden, and allows businesses greater certainty on which to invest and grow;
- provides advice on the appropriate principles for establishing pricing regimes for regulated services; and
- would facilitate a greater consistency of treatment of regulated facilities across Australia.

#### The electricity and gas industries

Electricity and gas are vital cogs in modern economies with an importance that is considerably understated merely by measuring their share in GDP (three per cent or so) the industry comprises. Without power and light from electricity and gas few of our daily activities would be possible. While gas and electricity are in competition with each other, gas is a significant fuel for electricity and many energy businesses have interests in both.

Aside from matters stemming from their ubiquity within the economy the industries' composition also creates policy issues. The industries' four branches: production, transmission, distribution and retailing, are interdependent. Until the last decade or so they were usually integrated, although natural gas production has normally been

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<sup>1</sup> Assessing:

- the potential for regions and small business to benefit from energy market development;
- the relative efficiency and cost effectiveness of options to reduce greenhouse gas emissions from the electricity and gas sectors; and
- means of encouraging the wider penetration of natural gas.

separate from its transport and retailing. The industries' disaggregation has been universally accepted as the best contemporary means of bringing greater efficiency. This allows for competition to be more active *within* the industries. As with all structural arrangements, these may not be optimal for all situations and, indeed, some retailers have acquired some generation.

Under the present policy framework, generation and retailing are treated as market-driven contestable sub-industries and transmission and retailing as natural monopolies that require some regulatory control. The regulatory/competitive dichotomy is, of course, not hard and fast. Some—primarily small isolated—regions may find it difficult to ensure sufficient competition in generation or retailing. And there are developments, especially in transmission, which are eroding the previous monopoly over supply.

The interface of a regulated with deregulated parts of the industry poses considerable risks to efficiency and commercial viability.. Regulated output prices using inputs with deregulated prices can, as has been seen, quickly bring ruinous cost squeezes. More commonly, unless the regulation is highly attuned to the true market position, it can lead to a gradual erosion of the incentives that are essential to drive efficiency in any industry. This applies especially to industries with private ownership.

In this latter respect, there is also now a widespread, though not unanimous view that private ownership in energy industries is superior to public ownership. IPA has been and remains a major participant in promoting the merits of privatisation

Private ownership itself adds another dimension to the regulatory agenda. An industry that is privately owned, even in part, cannot internalise its transactions in the way that is possible within a government integrated monopoly. This brings an illumination of costs and efficiencies that was previously hidden, facilitating means of promoting efficiency.

## 1. The Importance of private property rights

For much of the twentieth century, public ownership and central planning enjoyed wide support as the best means of promoting efficiency. There is now no reputable body of opinion that maintains such a view.

There is impressive empirical evidence gathered through hundreds of studies by the World Bank to demonstrate the greater efficiency of private ownership. This is notwithstanding examples of successful government businesses. Indeed, in the Australian energy industries there have been some aggressive marketing moves by some publicly owned retailers, notably Energex. Similarly, energyAustralia has been highly innovative in seeking to ensure new domestic customers installing air-conditioning are charged their true costs.

Although government owned businesses are capable of considerable efficiencies, in the final analysis they suffer from four disabilities that tend to weaken their performance disciplines over the longer term. These are:

- The lack of a market for the firm itself if others perceive its management is underperforming. It is not possible for a rival to mount a take-over (or, unless the state privatises) for the owners to voluntarily leave the field to a different management that might perform better.
- The ownership by the state means some political influence is almost certain to be wielded, eventually perhaps in the form of tariff setting, perhaps in requiring the business to operate using the government's preferred form of labour relations.
- The difficulties of motivating the management with a comprehensive profit related stake in the business
- The lack of profit maximising shareholders who have alternative venues for their funds.

Low cost energy is one of Australia's key natural advantages, even if, as during the much vaunted resources boom of the 1970s, the advantage has from time to time been over-stated. However, comparisons between Australian and international electricity and gas supply industries conducted during the 1980s demonstrated that our industries were lagging in competitiveness. Poor management, political interference and union controls had left the industries with chronic over-manning, excessive development, and prices that failed to match costs.

All states, with the partial exception of Queensland shared in this malaise, but it was in Victoria that the problems were deepest seated. Different studies by Victorian Government bodies<sup>2</sup> established the nature of the weakness and the Productivity Commission's predecessor body, the Industry Commission (IC) documented this more comprehensively<sup>3</sup>.

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<sup>2</sup> These included: Natural Resources and Environment Committee of the Victorian Parliament, *Electricity Supply and Demand Beyond the Mid 1990s*, Melbourne April 1988; SECV/DITR, *Demand Management Development Project*, Melbourne June 1990.

<sup>3</sup> Industry Commission, *Energy Generation and Distribution*, Report No 11 AGPS, Canberra, 1991.

The Commission set out a blueprint which included measures to ensure state based electricity businesses made use of competitive forces to bring about lower costs but also argued that private ownership was necessary to ensure gains are quickly taken up and become on-going. The Commission was forthright in articulating its view that “Ownership clearly does matter.” (Vol 2 p. 154). Privatisation was recognised as being important in bringing disciplines of capital markets and “the sanctions provided by the possibility of take-over and the risks of insolvency. Privatisation was also seen as a means of significantly reducing the scope for interference by governments.” (Vol 2 p.147).

Gas production, transmission, distribution and retailing is now largely privately owned in Australia<sup>4</sup>. Electricity remains mixed and the NSW Opposition’s policy announcement against privatisation in that State<sup>5</sup> is a setback for the reform process. Appendix 1 examines the outcomes of the privatised Victorian industry against that of other states. In general the data offers strong evidence to support the notion that privately owned businesses perform better than their government owned counterparts.

On-going government ownership of the energy industries continues to exercise a major suppressing effect on the industry’s efficiency. It does so notwithstanding the undeniable improvements that have followed from governments implementing corporatisation of their own business entities.

Private ownership’s advantages are often said, correctly, to be less important where there is natural monopoly. Natural monopoly occurs with large elements of transmission and distribution in both gas and electricity. But even here there are persuasive reasons to move down the private ownership path. These reasons include the fact that the natural monopoly might not prove enduring—something now being seen in both gas and electricity transmission—and because profit motivated cost reduction disciplines are so much more potent when under the control of private shareholders.

## **RECOMMENDATION 1**

**The Energy Market Review should recommend that governments develop privatisation programs for those energy businesses they continue to control.**

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<sup>4</sup> Part of Queensland’s gas retailing and distribution remains government owned.

<sup>5</sup> *A fresh approach to public electricity assets*, press release of 5 April 2002 by Liberal Leader John Brogden and Shadow Energy Minister Duncan Gay.

## 2. Distribution and transmission issues

### 2.1 The regulatory approach

Among the four industry components, local distribution of electricity and gas is normally the most important component of price. It also presents the most enduring regulatory issues, since as we shall argue, transmission is fast emerging from being correctly seen as a natural monopoly, though it is yet to escape the regulatory prison.

### 2.2 Essential facilities regulation

With any market, there is no doubting the importance of a legal framework in allowing efficient commercial interactions. And although regulation is a short-sighted policy where markets are competitive, there is a strong case for the regulation of an essential facility

There is a key distinction between a facility that has been developed without any protection or support from government and one that has been developed under some sort of franchise (or, like much Australian infrastructure, by the government itself). Where the monopolist has seized his position by spotting an opportunity and offering value, the government regulation is pure coercion. Where the monopoly is created by law, the monopolist is clearly bound by the terms of the original grant which include the *quid pro quo* for that grant. Those undertaking a development of the former kind need not and should not face regulation regarding access or price.

Professor Richard Epstein<sup>6</sup>, one of the world's leading authorities on constitutional and property law, however does not consider the distinction between a franchise protected "essential facility" and one that developed without any privileges as being as crucial as this. Much of his analysis (like the key English and American cases that established precedents) rests on the seventeenth century tract by Lord Matthew Hales *de portabis mari* ("concerning the gates of the sea"). In that tract, which was not published until the 1780s, Hales argued, that an asset (he was discussing cranes in ports) can be "affected with the public interest" either "because they are the only wharfs (sic) licensed by the queen" or "because there is no other wharf in that port".

Although not accepting a sharp dichotomy of approach between government supported and purely entrepreneurial infrastructure, Epstein argues "...regulation must be justified on the grounds that any monopolist charges too much and sells too little relative to the social – that is the competitive – optimum. But even when true, the case for regulation is hardly ironclad. The situational monopoly may confer only limited pricing power, and its durability could be cut short by new entry, or by technical innovation. Regulation could easily cost more than it is worth, especially if the regulation entrenches present forms of production against the innovation needed to undermine its economic dominance." (p. 284)

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<sup>6</sup> Richard A. Epstein *Principles for a Free Society*, Perseus Books, Reading Mass, 1998

But Epstein's view is that an essential facility will inevitably be regulated—something observable with railways in England from the mid nineteenth century. That being so, the issues remain to define the facility, at what point of time it is to be regulated, and how to ensure its owners have sufficient incentive to operate efficiently. Judging by outcomes the world over with rail regulation the task is extremely difficult. Appendix 2 offers further argument on these issues.

### 2.3 Regulatory decisions on price

In the final analysis, dominating the regulation debate is the prices that businesses are permitted to charge. In the February 2002 edition of the publication of the Utility Regulators' Forum, NETWORK, Professor Fels argued that in separate research Mr Rod Sims and NERA have both indicated that regulation is providing more than healthy returns compared with unregulated businesses. The work cited sought to demonstrate that regulatory outcomes in Australia were more favourable to the regulated businesses than those in the US and UK.

A paper prepared by NECG<sup>7</sup> carefully assesses the NERA analysis. NECG's rigorous examination of regulatory decisions in Australia, the UK and elsewhere found comparisons that assumed all the regulated entities were of a "plain vanilla" variety is highly misleading. With reference to the NERA analysis, they found that:

- the sectors analysed were atypical of the average levels of risk-free rates and equity risk premia, and when other regulated industries were included the averages were markedly higher;
- specific regulatory measures taken in the wake of the Maxwell scandal had artificially reduced the rates paid on UK government bonds, and the consequential risk free rate; and
- the regulatory models used in the US and UK give investors greater certainty than those in Australia and hence require lower returns.

A variation of this final point was alluded to in a McKinsey report, which argued:

*Regulators enjoy considerable discretion in determining prices for a forthcoming control period, so the outcome of the review is not easy to predict. Uncertainty produces what the market perceives as regulatory risk. This market perception must explain at least some of the increased cost of equity under the UK system. The beta (a measure of risk) for UK utilities is around 0.9, whereas the corresponding figure for US utilities is around 0.5 when adjusted for similar levels of debt. Thus the real allowed return in the United Kingdom must typically be more than 1 percent higher than the return in the United States. The cost to the United Kingdom's economy is between \$2 billion and \$3 billion a year in higher utility charges<sup>8</sup>.*

<sup>7</sup> NECG, *International comparisons of rates of return, Comment on a NERA report*, July 2001.

<sup>8</sup> Richard Dobbs and Matthew Elson, *The McKinsey Quarterly*, 1999 Number 1, pp. 133—144.

It is also noteworthy that the Productivity Commission, in its Position Paper rejected the ACCC views that current comparative rates of return, together with the evidence of new investment plans in some regulated sectors, can be taken as strong evidence that the access regime has been benign in relation to investment<sup>9</sup>.

Regulators' price decisions have required prices considerably below those sought by the regulated businesses. Real WACC levels have also tended to decline over time. The following chart summarises the more recent decisions.

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<sup>9</sup> Review of the National Access Regime: Position Paper. Productivity Commission, March 2001, p65.

Table 1

ISSUE	Regulator	Applicant charge	Determined charge	Date
<b>AGL gas contract market</b>	IPART	Annual revenue reduction from \$140m to \$128m	Annual revenue reduction to \$99m	May 1997
<b>Vic gas</b>	ACCC/ORG	9.7-10.2 return real pre tax	7.75% return real post tax	Oct 1998
<b>Wagga gas (GSN)</b>	IPART	Original 11.1% later offer 9.0%	7.75% real pre-tax	March 1999
<b>Telstra Interconnect</b>	ACCC	4.7c/minute	2.0c/minute with 1.6 c suggested Sept 1999	June 1999
<b>Adelaide Airport</b>	ACCC	8.89% real pre-tax or \$3.66/passenger	8.25% real pre-tax or \$3.45/passenger	June 1999
<b>Mildura gas</b>	ORG	Tender at 9% real pre-tax	9% real pre-tax	June 1999
<b>Albury gas</b>	IPART	9.6%	7.75%	July 1999
<b>NSW vesting contracts</b>	ACCC	43.64 cents	no more than 40 cents	Sept 1999
<b>NSW distribution prices</b>	IPART		16% real price reduction 1999-2004 7.5% (7.75% AIE, AE) 15% O&M reductions (10% AE, 5% AIE)	2000 Final Determination
<b>AGL Pipelines for the Central West Pipeline</b>	ACCC	Real pre-tax WACC of 10% tariff increasing after 2001 at CPI+1.36%	Real pre-tax WACC at 7.5% meaning prices are frozen in real terms post 2001	Sept 1999 Draft Decision
<b>AGL Pipelines for the Central West Pipeline</b>	ACCC	Real pre-tax WACC of 9-9.5% tariff increasing after 2001 at CPI+1.36%	Real pre-tax WACC at 7.8% (10.55% post-tax nominal) tariffs as proposed for 2 yrs then to fall by real 0.06% p.a	July 2000 Final Decision
<b>Victorian Electricity Distributors</b>	ESC	Pre-tax real WACC AGL 8.6% CitiPower 8.5% Powercor 10.6% TXU 10.5% UE 9.7%	Pre-tax real WACC 7.1-7.4% draft 6.8-7.2% final Year 0 price reductions (%) Original Final AGL 17.1 15.5 CitiPower 12.4 11.2 Powercor 19.6 14.5 TXU 21.8 18.4 UE 12.9 9.1	December 2001 Final Decision
<b>Powerlink</b>	ACCC		Pre-tax real 7.04%	July 2001 Draft Decision

The popularity of the recent film “A Beautiful Mind” has thrown into relief the importance of risk in decision taking and the application of game theory in reducing such risk, thereby offering mutual gains between parties as well as winner-takes-all zero sum gains. The application is especially relevant to situations where parties learn from each others’ behaviour and modify their actions accordingly. While at first glance a regulator may take the view that disallowing certain costs as a part of the charge base brings gains to the consumer, second round outcomes are less certain.

The issues of comparative rates of return has featured in all seminars and conferences that examine the appropriate WACC or other measure of return. Commonly those seeking a lower return would point to BHP and cite that company’s return on capital of, say 7%, and argue that the regulator has been over-generous to the regulated entities in offering a return higher than this.

What this neglects is the fact that BHP has a number of entities that earn a great deal more than 7% and is a business successfully striving to improve its returns by divesting the underperforming parts and seeking to expand the better performing parts. And the BHP activity closest to the regulated energy industries is Bass Strait gas where the business would earn a return on its investment of several hundred percent.

Moreover, the rate allowed in regulatory decisions is based on a risk-free situation. Projects have levels of risk that different proponents will disagree upon. Putting a maximum return at some average level computed from Stock Exchange data leaves little incentive to embark on riskier projects. At the same time, it destroys the symmetrical nature of the average spread of returns by cutting off the upside, thereby automatically reducing the true return the business can make.

## **2.4 The efficiency of regulatory law and its effects on property rights**

### **2.4.1 Regulation and efficiency**

Unless they perfectly mimic market forces, regulations of the uses to which property rights may be put reduce the value of private property rights. Such a reduction in the value of assets’ output, as the Productivity Commission noted<sup>10</sup>, tends to deter investment by raising hurdle rates. This means that assets generally and their associated labour and raw materials are used less than fully productively on an economy-wide basis.

This is just one of the deleterious effects likely to follow from intervention into the rights that private owners have in the use of their property. Also likely is a sub-optimum level and pattern of operation and maintenance expenditures.

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<sup>10</sup> Productivity Commission, *Review of the National Access Regime*, March 2001

Any government action that might diminish the value of private property rights should, therefore, be introduced only after the government has assured itself of the existence of countervailing benefits.

Government intervention in the normal interactions between buyers and sellers and associated parties has the capability to undermine property rights and hence investment. In addition, it can bring costs that distort on-going operational actions.

#### 2.4.2 Paperburden costs

Governments should ensure that firms are not diverted from seeking to profitably meet consumer needs. Regulatory certainty and stability are essential to allow this. Where businesses confront intensive regulatory oversight, the risk premia they require to embark on activities that involve sunk costs are increased. In addition they are constrained to set aside resources to counter adverse effects on them from the regulations. Both of these outcomes entail costs that have no corresponding benefits. Efficiency requires that governments minimise regulatory restraints on businesses whether they be privately owned firms or corporatised public firms designed to face similar disciplines and incentives.

Governments have created a plethora of regulatory agencies to control the energy industry. At the Commonwealth level, regulatory agencies fall under acronyms that include ACCC, NCC, NECA, AGO and NEMMCO. In addition, all states have their own regulatory agencies—for Victoria alone, those overseeing the energy industry include Essential Services Commission (ESC), VENCORP, EIO and OCEI and OGS. These agencies risk shifting the entrepreneurial activities of the industry's firms from a customer-directed to a regulator-pleasing perspective.

And none of these agencies, which collectively require some \$200 million a year of public funds, actually produce anything. Instead they provide directions, some of which are necessary, to the producers and sellers of electricity and gas on matters like:

- the prices they may charge,
- their permitted terms of dealing with each other,
- the fuel inputs they must use,
- the safety arrangements they must take, and
- the way they must treat their customers.

To do all this, the regulatory agencies have spawned a plethora of hearings, reports and decisions. For electricity, Victoria's Essential Services Commission (ESC) alone has produced or caused to be produced hundreds of documents, comprising well over a million pages.

Regulation also brings costs far in excess of the sums expended on the regulatory authorities themselves. As a rule of thumb, the paperburden of regulatory costs

imposed on business is often quoted at twice the costs of administering the regulation by the government itself<sup>11</sup>. This rule of thumb would almost certainly understate the resources involved in the energy industries where the regulatory framework is central to the various businesses. Each of the hundreds of documents has some commercial impact—actual or potential—on a number of firms and requires consideration and responses.

The government/regulator is often increasingly driven to augment its demand for information once it commences along the path. This may be because of a different view between itself and the facility owner over what constitutes commercial behaviour. In most cases the demands for additional information would have required responses from all of the businesses even though they may be unnecessary or irrelevant for some.

Experience is demonstrating that the regulators' requirements on firms for the purpose of price setting are extraordinarily intensive. Firms often claim that the information demanded of them is not normally collected or not available in the way that is sought. These regulatory costs are especially high in the directly regulated "essential facility" businesses but also figure strongly in generation and retailing where government intrusion remains strong.

## **2.5 Outcomes of current access regulation**

A number of submissions to the Productivity Commission's inquiry argued that regulators have adopted "pragmatic" rather than "efficient" pricing principles in practice, and that this necessarily reduces the likelihood that the theoretical benefits of price regulation will be attained.

However considerable uncertainty surrounds the question of whether, and to what extent, investments have been delayed, distorted or cancelled due to access regulation, with data being scarce and inadequate. Submissions have included those that attempted to provide broad measures and others offering more specific, or anecdotal, evidence. The submission of the ACCC is prominent in the former category. We have already noted the Productivity Commission's rejection of its claim that new investment plans vindicate the ACCC's views that the current access regime does not discourage investment.

In this context, evidence regarding the impacts of access regulation on specific investment proposals must clearly be given weight. The Productivity Commission's Position Paper cites a number of cases brought to its attention in the submissions, all but one of which suggest that access regulation has had disincentive effects. While the "sample" of project specific information is small in size, it is notable that a preponderance of the cases cited argued that access regulation was a disincentive to

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<sup>11</sup> see Moran, A. J. *Scope Costs and Benefits of Business Regulation*, in James M., *Restraining Leviathan*, CIS, Sydney 1987

investment. Indeed, BHP was alone in arguing that an access regime had, in its case, facilitated a new infrastructure investment<sup>12</sup>.

One particular instance that has come to our notice concerns TXU Networks, which sought a variation of its access arrangement to allow the profitable reticulation of gas into Barwon Heads in Victoria. This expenditure was not originally forecast and hence required the ORG's authorisation. The company sought a return on capital expenditure comparable to its internal hurdle rate for capital expenditure. The variation was rejected by the ORG and TXU deferred the investment to supply gas to the area. All parties were therefore losers: consumers were denied early access to a new energy alternative; the company was denied an ability to supply a profitable opportunity it had discovered.

Also of note in this context is the Melbourne Airport case, in which the ACCC sought to intervene in a case in which a voluntary agreement had already been reached between the facility owner and the access seeker. In this case Melbourne Airport and Impulse Airlines had agreed on terms for access by the latter to the new Domestic Express Terminal. In its submission to the Commission, Australia Pacific Airports Corporation (APAC) argued that:

*"Ideally, users and providers should be able to agree on terms and conditions of supply free from intervention by the regulator. This not only ensures that operators are receiving an adequate return, but it properly reflects on the value that users place on services provided."*<sup>13</sup>

The APAC submission argues that, by contrast, when regulators consider pricing mechanisms "the sole focus of attention is the provider of the service". As a result:

*"...the apparent willingness to pay of a customer was not even mentioned in the ACCC's draft decision."*

Moreover, it is argued that, *despite the voluntary arrangement between the parties ultimately surviving* the regulatory intervention by ACCC, there has been a tangible result in terms of investment disincentives. According to APAC:

*"...as a result of the ACCC's conduct, the Board of APAC will now no longer approve investment in new aeronautical facilities until such time as a final pricing decision is available."*

It is vital not to dampen the profit motivated efficiency drives including seeking out new opportunities that stems from private property rights and outcomes in

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<sup>12</sup> It should be noted that BHP's statement is no stronger than that its investment was "directly facilitated by the [Gas] Code". It does not state that the investment would not have proceeded in the Code's absence, whereas the cases cited to the contrary have explicitly stated that certain investment proposals have been abandoned as a direct result of access regulation considerations.

<sup>13</sup> Australia Pacific Airports Corporation, Submission No.10, December 2000, p 5.

terms of business decisions.

## **2.6. Benefits of adopting a more narrowly focused regime of access regulation**

Much of the regulatory literature over recent decades has, inspired by the work of Stigler<sup>14</sup>, featured the notion of regulatory capture by the regulated entities. Yet, in more recent years at least, the risk has been in the opposite direction with the regulatory authorities engaging in what Shuttleworth<sup>15</sup> has called “regulatory opportunism” to reduce prices.

Regulatory opportunism tends to bring a bias in favour of insufficient rather than excessive supplier returns because the most important constituency for the regulator is the government and public opinion. Generally, a regulator’s decision will be more welcome to consumers the lower the price levels they bring. Although setting a price that is too low will rebound on the system’s development and eventually on the existing network’s reliability, a self-interested regulator’s time horizon will place a lower priority on the longer term. By contrast, a business accountable to private shareholders has a combination of capital maintenance and current income as the focus of its self-interest.

The Chairman of the Productivity Commission, Gary Banks<sup>16</sup>, has also given recognition of this phenomenon. He says

*As is well known, the traditional concern based on the American experience was of capture of regulatory agencies by industry incumbents, who have more incentive than anyone else to find ways of influencing how regulators interpret the rules in their particular cases. But, depending on the institutional settings, quite different forms of influence can operate. These include favouring the interests of current consumers (and electoral constituents) over the interests of future consumers; which could lead to new entrants being favoured over incumbents.*

The question of the impact of access regulation on investment has been widely discussed. This discussion has included both theoretical considerations and attempts to analyze the impacts of the specific forms of access regulation currently implemented in Australia.

The potential for access regulation to have a “chilling” effect on investment almost certainly represents the major cost likely to be associated with it. It is, by definition, not possible to observe investment that has not been undertaken as a result of

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<sup>14</sup> Stigler, G.J. *The Economic Theory of Regulation*, Bell Journal of Economics, Spring 1971.

<sup>15</sup> Shuttleworth G, *Updating Price Controls: Rationale and Practicalities*, a report to the ORG, June, 1998

<sup>16</sup> Banks G., *Competition regulation of infrastructure: getting the balance right*, Presentation to IIR Conference, *National Competition Policy Seven Years On*, Eden on the Park, Melbourne, 14 March 2002.

regulatory disincentives. However, the potential for regulation to lead to major dynamic inefficiencies due to distortions of investment behaviour is apparent. Anything that reduces an investor's returns is some disincentive to invest.

Disincentives to investment arise from specific concerns as to the risks to returns from particular assets due to the operation of a given access regime. They also stem from a general tendency to increased "sovereign risk" where governments are seen as overly willing to constrain private property rights.

A risk averse view is clearly required in such circumstances. This is likely to be more damaging to general welfare where the importance of dynamic efficiency outweighs that of static efficiency. In such circumstances the impact of access regulation is likely to bring income transfers, rather than income increases.

It follows that unless the investment need is stable, and we can be highly confident that the regulation will be benign, it is preferable to err on the side of failing to declare essential facilities, rather than on the side of declaring non-essential facilities. This preference is heightened because other remedies, both in competition legislation and in other avenues, are available to address errors of omission. By contrast, there are no immediate remedies identifiable to address errors caused by regulating unnecessarily.

Though all excesses of regulation will rebound on economic activity, they assume greater immediate importance where the access regulations have the effect of reducing expected values below those necessary to justify the investment. Commonly regulators may try to excise the "economic rent" type of excess profits. But doing so may reduce the potential upside gain which the project, to be viable, needs in order to counterbalance downside risk. This is a matter that looms especially large in cases when new (rather than expanded) investment is under consideration and where demand is uncertain.

This argument for avoiding regulation has greater force, particularly in relation to the issue of the extensive information required to underpin effective and efficient price regulation.

## **2.7 Addressing costs in regulated businesses**

The previous section argued for a narrowing in the scope of access regulation. It is also essential that the form of access regulation should also be improved. The key purpose of reform in this regard is to reduce the extent of the negative impacts of access regulation on incentives and on perceptions of regulatory risk.

Two matters of particular importance are discussed in the literature in respect of the best way to value regulated assets. The first is whether to use forward or backward looking costs. That is, whether to take previous investment costs as the basis for determining current prices or whether to take the future costs of the equivalent

investment as the basis of current costs. The difference is important because the future costs are often lower because of improvements in technology.

The second is whether to optimise investment by disallowing costs for investment that is unnecessary in the future. Again, disallowing unnecessary costs brings lower present prices for consumers.

As with many other outcomes of regulatory approaches, the appropriate course is contrary to that initially presumed to be in the consumer interest.

While for facilities that are competitive, it is not possible for the supplier to charge for assets that are shown to be unnecessary, the regulated facilities are by definition not open to competition. If such a firm were to be denied a component of prices that comprised costs that are either unnecessary or will be cheaper in future, an element of risk is added. The firms themselves will require a higher investment premium for future expenditures or will delay undertaking such expenditures until they are urgent.

Similarly, a forward looking regime may unduly discourage new investment where costs are falling in real terms. This effect can be at odds with the social optimum where demand is rising and some portion of the investment is underutilised in the initial years.

Of course, there is a contrary viewpoint. The regulator in attempting to mimic the market does not want to reward poor decision making or premature investment. And the regulator wants to avoid being in the position of forcing users to pay for “stranded” costs that are not efficient. The dilemma will probably always be with us and is the main reason why “light handed” regulation which is not related to actual input costs (e.g. CPI-X as in its originally envisaged UK form) should always be the preferred model.

## **2.8 Consistency between access regimes**

The form of access regulation—where such regulation is applicable—should be made consistent, as far as possible, across all sectors. Thus, Part IIIA should form the basis for all access regulation, with industry specific access regimes being approved only where there are substantial industry-specific issues to be addressed. All industry-specific regimes should be made fully consistent with the general principles embodied in Part IIIA.

In particular, industry specific access regulation should not substitute lower “thresholds” for applicability than those applied in Part IIIA. In this context, we note as an example the submission to the Productivity Commission’s inquiry of Australia Pacific Airports Corporation. This argues that, by declaring certain facilities to be subject to Part IIIA, the Airports Act has the effect of lowering the threshold for its

application, in particular in terms of the “national significance” aspect of the criteria for application.

The mechanism of “declaring” that an access regime applies to particular facilities clearly precludes the operation of the generic processes by which the NCC informs itself of the views of the parties and reaches a considered view as to whether the criteria for application have been met. In so doing, it inevitably undermines the original Hilmer notion that access regulation is an unusual intrusion on property rights, which is to be used sparingly.

Finally, each industry-specific access regime should be subject to regular review to ensure its continuing need and that its form remains appropriate to the industry and the markets it faces. This view is consistent with the general view that regular regulatory review is essential to ensure the maintenance of regulatory best practices in a dynamic sense. More specifically, however, it is clear that many of the industries that are subject to access regulation will be characterised by rapid structural and technological change in the medium term. This suggests both that the need for access regulation *per se* may change over time and that the requirements of industry specific access regimes may also be subject to major change.

The frequency of such reviews may vary between different industry access regimes, reflecting different expectations about the rate of change. This has tended to increase. Existing “sunsetting” and mandated review requirements for legislation in Australia tend to work on five to ten yearly cycles which suggests that a five yearly review period should form the starting point for consideration in relation to individual industry access regimes.

As important as the frequency of such reviews is the nature of the review process itself. A fundamental consideration is that reviews must be conducted independently of the industry access regulator. They should be conducted transparently, by a body with adequate expertise, such as the Productivity Commission.

## **RECOMMENDATION 2**

- **The on-going requirement for every facility’s access regime should be reviewed on a regular basis against the need, due to potential anti-competitive outcomes in the absence of such a regime, and cost-effectiveness.**
- **These reviews should be conducted by an independent, well-informed non-regulatory agency like the Productivity Commission.**

### **2.9. Inclusion of pricing principles**

#### **2.9.1 Some issues with current approaches**

Pricing principles, where specified in existing access regulation, are often poorly

chosen, being based on pragmatic, rather than efficiency considerations. In this respect the Freight Australia submission to the *Review of the National Access Regime* argues:

*“Regulators should be mindful of the limitations and potential adverse effects that flow from a pragmatic, but poor, choice of pricing principles. Pricing principles that dampen investor incentives or undermine investor confidence would detract from the efficiency objective of access regulation”<sup>17</sup>.*

The submission to the *Review of the National Access Regime* of Energex similarly argued regulators have tended to follow poor pricing rules and that, for this reason, an approach based on the use of Section 46 of the Trade Practices Act may often yield superior results.

The choice of “pragmatic” pricing principles in practice is likely, in most cases, to be the result of recognition of the difficulty of obtaining the information required to implement “efficient” price regulation. To the extent that this is true, the adoption of a “risk averse” approach, involving erring toward leaving monopoly rents uncaptured, is a necessary outcome. Gans and King argue that:

*“...the regulator will have to consider itself as leaving some monopoly rents with regulated service providers. In this regard, the rents are simply an incentive bonus...and not monopoly profits per se.”<sup>18</sup>*

Given the degree of imprecision involved, due to informational requirements, and the relatively “light handed” approach that recommends itself as a result, it is not clear that price regulation under an access regime would exhibit superior performance in practice to one based on prices surveillance legislation. It is doubtful that there is any justification for extending the application of access regulation based on its superior performance in relation to monopoly pricing *per se*. This, in turn, tends to support the adoption of a narrow view of the applicability of access regulation.

### 2.9.2 Some appropriate principles to use

As noted above, we believe that there is, in general, considerable scope for pricing principles to be undermined in practice by the regulator, via the exercise of his necessary discretion. Consequently, pricing principles must be detailed and carefully specified if they are to be able to improve regulatory outcomes and enhance accountability on the part of the regulator, by providing an improved basis for the challenge of decisions by the regulated.

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<sup>17</sup> See Submission No. 19: *op cit.*, p 2.

<sup>18</sup> Economic Choices Associated with the Proposed Essential Services Commission. Joshua Gans & Steven King, p21. Submitted by the Australian Council for Infrastructure Development (Submission No.11).

Therefore, we welcome the proposal made in the Productivity Commission’s Position Paper that pricing principles should be inserted into Part IIIA. We believe that the specific pricing principles proposed by the Commission in Proposal 8.1 are a useful starting point. These are:

***“The pricing principles in Part IIIA should specify that access prices should:***

- generate revenue across a facility’s regulated services as a whole that is at least sufficient to meet the efficient long-run costs of providing access to these services, including a return on investment commensurate with the risks involved;***
- not be so far above costs as to detract significantly from efficient use of services and investment in related markets;***
- encourage multi-part tariffs and allow price discrimination when it aids efficiency; and***
- not allow a vertically integrated access provider to set terms and conditions that discriminate in favour of its downstream operations, unless the cost of providing access to other operators is higher.***

To these we would add provisions to meet two fundamental issues of price regulation. The first is the need for the evolution of such regulation over time to be consistent with the provision of incentives for continuously seeking improved productivity and efficiency performance. In order to deal appropriately with this issue, the following considerations must also be embodied in pricing principles:

- Pricing regulation should be “light handed” in its approach, both in terms of the extent of its attempts to capture monopoly profits and the information requirements imposed on the regulated;
- In pursuit of the above, it must be accepted that there should be some sharing of productivity gains between producers and consumers<sup>19</sup>;
- There should be recognition that, in a competitive market characterised by high entry costs and high levels of specific expertise, “super-normal” profits can persist for some time and are likely to be necessary to provide adequate signals for the entry of new competitors;
- Use of CPI-X regulation, to be fully incentive compatible, should incorporate price resets calculated on the basis of price monitoring with the X factor reflecting industry TFP, rather than rates of return or cost-based building blocks.

In the above context, that the need for price regulation to be incentive compatible over time is acknowledged in the Productivity Commission’s Proposal 8.2.

A second issue that requires reflection in pricing principles is the need for an approach that is “conservative”, in the sense of erring towards allowing facility owners to retain

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<sup>19</sup> In this context, the Victorian Office of the Regulator-General’s currently uses an “efficiency carryover” model, which allows regulated entities to obtain benefits from past efficiency gains over a five year time horizon. It is however unclear why the ORG’s 70/30 sharing between customers and companies is superior to a more “natural” 50/50 sharing.

monopoly profits, rather than toward risking “under-compensation”. The point to be underlined is that a conservative approach is required, not only to ensure investment incentives are maintained, in the positive sense, but to ensure “in the negative” that facility owners do not receive sub-normal, or even negative, returns as a result of failed attempts at a too “surgical” approach to price regulation.

Added weight is lent to this point due to price regulation being information intensive and, as a result, subject to a relatively high degree of error.

### 2.9.3 Building on existing experiences

Recent price re-sets for distribution and transmission have proven to be both acrimonious and resource intensive. The re-sets in Victoria and NSW have squeezed out any surplus profits (more than squeezed them out if transaction prices for Powercor and the share price for United Energy are guides).

Access to the distribution or transmission facility *per se* is not an issue—only one of the Victorian distributors (CitiPower, which is in the process of being sold) is not separated structurally from its retail arm. Powercor/Origin and United/Pulse have different ownership structures for the two activities. Across Australia, transmission is carried out in totally independent businesses. The concerns about transmission or distribution businesses favouring affiliates has proven to be unfounded and there are ample means of addressing such concerns should they emerge.

Commenting on the deficiencies that the present “building block” approach to price setting, the Productivity Commission argued<sup>20</sup>,

*“The approach is clearly highly information intensive and intrusive, which participants claimed reduces incentives for good performance. Specifically, it requires the regulator to:*

- *seek extensive information about a facility’s existing and forecast costs, including of any services not regulated (to prevent cost shifting);*
- *form judgements about whether costs such as operations and maintenance are based on efficient service delivery; and*
- *seek information about planned capital expenditure and form judgements about whether that expenditure is justified. This is because capital expenditure will increase the asset base and, therefore, the allowed dollar rate of return.*

*“The need to forecast future costs, and to validate proposed capital expenditure, could lead to the regulator having a significant influence over the running of the business.”*

These developments mean it is now timely to reduce the level of regulatory intrusion. The originally conceived notion of CPI-X regulation has been gradually modified into a

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<sup>20</sup> See Review of the National Access Regime: Position Paper. Productivity Commission, March 2001, p212.

form of cost based price setting. Recognising the appropriateness of the level of prices based on those presently in operation, an X-factor based on Total Factor Productivity should now be set in place. There is ready information on levels of Total Factor Productivity trends that can be used to set such levels of aggregate price. Within the average price level, businesses should be free to make variations to cater for different demands.

### RECOMMENDATION 3

**Implement future price settings based on CPI plus an externally developed X-factor that incorporates Total Factor Productivity, with**

- **full flexibility within the overall price setting for shifts that reflect cost changes; and**
- **to ensure investor confidence, place major restraints on future regulatory actions that might modify the basic CPI-X outcome.**

#### **2.10. Provision for “access holidays”**

Access regulation can have significant disincentive effects on new investments in infrastructure through its impact in reducing *ex ante* expected rates of return. This effect is clearly most pronounced where the construction of new facilities is being considered, as the degree of uncertainty as to the returns to the project will generally be greatest in these cases.

Following from the earlier discussion of property rights, we maintain that access regulation and price controls should not apply to infrastructure that is developed without the benefit of a government franchise, or other government support. In the current Australian environment, the adoption of this approach would be likely, in effect, to exempt most new infrastructure investment from coverage by access regulation<sup>21</sup>.

In the absence of a narrowing of access coverage, a “second best” amendment would be that access regulation be reformed to provide explicitly for the use of “access holidays” in relation to new infrastructure projects. Those projects were certainly not “essential” when conceived because life went on without them. But following earlier analysis, it can be persuasively argued that they progressively migrate into the “essential facility” category.

Equating an access holiday to a patent is a useful view of the concept. It suggests that the access holiday constitutes an explicit recognition of the right of the facility provider to the return on his investment as the *quid pro quo* for his creation of new value. It could also be married with the traditional common law concept of bottleneck

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<sup>21</sup> Arguably, for those new investments that are given a franchise or other effective subsidies, concurrent agreement on access issues would ensure that appropriate incentives could be maintained. However, there may be difficulties under current access regime arrangements due to the difficulty in concluding such an *ex ante* set of access arrangements.

facilities being “affected by the public interest”, whether or not they were developed under a franchise.

The important point is that the access holiday should not represent a “concession” by the regulator. Rather, as it applies to facilities developed with no or minimal government assistance, it is a recognition of the facility-owner’s property rights.

Consistent with this reasoning, implementing access holidays using “null undertakings” may be inappropriate. The undertaking mechanism functions as one in which facility owners “voluntarily” cede access to their property on certain terms, under threat that arbitration by the regulator may yield less advantageous terms. It was not envisaged as a means by which property rights may be positively affirmed. Moreover, use of the undertaking mechanism may create a presumption – or some pressure, at least – toward the specification of “post holiday” access terms as part of the “null undertaking”. This would be misconceived because there is a need for consideration of such matters to be made at a later date in the light of the history of the facility and the returns made on it.

There is also some doubt as to whether Part IIIA, as currently drafted, allows for the use of “null undertakings”. Amendments that would make explicit provision for access holidays would clearly be needed. In this context, it seems preferable to establish such provision separately from the existing undertakings provisions, given the different fundamental purposes served. Alternatively, it is arguable that provision of an access holiday is more closely equivalent to a “negative declaration”, with the distinction (*vis-à-vis* existing declaration arrangements) that it would occur *ex ante*.

More important than the specific mechanism by which access holidays would be conferred is the question of the terms of the access holiday. The broad terms of access holidays must be explicitly set out in legislation if the desired effect, of minimising regulatory uncertainty and disincentives, is to be attained. This does not, however, prevent the inclusion of some element of flexibility to deal with different circumstances. These may include:

- Provision for variation of the standard period of the access holiday should be symmetrical: that is, it should also be open to the investor to propose that a longer than standard period is required due to the specific characteristics of the project;
- Any ability for the regulator to reject the holiday on the basis of the likely *ex ante* appearance of high profitability should be closely circumscribed, with a high standard of proof of both high profitability and relatively low risk (or uncertainty) being required<sup>22</sup>; and
- Additional flexibility should be provided by enabling extensions or

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<sup>22</sup> This view is consistent with the Commission’s own argument (p193) that “...the fact that a project may turn out to be highly profitable should not be of great concern. ...at the end of the day, if infrastructure facilities are not built, consumers will be worse off.

augmentations of existing facilities (or network related investments) to be subject to access holidays, but that such requests would be assessed without any presumption in favour of acceptance.

Comments from the ACCC indicate that they, too consider that the concept of access holidays may have merit.<sup>23</sup> In this context, we support the ACCC view that

*“The Commission does not want this process to be seen as one of picking winners. By this we mean that it is one thing to grant a regulatory holiday for all entrepreneurial pipelines, but it is quite another for governments to pick and choose which projects are granted this status”.*

However, we would question the ACCC’s presentation of the question in terms of when market power would arise and be “able to be exercised”, rather than in terms of the need to ensure that investment is not deterred by limitations on *ex ante* expected returns. The ACCC suggestion that there could be an *ex post* “deeming” that market power exists and the holiday is thus truncated would also have the potential to largely undermine the potential benefits of access holidays.

In sum, provision of access holidays would be a crucial “second best” mechanism for minimising investment disincentives, were the preferred option of exempting new investment that do not receive government assistance from coverage not to be accepted. Such holidays should be approved in a “quasi-automatic” fashion is fundamental to the achievement of the goal of access holidays. The use of a strong presumption in favour of a pre-set holiday period (say ten or perhaps twenty years) is equally important.

#### **RECOMMENDATION 4**

**Access holidays or similar regulatory relief should be given to facilities deemed to be “essential” following a period of perhaps a decade of operation.**

#### **2.11 Competitive and entrepreneurial links**

The notion of access holidays shades into the appropriate treatment for competitive links. In distribution, although there is one such link (in the Docklands area of Melbourne) it seems unlikely that these will proliferate, at least under current regulatory arrangements. For transmission, competitive provision is far more promising.

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<sup>23</sup> “What is the Regulatory Policy Agenda for 2001 and Beyond?” Speech by Mr Rod Shogren, Commissioner ACCC, 30 April 2001. See [www.accc.gov.au](http://www.accc.gov.au)

### 2.11.1 Gas

Already we are seeing competition in gas with the Duke pipeline to Sydney offering vigorous competition to the line from Moomba. Unfortunately, the competition authority, the National Competition Council (NCC) in this case, has impeded rather than encouraged the competitive process.

During 1997 Australian Governments introduced the national gas Code. The Code itself and its regulators pay lip service to the view that regulation is very much a second best approach to market competition. Even so, supposed market imperfections invariably offer the opportunity to regulate. Because of this, the Code has failed to herald a sought after new era of gas development. The regulatory arrangements have, in fact, stifled new developments, morphing the key skills of gas firms from commercial into political entrepreneurship. We are now seeing new pipelines being designed to avoid regulatory oversight even where this means higher costs.

One key criteria in the Code is that a pipeline should be regulated where this “would promote competition in at least one market”. The regulatory authorities invariably render this down into the question of whether pipeline prices will be cheaper under a regulated regime rather than under one that relies on normal commercial interaction. Voluminous reports almost invariably produce the answer, “yes, a regulated price would be lower”.

In the narrow context of a single pipeline, it would, in fact, be astonishing if a different answer were possible. Pipeline costs are 95 per cent sunk. Once pipelines are in the ground, price reductions will not force lower output, while the customers (and gas suppliers) can only gain by a lower haulage cost. And to justify cutting the price, the regulators can always claim the pipeliner spent too much in building the asset, underestimated gas demand, or that future costs will be lower. That way the regulators can claim they are not expropriating property rights.

But, when pipeline owners, observe such activity, they take steps to avoid repeat performances. For, although government bodies can force down prices of existing assets, they are unable to force investors to build new assets.

With pipelines, as with other assets, where governments assume control over property rights and force owners to sell at prices they think are too cheap, investment dries up. However, last year the Australian Competition Tribunal overturned the NCC’s ambitions to regulate Duke Energy’s pipeline from Bass Strait to Sydney on the grounds that competition was adequate. Indeed, a price war had already broken out between the two facilities.

Disappointingly, the NCC refused to relinquish such an important opportunity for regulation up an opportunity for regulation. It hired two American academics to write a report that said reciprocal treatment for the competing Moomba to Sydney pipeline (MSP) was not appropriate. The academics also showed touching faith in regulators’

business skills. They maintained that because an ACCC draft decision proposed to reduce the price on the MSP further than it had fallen in the face of the competition from Duke, this proved the company was gouging the market!

In response to the regulatory decisions, we have two major prospective developments that are being tailored to ensure immunity from regulatory oversight. One of these, SEA Gas, links fields in offshore Victoria with Adelaide; the other, the Darwin to Moomba development would fulfil the Rex Connor's dream of bringing gas across the continent. The developers in both cases propose to size the pipes to cater only for pre-booked gas haulage, so that they escape regulation. This is in spite of the fact that pipeline economics mean costs per unit carried fall dramatically with size (for the Darwin to Moomba pipeline, capacity could be doubled at a cost increment of about 30 per cent).

### 2.11.2 Electricity

A recent report for NEMMCO by PriceWaterhouseCoopers and Clayton Utz<sup>24</sup> suggests that we should build more common carriage interconnects with regulated returns.

This is premised on transmission costs being only 5-10% of electricity costs. Hence, the authors argue, the benefits of greater competition and lower prices through generator competition are more than likely to outweigh any inefficiencies.

A major problem with this argument is it fails fully to recognise the scarcity of capital. Moreover, the sort of interconnects we are talking about are longer and more sparsely used than the existing main body of transmission—Latrobe and Hunter Valleys to the respective metropolitan centres—and the 5-10 per cent is not an accurate guide. SNI, linking SA to NSW for example, would cost \$500 per kW in capital simply for transport, which is similar to the cost of an open cycle gas turbine or half the cost of a combined cycle gas turbine.

While conventional AC links are controlled by the laws of physics, DC links offer scope for a link to be controlled so that it is akin to a generator. Australia (through Transenergie) has been the pioneer in developing totally unregulated links dependent on arbitrated prices between regions for their revenue; some such lines are now under consideration in the US<sup>25</sup>.

This allows an entrepreneurial approach - competition in transmission, with charges paid by willing buyers. It was the lack of such a service that dictated a consensus in

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<sup>24</sup> Interconnector Development in the NEM: A Report by the Interconnector Process Working Group June 2001. <http://www.nemmco.com.au/future/interconnectors/173-0104.pdf>

<sup>25</sup> Black & Veatch and Siemens are proposing to build four power plants near coal mines in South Dakota and Wyoming. This will transmit 6,000 MW of power along DC lines at a cost of \$11 billion for the plants and \$4 billion for the links. Already approved is the Neptune Project with three cables, 3,600 MW in total, linking generation in Maine and Canada to New York and New England.

favour of regulated links. These, in traditional systems, involve several adverse effects:

- gold plating; A notorious issue with government developed facilities is the tendency towards over-engineering. The Victorian transmission system is a case in point. The general consensus is that a private organisation would have been more parsimonious. Government organisations are less disciplined than private organisations to these cost/benefit trade offs because the decision makers have little financial stake in the outcomes.

While excessive capitalisation is one result of government ownership, an alternative outcome is a squeeze on new developments where a government general budgetary position is strained. The electricity industry throughout Australia has seen feasts, as governments have climbed on particular rationales for developments, followed by famines as a result of general budget constraints. Such famines are rarer with the private sector since the absence of investment capacity by one firm would not prevent a rival stepping in.

- we also have a political response; Government owned and regulated interconnects allow considerable scope for the pursuit of political goals using ostensibly commercial motives. This obscures the merits of a particular proposal. It leads to misallocation of production, often in the cause of regional development or saving of jobs of those whose votes are particularly valuable.
- finally, there is crowding out; A regulated monopoly transmission is financed by a compulsory charge on consumers. This differs from the alternative means of supplying the capacity: new generation, and entrepreneurial interconnect or demand saving measures. A compulsory charge is likely to crowd out those alternative measures, whether transmission or generation, and deny us the most economic industrial blend.

With competition now possible, it may be that the future will see no economic justification for anything other than a market provided entrepreneurial interconnected system, at least for major augmentations. At issue, on whether a line should be regulated or entrepreneurial, is whether it is:

- to allow improvements in reliability, spending that would be difficult to cover in fees, or
- for an augmentation.

Only in the former situation should regulated links be permitted. Welfare economics, on which planning rests, does not face the same incentives nor have the same quality of information on costs and risks that is found in the real market. A regulated link will crowd out entrepreneurial provision—which could be transmission, generation or demand side measures.

Moreover, the apparent benefits added in the welfare economics case are invariably greater than those in the market case. This is because it is well nigh impossible to restrict all the benefits of a market development to those paying for it. For example, the welfare economics calculus estimates the value people place on a new

development and adds in all the “consumer” and “producer” surpluses. Market outcomes are limited in this by all-comers paying the same price. Hence, much of the value of a welfare justified development should be discounted if its merits are to be compared to a market development. Otherwise it will divert capital to sub-optimal usages.

The Energy Market Review offers an opportunity to test these issues.

#### **RECOMMENDATION 5**

- **In the case of gas transmission, access regulation should cease whenever there is competition, leaving any controls to general provisions of competition law which seek to combat collusion.**
- **For electricity, two opposing models are the UK national grid, which is a fully planned system; and the PJM system with comprehensive nodal pricing designed to ensure market responses to constraints.**

**The Review should consider what, if any, circumstances could justify approval for a regulated interconnector financed by a compulsory charge on customers (or suppliers).**

#### **2.12. Improving access regulation**

In general, the scope of access regulation should be narrowed as far as possible, consistent with its underlying purposes. This is essential due to the general requirement in a liberal society for government to minimise its interference in private property rights and the more specific need to ensure that dynamic inefficiencies arising from the distortion of private investment incentives are minimised. In particular, it is argued that access regulation should be:

- Limited in its application to vertically integrated facilities;
- Limited to cases in which the provision of access is necessary to create the conditions for workable competition in downstream markets<sup>26</sup>;
- Limited to cases in which the duplication of facilities is clearly not economically feasible;
- Not applied to infrastructure developed without the benefit of a government franchise or any other support.

This opens the way to the development of the following more comprehensive set of policy approaches which amplify those offered in Recommendations 4 and 5.

#### **RECOMMENDATION 6**

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<sup>26</sup> The Productivity Commission has indicated a similar view via the inclusion of Proposal 6.1. in its Position Paper. However, focus on ensuring a “substantial increase” in competition would derive from access regulation arguably would continue to fall short of the Hilmer formulation of access being provided where necessary to ensure “effective competition”.

To develop policy in recognition of the twin importance of property rights and competition, and the need to avoid intervening in voluntary arrangements between parties these principles can be placed into a taxonomic framework addressing six important classifications of essential service or bottleneck infrastructure. These are:

- a) That which has been built without any market protection, especially that built since 1995 which is almost by definition “entrepreneurial” rather than regulated.  
In this case the preference should be ‘no regulation’ since the entrepreneur had no privileges in seeking to find the customers and their needs.
- b) That which introduces new competition, even if this is not identical to existing facilities.  
There is competition. No regulation should be put in place and regulation on the existing facility should be removed.
- c) Privately built infrastructure built prior to 1995 that enjoyed no government protection.  
The onus here should be on the authorities to make a case for regulation
- d) That which is owned by the private sector but was built under a regime that offered protection from competition.  
This presents a clear case for regulation but one that needs careful handling to avoid shutting out future competition.
- e) That which was owned by a government but has since been sold under contractual terms to the private sector.  
These should be regulated according to the contracted terms.
- f) That which was built by and remains owned by a government.  
This if it is not to be privatised needs to be regulated though in a way that does not pre-empt rival facilities.

This would place access regulation rules much closer to those envisaged by the Hilmer Report than is presently the case.

Should a facility developed purely as an entrepreneurial facility assume the nature of a monopoly “essential facility” this should be addressed by regulating following an regulatory or access holiday. As previously discussed, such a facility cannot be considered truly essential since life went on without it prior to an entrepreneur spotting a market need. Rolling such facilities into the regulatory net constitutes a deterrence to firms searching for the needs and undertaking the risky activity of meeting them.

### **2.13 Ensuring a consistent approach between new and existing transmission**

#### **2.13.1 Laying the groundwork for future augmentation of transmission**

Efficiency is achieved in commercial operations where there is

- known, tradeable and fully defined property rights
- obligations and gains from these property rights are clearly established
- competitive supply and demand to prevent monopoly prices.

The existing electricity transmission network is operated on an open access basis. At present neither producers nor customers have any exclusive property right to the network. All costs other than those that are firm-specific, are recouped from customers. The transmission rights are non-existent, although ownership rest with the transmission business. There are no requirements on the transmission business to operate in a way that least inconveniences the buyers and sellers of electricity.

Ideally, costs should be paid and benefits accrue to the party most able to take action to reduce them or to augment them in ways that offer increased value.

If others pay, parties benefiting will use more of the services than they need. Thus, if generators are able to obtain access to markets with only the line losses counting as costs, they will avoid a great many of the costs associated with transport. The classic case is where gas is a fuel option; the gas generator must pay full haulage costs for the gas to the plant but will avoid the cost of hauling electricity from the generator to the market. The clear incentive is to locate the gas generator close to the gas source, irrespective of whether transporting the gas would overall be a lower cost solution.

In addition, the lack of exclusivity means a generator must rely on being lower cost than other possible suppliers along a given transmission path if it is to be assured of running.

Similarly, if customers are paying for the transmission on a regulated basis, they may not be assured of obtaining the cheapest source of power. The transmission business, as the owner of all the rights, has an incentive to economise on building new links as long as the market is fully supplied. It would have no incentive to build a new line from a cheaper source if this would leave an existing line partly “stranded”.

In Victoria, these potential inefficiencies are countered by separating transmission planning from ownership. This is a sound approach but it would be even more preferable to have built-in incentives for the transmissions owner to operate with full efficiency.

Customer charges have a disincentive to efficient location similar to that of generators to the extent that the price they see is postage stamped over a large area. This means that a customer would see little value in locating close to power or in areas over-supplied with transmission.

### 2.13.2 The Nature of the Transmission Network

Conceptually, the transmission system may best be thought of as having two components: radial and meshed. The first delivers power from one or a number of generators to a major load node. The second delivers the power to the dispersed customers beyond the node. This shades into the distribution system.

Customers and generators alike have vital interests in both aspects, as does the carrier. However the interests are not identical along all parts of the network.

- Particular generators have a greater interest in the lines that connect their power to the node.
- Customers are most interested in ensuring that power is made available. Although they wish to see this coming from the lowest cost sources, they are indifferent as to which sources these may be.

The differentiation of the transmission network into the *radial* and *meshed* network indicates the necessity for different charging and property rights approaches. While customers in the meshed network must share usage of the network and agree or have imposed upon them a level of reliability and associated costs, generators have the overwhelming interests in particular radial lines.

### 2.13.3 Establishing rights

Some means of ensuring the transmission system is optimally operated is required. This is best accomplished by defining property rights so that the optimisation is the outcome of the various parties seeking to promote their own interests.

The difficulties in defining property rights include:

- the rights will always be shared in the great bulk of cases; hardly any lines connect just two related parties and the multiple users are likely to have different interests in upgrade, maintenance, timing of servicing;
- rights have already been allocated, often implicitly, especially in Victoria where there is private ownership of generation, transmission and distribution;
- definition of flow paths, loop flows etc.;
- definition of firm access and penalties for non-achievement;
- the expanded versus the sunk network and the difference between maintenance and new build;
- equity issues
  - if existing businesses are freely given a right where that right was previously either not present or less firmly defined, they obtain a windfall gain to the disadvantage of currently non-existing businesses that need to pay for access
  - giving a right to a business that previously had no such right (or an attenuated version of it) involves placing an imposition on another business.

These matters and others are to be considered under a review by NECA into transmission that is planned to commence shortly. Implicitly, generators have been afforded some notion of firm rights to the node. Under the vertically integrated systems that predated the national market, transmission and generation were built in lock-step. Indeed, there was over provision of transmission reflecting the low marginal costs of building incremental capacity along a particular radial.

Even though transmission capacity is variable, a concrete definition of “firm” capacity is definable and this should be done. As to the actual allocation and the payment, it is not possible to backtrack and re-allocate the implicit rights. They are in place and should be made explicit and tradeable. For radial lines to the various nodes, this capacity should be allocated at the level of capacity each generator held at the time of market commencement.

Any additional firm capacity should be offered through an auction system. And transmission operators/owners should have incentives to find ways of augmenting firm and non-firm capacity

This would still involve generation being scheduled on the basis of bid merit order but would require a generator without firm rights that constrained off a generator with such rights to provide compensation for that part of the latter’s bid quantity that was offered below the pool price. A new or expanded generator would then have strong incentives to ensure adequate capacity augmentation or to buy rights from an incumbent.

This would then remove the incentive a generator has to free ride on existing facilities, where such facilities are scarce. It would sheet home the true costs of building capacity and delivering it to market, thereby leaving no bias against new building of transmission capacity.

#### **RECOMMENDATION 7**

**To avoid having planning of transmission favouring existing owners, that transmission ownership and planning be structurally separated businesses.**

#### **RECOMMEDATION 8**

**That the present Review recommend to the planned review of transmission by NECA that a means of defining tradeable property rights to existing transmission be devised with this fully to take into account *de facto* rights.**

### **3. Regulation of competitive industries**

#### **3.1 Markets and Efficiency**

As previously addressed, promotion of efficiency in markets is predicated on two features: strong property rights and vigorous competition.

Strong property rights are essential to ensure that sellers are able to keep the profits their activities generate. As a corollary, they must also face the likelihood of losses from taking the wrong decisions, losses that can lead to bankruptcy in extreme situations. This property rights perspective forces sellers at every stage of the market process to ensure that customers' needs are researched and met at the lowest cost.

Competition is essential as a discipline on this process. Without a competitor fully able and anxious to step in to supply the incumbent's market, the latter's motivation to continually search out new needs and cheaper ways of meeting them is blunted. Indeed, a seller with an entrenched monopoly will raise prices and reduce sales beyond the level at which additional revenue covers costs, secure in the knowledge that a rival would be unable to undercut the price. It is for this reason that a surrogate for competition is deemed necessary with distribution.

This process of competition is now generally accepted as offering the best means of setting the price and quality mix that gives consumers the best value. It operates in both the static sense of bringing about the lowest cost outcomes for a given set of demand and supply configurations and in the dynamic sense of encouraging a ceaseless search for improving upon this in the light of shifting demands and input costs.

All regulatory bodies claim that they are seeking to replicate this competitive outcome in the context of a market in which there are some natural monopoly elements that require synthetic costs to be developed. Hardly any authority would nowadays claim that regulatory overrides offer superior outcomes to those of a free and competitive market. Regulators simply do not have the capability to assemble and process the information that profit-driven suppliers routinely undertake.

Two areas of the electricity market generally considered to be amply constrained by competitive forces, at least in principal, are retailing and generation.

#### **3.1 The Role of the Electricity Retailer**

##### **3.1.1 The retailer as the consumer's agent**

Under competitive circumstances, the retailer is the *de facto* agent of the consumer. That role is assumed of necessity—if abandoned or neglected a rival will step in. The retailer's activities, to ensure its on-going success and even its existence, must extend far beyond passively breaking down bulk and ensuring products are delivered at convenient locations. It must extend to assisting in discovering what the consumer

wants. Unlike self selected (and often government financed) consumer “representational” bodies the retailer is *compelled* to be the agent of the consumer, as long as the consumer can move to an alternative agent if the retailer provides unsatisfactory service.

The retailer is an agent in a far more comprehensive sense than any representative body because it needs to weigh up the needs against the available product inputs—and to do so correctly or face replacement. The retailer is under great pressure to seek out inputs from all sources.

The homogenous nature of electricity does not negate this. Electricity may be undifferentiable but its supply is from highly variable sources. In terms of assembling inputs, the retailer must decide, based on its customers’ requirements (and those of its target customers):

- how much power to contract rather than buy at pool
- how much of different sorts of power (baseload, regular peak, needle peak) to buy
- how much price risk to take for the needle peak.

In addition, this basic product has to be metered correctly, bundled in profitable packages, promoted to consumers who may have little awareness of their needs and options, and priced appropriately. The retailer also needs to examine economies of scope (or synergies) in bundling his goods together with other similar products, sharing services of specialists like meter readers, back office functions etc..

Competition between retailers tends to ensure that, for a given quality, products are purchased from the cheapest producers and sold on to customers at margins that are not excessive in relation to efficient retailers’ costs. Competition is also, and perhaps fundamentally, a discovery process, whereby the competitors set out to ascertain the needs of customers, where those needs are not well defined nor even fully understood by the customers themselves.

### 3.1.2 Regulatory impediments to retail competition in Australia

With over two dozen Australian businesses in retailing, there is no lack of experienced competitors and few non-regulatory barriers to entry. And, unlike services such as banking, there are no costs or inconveniences involved in changing retail supplier. The notion that the energy supply incumbents are able to exploit their current monopoly is plausible in Australian retailing situations only to the extent that governments erect entry barriers.

There are clear dangers in overriding the forces of competition, dangers that intensify with the length of time the controls remain. These dangers of seeking to replace or improve upon the market outcomes can be distilled into two primary failings related to where the regulator sets the controlled price too low. Setting prices too low will:

- require cross subsidies and either bring an unravelling of the market balance and/or lead to financial distress among retailers and inadequate incentives for new investment; an extreme outcome of these developments is evidenced in California; and
- crowd out the competitive provision that is being sought forcing (reluctant) host retailers to continue serving unprofitable customers.

These considerations underline one matter on which pricing controls or guidelines must be ruled out: the prevention of price increases on the grounds that consumers would prefer not to pay higher prices. Already in Victoria prices are in place that have been regulated over the past six years with little provision having been made for the changing costs—absolute and relative—on which the prices were first justified. Unless prices are allowed to adjust to the underlying cost shifts, retailing will be seriously harmed with the consumer being the eventual loser.

Indeed, as soon as full retail competition is in place, it is difficult to see any scope for price setting. Any price that is set above market levels will mean customers will be won away from the incumbent supplier by a rival seeking to take advantage of a profitable opportunity.

In fact, an existing retailer may be vulnerable to a rival who is able to better its price because the target customers are complementary to others that it presently serves. This might allow a rival to make price offers below the cost of the incumbent even if the latter is technically efficient.

In this respect, Victoria's most recent decision placed a 3% upper limit on the deviation from the average price allowed of the maximum price for individual customer classes. This cements-in distortions, making it easier for new retailers to avoid those customer classes whose tariffs have become highly unprofitable. The danger is that the host retailers will gradually be left servicing the highest cost customers.

A further distortion introduced was to confer a "one off" rebate of \$118 million to rural consumers. This subsidy had the merit of being clearly visible as a government rebate, even though it is a market distortion and likely to boost consumption in areas where supply is more expensive. It would be a highly retrograde step if the Victorian Government were to seek to have the rebate absorbed within the charges set by distribution businesses thereby introducing a new system of cross-subsidies.

In addition, and of more immediate concern to the retailers, the Government's retail pricing decision put ceilings on the average price increases. Rising energy costs in Victoria led electricity retailers to seek average price increases of between 15 and 21 per cent. On the advice of the Essential Services Commission, the Government pared these back to between 2.5 and 15.5 per cent.

The upshot of the price restraints is that there has been little incentive for retailers to seek out new customers. In Victoria, after two months of FRC only 7,500 small

customers have switched retailer (but even this is ten fold the level of NSW). To get to the UK benchmark of 38% of the market switching after 3 years would need upwards of three quarters of a million in Victoria and over a million in NSW.

Even more serious than these considerations is the danger to the retailing industry which faces unregulated energy costs but regulated prices to final consumers. This was the potent brew that led to hitherto unprecedented bankruptcies in California.

Compared to setting the price too low, there are far fewer dangers of allowing excessive prices. This is not the least because excessive prices bring their own remedy—competitors find ways of winning the ostensibly captive markets. The attention to this asymmetry in the context of “essential services” drawn by the Productivity Commission draft report on Part IIIA has previously been noted. As discussed, it advocated erring on the side of allowing a higher price rather than risking an excessively low price. These approaches are even more appropriate in retailing which does not have the long lived capital assets of network services and consequent ability temporarily to serve customers at marginal cost.

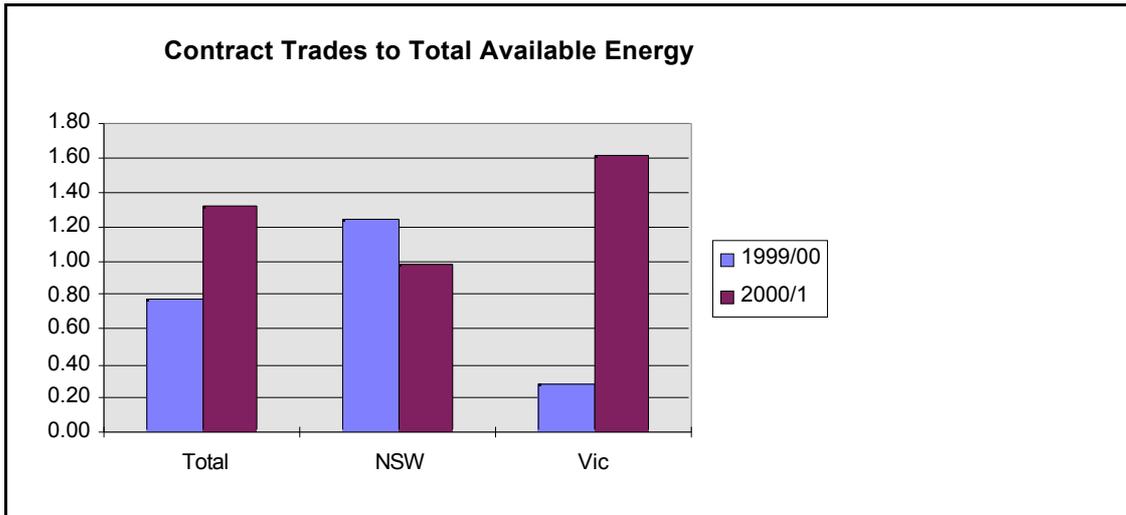
A further contemporary example of efficiency debilitating intervention in Australia and one that could not easily take place in a privatised system is the NSW Electricity Tariff Equalisation Fund (ETEF). ETEF is a compulsory insurance system that holds the spot market price of electricity between narrow bands. This imposes a low but palpable risk on the government as the owner of the businesses, of a colossal loss by should pool prices zoom up for a lengthy period.

More importantly, ETEF suppresses market signals for when new generation capacity, especially peak capacity, might be required. Over the longer term it will bring mismatches in energy requirements and availabilities as retailers have a much reduced incentive to signal needs by contracting forward for new supplies.

A manifestation of the effect of ETEF can be seen in contract transactions. In relation to the energy market, the turnover of contracts in NSW declined last year while that of Victoria increased fivefold. Victorian retailers and generators were seeking out ways of defraying their risks but in NSW there was far less need to do so because of the Government mandated form of insurance.

In Victoria, a strong growth in financial derivatives during 2000/01 brought them to the equivalent of 1.6 fold the size of the physical market (even so, many commodity markets have a derivative:physical ratio of 7:1). Significant in the derivative growth in Victoria was the popularity of “swaptions”, a product that allows retailers the flexibility to make offers without having to commit to contracting the energy. The following chart is based on AFMA data, which is far from comprehensive but does depict an accurate contrast between the two major Australian markets.

Chart 1



These contrasting developments have a bearing in regard to a statement in the Energy Market Review paper, which we fully support, that argued, “Government ownership of both electricity generation and retail businesses appears to provide a natural physical hedging opportunity, alleviating the need to maintain substantial financial contract positions to manage risk exposure. This may restrict the volume of trading on financial markets and has the potential to hinder or distort the efficient and timely development of deep and liquid financial markets.”

The effect of ETEF also impacts on the operations of private firms that compete with them. New South Wales government retail businesses are shielded in much of their market from competition by other firms.

Not only might such shielding of government firms from competition bring risks and stunted market development in the “home” market, but the government firms’ relative immunity from competition may allow them to compete unfairly in other, more open markets. This has been an accusation levelled by the European Commission of the French Government’s policy resulting in relative reservation of the French market for the government-owned Electricite de France.

### 3.1.3 Metering and its implications for Full Retail Competition

An issue of considerable contention in Australia and overseas is the lack of demand side response within the electricity market. It is said that there are only a few hundred MW of demand in the SA/Vic market that can be controlled. This is a very small share of the market. Clearly one reason for firms not wanting to negotiate demand side contracts is that, smelters excluded, energy only constitutes 2-10% of costs and downing tools is more expensive than making a small saving.

In the case of households the lack of interval metering is a major factor. Indeed, this lack and the consequent need for load profiling has a perverse effect. Retailers would

find those households who are the heaviest users to be the most attractive targets, notwithstanding that such households typically use air conditioning which has been a major factor in bringing greater peakiness and hence higher costs.

A debate which divides retailers, consumerists and economists is what to do about the lack of metering. It all comes down to price of the meters and costs of reading them. But according to McKinseys<sup>27</sup>, household users exhibited considerable demand elasticity in a Texan study. Without specifying the price changes involved, the study claims that an experiment with “dynamic pricing” through real time metering brought consumers to shift one third of their load out of peak periods.

Such a magnitude could vastly increase the savings from electricity markets and the importance of retailers in achieving these. The issue remains the cost of roll-outs. One firm, Email, is discussing a \$60 meter if the volume is 400,000. But this would seem to need additional expenditures for the meter to be a tool that can offer genuinely controllable usage. The fact remains that notwithstanding all the potential gains and talk of mass roll-outs of interval meters nobody has yet done it.

The issue has featured strongly in the debate internationally. We tend to the view adopted by Littlechild<sup>28</sup>, who has argued that with all its shortcomings, a profiled load and rivalry for the retail consumer is worth it.

## **RECOMMENDATION 9**

**Allow full scope for retail competition as early as possible with a rapid phase-in of the removal of all price controls.**

### **3.2 Competition in generation**

#### **3.2.1 Market concentration**

Throughout Australia, ESAA lists about two dozen generation businesses providing more than one percent of any of the four main markets. This offers adequate competition for the market as a whole. Nonetheless, there are concerns, noted in Section 2.3.4 of the Review’s Issues Paper, of excessive concentration of electricity generation in all states other than Victoria.

These concerns are credible in view of the relatively minor degree of inter-linkage in the Australian electricity system. And ABARE has published some research which gives added support to claims are exercising market power<sup>29</sup> (though ABARE, rather

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<sup>27</sup> Power by the Minute, February 2002

[http://www.mckinseyquarterly.com/article\\_abstract.asp?tk=83967:1142:8&ar=1142&L2=8&L3=48](http://www.mckinseyquarterly.com/article_abstract.asp?tk=83967:1142:8&ar=1142&L2=8&L3=48)

<sup>28</sup> Littlechild, S.C., Why we need electricity retailers: A reply to Joskow on wholesale spot price passthrough, The Judge Institute of Management Studies, University of Cambridge, September 2000.

<sup>29</sup> ABARE’s January paper, *Competition in the Australian national electricity market*, ABARE Current Issues, January 2002.

surprisingly, claims to have detected abuse of market power in Victoria and not the other markets).

A test of claims that generators are driving up prices would come from an examination of their share prices. Unfortunately most Australian generators are either government owned or not listed. Loy Yang is the exception and, is one of the largest energy suppliers in Australia. As a well run firm, it is therefore a decent bellwether for the industry in general. Loy Yang's shares are trading at less than a quarter of their issue price, while its debt too is selling in secondary markets at a steep discount. This is not the sort of outcome that might be expected of a firm that is exercising monopolistic powers or benefiting from such activity by other firms.

Market power is an elusive concept. Almost all businesses in all markets enjoy some ability to raise prices by offering less. Many firms promote differences, often trivial differences, in their brands in order to improve prices. Others may find niches within markets in which they can, at least temporarily, charge higher prices than the basic costs would seem to justify. Still others find themselves in a fortunate position of having supply available that is insufficient to meet demand—perhaps because of a competitor's sudden failure, perhaps because of an unanticipated upsurge in demand.

Although there may be grumbles about “profiteering” in some such circumstances, actions to prevent the higher prices will normally rebound against the consumer's interest. Without the ability to charge very high prices to cover rare events, firms may have inadequate incentives to operate so that they have capacity available at the right time. In addition, these very high prices act as a means of rationing supply to those placing the greatest value on it (that is, demand side participation).

As is well known, wholesale prices have been remarkably low since the NEM and its Victorian predecessor commenced. The average electricity spot prices in the four main markets are illustrated below.

**Table 2**

<b>Average Prices in Major National Electricity Markets (\$)</b>				
Year	NSW	VIC	QLD	SA
1999 J-June	23.7	25.1	55	49.7
1999 - 2000	28.9	26.1	45.3	60.6
2000 - 2001	38.4	45.4	42.2	57.3
2001 J-Dec	27.4	26.7	28	26.4

Although prices may now be trending upwards, we have seen major falls from the \$38-44 that prevailed prior to markets being introduced. Underpinning these price falls have been large increases in efficiency. For example, in Victoria the generators since being moved into a more competitive setting (following corporatisation in 1994 and their subsequent privatisation) have seen their workforces shrink from about 11,000 to the equivalent of less than 2,500. At the same time other efficiency measures like availability-to-run have been lifted from the high 70s to the mid 90s.

**RECOMMENDATION 10**

**Generation is essentially a competitive service. The Review should examine changes in industry structure that may ensure that this potential is fully realized. While market rules for generators are necessary as a result of the homogenous nature of the product, these should not extend to regulation of output nor of establishing a price (other than at a very high level).**

**3.2.2 Market design**

Electricity shares a great many features with other commodity markets but its inherent non-storability does give rise to a need for a more structured market than is seen with any other commodity. In a grid based system, the need for all suppliers to be scheduled, and for various ancillary services to be supplied to ensure the system operates efficiently, automatically requires a market manager.

Virtually all electricity industries are moving to a variant of a competitive based wholesale market, where suppliers (and occasionally demanders) make quantity bid offers up to a price capped at a very high level. But there are some significant differences.

Under the new UK variant (NETA), the centralised market system pays the generator the price it is bid; most other variants pay the price bid by the marginal supplier to all suppliers. There is something to be said in auction theory for both approaches, though the UK approach requires considerably more investment in information technology systems.

In reality, however, all electricity markets are fundamentally contract markets (an exception was the failed Californian model where contracts were largely forbidden). In Australia, the best guess is that 95-97 per cent of energy is bought under contract. The reason for this is the strong risk aversion of retailers (and their financial backers) to high price excursions. The spot market (or, in the UK, the balancing market) is therefore a market for “unders and overs” which settles the small amount of energy that was despatched and used without a contract cover.

Some markets incorporate a capacity payment to encourage high cost capacity to be made available. While this has some ostensible appeal in the context of a market with variable demand, it also involves a central planner determining what capacity level should be made available and how much to pay for it. Our own view is that the energy only market works better<sup>30</sup> though, as with other market design issues, the matter is not settled.

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<sup>30</sup> See Peter Hartley and Alan Moran, *Marginal Costs and Prices in the Electricity Industry*, by IPA June 2000 <http://www.ipa.org.au/pubs/Moranwebpapers/Energy15.pdf>

These are just the more important matters exercising people's minds in the wholesale electricity market. Doubtless we do not yet have the optimum set of rules but the market continues to emerge and the great many variations on the basic theme will continue to inform us as to what changes might best be made.

#### **RECOMMENDATION 11**

**The Review process note the many variations of the wholesale market and broadly endorse it and the existing approach to effecting change to it.**

### **4. Governance Issues**

In Section 2 we raised the issue of the great many regulatory institutions that are involved in the energy industry. Concern regarding these are several fold:

- there is overlap—for example NECA undertakes consultations on reviews to the national electricity code which are then passed to the ACCC which undertakes the same reviews *de novo*;
- although NEMMCO is supposed to be the market manager, it is also involved in certain elements of policy work;
- State Governments continue to have considerable control over the industry in their respective states; this is evidenced in:
  - decisions on FRC
  - apparently vetoing the creation of new electricity transmission regions in defiance of Code provisions
  - in insisting upon specific sorts of power, in particular “green” power.

In addition, State Governments appoint directors to NECA and NEMMCO. There are suggestions that they use these directors to pursue particular policy approaches that might benefit their own states.

The electricity and gas industries continue to be viewed by governments as more sensitive than other industries and are therefore subjected to more intervention. This has the potential to seriously harm the operation of market forces and therefore detract from efficiency.

#### **RECOMMENDATION 12**

- **Governments should cease trying to manage energy industries with industry specific policies rather than using general industry policy.**
- **The regulatory arrangements should be rationalised to avoid duplication and be placed under fully apolitical controls.**

## APPENDIX 1

**Outcomes of private ownership of electricity in Victoria**

Much is made of the sums raised in energy privatisation—\$28 billion for Victoria and over \$5 billion for South Australia. Important though these have been to the fiscal health of these two states, more important is the outcome for the industries' efficiencies. These have included cost savings and innovations which have brought great benefits to customers.

Cost Savings

Victorian distribution businesses since privatisation have shown marked increases in productivity and in customer service. Personal communications with two companies revealed considerable savings post privatisation. In the period between privatisation and mid 1999, Eastern Energy (TXU) made savings in operating costs of 22 per cent, while CitiPower, which inherited municipal council owned electricity businesses that were even less efficient than the SECV, made savings of 38 per cent.

Benchmarking United Energy against 104 US utilities, the Pacific Economics Group (PEG) found that the Victorian distribution business's standardised overall cost was 45% of that of the average U. S. firm. The study's findings would have placed United Energy close to the frontier of efficiency.

The following table shows United Energy compared with the average in the sample compiled by PEG.

**TABLE A1****AVERAGE VALUES OF VARIABLES IN THE BENCHMARKING STUDY**

Variable	Units	US Sample Average	United Energy	United Energy / Sample Average
Total Cost	Thousands of \$US	377,782,714	171,158,508	0.45
Price of Capital Services	Index Number	1.00	1.07	1.07
Price of Labor Services	\$1,000 (US) per Employee	51.75	36.59	0.71
Price of Materials	Index Number	1.12	1.08	0.97
Total Customers	Customers	695,777	538,000	0.77
Retail Deliveries	MWh	17,758,000	8,448,605	0.36
Miles of Distribution System	Miles	20,489	7,387	0.36
% of Distribution System Electric	Percent	89%	100%	1.12

Source: Pacific Economics Group, Kaufmann, L., Lowry, M.N., and Hovde, D., *United Energy Performance, Results of International Benchmarking*, November 1999, p. 39

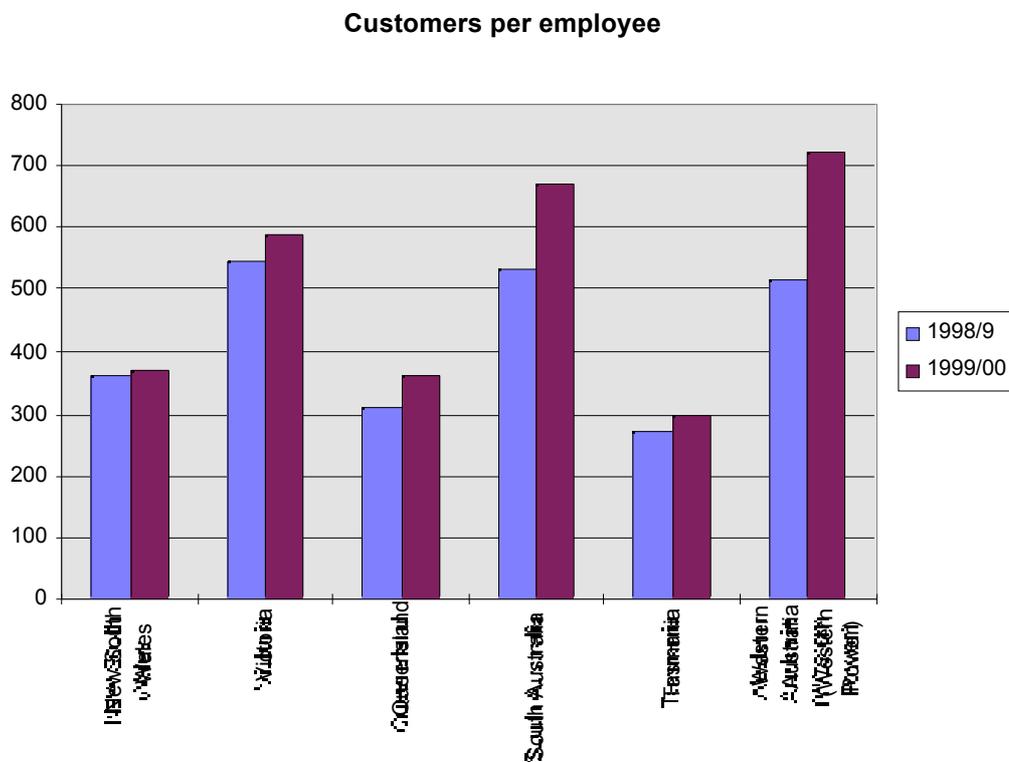
However fully documenting the productivity performance of Australian distribution businesses is difficult. This is not least because data in the ESAA annual publication

*Electricity Australia* shows some inconsistencies, possibly because of the difficulties of unscrambling retail and distribution personnel in earlier years.

We can be reasonably confident of the 1999/2000 data from ESAA. Measured in terms of customers per employee, this indicates labour productivity in NSW and Queensland respectively was only 62 and 61 per cent of that of Victoria. South Australia, post its privatisation, appeared to have leapfrogged Victoria, while Western Australia (which covers only the South East interconnected system) was also well ahead.

Chart A1 illustrates this.

**Chart A1**



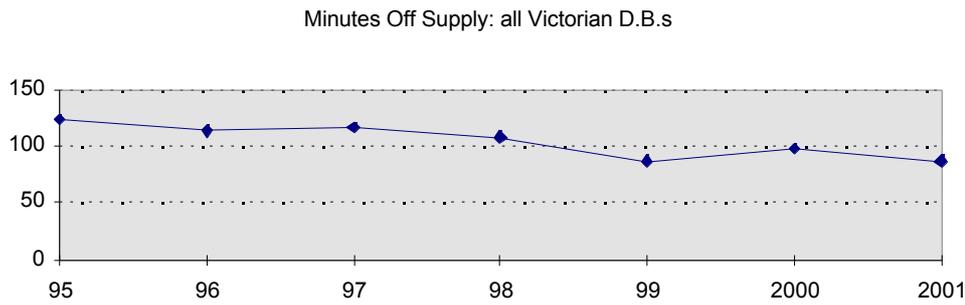
Source: ESAA

The above yardstick measuring efficiency levels, labour productivity, excludes the important component of capital productivity. Energy businesses themselves attempt to determine their relative efficiencies to set internal targets (and, in the regulated environment in which distribution operates, to deter regulators from seeking excessive price reductions).

### Reliability Improvements

Reliability of distribution in Victoria has improved considerably since privatisation. A steady improvement in reliability, as measured by minutes off supply, has been experienced in the years since 1995 as illustrated below.

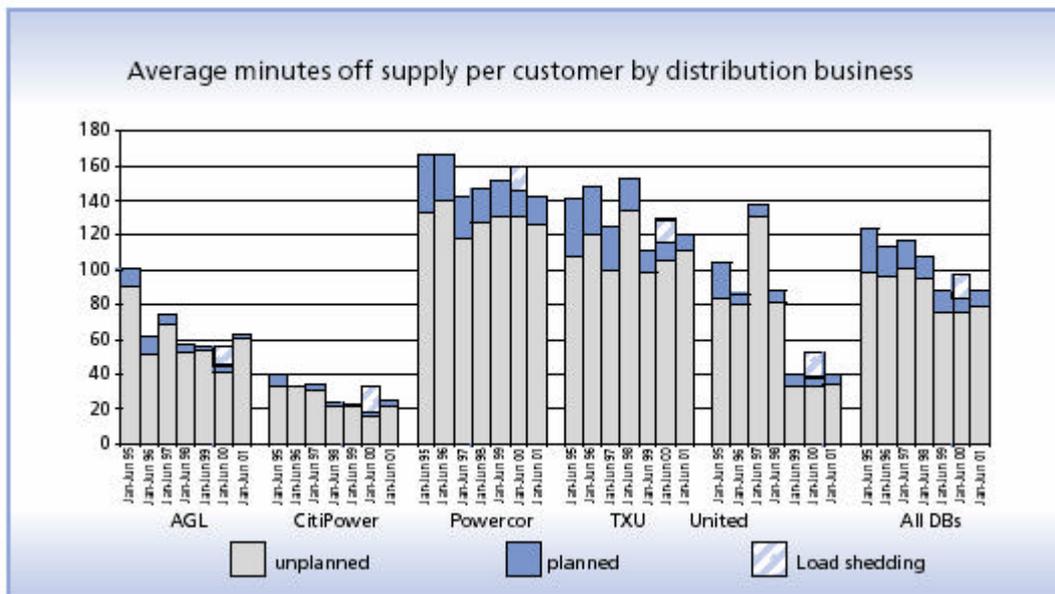
Figure A1



Source: ORG

The improvements have been seen in all five distribution businesses as illustrated in Chart A2 below.

Chart A2



Source: ORG

A small increase (4 per cent) was recorded in minutes off supply in the first half of calendar 2001. This was ascribed to more normal storm situations following a very benign first half year in calendar 2000. The Office of the Regulator General noted that the distribution businesses remained on track to the target reductions in minutes off supply that had formed part of the 2001 rate re-set.

In respect of reliability, the Victorian outcome has shown relatively more improvement than that in other jurisdictions. Chart A3 illustrates this.

Chart A3

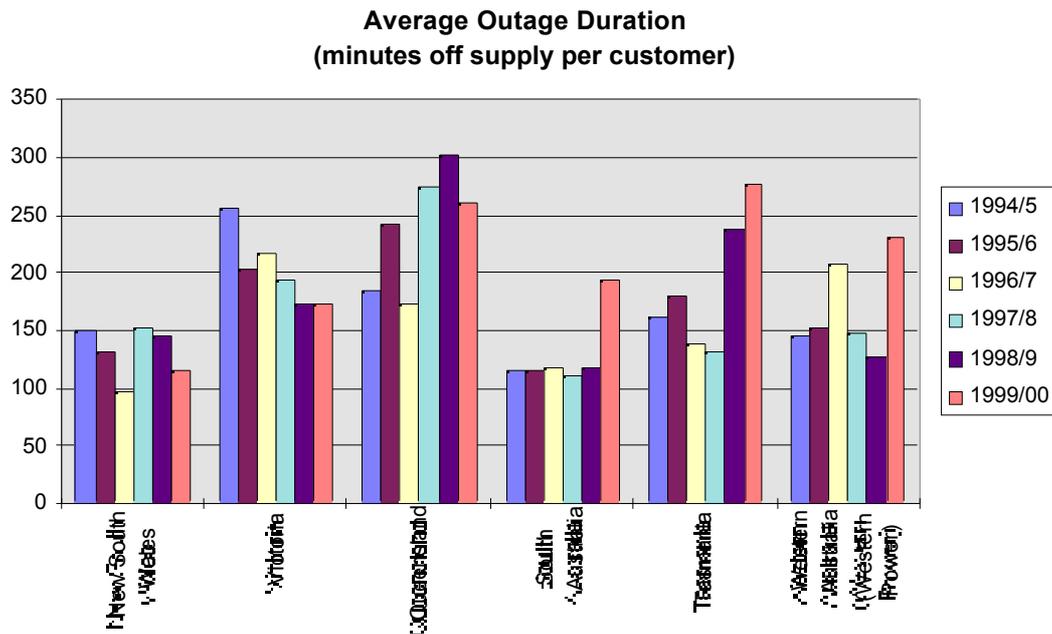


Chart A3 shows that improved performances have been logged only by Victoria (outages down 32 per cent) and NSW (outages down 24 per cent). Other states have shown increased outage times of between 41 per cent (Queensland) and 71 per cent (Tasmania)

### Generator Performance

As with distribution, it is rarely possible to assemble simple benchmarks allowing state by state comparisons between generation businesses. There are no measures of total factor productivity levels while partial measures like labour productivity can be misleading. Thus, output per employee contains definitional problems following a greater use of contract labour.

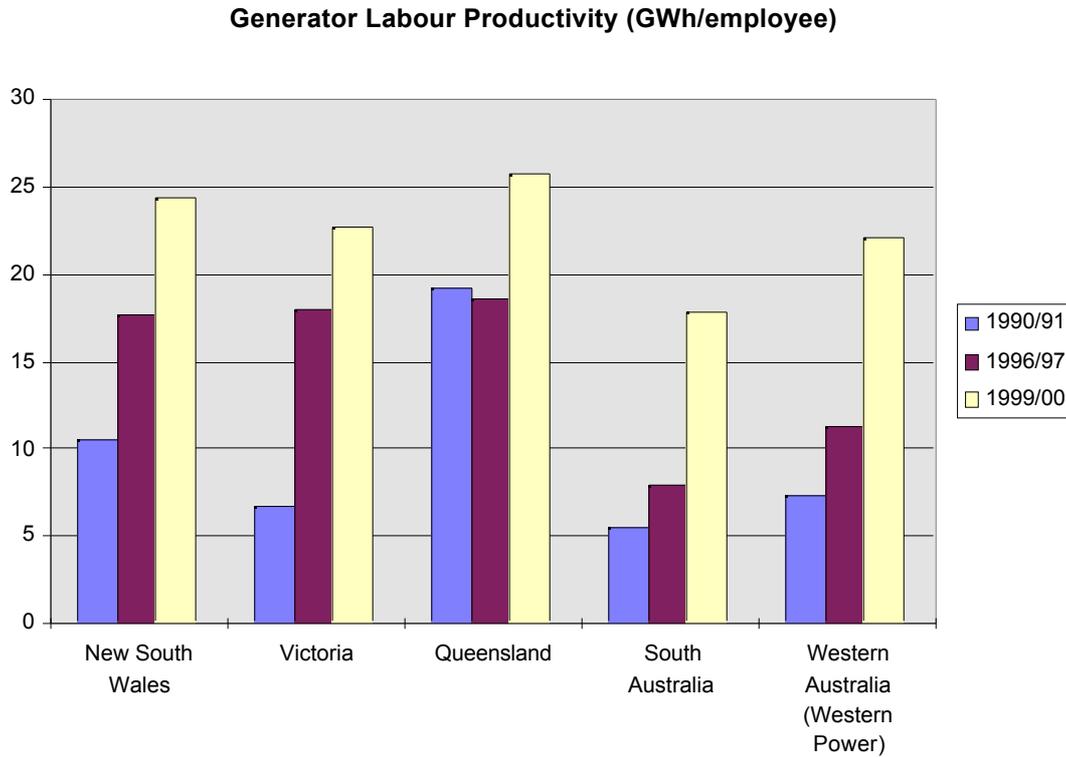
In addition, different types of generator have different capital:labour ratios. Gas generators and hydro-electric generators require fewer staff than coal fired generators, while Victoria's brown coal generators differ from other states' black coal generators since they mine their own coal.

Furthermore, as with distribution businesses, profit figures are now not readily available as a result of the privatised businesses normally consolidating profits into parent company accounts.

Nonetheless, there is sufficient data to be able to construct a reasonably accurate picture of the change in operational performance of the privatised Victorian generators and to compare this with the performances of other states' generators.

Chart A4 illustrates the comparative trends.

Chart A4

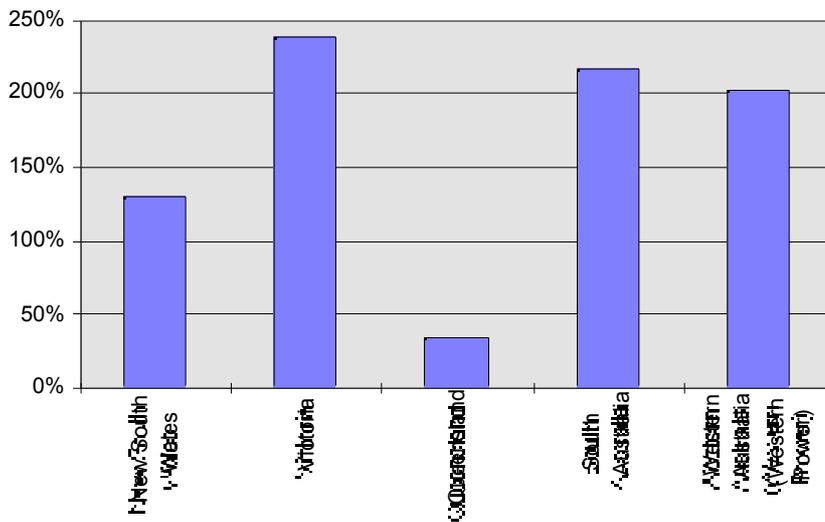


Source ESAA

The available data shows that productivity in all state systems has experienced marked improvements. That of Victoria has, however, been the strongest. Over the past decade, the Victorian generators' productivity has increased by 237 per cent. The comparative performance of five states is shown in Chart A5 below.

Chart A5

Productivity Increase in Generation 1990-2000

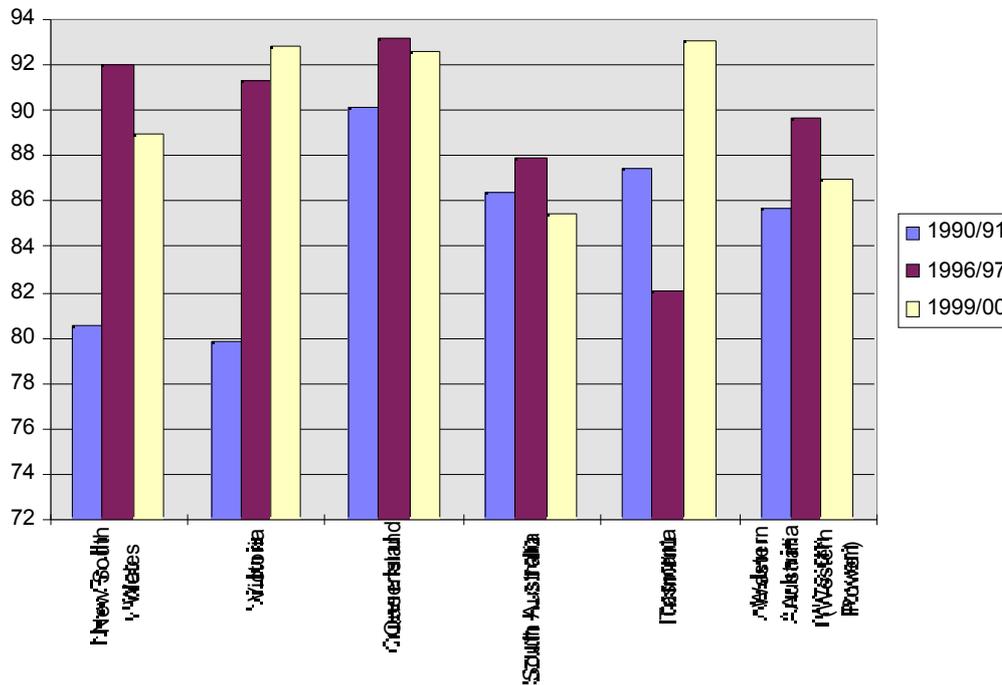


Source ESAA

Part of the improved productivity of the generators is their greater availability. Not only did the pre-1992 generation sector exhibit gross over-manning but the generators were available for less than 80 per cent of the time. Having generators available to run at short notice enables them to meet unexpected changes in demand, and also brings about lower prices. The improvement in Victoria’s generators has been outstanding as Chart A6 illustrates (but recent breakdowns may have brought a deterioration).

Chart A6

Power Stations' Availability to Run



Source: ESAA

### Prices to Customers

The ESAA publication *Electricity Australia* conducts its price surveys by dividing revenue by energy usage and subdividing this into different customer classes. However for contestable customers, the fact that energy retailers now operate across states means, on these grounds alone, it is no longer possible to use such aggregate data to prepare such estimates.

As the Eastham Task Force found in South Australia, “The Task Force was not able to ascertain the number of business customers who have signed contracts with other retailers, nor the price of those contracts. However information from AGL suggests that of the total contestable market in South Australia, around 40% of customer load will be supplied by other retailers from 1 July 2001. This 40% figure has been confirmed by information available to the South Australian Independent Industry Regulator (SAIIR) which also indicates that a number of retailers are now active in South Australia<sup>31</sup>.” A somewhat larger percentage of the larger (over 160MWh) contestable customer load has shifted in Victoria. In noting that prices quoted to South Australian contestable customers had risen by 30-35 per cent, the State Premier also quoted evidence that similar price increases were evident in other markets. The ESAA<sup>32</sup> provides price surveys that offer useful information.

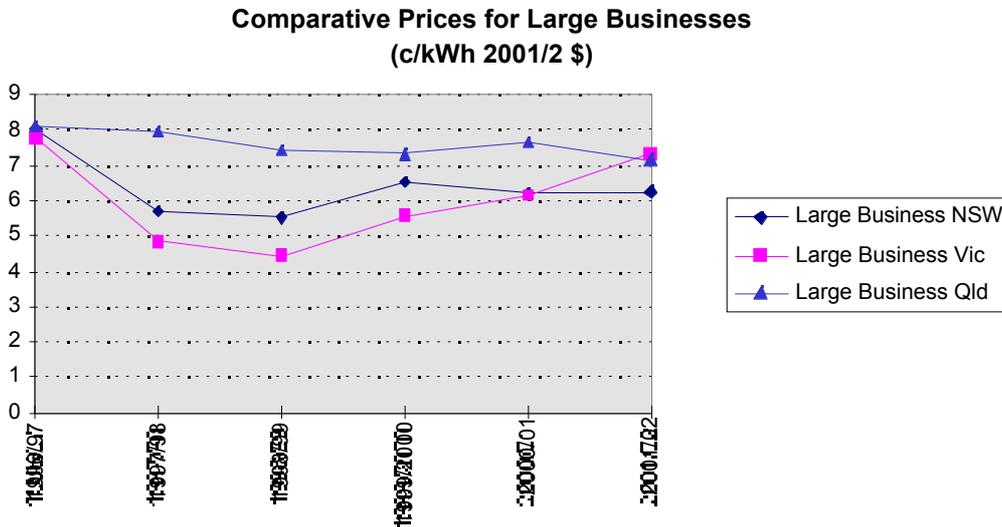
<sup>31</sup> The state government electricity taskforce, final report, 29 June 2001

<sup>32</sup> ESAA, Electricity Prices in Australia, 2001/2002

Business Customers

Business customers' prices, which are now largely deregulated, have seen quite considerable reductions across the different classes. The ESAA estimates prices in constant dollars to have been as follows.

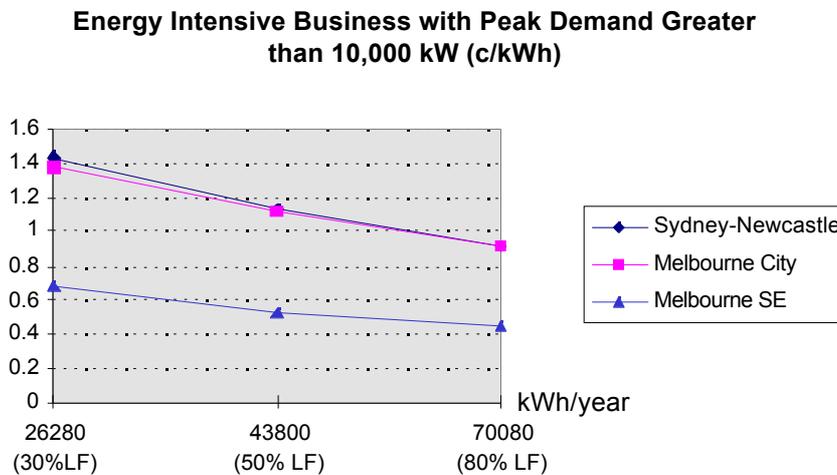
**Figure A2**



Large business customers in Victoria benefited from very low prices during the late 1990s. The increase in wholesale prices since then brought a sharp increase from the year 2000. New generation capacity that has been announced may bring a lowering of wholesale prices though they are unlikely to fall to the very low levels that prevailed in the 1997-1999 period.

Figure A3 shows that these charges for larger business customers with varying load factors

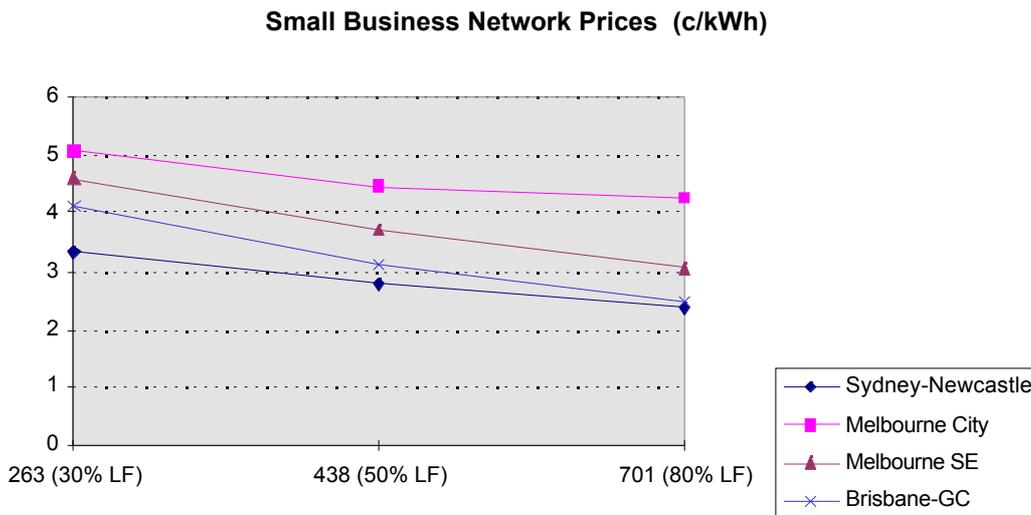
**Figure A3**



The different line configuration of the Victorian system tends to favour prices to larger customers in comparison with the NSW and Queensland systems (Victoria has few 11 kv lines). Victoria's other business customers tend to have higher line charges due to the configuration of the system. As with the larger business customers, the energy component within the total has tended to increase since the year 2000.

Network prices for small business customers in Sydney, Melbourne and Brisbane are shown in Figure A4 below.

**Figure A4**

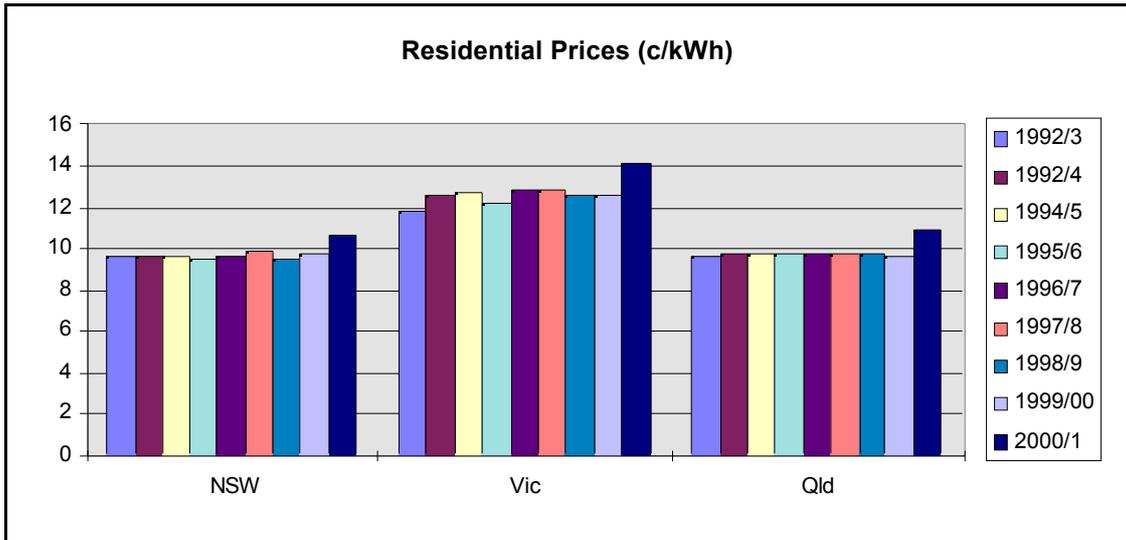


### Domestic Customers

Prices in Victoria to residential consumers have long been rather higher than those of NSW and Queensland. In part this is due to lower levels of electricity consumption in Victoria (NSW households consume 33% and Queensland households 40% more than Victorian). These lower consumption levels require higher amortisation costs.

It is also likely that Victorian prices had been higher as a result of the state's relatively high costs pre-corporatisation/privatisation.

Chart A7



Source ESAA Electricity Prices in Australia 2001/2002

Following increases in wholesale electricity prices, price increases to the formerly franchised customers were introduced in January 2002.

Retail competition means it is no longer easy to observe average price outcomes on a statewide basis. What we can be sure about is that though governments can force down prices for some periods of time, competition will result in the lowest sustainable prices.

## Appendix 2

### Essential facilities regulation

There are two sets of arguments that can be advanced in favour of regulation of assets as essential facilities. The first is based on the development of the common law as outlined by Professor Richard Epstein<sup>33</sup>. The second is contained in the submission to the Productivity Commission's *Review of the National Access Regime* (n. 53) by Dr T Dwyer and R K H Lim and rests on the notion that the "essential facility" only obtains a right of way over others' properties by government action and owes a corresponding duty.

Epstein points out that resolving clashes of rights is the fundamental purpose of property law. Sorting out the rights of different property owners where those rights are in conflict has been the task of courts throughout the ages.

There is a key distinction between a facility that has been developed without any protection or support from government and one that has been developed under some sort of franchise (or, like much Australian infrastructure, by the government itself). Where the monopolist has seized his position by spotting an opportunity and offering value, the government regulation is pure coercion. Where the monopoly is created by law, the monopolist is clearly bound by the terms of the original grant which include the *quid pro quo* for that grant. Those undertaking a development of the former kind need not and should not face regulation regarding access or price.

Epstein, however does not consider the distinction between a franchise protected "essential facility" and one that developed without any privileges as being as crucial as this. Much of his analysis (like the key English and American cases that established precedents) rests on the seventeenth century tract by Lord Matthew Hales *de portabis mari* ("concerning the gates of the sea"). In that tract, which was not published until the 1780s, Hales argued, that an asset (he was discussing cranes in ports) can be "affected with the public interest" either "because they are the only wharfs (sic) licensed by the queen" or "because there is no other wharf in that port".

Although not accepting a sharp dichotomy of approach between government supported and purely entrepreneurial infrastructure, Epstein argues "...regulation must be justified on the grounds that any monopolist charges too much and sells too little relative to the social – that is the competitive – optimum. But even when true, the case for regulation is hardly ironclad. The situational monopoly may confer only limited pricing power, and its durability could be cut short by new entry, or by technical innovation. Regulation could easily cost more than it is worth, especially if the regulation entrenches present forms of production against the innovation needed to undermine its economic dominance." (p. 284)

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<sup>33</sup> Richard A. Epstein *Principles for a Free Society*, Perseus Books, Reading Mass, 1998

### 2.3.2 Regulation as the price for government services

In their submission to the Productivity Commission, Dwyer and Lim (Submission 53) argue that it may be reasonable to allow the market to set the rates for infrastructure but that the market comprises more than the investor and the user. They suggest it also comprises the Crown (as granter of the franchise) and the landholders giving or being forced to give access and other potential infrastructure providers. This starts to resemble the dilution of control and subsequent fuzzy policy implications that is often seen when the firm is viewed as a series of “stakeholders”.

The Dwyer and Lim submission focuses on property rights but assumes all things are owned by someone. In fact the cardinal rule of property rights is that all things of value must be owned. Things which have no value need not and usually should not be owned by anyone. Their ownership becomes vested in those who discover the value.

This is the accepted procedure for patents and copyright. The uninvented material is unowned until invented, after which the inventor obtains (limited) ownership rights.

This is also the principle behind mining law in most common law countries. The crown is the theoretical owner of the minerals that are undiscovered and charges a “royalty” on them. But that charge is reasonably well known in advance and is fixed. The discoverer of the minerals obtains substantially all the value from them. Were this not the case, the incentives would be wrongly placed: the government and/or landowners would receive windfalls without expending any effort. This misdirection of rewards for effort and risk taking would cause sub-optimal search and development activity.

Similarly, the mineral product needs to be transported over a landowner’s property. While it is reasonable that the landowner be fully compensated for any inconvenience thereby caused, to give the owner more than this would overcompensate him and, accordingly, undercompensate the explorer. This would lead to a misallocation of resources.

It is possible for the state to seize rents from monopoly privileges the infrastructure owner is given. Indeed, the very definition of economic rents might recommend this as the correct course since seizure could not have any adverse effect on economic activity. But it is difficult to identify any such rents in advance. There may, of course, as in the case of a mineral discovery, be very substantial rents *ex post* but taxing these will curtail search activity and their future availability.

Unless there are a number of infrastructure owners spotting an exceptionally profitable opportunity at the same time and only one development can proceed, the rents are not present in advance of a facility’s development. Attempts to anticipate them with a tax will constitute discriminatory investment policy, reduce investment and diminish economic welfare.

Governments are in competition one with the other to attract investment and to ensure they maintain the environment that allows their citizens to prosper. If they purloin the value from their essential administrative role that prosperity will be attenuated. In this respect, Dwyer and Lim maintain:

*“Moran and others forget that the underlying property in question belonged to the Crown as landlord on behalf of the people in the first place. ... If the Crown, on behalf of its subjects, says to an infrastructure developer ‘you may have these easements for your infrastructure on condition that, having been granted free access, you will not abuse your conferred monopoly, by charging more for access than your costs.’ What is there to complain of?”*

There is nothing to complain of when the ground rules are fully spelt out, but a nation that seeks at the outset to reduce entrepreneurs’ opportunities to profit from spotting market opportunities will see less such activity. If all infrastructure returns were to be capped at a rate of return that the government or its agents consider appropriate, there would be less of such infrastructure built. There will certainly be less of the more risky infrastructure that has uncertain returns. In terms of the infrastructure built, we would therefore see a concentration on serving existing known markets with known resources. We would see far less activity on projects that entailed forecasts of demand growth that contain considerable up- and down-side uncertainty. Not only does this deny the economy worthwhile ventures, but the ventures denied are those that improve its economic resiliency and ability to adapt to change.

As Thomas Friedman points out in *The Lexus and the Olive Tree*, government actions to reduce profitable opportunities will spark swift retribution in today’s wired world. Information concerning increased government intervention is quickly transmitted through such agencies as Dun and Bradstreet. Capital, and perhaps scarce labour, will shun the country whose government acts so irresponsibly, forcing it back into line or resulting in the country facing a lower level of prosperity. This discipline of globalisation does much to reduce the scope governments have to intervene within an economy. It is a benefit in that it sharply constricts the ability of governments to tyrannise their own or foreign citizens.

However, it is not new. The growth of the common law itself is due to the internationalisation of commerce in the Middle Ages. The *Law Merchant* developed as a means of allowing trade to take place. Governments that favoured some parties, either on their own behalf or on behalf of their citizens, found their lands were less patronised by traders and that some of their more productive citizens migrated. Without anyone planning it, the law developed as a constraint on government action. It remains so today.

Of course, it is true that Governments frequently play fast and loose with private property. Even the US Supreme Court in *Lucas v North Carolina* refused to acknowledge a “taking” unless it was total. However, the point is that a few

grasshoppers do little damage to a crop but a plague of locusts destroys it. Too much interventionary action shifts a nation to the political and economic periphery. Very few politicians find it possible or palatable to totally refrain from overriding the established law but the difference between nations like Switzerland, the USA and Singapore are considerable when compared to countries like Sierra Leone, Malawi, Rumania, Myanmar and other unsuccessful economies. The former group of countries is near the top and the latter near the bottom of the economic freedom league compiled by a group of “think tanks”. Countries are ranked according to criteria in which the degree to which their economies are characterised by considerable government intervention. There is a very strong correlation between economic prosperity and economic freedom.