Productivity Commission

The National Access Regime

Legislation Review of Clause 6 of the Competition Principles Agreement and Part IIIA of the Trade Practices Act 1974

Submission by

The Australian Council for Infrastructure Development

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1 Introduction

AusCID is the principal industry association representing the interests of companies and organisations owning, operating, building, financing, designing and otherwise providing advisory services to private investment in Australian public infrastructure.

The Council formed in 1993 and currently has over 100 members, of whom 25 are Full Members (directly or indirectly own equity in Australian infrastructure) and 59 are Associate Members (support private infrastructure development). Details are set out in Appendix A.

As a result of our membership base, AusCID is in a unique position to consider the views of infrastructure owners, equity investors and debt financiers and combine them with the views of infrastructure operators.

On 11 October 2000 the Assistant Treasurer asked the Productivity Commission (PC) to review Clause 6 of the Competition Principles Agreement and Part IIIA of the Trade Practices Act 1974. These provisions seek to develop a framework which regulates access to infrastructure assets which are, among other things, of national significance. If necessary the framework empowers the ACCC to act as an arbitrator to determine the conditions of access according to the pricing principles.

The terms of reference for that review require, among other things, that the PC consider whether the benefits to the community of regulation outweigh the costs and whether the benefits of regulation can be achieved in some other way. The PC is also to consider mechanisms for improving the function of Part IIIA and Clause 6.

The PC published an *Issues Paper* in October 2000 which discusses some of these issues and calls for submissions from interested parties.

1.1 Other AusCID submissions

AusCID has been an active commentator on regulatory issues as the Australian system of economic regulation of infrastructure businesses has developed. AusCID acts as the secretariat for the Regulated Businesses Forum (RBF), a group of businesses which share a general concern regarding the nature of economic regulation in Australia. The businesses operated by the members of the RBF span every Australian State and Territory. The operations and interests of the members include electricity generation, transmission and distribution, gas transmission and distribution, telecommunications, water and wastewater, road and rail transport, airports and ports. Members include not only operators but also investors, financiers and industry associations acting on behalf of their members.

The total investment in Australian infrastructure represented by the members of the RBF totals many billions of dollars. The members of the RBF are therefore significant stakeholders in the development of regulation in Australia. Many other firms which have an interest in the development of regulation in Australia also attend RBF meetings and are kept informed of progress.

The fact that such a wide range of businesses, including many which are usually competitors, has combined efforts to express a concern regarding the direction of regulation in Australia is evidence in its own right that something is amiss. The RBF

hopes to become the focus for a business view regarding the most appropriate form of regulation for Australian infrastructure and utilities.

The RBF recently made a submission to the Victorian Government's review of the Essential Services Commission (ESC). The submission discusses the nature of regulation and the impacts that regulation can have on a business' activities and its incentives. Although focussed on issues related to a state based regulator, the ESC submission is highly relevant to the National Access Code inquiry. The RBF's issues and objectives statement which forms an appendix of the ESC submission is also relevant to the system of national access regulation. A copy of that submission is attached.

In addition, the RBF commissioned a paper entitled 'Economic Choices Associated with the Proposed Essential Services Commission' by Professor Joshua Gans of the Melbourne Business School and Professor Stephen King of the University of Melbourne. This is an independent paper however its content does support the views of the both AusCID and the RBF regarding the preferred nature of regulation in order to optimise outcomes for businesses, consumers and the entire nation. This paper is also attached.

This submission is in two sections. The first part discusses the issue of regulatory risk and its impact on investors. The second section considers the National Access Regime and makes some recommendations to the PC regarding its inquiry.

2 Importance of infrastructure to the economy

Efficient infrastructure is particularly important for a country like Australia. Not only does Australia have to offset its labour cost disadvantage relative to its Asian neighbours, it also has to overcome very large distances over which goods must be transported. Having more efficient infrastructure services than its competitors is one way by which Australia can gain a competitive advantage.

Infrastructure assets have a number of other characteristics which have led governments to provide services directly, or to regulate private providers. These characteristics set infrastructure apart from other sectors of the economy and create the need for a complex interaction with the government if the private sector is to provide services.

Infrastructure is an essential contributor to the production of other goods and services. If the provision of an infrastructure service is disrupted there can be widespread multiplier effects across the economy leading to significant costs.

Infrastructure often exhibits large natural monopoly elements such as increasing returns to scale, low marginal cost of production and consumers often have a limited choice for the provider of the service. Infrastructure assets are also often highly capital intensive. There are therefore high sunk costs associated with creating infrastructure assets and the investment profile is discontinuous. These traits enhance any natural monopoly characteristics. Infrastructure assets have correspondingly long lives and pay-back periods.

For these reasons Governments have generally chosen to regulate infrastructure service providers (both public and private) in order to avoid the inefficiencies which

can be generated by monopolies compared with the situation which would prevail in economically competitive markets.

However, from the point of view of investors, infrastructure investments are also of a peculiar nature. Infrastructure investments are typically limited use assets. If the project becomes unviable the asset cannot easily be used to provide an alternative service or moved to a different location. Hence investments are relatively inflexible. To a large extent then, investments in infrastructure are 'sunk costs'. This means that investors will be very sensitive to the risks associated with those investments. Any increase in risk, or the perception of risk, will result in a reduction in the capital available for investing in infrastructure or an increase in the returns demanded by that capital.

2.1 A role for Government

Given the importance of infrastructure services to the economy, the Government has a key responsibility in ensuring those services continue to be delivered to an appropriate standard. One part of ensuring this occurs is to set policy to encourage efficient investment in infrastructure assets in order to ensure that efficient investment occurs and to enhance reliability and service standards in the long run. In this case the Commonwealth Government must determine the regulatory regime such that it develops an investment climate which is responsive to these capital needs and which will encourage investment in Australia's infrastructure.

The Government cannot step back from its responsibility to oversee the efficient delivery of infrastructure services for Australians. It must set the policy framework to encourage continued investment in that infrastructure for the long term benefit of the community.

3 Regulatory risk

Infrastructure and utility businesses are highly capital intensive. The investors which are required to put equity into these businesses seek the best possible risk weighted return for their funds. The market for these funds is global, as evidenced by the very high proportion of foreign ownership of Australian infrastructure and utility businesses. Australian investors, too, seek the best risk weighted return from their shareholders funds wherever the investment may be. There is no room for parochialism.

One of the major risks an investor in any potentially regulated asset considers prior to investing is regulatory risk. This is the risk that the rules surrounding the regulation of the business will vary from those rules the investor assumes apply at the time of investment.

Any perception of increased regulatory risk decreases Australia's chances of attracting investment funds or increases the required return on that capital. Ultimately, regulatory risk – real or perceived – has the effect of increasing the price of both regulated services for consumers and of reducing their quality.

A study by the University of Melbourne and the Victorian Department of Treasury and Finance (Arndt and Maguire 1999) found that investors in Australian infrastructure consider that Victoria is a high regulatory risk jurisdiction. Many of the

issues raised in the respondent's comments apply to the National Access Regime. AusCID confirms that this view is held by many of its members.

Recent decisions regarding access to the Eastern Gas Pipeline and to the rail freight track in Victoria (albeit under a State based access regime) have enforced these perceptions of regulatory risk and a lack of certainty in access regulation. Decisions regarding price setting for electricity distribution businesses in Victoria and other state based regulatory rulings have further exacerbated the investment industry's already skeptical view of regulators. AusCID's has made submissions on these issues, copies of which are available on our web site (www.auscid.org.au).

3.1 The effect of regulatory risk on investment

Investors in regulated or potentially regulated assets invest large sums of money in capital intensive businesses for relatively long term paybacks. These rewards are usually dependent on a range of factors including demand for the service, construction and technology issues and operating efficiency. All of these factors create potential risks that investments in infrastructure businesses will not earn the required rewards to justify that outlay. Perhaps the same rewards could be earned in less risky areas or perhaps greater rewards could be earned for commensurate risk.

The combined effect of recent regulatory decisions in Australia has been to create the perception among equity investors that, while capital invested in infrastructure businesses is risky, the rewards which can be earned in return are diminishing. This is the case both for regulatory decisions which mandate prices which can be charged or maximum returns on investment and for access regimes which impose access pricing on infrastructure owners.

3.2 Impact of regulatory risk on Australian investment

The current National Access Regime is unclear, uncertain and biased towards access seekers. As a result it is having a substantial disincentive on new investment in sectors where it applies such as gas pipelines, electricity transmission and telecommunications, and in sectors where it may potentially apply such as airports, rail and shipping channels.

The supposed 'light handed' approach promised at the time of asset sales and in the Hilmer report has been lost. Instead 'heavy handed', intrusive, information intensive and expensive regulation has been delivered.

AusCID recently undertook a survey of our members to determine their intentions for investment in infrastructure businesses over the next two years. They were also asked about the effect that regulation or the potential regulation of those businesses had on those investment intentions.

Seven major Australian equity investment funds were questioned. In all they had A$2,100m allocated specifically to infrastructure related equity investments. Assuming an average debt-equity ratio of around 70% this would create about $7 billion worth of infrastructure investment overall.

Of this total $2,100m investment about $1,200m was earmarked for Australian investments, $700m offshore and $200m unallocated. One fund commented that even considering exchange rate risks offshore, regulated investments were seen as lower risk than Australian regulated investments.

Our members were specifically asked about their intentions regarding investment in regulated or potentially regulated assets. Most stated that they were unlikely to invest further in regulated assets but that this would be based on 'value opportunities' arising. In other words investors were applying a greater risk premium to investments due to regulatory risk. Several funds stated that they now had policies prohibiting investment in regulated assets all together, with the sole exception of airports where a large proportion of cashflow is unregulated. Even in the airports sector, recent regulatory decisions have reduced the willingness of firms to invest, all other things being equal.

These results have been supported by other public statements from our members. Speaking at AusCID's annual conference in Melbourne this year the head of infrastructure investment at AMP Henderson, Mr Danny Latham, said that "AMP has not invested in Australian infrastructure for two years because of perceptions that the sector was over-regulated" (Hopkins 2000).

As well as reducing the prices which Governments and taxpayers can earn from the privatisation of existing assets, the presence of regulatory risk leads to a drying up of capital for existing businesses. This means that businesses such as electricity distributors or gas transmission companies will find it increasing difficult to convince their boards to allocate funds for expansion or innovation as the revenues which may be earned from these risky activities will be regulated. Boards will instead direct available capital to other risky, but potentially more rewarding investments.

AusCID is also aware that debt providers to regulated businesses have modified their lending behaviour as a result of regulatory risk. While returns to financiers are not usually directly impacted by regulatory decisions (only equity dividends are reduced), concern regarding uncertainty has led several banks to restrict the structure of funding to regulated businesses beyond the current regulatory period. This action means that the business cannot be as flexible as it would like in structuring its finances. This in turn may lead to higher costs of capital raising and hence either higher prices or a reduction in the quality of services.

3.3 Consequences of poor regulation for Australia

As far as investors are concerned there are significant problems with the current approach to regulation in Australia, including aspects of the National Access Regime. If the current approach as delivered by various regulators throughout the country is maintained, several negative outcomes can be expected.

- Investment funds will go to other, less risky jurisdictions or else require a premium for perceived regulatory risk. This will result in increased costs for customers and access seekers in the long run or the deferment of investment in new infrastructure assets which may be subject to access rulings.

- Investment in new assets and innovation and upgrading of existing assets which may be subject to access rulings will not be approved by boards as there will be little or no perceived additional return for this risky expenditure.

- Capital raising for the expansion of existing businesses will be impossible or more expensive than necessary, again leading to increased costs for customers in the long run.

It is of great importance that the PC recommends that the Government acts to relieve investor concerns while retaining the appropriate checks and balances necessary to protect consumers and access seekers. AusCID provides several recommendations to the PC regarding its review of the National Access Code in the remainder of this submission.

4 Principles for an effective regulatory regime

There are several fundamental principles which govern any regulatory regime. First and foremost must be that there is some form of market failure which creates inefficiencies and that these inefficiencies impose a cost on access seekers or consumers. Implicit in this is the assumption that for regulation to be worthwhile, the costs of that regulation (to taxpayers, regulated businesses and the community at large) must be less than the benefits it bestows.

Generally, regulation seeks to simulate the market outcomes which would be expected in the case of free competition. It therefore follows that, as far as possible, a regulatory regime should be light handed and seek the minimal information possible from regulated businesses in order to contain costs. It also therefore follows that 'regulatory creep', where a self interested regulator seeks to expand the application of regulation, should be avoided. Finally a regulatory regime must provide clarity and certainty for investors if it is not to deter future investments.

These issues are dealt with in greater detail in Gans and King (2000) which is attached.

4.1 Cost of regulation

Regulation imposes significant costs on regulators, businesses which are regulated, investors considering investments in regulated or potentially regulated businesses and the Government which must set the rules for regulation. As the type of regulation being practiced becomes increasingly heavy handed, more and more information is sought from businesses.

This practice imposes costs on the businesses which must dedicate senior executive time to preparing submissions, appeals and the like and also on the regulators themselves which must analyse ever increasing streams of information.

Given that the costs imposed on the community by these intrusive regulatory regimes run to many millions of dollars per year it pays to contrast the assumed benefits of that regulation with the costs. If the costs exceed the benefits then regulation does not provide any net gain to society at all and should be discontinued or altered to a more 'light handed' approach which is less information intensive and therefore much cheaper.

For example the Office of the Regulator General in Victoria cost Victorian taxpayers $7.95m in 1998/99 and $12.8m in 1999/2000 to run. Similar costs are expected to have been incurred by taxpayers to run other state based regulators and the ACCC. These costs are generated in part by the information asymmetry costs due to Rate or Return or Cost of Service regulation.

On the businesses side the costs are also significant. For example the regulatory costs to the gas and electric utility distributors and retailers include regulatory staff, consultants and legal advisers. These costs are estimated to be of the order of $30m in 1999/2000 for the Victorian distributors and retailers alone.

Another clear demonstration of the volume of information being generated by regulators, and in need of carefully consideration by businesses and the broader community is the number of documents produced. For example the Office of the Regulator General in Victoria produced over 200 documents related to the regulation of gas and electricity businesses, mostly in the 1999/2000 period. Other regulators such as the ACCC conduct themselves in a similar manner and incur similar costs.

The total costs of regulation are therefore likely to run to possible hundreds of millions of dollars per year when the costs incurred by all regulated businesses, access seekers and the broader community are included. It is unclear whether the supposed benefits of thee regulation imposed truly justify these costs.

AusCID is aware of cases where regulators have sought to use their 'facilitate and arbitrate' role to impose direct regulation on businesses which is outside the scope of their role under Part IIIA. In AusCID's view this stems as much from a cultural paradigm inside regulators that they 'know best' how to run a business efficiently as from any real or perceived benefits for consumers or access seekers which could flow.

This type of intrusive action by regulators serves to dissuade businesses from putting forward undertakings for ratification as they fear further intrusions into their business practices by regulators, even in competitive or potentially competitive areas. Hence any criteria applied to define regulatory activities must clearly define the scope of their activity and limit it to areas where market failure is a concern. In AusCID's view the current guidelines do not achieve this adequately. This issue is dealt with in the next section.

4.2 Application of the National Access Regime

4.2.1 Scope of regulation

Because of the costs imposed by regulation it is important that it is only imposed when it is absolutely necessary. If parts of a businesses activities exhibit monopoly characteristics and are regulated, then this should be quarantined from other aspects of a businesses activities which may be competitive or potentially competitive.

AusCID's members have experienced situations where regulators have sought to regulate aspects of their business which are competitive. This approach increases costs and further deters investors and businesses from engaging in investments

which may be regulated. This is issue is dealt with in greater depth in the RBF submission and Gans and King (2000).

It follows that terms and conditions of access decisions should only apply to areas of a business where market power is a concern. This needs to be quarantined from other business activities.

Limiting regulation to activities which are anti-competitive and which demonstrate efficiency losses has implications for the National Access Regime which are discussed below.

4.2.1.1 Current criteria for declaration

The current criteria to be considered when assessing an application to have an asset declared follow. All of the criteria must apply.

- Access (or increased access) to the service would promote competition in at least one market (whether or not in Australia), other than the market for the service;
- It would be uneconomical for anyone to develop another facility to provide the service;
- The facility is of national significance;
- Access to the service can be provided without undue risk to human health or safety;
- Access to the service is not already subject to an effective access regime; and
- Access (or increased access) to the service would not be contrary to the public interest.

There is no statement of the objectives of Part IIIA or of how these criteria were determined.

One of the reasons that regulatory risk arises is because the wording of regulatory guidelines is unclear and can be interpreted in different ways by investors, regulators and the original policy makers. In particular the definition of 'national significance' and 'public interest' are unclear. Unless these and other relevant terms are defined precisely, uncertainty will be present in the minds of investors regarding whether an access regime may apply to their investment. This has the effect of deterring investment or increasing the cost of the funds available for the project due to the regulatory risk premium.

The recent recommendation by the National Competition Council (NCC) to declare Duke Energy International's Eastern Gas Pipeline (EGP) was another example of unclear criteria leading to regulatory risk.

In the case of the EGP, Duke Energy International has sought to capture part of the Sydney market for natural gas which is currently supplied by Australian Pipeline Trust's Moomba to Sydney Pipeline (MSP). In so doing, Duke Energy and its

investors hope to increase competition for natural gas in the Sydney region and hence grow the market. This is exactly the type of activity which National Competition Policy was intended to encourage.

AusCID believes that in that recommendation the NCC fundamentally misinterpreted the nature of competitive forces introduced by the EGP by referring to 'point to point' services.

The NCC recommendation flies in the face of common sense as the EGP, by reference to the market it serves, is clearly in competition with the MSP. The Minister's subsequent decision to support the recommendation sent a strong message to potential pipeline infrastructure investors that significant (and unnecessary) regulatory risk exists in Australia. Not only must investors bear the risk of construction of major infrastructure assets (in this case in the order of $500 million) and related operating and market risks, they must also wade through a regulatory minefield.

The narrow interpretation of 'market' by the NCC against the interests of the infrastructure investor is consistent with investors' general experience that regulators consistently interpret their guidelines in a manner which is adverse to investors and positive for consumers or access seekers. In this environment any scope for a regulator to use 'opinion' or 'discretion' in interpreting its guidelines will be read by investors as creating significant regulatory risk and will be a disincentive to investment.

4.2.2 Dedicated infrastructure providers

Infrastructure owners which control a single asset with no vertical integration either upstream or downstream have no incentive to use market power (if it exists at all) to reduce the level of service offered. Indeed, they have every incentive to increase the number of customers they provide services to and to maintain quality service delivery. It is therefore incongruous that the National Access Regime applies in these situations. The application of this type of regulation imposes significant costs on the business and taxpayers with little, or no, benefit.

Where there is a fear that the asset owner could engage in uncompetitive behaviour this should be dealt with under the general provisions of the Trade Practices Act or some other general legislation.

Gans and King (2000) further develop this point of view in their paper.

4.2.3 New investment

In AusCID's view new investments should be treated differently from existing investments by Government which have been sold to private operators. While there is a case for imposing regulation on assets created with public resources so that the

benefits of those resources can be distributed fairly this is not the case for new investment by private parties[1].

Where no services have previously been available at all then any new investment which provides those services must clearly be in the 'public interest'. Any regulatory regime imposed on this investment must act to deter investors who will pass through the costs to the ultimate consumers. Where the regulatory regime is unclear or is imposed or altered subsequent to the investment and pricing decisions by the operator this manifestation of regulatory risk will deter future investment in assets with similar characteristics. Clearly this type of outcome is contrary to the public interest.

If the National Access Regime is to apply to new investment then it should allow for 'access holidays' to be granted to them for a period commensurate with the life of the assets being created.

Gans and King (2000) further develop this point of view in their paper.

If access 'holidays' are unacceptable and an access regime is to be required for new investments then it should at least allow for an 'undertaking' to be agreed prior to the investment decision being made which will remain valid for a period commensurate with the life of the asset and which is not reviewable. In these cases regulatory risk will be removed and the foreseeable and efficient costs of providing access will be passed through to customers.

4.3 Pricing Principles: Incentive vs rate of return regulation

There is little or no certainty or clarity for investors regarding the 'pricing principles' which the ACCC is to consider when determining access prices after a 'declaration'. The Competition Principles Agreement provides some principles for the regulator to take into account in Clause 6(4)(i):

(i) the owner's legitimate business interests and investment in the facility;

(ii) the costs to the owner of providing access, including any costs of extending the facility but not costs associated with losses arising from increased competition in upstream or downstream markets;

(iii) the economic value to the owner of any additional investment that the person seeking access or the owner has agreed to undertake;

(iv) the interests of all persons holding contracts for use of the facility;

(v) firm and binding contractual obligations of the owner or other persons (or both) already using the facility;

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1 Of course any regulatory regime imposed on a privatised asset needs to be clearly defined at the time of sale to remove any scope for regulatory risk. The anticipated costs of this regulation will then be factored into the price paid by the successful bidder.

(vi) the operational and technical requirements necessary for the safe and reliable operation of the facility;

(vii) the economically efficient operation of the facility; and

(viii) the benefit to the public from having competitive markets.

Similar guidelines exist for industry specific regulatory regimes throughout Australia. Such guidelines have consistently been interpreted by regulators against the interests of the infrastructure owner and in favour of consumers or access seekers. For example both the Victorian Regulator General and the ACCC have interpreted 'incentive regulation' of the form 'CPI – X' to mean the so-called 'building block approach' which is really thinly disguised cost of service or rate of return regulation.

Rate of return regulation forms the basis of the regulatory approach by Australian regulators and involves the:

- measurement of asset values
- estimation of the rate of return
- assessment of capital and operations costs
- sharing of productivity gains; and
- the setting of a fixed term regulatory period and the reassessment of the above issues at the start of the next regulator period.

The pricing and valuation decision are based on a static perfectly competitive market equilibrium where each firm earns zero economic profits or, equivalently, earns exactly the risk adjusted market rate of return on its capital stock. If a firm makes no more than this return the firm can be made to mimic the behaviour of a perfectly competitive firm. There are a number of issues as to whether this is the correct regulatory objective and whether it can be effectively implemented in practice.

The costs of this form of regulation include:

- Information asymmetry costs and the costs of micro-management of utilities by regulators;
- The negative impacts of heavy handed regulation on business innovation and efficiency incentives; and
- The "principal agent problem" in regulations and the risk of regulation inflation. This arises when a government (principal) establishes a regulator (agent) without clear guidelines on the regulatory approach to be adopted. There is also the general trend for regulatory authorities to increase the amount of regulation over time, especially when clear guidelines are missing.

As a result, most jurisdictions around the world have discredited rate of return regulation as being 'low powered' and leading to perverse incentives. As such they are adopting incentive regulation which is based on encouraging regulated

businesses to grow the entire 'cake' to the benefit of both investors and consumers, rather than dividing the 'cake' between the two parties.

True incentive regulation caps prices with no reference at all to a businesses costs. AusCID has explained this in its submission to the ESC and it is further elaborated on in the submission by the RBF and in Gans and King (2000).

It is fundamental that any form of regulation, including any revised 'pricing principles', must deliver true incentive regulation with the intention of encouraging investment for the benefit of both consumers and investors rather than merely dividing profits between investors and consumers.

There is an urgent need for true incentive regulation to be implemented in order to encourage innovation and risk taking by investors and operators. Without these incentives the benefits of private sector ownership will be diminished. In particular there is a need to recognise, reward and allow the recoupment of efficient investment in infrastructure assets.

4.4 Whole of economy view

An essential role of any regulator is to balance the needs of consumers today with those of consumers in the future. While a reduction in the price of a regulated service may be positive for certain customers in the short term, if it means that capital dries up and investment is not made in improving services then those customers may be worse off in the long run.

Furthermore, services may not currently extend to all potential consumers. For example electricity or gas services may not extend to all regional areas. If investments in regulated assets are seen as risky, or appropriate sharing mechanisms between investors, access seekers and consumers are not available, then potential consumers who do not currently have access to the services in question may find that no investors are willing to fund service extensions.

As already discussed, infrastructure is peculiar in that its availability also stimulates other forms of economic development. A well directed regulator should therefore consider nationwide economic development issues as well as the cost of service to existing customers. It should be fundamentally concerned with encouraging investment, innovation and efficiency gains in existing businesses. This should include the impact on the attractiveness of Australia as an investment destination as a consequence of regulatory decisions.

In AusCID's opinion there is no doubt that the attractiveness of Australia as an investment destination has suffered due to the recent series of decisions by Australian regulators both directly (investment in infrastructure) and indirectly (lack of investment leading to increased cost of doing business in Australia and perceived sovereign risk issues).

The objectives of Part IIIA should clearly state that these issues are of paramount importance when the benefits to the community of regulation are considered.

The objectives should also acknowledge that while it is a driver of efficiency, competition is not an end in itself. Policy makers and the regulator should consider

the expected outcomes from that competition using a defined public interest or economic benefit test and compare them with the costs of regulation. It is the outcomes of competition which are beneficial, not the competition itself.

4.5 Administrative arrangements

4.5.1 Independence of the ESC

In order to attract the confidence of the investment community it is essential that the regulator which administers the National Access Regime is independent. The ACCC is perceived by business and investors to be a consumer focussed organisation. This is not surprising given the ACCC's origins as the Prices Surveillance Authority, baggage its chairman also carries.

Comments by Professor Fels reported in Business Review Weekly on 13 October 2000 that "Self interested monopolies ... will be given short shrift" are counter-productive to investors in those natural monopoly businesses having confidence that their concerns and interests will be heard and dealt with fairly by a truly independent regulator. AusCID's members also commonly complain that while they try to operate as a business and focus on the needs of their consumers, the regulators have little, if any, business experience and cannot understand the range of issues a business has to deal with. Instead they become mired in theoretical models which bear little resemblance to reality and increase analysis costs markedly.

The Australian Competition Tribunal is generally perceived as independent by regulated businesses and does give a degree of confidence to them. However it is poorly resourced and unable to act in a timely fashion to alleviate the concerns of investors.

It is important that the need for an independent regulator is not confused as meaning that the Government has no role to play in regulation. As already discussed there is an important role for Government to play in setting industry policy and in oversight of the regulatory system to ensure that processes are working as anticipated. This role should include facilitating periodic independent reviews of both the regulatory system and the regulator itself such as the review the PC is currently carrying out.

4.5.2 Appeals processes

The National Access Regime is framed from the paradigm that businesses should be encouraged to reach a commercial agreement over access to an asset. Only if those negotiations fail would the regulator step in. Even then the role of the regulator was originally intended to be 'light handed' and non-intrusive. Perhaps as a result of this the appeals processes are limited. For example there is no ability to appeal the ACCC's decision regarding an 'undertaking'.

Decisions regarding appeals should be made in a timely fashion with strict time limits applying to the appeals body. The situation where businesses must keep investments on hold for years awaiting the outcome of an appeal is clearly unsatisfactory. If necessary, additional resources should be allocated to appeals bodies to allow timely review of decisions.

5 Conclusions

The fundamental view put forward in this submission is that risky investment in infrastructure (whether in monopoly activities or otherwise) must be appropriately rewarded or else it will go elsewhere. This will ultimately be to the detriment of the Australian community as services will degrade and jobs growth will slow.

AusCID is concerned that there is demonstrated regulatory risk in Australia and, more importantly, regulatory decisions have lead to perceptions of regulatory risk among investors. In fact several AusCID members have indicated that they are no longer prepared to invest in regulated assets or that they will expect greater risk premiums if they do so.

These perceptions mean that regulated businesses will find it increasing difficult to convince their boards to allocate funds for expansion or innovation as the revenues which may be earned from these risky activities will be regulated. Boards will instead direct available capital to other risky, but potentially more rewarding investments. This will result in increased costs for customers in the long run.

Furthermore Government options for delivering infrastructure and utility services will be restricted. Private sector investment in these types of monopolistic or semi-monopolistic activities will be curtailed because of the fear of restrictive and heavy handed regulation in the future, irrespective of current promises of a light handed approach.

Given this perception of regulatory risk it is essential that the Productivity Commission recommends actions to foster an environment of regulatory certainty and transparency.

In AusCID's view:

- The terms and conditions of access decisions should only apply to areas of a business where market power is a concern. This needs to be quarantined from other business activities.

- The definition of terms in the criteria which must apply for a service or asset to be declared must be clear. In particular clarification is needed regarding 'national significance', 'public interest' and the definition of a 'market'.

- There is no need for the access regime to apply to infrastructure owners which are not vertically integrated. Potential abuse of market power should be dealt with under a different regime.

- Negotiated 'access holidays' should be allowed for new investments. The term of these 'holidays' should be commensurate with the life of the asset. If this is not acceptable then at least an 'undertaking' should be agreed prior to the investment decision being made which will remain valid for a period commensurate with the life of the asset.

- The promotion of 'competition' is not an end in itself. Policy makers should consider the outcomes from that competition rather than its mere presence. An objectives statement for Part IIIA should acknowledge this and discuss the need for regulatory decisions to consider whole of economy implications. In particular

they should be made in such a way as not to act as a deterrent to efficient investment.

- Better administrative procedures are required. In particular the regulator and reviewer must be truly independent and there should be strict time limits for regulatory decisions. If necessary additional resources should be allocated to ensure timely decision making.

References

Arndt, R. and G. Maguire (1999). *Risk Allocation and Identification Project - Survey Report*. The University of Melbourne, The Department of Treasury and Finance. ISBN 073111406X, Melbourne.

AusCID (2000). *Essential Services Commission, Submission to the Victorian Department of Treasury and Finance,* October.

Hopkins, P. (2000). *Regulation deters the investor.* The Age, 30 October 2000.

Gans, J. and S. King (2000). *Economic Choices Associated with the Proposed Essential Services Commission – a report for the Regulated Businesses Forum,* October.

Regulated Businesses Forum (2000). *Essential Services Commission, Submission to the Victorian Department of Treasury and Finance,* October.

Appendix A – AusCID membership listing December 2000

Full Members
Abigroup
AMP Asset Management Australia
Australian Gas Light Company
Australian Pipeline Trust
Baulderstone Hornibrook Engineering
CGE Australia
CitiPower
Commonwealth Bank of Australia
Deutsche Asset Management (Australia)
Edison Mission Energy Holdings
Freight Australia
Hastings Funds Management
Leighton Holdings
Lend Lease Infrastructure
Macquarie Infrastructure Group
MTAA Superannuation Fund
National Australia Bank
National Express Group
NRG Asia-Pacific
Statewide Roads
The Hills Motorway
Transfield
Transurban City Link
United Energy
Walter Construction

Associate Members
ABN Amro
Allco Finance Group
Allen, Allen & Hemsley
Alstom
Anglian Water International
ANZ Investment Bank
Arthur Andersen & Co
Australia Pacific Airports Corporation
Babcock & Brown
Bank of Western Australia
Bishop Austrans
Bovis Lend Lease
Brisbane Airport Corporation
Brown & Root Services
Clayton Utz
Corrs Chambers Westgarth
Credit Agricole Indosuez Australia
Deacons Graham & James
Deloitte Touche Tohmatsu
Deutsche Bank AG
Downer Construction (Australia)
Dresdner Kleinwort Benson
Egis Projects Asia Pacific
Enetech
Epic Energy
Ernst & Young

Associate Members (cont)
Evans & Peck Management
Hawker Britton
HSBC Bank Australia
Hyder Consulting
John Laing Investment (Hong Kong)
KPMG Corporate Finance
Macquarie Corporate Finance
Mallesons Stephen Jaques
Maunsell McIntyre
McConnell Dowell Constructors
Merrill Lynch (Australia)
Multiplex Constructions
National Australia Asset Management
Ove Arup & Partners
Pacific Hydro
Pacific Road Corporate Finance
Paladin Infrastructure
Philips Projects Group
Phillips Fox
PPK Environment & Infrastructure
Pricewaterhouse Coopers
Pricewaterhouse Coopers Legal
Prymont Raw Materials
Quantm
Serco Asia Pacific
SG Australia
Sinclair Knight Merz
United Utilities Australia
VSL Prestressing (Australia)
Warburg Dillon Read
WestLB
Westralia Airports Corporation
Westpac Banking Corporation

Invited Members
Australian Rail Track Corporation
CS Energy
Rail Services of Australia
Telstra Corporation

Personal Members
Bill O'Chee
DS Corporation
Finlay Consulting
Hunwick Consultants
Infranet
Infrastructure Advisers
Peter Johnston
John McMurtrie
Kevin Ford & Associates
NLS Consulting
Perry Partners
Symbiosis Solutions
Gregory Story

Attachment A.
to. Sub. No 11.

Economic Choices Associated with the Proposed Essential Services Commission

A Report for the Regulated Businesses Forum

Joshua Gans and Stephen King

University of Melbourne

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Executive Summary

The Victorian government has proposed that an Essential Services Commission be set-up to cover the regulation of utility industries. In particular, the ESC will cover issues of 'economic regulation' (i.e., competition and pricing issues) and 'supply security.' This paper considers the economic trade-offs the government and its regulator will face in carrying out these functions and how these impact upon the design of a regulatory institution such as the ESC.

Regulation should be appropriately viewed as a system of inter-related choices. These choices include the scope of regulatory discretion and powers (i.e., what variables and services are regulated), the quality of information at the hands of the regulator, and the power of incentives provided to utilities. A decision regarding one of these variables impacts decisions on others. Thus, it is important that in designing an institution such as the ESC the government consider the *systemic* elements of regulation.

Economic Regulation

The purpose of economic regulation is to ensure that the social losses from monopoly power are minimised. In some situations this calls from direct regulation of pricing while other situations require the encouragement of greater levels of competition. In either case, the long-term goal of economic regulation is to ensure the efficient flow of capital and economic resources into an industry. As the regulated firm makes some of these key economic decisions, second-guessing or otherwise auditing those decisions carries with it a significant risk of distorting investment choices. This can result in either delayed investment or investment in sub-standard technologies. Similarly, a lack of clarity as to what will be regulated and how regulations will operate creates additional risks for regulated firms, especially when investment time horizons are long.

Given this, there are four key principles that the government should follow when designing the powers, scope and goals of the ESC:

1. When considering the ESC's powers in terms of price controls and quality standards, the Government should develop criteria for determining whether particular services should be subject to such regulation or free of regulation. We suggest that this criterion be based upon whether:

    a) the production of the service requires technologies that exhibit natural monopoly characteristics; that is where it is socially inefficient to have more than a single supplier of the service; and

    b) there are no relevant alternative products or sources of supply (such as imports) or other factors that would limit a single supplier of the service from having significant market power.

2. With respect to its licensing powers, licenses should explicitly relate to quality standards except where it is clearly established that a particular segment is subject to natural monopoly production technologies. In this situation, licenses themselves should be awarded by competitive process (such as efficient auctions or tenders) that ensures there is competition for the market. In addition, those licenses should be awarded on terms that clearly specify pricing and quality standards to be imposed on the licensee. Those terms may themselves be appropriately built into the licensee selection criteria.

3. With regard to the creation of infrastructure assets, there should be a clear and explicit statement that the costs associated with such assets will be taken into account and the costs apportioned to users in a way that will encourage optimal provision of infrastructure investment. Thus, encouraging investment should be an explicit goal in economic regulation. With regard to on-going efficiencies, the government should mandate that the regulator follow price-based (incentive) regulation rather than cost-based (i.e., rate-of-return) means of regulation. This will minimise regulatory costs associated with pricing reviews and provide utilities with high-powered incentives to create efficiencies. This will ensure that customer prices, over the medium to long-term, are at their lowest possible levels.

4. An appropriate set of processes should be established that allow for regulatory commitments to be written as access undertakings at the investment proposal stage. This will facilitate an environment that relieves regulatory uncertainty associated with new infrastructure investment.

This final recommendation is particularly important. The government should empower and set as a key objective that the ESC evaluates access and other pricing proposals up-front; before infrastructure investment occurs. This gives regulated utilities the opportunity to reduce regulatory risk in investment decisions and allows the regulator to encourage investment by offering 'access honeymoons,' that give providers of new services a regulatory free period following asset creation.

Supply Security

Supply security is an important issue in utility industries because of the lack of substitutes consumers face in the short- to medium-term regarding the services those utilities supply. Hence, interruptions to supply can create significant external effects on consumers. Because of a lack of information and free-riding issues, a regulator can improve security outcomes for consumers.

In this regard, the regulator faces a choice between the types of instruments that can ensure supply security is at a socially efficient level:

- *Liability*: these instruments come into operation when triggered by an actual interruption. Each specifies a set of sanctions and compensations to users that must be made in the event of an interruption occurring.

- *On-going regulation*: these instruments are designed to monitor (or audit) the current (or historic) levels of precaution taken by infrastructure owners and

provide incentives or performance sanctions to ensure that they achieve a socially optimal level.

The ESC has a potential role in ensuring that liability rules are enforced or, alternatively, a direct role in on-going regulation. The former set of rules is potentially less costly than on-going regulation. However, liability rules also suffer from limits on enforcement, limited liability of firms, risk aversion, many responsible agents, governance and equity issues.

We consider it appropriate that the ESC consider its role on both the liability and on-going regulation dimensions. These dimensions are likely to be complements rather than substitutes and to that end, it is appropriate that a single institution have power over both so as to generate a coordinated response. Nonetheless, the need for clarity and an understanding of the incentives of utility to engage in activities that are precautionary is critical. If there is uncertainty regarding the regulator's role and the form of regulation to be employed, this is likely to damage investment in precaution and the long-term supply security in utility industries in Victoria.

Summary

The Victorian government has a unique opportunity to design a regulatory institution that provides an environment conducive to investment and consumer benefits from utility services. This will require a careful consideration of the trade-offs involved in regulation and also the difficulties regulators – in the absence of proper legislative backbones and guidance – face in committing to regulatory policies that reward investment and create incentives for efficiency gains that will flow on to consumers. Without such consideration at the design stage, an environment of increased regulatory risk will arise and will lead to sub-standard performance of utility industries.

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1 Background

The Victorian government has proposed a major reform of the State's processes and institutions governing the regulation of essential services. The *Essential Services Commission* will replace the Office of the Regulator General and will oversee most regulatory issues (from ensuring competition to health and safety regulation) that arise in relation to the services of utilities. Those utilities include electricity, gas, water and sewerage, public transport, rail freight and ports.

From an economist's perspective, effective regulation, in principle, can assist in generating important efficiencies. It can ensure that economic decision-makers take into account costs that they impose on others and that they are rewarded for benefits accruing elsewhere in the economy (i.e., they internalise externalities). It can also ensure that competition works to benefit consumers while rewarding suppliers for private investments in infrastructure, cost reduction and innovation. However, the extent to which these efficiencies are achieved in practice critically depends on the scope of regulatory powers, the decision-making processes of the regulator and the actual regulations imposed on the market. If either the design of the regulatory institutions or of the actual regulations fail to correctly address issues of economic efficiency, then instead of resulting in efficiencies, regulation can lead to significant economic losses.

This paper highlights some key economic issues that will face an Essential Services Commission and discusses how these issues impact on its role and powers. In particular, we intend to focus on the areas of "economic regulation" and "reliability of supply" as these are areas where economic factors come to play most intensively.

Economic regulation is aimed at ensuring the competitive provision of infrastructure services. From an economist's perspective, this can benefit consumers by making final prices more efficient and also by ensuring infrastructure investment takes place in a timely and cost effective manner. Given this, a regulator cannot neglect the issue of supplier return in fostering an environment where private decision-makers have *incentives* to minimise costs, maintain quality standards and upgrade investments appropriately.

Effective economic regulation means that the regulatory institutions and framework reflect the nature of the economic problem that drives the need for regulation. In many situations this relates to the existence of a natural monopoly

technology at some stage of the production process. In such circumstances, regulation needs to be focussed on those 'natural monopoly' segments and provide a means of leaving more competitive segments free from regulatory and other interference. This impacts, for instance, on what prices – wholesale versus retail – that a regulator might set and also on the processes used by the regulator to determine the specific areas that require regulation. Transparency and consistency in such procedures can facilitate investment by reducing both regulatory risk and the risk to investors in competitive stages of production from the use of market power.

In relation to supply security, the key issue is whether infrastructure providers take sufficient care in ensuring that the supply of their services is as free from interruptions as possible (recognising that perfectly reliable supply is unlikely to be an economically efficient benchmark). In this situation, the regulator could have several potential roles. A heavy-handed role would see it monitoring directly the performance of providers. An alternative approach would see it as enforcing liability rules in the event supply is interrupted. Each approach has potential benefits and costs and our report will highlight these and how they impact on the role of the regulator.

What follows is an examination of the trade-offs involved in economic regulation and supply security in turn. Before turning to these, however, it is useful to consider the general approach by economists towards regulation and how regulation can be usefully evaluated by conceiving of it and its institutions as a *contract* between the government and private agents.

2 The Regulatory Contract

Regulation constitutes a set of activities and laws by governments directed at constraining or providing incentives for private agents to act in a socially desirable manner. Consequently, the type of regulation that is required for different circumstances is likely to vary greatly. In some situations, regulators set boundaries that constrain the choices of private agents while in others regulators take an on-going role in auditing and evaluating the desirability of actions of private agents.

In many respects, the problem regulators face is very similar to the problems of any principal contracting for a desired outcome from an agent. When a private firm procures outside services from suppliers, it will be concerned that the service it receives is timely, of high quality and reflects the lowest costs it can attain. Indeed, when a private firm conducts its own internal affairs, it faces a similar set of contracting problems. It is concerned with how to resolve goal differences between itself and employees while still allowing some decentralisation of decision-making.

When it comes to the regulation of essential services, the regulator is concerned with the trading relationship between firms that provide such services and their customers. Those customers might be final *consumers* of a service, *complementors* who use the service to produce other goods or services, or *competitors* who use the service to produce goods or services that substitute for the network's own output in that or related markets. Basically, the regulator is concerned that the trading terms that might arise in the absence of regulation may not reflect socially desirable outcomes. In the case of essential services, the major goal is the achievement of economic efficiency and the concern that this may not arise if decisions are left purely in the hands of private agents.

It is from this perspective, that we examine the scope and functions of the proposed Essential Services Commission. That Commission will have powers to set the regulatory contract between it and providers of essential services. The institutional framework of the ESC will set out the goals of that regulatory contract as well as the instruments that can in effect be contracted upon.

2.1 Need for Regulation

When is regulation required? From an economist's perspective, regulation is useful in contexts where market forces cannot assure a socially efficient outcome. However, as with any policy decision, the benefits of regulation in achieving efficiency gains must be compared with any other costs that might arise from that regulation.

In some situations, market failure is so extreme – i.e., for the provision of pure public goods – that governments adopt for a particularly strong form of regulation; i.e., public ownership. Here, however, the ESC is concerned with less direct regulation that imposes constraints on private activity rather than controlling that activity directly. In this context, there are two broad sources of market failure that can drive the need for regulation – the existence of externalities and the lack of competitive outcomes. We deal with each in turn.

2.1.1 Controlling Externalities

An externality is basically an impact on economic agents that arises from the choices of other economic agents. Externalities may be positive or negative. For example, if one firm causes pollution, this negatively impacts on other agents. This is an example of a negative externality; the key feature of which is a neglect of the potential negative impacts of an action when that action is evaluated looking only to the private costs and benefits of the firm concerned. Thus, when there are negative externalities, 'too much' of a particular activity might occur. On the other hand, for positive externalities, there may be too little of an activity. A good example of this are the benefits associated with development of new product ideas. When a new product is introduced, some of the benefits flow to consumers who only partially compensate the seller through pricing. Hence, there is likely to be too little new product introduction.

To be sure, externalities are not necessarily a fundamental problem in market economies. When stable and certain contracting environments exist between private agents (i.e., there are no transaction costs), then, as Ronald Coase has argued, negotiations between private individuals are likely to result in socially efficiency outcomes. Those individuals will recognise external effects between them and come up with contractual mechanisms that compensate for those effects. Seen in this light, there is a need for regulation to control externalities only in situations where there is a breakdown in the efficiency of transactions among private agents. In particular, such breakdowns arise where the number of private agents affected by a particular external effect is large or, alternatively, there are

significant differences in the information held by agents regarding the nature of those external effects.

Given this, a regulator can play an important role in correcting the externality problem. It can either direct agents to undertake socially desirable actions or give them incentives to do so. The precise means, however, will depend on the particular problem at hand.

2.1.2 Ensuring Competition

Market failures also arise when there is insufficient competition in the provision of a service. A lack of competition could arise for historical reasons and because of the nature of technological requirements in an industry.

When there is a lack of competition, there may be insufficient provision of a service as suppliers restrict supply or investment in order to raise revenues from end-users. While this may increase supplier profits, it is often outweighed by consequent harm to consumers. Such a loss in efficiency can be corrected by regulation either directed at lowering prices or altering other competitive variables, or alternatively alleviating the structural causes giving rise to a lack of competition.

The regulatory role in ensuring competitive outcomes is complicated by the fact that in some industries – particularly those involving essential services – ensuring competition may not be socially beneficial as it may result in inefficient duplication of infrastructure investment. In this situation, the regulator faces important trade-offs between encouraging socially optimal investment while alleviating the more significant detriments arising from a fundamental lack of competition. We will explore this particular trade-off in more detail in Section 3. Nonetheless, it should be emphasised that in its role of ensuring competition, a regulator should have an eye towards generating the social outcomes that may result from competition rather than actual competition per se.

2.2 The Regulatory Regime

Having established a need for regulation and hence a set of regulatory goals that the regulatory contract should achieve, the next tasks is to consider the details of that contract; i.e., how those regulatory goals are achieved? As with most contracts, it will not be possible to simply specify a set of actions for a regulated firm and expect to achieve regulatory goals. Save for public ownership, many of the key variables will optimally be left at the discretion of the regulated

firm and the role of the contract will be to either constrain the firm's actions, creative incentives for appropriate actions or both.

The establishment of a regulatory regime revolves around the answers to three key questions:

1. (*Control*) What decision variables are left to the discretion of the firm?

2. (*Information*) What type of information does the regulator have about the firm's activities?

3. (*Incentives*) How does the regulator use that information to set constraints on the firm's decisions?

How these questions are answered will define the precise nature of the regulatory contract. Importantly, the answers to these questions will interact with one another. That is, it will be difficult for the regulator to control variables when it has poor information about these variables although it may be able to provide incentives for good performance by monitoring some decisions and not others. Thus, the establishment of a regulatory regime will require a *systemic* answer to all of these questions. It is, therefore, important when considering the scope and powers of an organisation such as the ESC to consider how powers on one dimension may interact or constrain the application of powers on other dimensions. Given this, it is useful to analyse each question in turn.

2.2.1 Control

In designing the ESC, the government will specify what types of actions may be regulated and those that will remain free of regulation. Among those activities that may be regulated, the ESC will also have discretion as to whether it in fact regulates those actions. Finally, the design of the ESC will include criteria for assessing whether an activity should be regulated. All of these issues ultimately will determine the degree of control afforded to regulated firms.

To see how the degree of control can vary over different situations consider, for example, a firm's control over its pricing. In some situations, a firm is free to price subject to a broad price cap over all of its products while in others, firms' prices for particular products are fixed while others can be set freely. Alternatively, the regulatory constraint may be minimal and may only be activated if private negotiations break down. In those situations, control may be imposed on other dimensions of choice for the firm such as whom it is required to negotiate with and whether it can treat different agents differently (e.g., no price discrimination requirements).

The choice of what variables to leave under the control of a regulated firm is a difficult one. Sometimes, however, it is easy to isolate particular actions that – in the context of essential services – would be clearly anti-competitive. Usually the requirement to mandate access to essential facilities when those facilities are not congested is seen in this way. What reason could there be to deny access but for the abuse of market power? In other situations, the existence of information regarding the socially optimal level of pricing may give regulator sufficient confidence to directly administer those prices.

In general, however, the degree of control depends on the resolution of the other key regulatory questions. If, for example, a firm has very high incentives to control costs, it is perhaps better to leave cost-related decisions to the firm rather than prescribe a given set of technical standards. On the other hand, if it is identified that a firm may have an incentive to cause quality to deteriorate, specifying minimal quality standards might be appropriate.

Regardless, it is critical that control issues be clear and transparent. A regulatory regime cannot function effectively unless firms and other agents are clear as to what activities the regulator controls and what are left to the discretion of firms. This includes clarity over the procedures that are used to determine if a particular activity might be subject to regulation or not. If there is a lack of clear definition over the degree of control, the likely impact will be adverse consequences on the efficiency of firm-level decision-making.

2.2.2 Information

In regulating an essential service, the regulator usually wants to ensure that prices ultimately are set in a way that results in an efficient outcome. In economics, this will require that prices bear some relation to costs but also that prices are adjusted for quality and other demand characteristics. However, the regulator may be beset with information problems.

On the one hand, the regulator may not be able to easily discern costs and may have to rely on information from the firm itself to make such determinations. Not surprisingly, a firm's willingness to reveal such information in a truthful manner will depend on the incentives faced by the firm. If by revealing a low cost, the firm receives a lower price, it may be reluctant to admit to having low costs. This is a case of the hidden information or *adverse selection* problem faced by regulators.

On the other hand, the firm may be able to take actions that can ensure that costs are low or quality is high. However, while the information on relevant outcomes might be relatively transparent, the regulator might not be able to

determine if the firm is taking appropriate actions in relation to those outcomes. So if the firm's price is adjusted with observed costs, a firm may not have an incentive to keep those costs as low as possible; especially if the regulator cannot verify the investment costs that achieve this. This is a problem of hidden action or *moral hazard.*

Both the adverse selection and moral hazard problems arise because the information the regulator receives about the firm's characteristics and choices are inherently imperfect. Moreover, the firm has more knowledge of those key variables but potentially little incentive to report honestly. The regulator may be able to improve its knowledge by continued monitoring or auditing. However, even if successful, this monitoring will be costly and undermines some of the value of leaving decisions under the control of the firm. In the extreme, excessive monitoring and auditing by a regulator is the same as having direct regulatory control of the firm.

Given the imperfection in the information received by the regulator, it will have to be wary of uncertainty and gaming aspects that arise when objective (that is, verifiable) information is used.

Uncertainty: even objective information may be based on variables outside of the control of the firm and hence, by linking their profits to that measure, undue risk may be placed on the firm. This will raise the firm's cost of capital.

Gaming: A regulator that focuses on a set of information to determine its regulatory choices (e.g., prices, rate of return, etc.) will give the firm an incentive to take actions that distort that information in its favour; perhaps at the expense of socially desirable outcomes.

Each of these issues will constrain the manner in which the regulator can actually make use of any information it may possess.

A good example of this arises when a firm has some regulated activities and other non-regulated activities. The firm may then engage in *accounting cross-subsidisation.* Most regulated firms have multiple products and services. A proposed regulatory regime may involve a situation where some activities are regulated more stringently than others. To the extent, however, that some costs are common across those activities, the firm can allocate those costs in a manner that, while not influencing its actual behaviour, may influence the cost measures utilised in regulatory decisions. To overcome this type of problem, the regulator needs to control the accounting practices of the firm – perhaps through accounting separation or by specifying rules to allocate joint or common costs.

Nonetheless, even if this is achieved, there is potential for *managerial cross-subsidisation* that involves the re-direction of the firm's real resources. A

firm may allocate poorer performing personnel and managers to regulated activities or scarce capital funds away from these activities. Ultimately, the regulated activities may not receive the complete attention of senior management. If potential cross subsidisation causes an information problem then regulation needs to be carefully designed to take this into account. In particular, the bounds of any regulation need to be carefully specified. As a general rule, it is undesirable to have regulation impinge on potentially competitive areas. But if cross subsidisation causes significant problems it might be better to regulate the firm on a global basis – across all activities – rather than trying to regulate activities associated with particular goods or services of the firm. Alternatively, it might be better to leave some potentially non-competitive areas unregulated rather than create significant distortions through a regulatory regime that encourages inefficient resource allocation. In the extreme, it might be better to restructure the firm so that it does not engage in both regulated and non-regulated activities.[1]

These information problems can be partly mitigated if the regulator can compare the firm's reported costs and service quality to those of firms in other jurisdictions. This type of benchmarking might enable a form of yardstick competition; whereby, regulators in several jurisdictions pool information to gather a more accurate picture of a firm's characteristics. Potentially, this type of information is less subject to the types of distortions raised above. Of course, its effectiveness relies on the inability of firms across jurisdictions to achieve collusive outcomes in their reports to their respective regulators.

The regulator could supplement objective information with its own subjective evaluation as to the firm's behaviour and potential abuses of monopoly power. However, with subjectivity comes the problem of commitment that is so important in establishing incentives. The firm might be concerned that good performance may not be rewarded at all and regulation may become tighter in response to good firm performance. This will reduce the firm's incentives to act in a socially desirable manner. Thus, to use subjective criteria effectively, the regulator will have to establish a reputation for leaving some 'rents' with the firm; thereby, sending a signal that the firm will not be 'punished' for any future desirable actions.

The costs of gathering regulatory information need to be considered. Increasing the information burden of regulation is often undesirable. Not only does this open the way for more information distortion and game playing, the

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[1] The break up of AT&T in the US was partially based on the inability to effectively regulate local telephone services if the local call provider was also engaged in competitive supply of long distance. See T. Brennan, "Why regulated firms should be kept out of unregulated markets: understanding the divestiture in United States v. AT&T," *Antitrust Bulletin*, 32, 741-793.

gathering of extensive information is costly. Often the regulator pays inadequate attention to these costs because they are directly borne by the regulated firm. A good regulatory regime does not involve the gathering of excessive costly information, but is one that has carefully designed information requirements that limit the potential for information distortion and rewards firms for reporting good performance.

Ultimately, informational issues mean that the cost of achieving a particular regulatory outcome may be too high. Hence, in constructing the regulatory contract the costs of procuring and using information must be taken into account, explicitly.

2.2.3 Incentives

How the regulator uses information that it may have will ultimately impact upon the firm's incentives to take socially desirable actions. Traditional forms of regulation, such as rate-of-return regulation, pay little attention to firm's incentives and can lead to substantial distortions and economic loss. More modern forms of regulation, that take account of both firm's incentives and the regulator's information constraints, are called incentive regulation.

To see the importance of incentives and regulatory design, suppose a firm's price for particular service is regulated. The regulator might choose to have a pricing formula that relates the prescribed price (or price bound) to the reported cost information from the firm. From the firm's perspective, this type of cost based regulation means that if it fails to keep costs down, it will be able to pass any cost increases through to its customers through a price increase. Alternatively, if it undertakes investments that reduce costs, its price will be lowered, so some of those cost savings will be passed through to consumers. Thus, this form of cost-based regulation provides poor incentives for the firm to operate efficiently.

Cost-based pricing is an example of a low-powered incentive scheme. Basically, for every $1 reduction in costs, the firm receives a (relatively small) fraction of the benefits associated with that reduction. Similarly, it is insulated from the full impact of any cost increases. So while this form of price regulation has the advantage that customers pay prices that are cost-reflective, that same property reduces the incentives of a firm to control costs in a socially desirable manner.

Rate-of-return regulation is a form of cost-based regulation with low powered incentives. Under rate-of-return regulation the firm has a rate-base and an allowed rate-of-return determined by the regulator. The firm must then price to generate the return on its rate base that is equivalent to the allowed rate of return.

Because this is a low powered incentive scheme, firms have little incentive to control costs. In practice, this has meant that rate-of-return regulation is accompanied by intrusive regulatory investigation of firm's costs and capital expenditures. In this sense, rate-of-return regulation both provides poor incentives and ignores the regulator's information constraints.

In contrast, suppose that the regulated price was fixed (perhaps as a form of price cap). While the initial price may be based on current cost characteristics, any future changes in costs will be borne by the firm. That is, if it achieves cost-savings of $1, this means a $1 increment to its bottom line. Alternatively, a $1 cost increase, reduces the firm's profits by $1. This is a high-powered incentive scheme. There is no pass-on to consumers in either case. Consequently, the firm internalises all of the cost effects; giving it an incentive to control costs in a socially desirable manner. However, this means that future prices are not cost reflective.

More generally, incentive regulation requires that the firm face the consequences of its own cost and investment decisions. If a firm is able to reduce costs then it can retain the benefits. However, if a firm fails to operate efficiently, then it must bear the burden of cost over-runs or poor investment decisions. Because they face the full consequences of their actions, firms will try and choose economically efficient actions under incentive regulation. Further, such regulation usually requires less firm specific information. The regulator is not attempting to judge specific firm decisions under incentive regulation and so does not have to gather decision specific information. In this sense, incentive regulation better reflects the information constraints facing the regulator.

The contrast between cost-based and fixed-price regulation illustrates a basic trade-off in providing incentives to regulated firms: *to encourage desirable actions for variables under the firm's control requires high-powered incentives but this in turn necessarily allows the firm to earn rents, that may distort price signals to the firm's customers.*

Well-designed regulation that provides high-powered incentives, can lead to benefits to both customers and the regulated firm. This is again illustrated by the comparison between cost-based regulation and price-based regulation. Under cost-based regulation, the firm has no incentive to maintain low, efficient operating costs. Any decrease in costs is quickly passed on to customers and the firm's managers and owners receive little return for effort put into improving efficiency. In fact, to the extent that managers can raise costs and gain benefits through personal perquisites with no reduction in regulated profits, cost-based regulation will lead to inflated costs and inefficiency. In contrast, price-based regulation allows the firm's owners to retain the benefits of efficient operation and provides strong incentives to maintain low operating costs. However, to the

extent that the regulated price path is determined by reference to relevant factors outside the regulated firms control, such as external efficiency benchmarks, cost savings are passed onto the customers. Overall, prices are lower and profits higher under well designed incentive regulation.

A simple example illustrates this point. Suppose costs are currently $10 per unit but that the firm's managers could embark on efficiency improvements that would reduce these costs to $6 per unit. Under cost-based regulation, the managers have no incentive to lower costs as a $4 reduction in per unit costs will simply lead to a $4 reduction in the price with no improvement in profit. In contrast, under well-designed price-based regulation, the regulator will have set prices for the firm based on benchmarks of efficient operation. The regulator will set a price cap taking these external benchmarks into account and making allowance both for errors of measurement and industry specific factors. Suppose the regulator sets the price at $8 per unit. Clearly consumers are better off – they face a price that is $2 lower than under cost-based regulation. The regulated firm is also better off. The firm's managers now have the incentive to engage in efficiency improvements. If they lower costs to $6 then they raise profit by $2 per unit. Of course, if they operate inefficiently, as they would under cost-based regulation, then the firm will make a loss. Price-based regulation creates a strong incentive for the firm to seize efficiency improvements and in so doing can make all parties better off.

It could be argued that incentive regulation does not lead to 'efficient' prices. In the above example, the efficient price *ex post* would be $6 per unit. But such a claim ignores the whole point of incentive regulation. A regulator cannot reproduce a 'perfect' world, and any attempt by the regulator to do this will ignore incentives and information problems and will lead to a poor outcome. The key to good regulation is to realise that regulation is designed for an imperfect or 'second-best' world, and that optimal regulatory solutions cannot be judged against a fictitious benchmark of perfection.[2]

2.3 Summary

The powers given to the ESC will influence the nature of the regulatory contract. This is most salient in terms of the activities of firms they will be able to control but also in terms of the goal structure and the ultimate aims of the

[2] Standard references that deal more significantly with these issues include D. Baron and R. Myerson (1982) "Regulating a monopolist with unknown costs" *Econometrica*, 50, 911-930; and J.J. Laffont and J. Tirole (1993) *The theory of incentives in procurement and regulation*, MIT Press, Boston,

regulatory contract. By conceiving of these issues at the institutional design stage, more appropriate trade-offs can be considered.

Regulatory design needs to take into account the information limitations that face the regulator and the need to provide correct incentives to the regulated firm. Failure to use incentive regulation can lead to poor economic results. Failure to recognise the regulator's information constraints can lead to regulations that allow for gaming by firms. There needs to be a clear statement of procedures to be followed by the regulator, and in particular, a statement as to exactly which variables are under the control of the firm and which are to be 'controlled' by the regulator.

Issues of control, information and incentives are, of course, linked. Modern economic theories of incentive regulation provide a variety of ways to design regulatory schemes that provide desirable economic outcomes. However, it must be recognised that regulation involves 'second best' decisions. Sensible regulation will not result in first-best economic outcomes and regulators must avoid the incentive to impose these outcomes *ex post*. For example, regulators must avoid the temptation to arbitrarily mark down prices if a firm reports relatively high profits. If regulation has been well designed, these profits reflect efficient firm operation and benefits to the consumers have already been provided *ex ante* through the regulatory process. Regulators should not be frightened by outcomes where all participants – both the regulated firms and their customers – end up better off.

3 Economic Regulation

One of the key functions of the proposed ESC will be that of economic regulation of utility and related industries.

> Economic regulation aims to provide incentives to suppliers to deliver services at the level, quality and reliability customers need, at the lowest long-term cost, in circumstances where competition cannot be relied upon to do so. (Discussion Paper, p.13)

The goal of economic regulation appears to be to make certain essential service sectors operate more competitively. Indeed, this role is seen as the ESC's chief role (p.19).

In this section, we use the regulatory contract framework to evaluate the key choices surrounding the ESC's role in economic regulation. In particular, how wide should its scope be? How many resources should it devote to industry monitoring? And how should it take into account the role of private decision-making?

3.1 Criterion for Regulation

There are certain key industries that appear to be the main focus of economic regulation. These include electricity, gas, ports, grain handling, water and sewerage. In each case, the main motivation for regulation appears to be concerns that important functions within each industry may be subject to natural monopoly characteristics that make it efficient to limit the number of service providers (perhaps to just a single provider). This means that competition is neither feasible nor necessarily desirable when considering an economically efficient outcome. Nonetheless, where competition is lacking there is a potential role for a regulator in ensuring competitive outcomes in terms of pricing and service quality.

To this end, the proposed ESC is to have certain goals aimed at preserving competitive outcomes (p.20). Interestingly, each of these are also goals of Parts IIIA and IV of the Commonwealth *Trade Practices Act* (1974) and other sector specific regulatory regimes such as the National Gas Code. In this light, therefore, the ESC is operating as a substitute for Federal regulatory institutions such as the Australian Competition and Consumer Commission (ACCC). Nonetheless, in

many respects, the ESC's proposed powers are stronger than those under the Federal competition legislation with the ESC being able to directly regulate prices, service standards, licensing and market conduct and having broad information gathering requirements. Usually, in the Federal legislation, such regulatory powers can only be exercised in certain circumstances following other reviews – both regulatory and judicial.

3.1.1 Criteria for Price and Quality Regulation

Having such powers and scope is potentially reasonable when considering a regulator's ability to restore competitive outcomes. However, there is a clear lack of definition in the current proposal that may well undermine the overall performance of the regulatory regime. In particular, there are no criteria for evaluating what services will actually be subject to regulation and those that might be free of regulation – even within the listed industries that will be overseen by the ESC. This is critical in that the decisions of firms in those industries will be made with a view to possible regulatory outcomes and if they cannot evaluate whether and under what circumstances they will be subject to regulation, this provides potentially considerable uncertainty that may lead to delayed or inefficient decisions.

To see this, suppose that a particular industry – like gas supply – potentially had some non-competitive and competitive elements. For example, a distribution network may be subject to natural monopoly characteristics while retailing and gas supply may come from multiple providers. A potential supplier considering developing a new gas pipeline into Victoria may be concerned about the overall price they might receive. In part this will depend upon the costs of distribution. However, it will also depend on the price conditions they face with final customers. From an economist's perspective, prices of non-competitive segments may need to be subject to regulation while those of competitive ones should not be. However, a potential gas supplier may be unsure as to whether the ESC will choose to regulate the distribution price, final prices, both or neither. A failure to regulate distribution prices or a potential threat of regulating final prices may well deter the potential supplier from entering altogether – to the detriment of competition and economic efficiency.

In contrast, suppose that it was clearly mandated that only certain non-competitive segments would be subject to price regulation and the ESC clearly specified the criteria and methods of such regulation. In this situation, the potential supplier would face more certain entry conditions. They would know the terms of distribution and also would know that if they earned favourable returns in competition with other suppliers (say by having lower costs and higher

reliability) they would be able to keep those returns. This would create an environment conducive to such entry and competition.

Recommendation 1:

When considering the ESC's powers in terms of price controls and quality standards, the Government should develop criteria for determining whether particular services should be subject to such regulation or free of regulation. We suggest that this criterion be based upon whether:

a) the production of the service requires technologies that exhibit natural monopoly characteristics; that is where it is socially inefficient to have more than a single supplier of the service; and

b) there are no relevant alternative products or sources of supply (such as imports) or other factors that would limit a single supplier of the service from having significant market power.

A service should be covered by regulation if both of the characteristics in Recommendation 1 are satisfied. This will often require careful analysis. In particular, all relevant alternative sources of supply and constraints on market power need to be considered. For example, consider rail transport. While it is reasonable to suggest that it is more efficient in many regions to have only one rail operator, and as such, this firm will be the only supplier of rail transport services (or rail services under an access regime) this does not mean that the firm has substantial market power. In many regions and for many services, rail transport competes with road transport. In general, road transport is a highly competitive industry. If road transport provides a vigorous competitive alternative to rail transport, then the sole operator of a rail line does not have substantial market power. Rather, they operate in a competitive market.

As a second example, suppose there is a single provider of a particular retail service and there are no relevant substitutes for this service. In this situation, it might appear that the monopoly provider will have substantial market power. However, if this firm has only one or a small number of buyers, these buyers are likely to have significant countervailing power. In such circumstances, the retail buyer(s) will negotiate directly with the seller and all parties have an incentive to reach an economically efficient solution. There is unlikely to be a need for regulation.

Unless both of the requirements of Recommendation 1 are not satisfied, then intrusive regulation is likely to be counterproductive. The regulations will tend to interfere with a working market rather than preventing a market failure. In such situations, regulation can harm both the regulated firm and consumers. For example, intrusive regulation of rail may reduce rail investment and result in rail being a less effective competitor with road. Clearly this will harm the rail owner, but it will also harm customers as they face a less competitive market due to inappropriate regulatory intervention.

3.1.2 Structural Choices

The ESC's powers will also include licensing in essential service industries. One part of licensing is to ensure quality standards. Another, however, is potentially to limit the number of suppliers in situations where a service provided has natural monopoly characteristics. This is appropriate as free entry and competition may lead to excessively high industry costs.

The ESC's licensing role will, therefore, have an important impact on the structure of the industry. However, as with pricing and quality regulation, in order to reduce regulatory risk and facilitate efficient decision-making with regard to service provision, it is important that the criteria and goals of licensing be specified and the scope for restricting entry be applied to non-competitive rather than potentially competitive production segments.

Designing an efficient and practical licensing regime raises similar issues to the design of general regulation. The ESC needs to be aware of both its own information limitations and be careful to establish desirable incentives under licenses. For example, if the duration of a license is too short, license holders will not invest in long-term specific capital. Long-term licenses are likely to be incomplete as it is impossible to predict all relevant factors that may change over the life of the license. The regulator needs to establish a reputation for not behaving in an opportunistic manner when it has discretion under the license. At the end of a license period, ownership and the potential 'hand over' of existing capital needs to be considered.

When dealing with natural monopoly industries, a well-designed licensing procedure can create desirable competition for the market, and lead to considerable social benefit.

Recommendation 2:

With respect to its licensing powers, licenses should explicitly relate to quality standards except where it is clearly established

that a particular segment is subject to natural monopoly production technologies. In this situation, licenses themselves should be awarded by competitive process (such as efficient auctions or tenders) that ensures there is competition for the market. In addition, those licenses should be awarded on terms that clearly specify pricing and quality standards to be imposed on the licensee. Those terms may themselves be appropriately built into the licensee selection criteria.

3.1.3 Summary: Control Issues

In summary, at present the proposed scope and powers of the ESC do not address the first key question with regard to the regulatory contract: what variables will be left under the control of private firms and what activities will be subject to regulation? Specifications need not be exact at this stage but should at the very least provide criterion that will be used to evaluate whether a particular set of activities will be subject to regulation or not. Doing so will provide a degree of certainty to market players and facilitate efficient and timely decision-making.

3.2 Acquiring Information

Any regulatory regime requires information in order to determine key variables such as pricing and quality standards. This information is costly to acquire and gather and, moreover, how it is used will impact upon the incentives of firms. Many of the trade-offs associated with informational components of regulatory regimes where discussed in Section 2. Here we wish to emphasise that in the context of economic regulation it is important how broadly a regulator considers necessary information. In particular, in some situations, it is better not to engage in explicit monitoring and instead rely on output-based incentives to set regulatory variables.

3.2.1 Cost and Demand Information

In setting prices, economists recommend the acquisition and use of both cost and demand information. This is especially important in the regulation of natural monopolies where the greater proportions of costs are fixed rather than ongoing. Having both sources of information allows for the efficient recovery of such costs from those consumers who value the service the most.

What is important, however, is how the regulator takes into account the imperfections associated with gathering that information. It is a rare industry indeed, where the regulator can know as much as the regulated firms regarding the efficacy of their decisions. Invariably, given a decision to leave control of key variables to the regulated firm, it is also economically efficient not to second-guess those decisions. What is more favourable is to evaluate those decisions on the basis of outcomes rather than the precise process and rationale for those decisions. The goal here is to provide incentives for appropriate decision-making while economising on the costs associated with attempting to reach goals of symmetry of information between firm and regulator. We will have more to say about what is involved in setting incentives for private decision-makers below. Here, however, it is important to emphasise that information gathering should not be a goal of a regulator per se but only an end evaluated within the context of the entire regulatory regime.

3.2.2 Benchmarking

An important source of information for regulators is the performance of similar firms in other regions or jurisdictions. This source of information is particularly important in the Victorian context where there are horizontally separated distribution businesses in electricity, gas and water. It is also important in the Australian context of state-based regulation. By co-operating and co-ordinating with other state-based regulators such as IPART, the ESC can pool information about regulated firms and improve the efficiency of regulation. The pooled information can be used to benchmark regulated firms or create 'yard stick' competition.

Benchmarking involves comparing the performance of a regulated essential facility in one region with the performance of similar facilities in other regions. The comparative performance information is used as an input into the regulatory framework. Because the regulated firm is indirectly forced to compete with firms in other regions through performance comparisons, benchmarking improves the incentive effects of regulation. For example, suppose a firm was regulated using cost-based pricing. As noted above, this generally provides the regulated firm with poor incentives to minimise costs, to innovate and to operate efficiently. If, however, the price that a firm could charge was based not simply on its own costs but also on the costs of other firms, then this would help to restore the incentives for efficient operation. The firm would have the incentive to lower its own costs, as this would only partially be reflected in a lower price. If the firm were able to operate more efficiently than other firms then it would be rewarded for this efficiency rather than being punished as under cost-based price regulation.

Benchmarking and yardstick competition do not require firms to be identical. Useful comparisons can be made whenever the performances of two firms, under efficient operation, are positively correlated. If firms operate in very different environments and face different market risks, then comparisons provide less information than when firms operate in similar environments and face similar risks. However, in each case explicit comparisons of firm performance can provide useful information to the regulator and can improve the efficiency of regulation.

Well-designed benchmarking procedures take firm differences into account. The greater the similarity of firm operating environments then the greater the weight interfirm comparisons should have in an efficient regulatory framework. Statistical techniques can be used to determine appropriate weights for firm comparisons. These comparisons can be based on relatively simply performance indicators such as cost, on multi-dimensional indicators such as quality, and on sophisticated performance measures, such as total factor productivity.

Care needs to be taken when designing benchmarks and implementing yardstick competition. Poorly designed schemes can have the undesirable effect of increasing risk to the regulated firm with no offsetting efficiency benefit. However, well-designed schemes that allow for the idiosyncratic features of individual firms and apply appropriate weights to benchmarks provide significant regulatory benefits. These schemes create good incentives for firms and reward the most efficient firms. The only losers under well-designed benchmark schemes are poorly managed firms.

3.3 Providing Incentives for Investment and Innovation

The most important thing to recognise about any regulatory regime is that key decision variables are left to private agents. To ensure that those decisions are made in a socially beneficial way, the regulatory regime must consider the incentives that are created by the degree of control and the use of information in setting variables that are regulated such as pricing and quality.

As discussed in section 2, this will invariably mean 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 (or penalty) and not monopoly profits per se.[3]

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[3] Laffont and Tirole, *op.cit.*, 1999.

However, when it comes to investment and innovation in infrastructure provision, the importance of clear incentives becomes even more critical. This is because the costs associated with those activities are sunk and will, given the privatised and corporatised nature of the industries in question, be borne by private agents. However, the benefits from those investments are more diffuse. This raises the issue of the positive externalities that arise in infrastructure investment contexts and the likelihood that even under ideal circumstances, privately funded investment is likely to be delayed and of lower scale than would be socially desirable.

Given that competition regulation imposes constraints on the profit-making activities of infrastructure providers, the regulator is faced with a difficult task of encouraging socially optimal investment while preserving competitive outcomes. The two goals often conflict; leaving the regulator with a trade-off. Even more difficult is the fact that investments, when undertaken, have sunk costs so that a regulator may be tempted to under-reward investors after the fact. In the short-term a lack of such rewards is of little economic consequence. Where it does matter is for the long-term and how past regulatory decisions signal attitudes that might be applied to new investments.

This risk of regulatory opportunism is a significant concern. If the regulatory regime allows the ESC to engage in short term opportunism by effectively seizing sunk investments and preventing firms from earning an appropriate return on their investments, then regulated firms will not invest. The end result will be a reduction in the services offered to customers. However, the incentives for short-term opportunism by regulators are significant. It is easy for a regulator who may be driven by short-term considerations, to undervalue the long-term costs of deterring investment.

In an infrastructure setting, the consequences of a lack of respect for investment incentives are profound. This is precisely because there are multiple parties that will benefit from an investment. Put simply, potential investors would rationally delay or refrain from any investments if they thought investment costs would be under represented in the cost-base for regulated pricing – even where their own return would justify that investment. To see this, consider the following hypothetical situation.

> [I]magine that the *Trade Practices Act* mandated that the services provided by all lawncutting devices were subject to an access regime, in this case, for the production of neat gardens. The Smith family is considering purchasing a lawnmower. However, before they do this they notice that their neighbours, the Jones family, have a nice new lawnmower. The Smiths propose to the Joneses that perhaps they could borrow their mower for one day a week. They argue that the loan would not inconvenience the Joneses who use the lawnmower themselves for

> one day each week. Of course, the Smiths will compensate the Joneses for fuel used and physical depreciation caused. This offer is, of course, consistent with the economically efficient use of the lawnmower. That is, given that the lawnmower exists and is not fully utilised by the Joneses (that is, there is excess capacity), if the Smiths are willing to bear the costs of their usage, it is socially efficient for them to be granted access to the Joneses' mower. To the extent that there is a legal stipulation for the Joneses to grant the Smiths access, so much the better.
>
> The problem, however, is that the Joneses were considering purchasing an electric weeder. They had decided that the purchase would have been worthwhile even if it were only used one day a week. At first glance, it would seem that the prospect of renting would only enhance the benefits that the Joneses would derive from purchasing the weeder. However, the Jones family are sophisticated thinkers. They reason that it might be better to see if someone else on the street purchases the weeder first. That household would bear the capital costs of the weeder while the Joneses could simply rent it out for one day a week. Under a proposal such as that of Smith for the mower, Jones would only have to pay for the operating expenses of the weeder – a negligible amount relative to the purchase costs.[4]

Regulation that neglects sunk investment costs creates a free-riding problem among potential investors. Each chooses to delay investment and wait for others to provide the infrastructure; with access regulation freeing them from ever having to contribute to the investment. However, with all investors realising this, no one investor is likely to take the lead. The end result is delayed investment; with only the potential competitive returns motivating investors. If, however, the investment costs are insufficient to cover those competitive returns, investment will never take place.

3.3.1 Taking into Account Investment Costs Ex Post

Given this, a principal requirement of any pricing structure would be to take into account investment costs. However, it is important for efficiency purposes that this is not simply a guarantee of a rate of return. Such policies will

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[4] Joshua S. Gans and Philip Williams "Efficient Investment Pricing Rules and Access Regulation," *Australian Business Law Review*, Vol.27, No.4, August, 1999, p.268. See also J S Gans and S P King, "When Being First Doesn't Pay", *The Australian Financial Review*, Friday 30 January 1998, p 32.

encourage inappropriate investment and also give rise to issues regarding the calculation of the rate of return and base upon which to calculate that return.[5]

To overcome such problems, economists in general recommend a multi-part tariff structure for pricing. The usage charges effectively reflect incremental costs while the fixed component is designed to contribute towards investment costs and generate appropriate investment incentives. Notice that it is critically important that fixed charges do not relate to usage in this case; as demonstrated by the lawnmower parable:

> Notice that the reasoning of the Joneses would not change if access seekers, such as Smith for the mower, were forced to contribute towards capital according to use. To see this, suppose that Smith also was forced to pay Jones for one seventh of the capital costs (given that they use the mower for only one day per week). A potential investor, such as Jones, would still be better off waiting for another household to purchase the asset. In this case, that provider would have to bear most of the capital costs associated with the necessary idleness that accompanies mowers and weeders. As providers of an asset are not compensated for idleness that arises in such lumpy investors, under such access regulation they are better off being a seeker rather than a provider.
>
> The idea of economic efficiency is not confined to the efficient use of assets that have been created, it can also be applied to the decision to invest in new assets. In particular, efficient investment requires that investment takes place at a time that will maximise the net benefits to society as a whole.
>
> For Smith and Jones' street, access regulation based on simple cost recovery rules, while encouraging efficient utilisation of assets, discourages efficient investment. Even purchases that might have been individually optimal are delayed. Access regulation that does not respect the incentives to invest encourages a problem of free riding among potential providers. For these situations, the access regime that focuses exclusively on efficient usage can potentially discourage provision and hence, discourage any usage at all.[6]

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5 It has long been recognised that rate-of-return regulation, which provides a guaranteed return on capital investment without providing appropriate incentives to guarantee that investment is efficient, leads to undesirable investment, gold-plating of capital and artificial inflation of the rate base. See H. Averch and L. Johnson, (1962) "Behavior of the firm under regulatory constraint", *American Economic Review*, 52, 1052-69.

6 Gans and Williams, *op.cit.*, p.268.

Nonetheless, by fully allocating costs based on the relative value a user places on the service, it is possible to recover investment costs efficiently while creating socially desirable investment incentives.[7]

Recommendation 3:

With regard to the creation of infrastructure assets, there should be a clear and explicit statement that the costs associated with such assets will be taken into account and the costs apportioned to users in a way that will encourage optimal provision of infrastructure investment. Thus, encouraging investment should be an explicit goal in economic regulation.

3.3.2 Undertakings: An Ex Ante Approach

The rules that determine when new facilities will be included in a regulatory regime also influence new investment. If these rules fail to take into account the relevant *ex ante* risks of new investment then they can deter socially desirable investment.

A simple example illustrates this regulatory problem. Suppose that there is a single firm that can build a new infrastructure facility that might be subject to access regulation. The facility might be a new gas distribution network to a country town that previously had no access to natural gas supplies. Even in the absence of regulation, the firm that invests in this facility faces an uncertain return. The project might be highly successful or it might fail. The success of the project will depend on the town's demand for gas and this will not be known for certain until after the investment has been made and the relevant costs are 'sunk' by the investors. The firm will need to make its decision about the investment based on the risk and expected return of the project.

Now, suppose that after building the new gas distribution system, this system can be declared for access by other gas companies. A potential access seeker can wait until they have observed whether or not the gas distribution system to the town is successful before they attempt to gain access. Competing gas companies will only seek access if the project is a success. In this case, the competitors will want to share the 'rents' from selling gas to the country town. But if the project is a failure, so that gas sales to the country town are poor and the

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[7] For an economic analysis of the appropriate basis for valuing assets in the context of access regulation see Joshua Gans and Philip Williams, "Access Regulation and the Timing of Infrastructure Investment," *Economic Record*, Vol. 79, No.229, June 1999, pp.127-138.

initial investors receive little if any return on their initial investment, no competitors will seek access. The investing company will be left to bear all losses associated with their investment. In this sense, the potential for access declaration of the new gas facilities tends to reduce the return on the investment when that investment is successful, but does affect the losses faced by the investing firm if the project fails. Access regulation biases down the expected return from the project and will tend to deter firms from investing in (socially desirable) new infrastructure projects.

This example illustrates a general principle. Regulation, including declaration and access, are *ex post* decisions that affect the expected return from an investment. Further, regulation is most likely to be used to control a firm's behaviour when the returns from the investment are high. This means that *ex ante* the potential for regulation will 'cream skim' the returns from an investment and might make socially desirable investment privately unprofitable.

The principle, that access regulation will deter investment when returns are uncertain, holds regardless of the access prices so long as access leads to some diminution in total profits to the access provider. Access pricing rules that allow a 'reasonable' return on investment do not avoid this problem. For example, suppose that if declaration is successful, access prices are set by the regulator to cover the cost of the investment, including a 'risk premium.' So long as there are some potential situations where the investment will be *ex post* unprofitable, the potential for access will distort the expected investment returns and may make the investment unprofitable. Even if the regulator could set the access price *before* any investment, the potential for access to distort investment would not be eliminated. To see this, suppose that the regulator can *ex ante* set the access price such that whenever access is sold the network owner is guaranteed to make enough return to cover their investment. Then this will still not overcome the problem if there is a potential for the service to 'fail.' In these situations there will be no access seeker and the investor will be forced to bear the entire burden of any loss.

In summary, whenever the returns from a large infrastructure investment are uncertain, the potential for declaration and access (at non-trivial prices) will tend to deter socially desirable investment.

To avoid the disincentives for investment created by regulation, rules need to be carefully constructed to allow for both the inclusion and, more importantly, the exclusion of new facilities from the regulatory regime. For example, in the case of access regulation, facility declaration rules need to allow investors in new infrastructure facilities to apply for an 'access honeymoon.' In other words, investors should be allowed to present the ESC with an undertaking that permits the infrastructure owner not to provide access for a fixed period of time, such as

twenty years. This undertaking would be provided before the facility is built. The ESC should be able to accept such undertakings when there is a reasonably high degree of uncertainty surrounding the investment.

Recommendation 4:

An appropriate set of processes should be established that allow for regulatory commitments to be written as access undertakings at the investment proposal stage. This will facilitate an environment that relieves regulatory uncertainty associated with new infrastructure investment.

4 Supply Security

It is proposed that the ESC will have a role in ensuring the security of supply from regulated essential services. There are no details of what precisely that role will be. From an economic perspective, however, the role for regulation here arises from a combination of the externalities that arise when there are supply interruptions and the potential lack of competition that might drive service providers to minimise the possibility of such interruptions.

However, there are existing contractual and liability regimes that do cover supply security in these industries. Therefore, the question is what additional role the ESC might play in facilitating a socially optimal level of security. There are two potential roles. First, the ESC may engage in on-going regulation of essential services to ensure that the probability of interruptions is at an optimal level. Second, the ESC may play the role of customer-advocate in enforcing contractual terms and penalties that may be associated with supply interruptions.

We will review these roles here in the context of a closer examination of the supply security problem per se. It will be argued that the two roles of complementary and that the powers of the ESC should be specified accordingly. Nonetheless, there may be an issue regarding what types of interruptions are to be the primary purviews of the ESC.

4.1 Risks in Supply

In infrastructure service provision, there is a range of supply risks ranging from inconvenient, short-term interruptions to prolonged and widespread loss of supply. A challenge for a regulator is to determine whether and where on this spectrum should it intervene to regulate supply risks. A secondary question is to determine the form this intervention should take.

The two issues are interrelated, for the costs of intervention, which depend in part on the choice of instrument, will influence the point at which the benefits of intervention may be expected to exceed the costs.

Following the logic discussed for economic regulation, there is a *prima facie* role for regulatory intervention on efficiency grounds when the external costs of supply disruptions are large. Therefore, the scope of regulatory authority

concerning risk regulation needs to distinguish between events that do not give rise to substantial external costs, and those that do. Attempts by the regulator to cover all interruptions to service will lead to excessive regulatory intervention.

A key issue are the difficulties regulators and users face in knowing whether those who cause risks, or those who are responsible for mitigating them, are acting in the public interest. This problem arises due to the profound informational problems that hinder both the detection of risks and the effectiveness of risk mitigation activities.

The problem of risk regulation therefore takes place on at least two levels. First there is the objective of ensuring optimal levels of risk management to meet efficiency and equity objectives. Second, there are limitations on the scope for achieving optimality in implementation due to informational difficulties. Reflecting this latter limitation, risk regulation may be more appropriately viewed as the development of a more coherent framework, designed to avoid the more costly mistakes of the past.

4.2 The basic problem

The basic concern is that the level of supply security in infrastructure services may not be socially optimal if left unregulated. In particular, it is concerned that interruptions may occur too frequently and at too high a cost.

The socially optimal level of supply security is unlikely to be a standard of perfect reliability; i.e., no interruptions. While there are benefits to the community of reducing the probability of an interruption to zero, it is recognised that doing so would entail prohibitively high costs. These costs are associated with actions that can be taken by agents in the economy that are directed towards increasing the security of supply. These actions may be conveniently labelled, *precaution*, although they comprise actions such as investments in redundancy, safety protocols, substitute supply sources, alert-awareness and the like. Each of these actions is costly (both privately and socially). Hence, their cost must be compared with the benefits they generate in order to evaluate whether they are worthwhile.

The real concern is that without any judicial or legislative intervention, the socially optimal level of supply security is unlikely to be provided by the private sector. This is because many of these infrastructure industries are characterised by natural monopoly technologies. Hence, competition, if it exists at all, is unlikely to place requisite discipline on firms to take precautionary actions to generate a socially optimal level of supply security to consumers. Consumers cannot choose their suppliers based on the level of security offered.

But the problem is deeper than this. One can ask: even if a provider is a monopolist, could not a consumer, fearful of interruptions, contract with the provider to take the necessary precautionary actions? Although this may be a possibility for determining tolerances for day-to-day service levels that are, in general, observable, there are, however, several factors that may prevent this contractual solution from being successfully implemented for larger supply interruptions:

Information asymmetries: consumers may not be able to easily or cost-effectively identify the levels of risks involved, or may not be able to determine whether an infrastructure provider was undertaking the necessary precautionary actions to reduce supply risks;

Free-riding: to the extent that the infrastructure involves networks and security is part of network integrity, then it is difficult for one consumer in a locality to have secure supply while another does not. It is possible for one consumer to insure for the losses associated with supply interruptions while another does not. However, this mechanism does not ensure that the optimal level of resources is devoted to precaution.

An important feature of the problem that gives rise to a potential need for regulatory intervention is the necessity to acquire costly information to identify and respond to risk. Information about risks has public good attributes: its use is non-rivalrous among all that are exposed to them. Regulatory policy allows all individuals who are exposed to a risk to share the costs of identifying it and designing a common response.

4.3 Classifying regulatory solutions

There are many instruments at a regulator's disposal to encourage a socially optimal level of supply security. We will classify two types of instruments:

Liability: these instruments come into operation when triggered by an actual interruption. Each specifies a set of sanctions and compensations to users that must be made in the event of an interruption occurring.

On-going regulation: these instruments are designed to monitor (or audit) the current (or historic) levels of precaution taken by infrastructure owners and provide incentives or performance sanctions to ensure that they achieve a socially optimal level.

Thus, both liability rules and on-going regulation have in common a set of sanctions that are imposed on infrastructure owners. However, for liability rules, these sanctions are triggered by actual interruptions, while on-going regulation

focuses on performance criteria and on precautionary actions (regardless of whether an interruption has occurred or not). In what follows we will review instruments of each type in turn. It will be argued that a reliance on one type or another will be inadequate for the task at hand. Hence, it is likely that a combination of on-going regulation and some use of liability will be the appropriate policy.

4.4 Liability rules

A liability rule specifies a set of sanctions or compensatory mechanisms that are triggered by actual realisations of interruptions to service. These include:

- *Strict liability rules*: these are rules that hold infrastructure owners liable for the costs of all supply interruptions (regardless of how they are caused).

- *Contract damages*: these are imposed contractual terms that specify the compensation that must be paid to users in the event of supply interruptions.

If specified correctly, each of these instruments has the potential to encourage socially optimal precaution on the part of infrastructure owners. Each is an obligation on infrastructure providers to ensure supply. If they cannot, then these mechanisms specify the 'price' they must pay. If this price reflects the harm actually caused by the interruption, then a private infrastructure owner will internalise any social costs imposed by interruptions.[8]

Liability rules, if working properly, have a key advantage: they have relatively low informational requirements.[9] The only information required is an evaluation of the actual harm done; observed when that harm is realised. Thus, information can be gathered ex post. So, no information, regarding the precautionary actions undertaken by the infrastructure provider is required.

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[8] This logic is a standard one in economics when there are external effects. It is akin to a system of Pigouvian taxes. The logic there is that private agents will internalise the true social costs of their actions if they are forced to bear those costs. In this case, the costs are realised when an interruption occurs. For a discussion of such Pigouvian mechanisms see Joshua Gans, Stephen King and Gregory Mankiw, *Principles of Microeconomics*, Harcourt-Brace: Sydney, 1998, Chapter 11.

[9] That is, they have a lower information burden on the government who only needs to determine the magnitude of harm following an actual accident. The information requirements in forecasting, etc., remain on the infrastructure managers under liability rules.

Indeed, liability rules demand no ex ante judgment on the levels of these whatsoever.

However, there are several conditions under which liability rules may not operate well.

- *Incomplete enforcement*: for a liability rule to work properly, compensation based on actual harm faced must actually be paid. If the court system only weakly enforces the rule, too little supply security will be realised.[10]

- *Limited liability*: if the magnitude of harm is so large that a firm cannot pay out this amount the users, then this will limit the ability of a liability rule to encourage firms to internalise the costs of their actions.[11]

- *Risk aversion*: notice that a liability rule means that an infrastructure provider is liable for interruptions even if they were not related to precautionary actions at all. This is a key part of the informational advantages of liability rules. However, risk-averse agents will bear additional costs from these risks. This may raise the cost of capital to infrastructure and deter investment.[12]

- *Many responsible agents*: liability rules presume that the infrastructure provider is the only agent responsible for precaution, or that fault can be easily assigned when multiple players are involved. In reality, other agents may be responsible as well, including users, government regulators and

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[10] See Steven Shavell, *Economic Analysis of Accident Law*, Harvard UP: Cambridge, 1987.

[11] In principle, the government could provide some subsidy or other benefit to an infrastructure provider to compensate for this. However, subsidies, protection of monopoly and similar schemes introduce additional distortions. See Steven Shavell, "A Model of the Optimal Use of Liability and Safety Regulation," *Rand Journal of Economics*, Summer 1984, 15, pp.271-80; and Donald Wittman, "Prior Regulation Versus Post Liability: The Choice Between Input and Output Monitoring," *Journal of Legal Studies*, January 1977, 6, pp.193-211.

[12] See Mitchell Polinsky and Steven Shavell, "The Optimal Tradeoff between the Probability and Magnitude of Fines," *American Economic Review*, 69 (5), 1979, pp.880-891. An additional related concern is the uncertainty faced by the infrastructure owner over the extent of harm. Users may have better information regarding this and hence, this may lead to sub-optimal provision of supply security if a liability rule is imposed. See Charles Kolstad, Thomas Ulen and Gay Johnson, "*Ex Post* Liability for Harm vs. *Ex Ante* Safety Regulation: Substitutes or Complements?" *American Economic Review*,80 (4), 1990, pp.888-901.

even debt providers. Determining the optimal liability rule when this is the case is difficult.[13]

- *Governance issues*: an additional problem with liability rules relates to corporate governance. Interruptions, almost by definition, are rare events. So while the probability on occurring in a given year, five years or even decade is small, over twenty or fifty years that probability becomes a near certainty. Precaution is likely to be effective in reducing probabilities of interruptions over that longer time horizon. However, the time horizon of managers and equity holders of infrastructure is much shorter. So while the costs of precautionary actions are borne immediately, the beneficial consequences are not realised during the economic life of those decision-makers. This means that the incentive effects of a liability rule might be weak.[14]

- *Equity issues*: if the risky event is perceived as potentially severe, in that it could cause substantial physical damage to humans, then there is likely to be an emphasis on prevention rather than compensation in policy design. It is also likely that community concerns regarding substantial environmental damage would also limit the scope for liability rules to be considered fully effective.

Each of these difficulties limits the ability of a liability rule to ensure that decision-makers responsible for precautionary actions internalise the full social costs of those actions.

4.5 On-going regulation

On-going regulation involves more active government involvement in the actions of infrastructure firms. The objective of on-going regulation is to reduce the likelihood of a major interruption through the development and review of operating standards.

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[13] For a discussion of holding debt holders liable see Rohan Pitchford, "How Liable Should the Lender Be? The Case of Judgment-Proof Firms and Environment Risk," *American Economic Review*, 85 (5), 1995, 1-1186.

[14] The problem of policy myopia is not limited to private sector participants. Arguably governments also have relatively short-term planning horizons and may therefore neglect policies that have only long-term payoffs.

Possible instruments include:

- *Periodic audits*: the government periodically holds inquiries into the level of precautionary actions undertaken by infrastructure providers.

- *Standards*: standards for precautionary actions are taken and monitoring used to ensure those standards are being met on an on-going basis.

- *Incentive regulation*: rewards and sanctions are instituted on a recurring basis for failure or otherwise to undertake precautionary actions.

Like liability rules, on-going regulation has the potential to generate a socially optimal level of supply security. Unlike liability rules, however, it acts to place incentives directly on precautionary actions rather than indirectly through the observed consequences of those actions. As such, the information requirements are more onerous. The government needs to have some way of assessing the optimality of desired levels of precaution as well as monitoring whether those actions have been taken. Each of these tasks is potentially costly.

On the other hand, on-going regulation resolves some of the difficulties faced by liability rules in getting the incentives right. The problems of uncertainty and limited liability are less salient. Also, given the on-going nature of the regulation, the governance issues are not likely to be salient.

There are two key features that determine the success of on-going regulation:

- *Observational difficulties*: in order to be effective, it must be possible for the regulator to observe the level of precautionary actions undertaken. If measures of these are easily manipulated, it will be difficult to impose sanctions on infrastructure providers for non-performance.[15]

- *Regulatory commitment*: there may be changes that alter the regulator's view of the optimal level of precaution. However, if these changes are based on the past actions of infrastructure owners (for instance, the ease with which they achieve some standards) this may tempt regulators to 'ratchet-up' performance standards. Foreseeing this, infrastructure firms

[15] For a discussion of these types of informational issues see Paul Milgrom and John Roberts, *Economics, Organization and Management*, Prentice-Hall, 1992; and George Baker, "Incentive Contracts and Performance Measurement," *Journal of Political Economy*, 100, 1992, pp.598-614.

may not perform as well. Hence, applying on-going regulation requires commitment on the part of the regulatory to standards previously set.[16]

The key to the success of on-going regulation is the detection of appropriate levels of precaution and the ability to link them to sanctions if non-performance is detected. If either of these factors is difficult, on-going regulation will be less effective.

4.6 Combining instruments

In reality, the appropriate policy to promote optimal supply security will be some mixture of liability rules and on-going regulation. Their relative strengths, or alternatively the limitations of the different policies, in influencing risk management practices will drive the mix.

This occurs in other policy areas. Consider road accidents that are the result of excessive speed. While a driver will be (partly) liable for harm caused in accidents that were the result of their speeding, drivers are also disciplined directly on their failure to adhere to speed limits. This illustrates the type of trade-offs involved in liability rules and on-going regulation. The liability of motorists is limited, in general, by their wealth that cannot compensate for harm to others in high-speed accidents. However, on-going regulation is imperfect because it is costly and difficult to enforce every instance of speeding. Moreover, speed limits are inflexible and do not take into account differing circumstances (i.e., maybe some speeding is worthwhile in an emergency). The result is a mix of instruments that works well given the constraints of reality.

Here we wish to reflect on the criteria that will lead to a preference of on-going regulation over liability rules in the policy-mix – although each type could be complementary as well. Each of these criteria should be applied with respect to precautionary actions that can mitigate the possibility of a given type of accident.

- How large is the magnitude of possible harm? If an interruption results in harm whose monetary value exceeds the ability of a corporation to pay (i.e., it would go bankrupt first), then liability rules will be less effective.

- Are many agents responsible for precaution? If many agents are responsible for precaution then liability rules are unlikely to be fully

[16] See Milgrom and Roberts, *op.cit.*

effective. However, if there is scope for negotiation among those responsible, such rules could be effective.

- How easy is it to evaluate the social costs and benefits of a precautionary action? If a government inquiry could establish that certain precautionary actions were worthwhile, then on-going regulation of their performance is desirable.

- Is on-going monitoring of performance costly? If it is costly to periodically monitor the performance of infrastructure providers, then it may not be easy to ensure that firms are complying with desired standards.

- Do community standards regarding a desirable level of supply security change infrequently? If they are more or less constant over time, then the temptation of regulators to increase performance standards is reduced and on-going regulation is more effective.

The first four of these questions relates to whether liability rules (the first two) or on-going regulation (the last two) are in fact feasible. We envisage the answers to these questions will differ depending upon, for instance, there a blockage in a distribution network or a drastic interruption to supply. It is possible that one, both or neither are feasible for a given potential accident. If only one is feasible, however, that should be chosen. If, however, both types are feasible then their relative merits must be evaluated. The last question addresses this criteria.

4.7 Summary

In summary, there are two main areas for policy attention by governments concerned by the risk of interruptions. Governments can respond to concerns regarding interruptions by:

- Regulating actions to mitigate risks; or

- Establishing liability for outcomes.

The choice among the policy responses is hampered by the observational difficulties that hinder the assignment of liability on the one hand and determining the adequacy of precautionary actions on the other. As we have indicated, legal, political and commercial limitations undermine sole reliance on liability rules.

The choice among the regulatory alternatives, and the degree of intervention depends fundamentally upon the nature of the interruption. The discussion above provides a basis for characterising the interruption and for determining whether policy instruments for risk regulation lie more with liability assignment or regulation of business practices.

5 Conclusion

In this report, we have considered the role of the Essential Services Commission. In particular, we have considered the constraints that the government should place on the ESC, including rules to determine which services are regulated and how they should be regulated. Our discussion has, necessarily, been general. There are a variety of essential services that can come within the regulatory mandate of the ESC. But there is not a simple one-size-fits-all regulatory solution. Rather the ESC needs to carefully consider the relevant industry and act to regulate the industry within strict guidelines provided by the government.

While our discussion has been general, there are some specific rules that need to be satisfied by any regulatory structure involving the ESC. First, there need to be clear rules for determining which essential services should be regulated. These rules need to focus on the relevant market failure that regulation is supposed to correct. If there is not a significant market failure then there is no cause for regulation. The rules should be conservative in the sense that they require a positive case to be made for regulating a firm. The potential costs of intrusive regulation mean that the assumption should be against regulation unless a persuasive case for regulation can be advanced.

It needs to be recognised that regulation is always a second best tool. It is an imperfect replacement for competition and should not try to mimic the outcome of a perfectly competitive market. Rather, regulation should be designed taking into account the costs of information and the incentives created for the regulated firm. Incentive regulation, that provides high-powered incentives for firms to achieve cost savings and to operate efficiently, needs to be used. Low powered cost-based regulation, such as rate-of-return regulation should be avoided. Carefully designed incentive regulation will make both customers and the regulated firm better off. However, it will not replicate the first-best competitive outcome. For example, incentive regulation will achieve lower prices for customers but will not necessarily result in prices that equal marginal cost. The regulated firm may retain 'excessive' profits, but these profits will reflect efficiency gains, not exploitation of market power, under incentive regulation. The regulator needs to avoid the temptation of short-term opportunism. The regulator may seize firm profits in the short term but by doing this the regulator will destroy the incentives needed for efficient firm operation. The long-term costs of regulatory opportunism will generally outweigh any short-term gain.

Regulations need to be clear. For example, firms need to know exactly which variables they control and what constraints they face under regulations. Regulatory uncertainty will reduce the incentive for firms to invest and operate efficiently.

The regulator needs to use appropriate regulation to limit information problems. For example, regulation that creates competition between the firms – such as competition for the market under a license scheme – provides an efficient way to minimise the information required by the regulator. Firms reveal information through the bidding process. Similarly, benchmarking allows the regulator to gather relevant information while creating appropriate incentives for regulated firms. The cost of gathering information needs to be recognised and any regulatory regime that depends on the regulator gathering large amounts of precise and intrusive information from a firm is likely to be inefficient and open to gaming.

Incentives for investment are of paramount importance. Poorly designed regulation can easily deter investment or distort the type of investment undertaken by the regulated firm. Rate-of-return regulation for example, provides firms with incentives to inefficiently invest to inflate their regulatory rate base. Conversely, regulation that allows for opportunism by either the regulator or other market participants will deter efficient regulation, leading to higher costs and poorer service in the medium to long term. To provide appropriate incentives for investment, firms need to be guaranteed that they will be allowed to keep the returns from efficient investment. This *does not* mean that investment should be guaranteed a rate-of–return. Rather, it means that where new investment leads to a social gain, firms will be allowed to keep an appropriate portion of that gain. For example, it might mean that investment in risky new infrastructure projects is explicitly excluded from any regulation for a specified period of time. This means that the relevant firm bears all the risk and receives all the relevant gain if the project is successful, but also bears all the cost if the project fails. Such exclusion will make both the firm and consumers better off compared to a regulatory regime that deters the investment.

The appropriate treatment of investment needs to be at the heart of an efficient regulatory regime. In particular, encouraging investment should be an explicit goal of economic regulation.

When dealing with supply security, regulations need to recognise that complete security will almost certainly not be economically efficient. The government needs to consider both *ex ante* tools, such as standards, periodic audits and incentive regulation, together with *ex post* tools, such as liability rules. The government needs to recognise the costs and benefits of these regulatory tools

and to design a scheme for the regulator that provides flexibility to adjust the mix of tools and certainty for the regulated firms.

attachment B.
to. Sub. No. 11

THE REGULATED BUSINESSES FORUM

Department of Treasury and Finance, Victoria

Essential Services Commission

Submission by

The Regulated Businesses Forum

October 2000

Table of Contents

1 Introduction

The Victorian Department of Treasury and Finance (DTF) in its *Essential Services Commission – Consultation Paper* proposes that the Office of the Regulator-General (ORG) be replaced with an Essential Services Commission (ESC). It canvasses stakeholder's views on the key aspects of the proposed ESC including *inter alia* the scope of regulation to be applied, whether the ESC should regulate the reliability of supply and the corporate governance arrangements for and structure of any ESC.

The Regulated Businesses Forum provides this submission for the consideration of the Department and other policy makers within Government. It has also commissioned a paper entitled 'Economic Choices Associated with the Proposed Essential Services Commission' by Professor Stephen King of the University of Melbourne and Associate Professor Joshua Gans of the Melbourne Business School. This is an independent paper and is submitted without comment. However its content does support the views of the Regulated Businesses Forum regarding the preferred nature of regulation in order to optimise outcomes for businesses, consumers and the entire State.

2 What is the Regulated Businesses Forum?

The Regulated Businesses Forum (RBF) is a group of businesses which share a general concern regarding the nature of economic regulation in Australia. The businesses operated by the members of the RBF span every Australian State and Territory. The operations and interests of the members include electricity generation, transmission and distribution, gas transmission and distribution, telecommunications, water and wastewater, road and rail transport, airports and ports. Members include not only operators but also investors, financiers and industry associations acting on behalf of their members.

The RBF currently has ***XXXX*** members. Details are set out in Appendix A. The total investment in Australian infrastructure represented by the members of the RBF exceeds A$***X*** billion. The members of the RBF are therefore significant stakeholders in the development of regulation in Australia.

The fact that such a wide range of businesses, including many which are usually competitors, has combined efforts to express a concern regarding the direction of regulation in Australia is evidence in its own right that something is amiss. The RBF hopes to become the focus for a business view regarding the most appropriate form of regulation for Australian infrastructure and utilities. To this end the RBF has prepared an 'Objectives and Issues Statement'. This document reflects the views of the RBF regarding regulation in Australia generally and is not specifically directed at Victoria. It can be found in Appendix B.

3 Why Regulate?

An optimal competition policy is a policy that minimises the sum of administrative costs and error costs.[1] Administrative costs in this context refer to the costs incurred by parties to an action in implementing regulatory decisions. Error costs are the costs to participants and to society of incorrect decisions on (i) deciding whether to intervene; and (ii) implementing a sanction, remedy or setting an access price. In general terms, attempts at reducing administrative costs increase the likelihood of error costs and vice versa. For these reasons, it is critical that access regulation only be applied where there is manifest evidence of market failure; such as where there are demonstrable natural monopoly characteristics or clear evidence of anticompetitive network externalities.

When regulation applies, there is a need to ensure that any potential benefits of regulation outweigh the costs of regulatory error.[2] Moreover, in assessing the effectiveness of regulation, any potential benefits from regulating must be measured against the possibility that regulation may harm the competitive process, by not allowing recovery of efficiently incurred costs; by deterring genuine, vigorous conduct; or penalising commercial conduct that brings genuine, long term benefits to consumers.

3.1 Administrative Costs

Administrative costs are a function of the difficulty of distinguishing legitimate, pro-competitive conduct from conduct that harms the competitive process. It is inherently difficult to distinguish between legitimate, pro-competitive conduct (the kind which benefits consumers), and anti-competitive conduct which harms the competitive process. Accordingly, the Hilmer Report notes that:

> it is the essence of competition that firms should attempt to outperform competitors in a manner which, if successful, could have adverse consequences for those competitors. For example, the introduction of a new and better product might put competitors at a disadvantage or in extreme cases even put them out of business, but is not the sort of conduct which should be prohibited[3]

Indeed, it was for this very reason that Hilmer rejected an effects-based test for unilateral conduct, finding that such a test:

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1 R. Cooter and T. Ulen, 1997, [2nd Edition], *Law and Economics*, Addison-Wesley, Reading Massachusetts, p. 336.

2 The costs of regulatory error include the potential deterrent effect of regulation on competitive conduct. See Landrigan M. & Warren T., Administrative costs and error costs in market conduct regulation: two case studies, 7(3) (2000) Competition and Consumer Law Journal 224-239.

3 Hilmer (National Competition Policy) Report (1993), p.62.

> does not address the central issue of how to distinguish between socially detrimental and socially beneficial conduct.[4]

This complexity has inevitably increased administrative costs, as evidentiary requirements are so much more difficult to meet. Besides complexity, administrative costs are also a function of the incentives participants have to engage in protracted legal dispute. There are two general reasons why some private parties to an action are less likely to settle than others. First, parties with deep pockets are less likely to find the costs of trial prohibitive. Second, parties that are less threatened by the trial results are less likely to settle.[5] Competition law disputes are often characterised by parties with deep pockets. Furthermore, there is often an asymmetry in risk between the parties, making settlement difficult.

When evidentiary thresholds for regulatory intervention are lowered and the prosecutor or complainants face no penalty for error, there is little incentive for the regulator or complainants to 'get their case right'. While this may reduce administrative costs, it greatly increases error costs. Any regulatory regime must therefore take into account:

- the potential for the regulator to err; and
- the importance of having a vigorous response by the incumbent in terms of the gains available from competition.

The latter point was made by the advisers to the New Zealand Government at the time of market liberalisation in that country concerning telecommunications. The advisers observed that

> ... the case for competition hinges on the effects on Telecom. Competitors are unlikely to be more than marginal in size in the market-place, but their impact on Telecom could be substantial'.[6]

Put differently, when consumers rely to any extent on an incumbent for the source of competitive benefits, the receipt of gains by those consumers depends on whether the incumbent can compete vigorously with entrants. Furthermore, if the incumbent is constrained from competing vigorously, entrants will have little incentive to do so. Accordingly, one of the most effective ways of reducing the competitive benefits of market liberalisation is to shackle the incumbent from engaging in vigorous competition.

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4 ibid, p.70.

5 A. Polinsky and S. Shavell, 1998, "Public Enforcement of Law", *New Palgrave Dictionary on Economics and the Law*, Macmillan Reference Limited, London, Volume 3, at p. 185.

6 See Ergas H., "Telecommunications across the Tasman: A comparison of regulatory approaches and economic outcomes in Australia and New Zealand", citing (at n51), Touche Ross Management Consultants, 1987, Telecommunications in New Zealand Wellington: Department of Trade and Industry.

3.2 Error Costs

Error costs are the costs to participants and to society of incorrect decisions on the part of the regulator and/or the courts. Errors can occur at two levels:

- deciding whether to intervene; and
- implementing a sanction , remedy or setting an access price.

Most regulators have a discretionary power over whether or not to intervene. The inherent complexity of competition law issues means that a regulator always runs the risk of error in deciding whether to intervene or in setting an access price.

Similarly all regulators run a significant risk of error in making judgements on alleged conduct. There is always uncertainty as to the point at which vigorous competition becomes anti-competitive, especially in relation to vigorous price competition. The New Palgrave Dictionary on Economics and the Law recognises these difficulties and notes that:

> when confronted with a claim of price predation, a court [or regulator] must sort out pro-competitive, aggressive pricing from pricing that only makes business sense if it significantly lessens future competition ... The difficulty is that predatory pricing can resemble vigorous price competition. Consequently, the fact-finder [regulator or court] must weigh the social costs of falsely condemning competitive pricing (Type I error) against the costs of erroneously exonerating anticompetitive conduct (Type II error).[7]

The costs associated with both a Type I and a Type II error are significant. Type II errors are unjust to the victims and may signal leniency in the regulatory system increasing the likelihood of such behaviour.

Type I errors are potentially even more costly than Type II errors. Market participants when making their pricing decisions routinely factor in the risk of a Type I error. Changes in the risk of such errors occurring will reduce the scope for competitive price reductions. In effect, market participants, will be far more reluctant to engage in vigorous price cutting and consumers will be worse off if the risk of Type I errors increases. Furthermore, Type I errors if accompanied with significant penalties affect the risk premium that investor's factor into investment decisions, increasing the industry's cost of capital.

The very real impact on pricing behaviour of a lower evidentiary threshold is apparent from US evidence that indicates the setting of low thresholds for finding predatory conduct results in a significant reduction in price competition. For example, the US Federal Communications Commission ("**FCC**"), under pressure from AT&T's competitors, prevented AT&T from responding to competitive entry by discounting off tariff and sharply lowering prices. The result has been that US prices

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[7] J. Ordover, 1998, "Predatory Pricing", *New Palgrave Dictionary on Economics and the Law*, Macmillan Reference Limited, London, Volume 3, at pp. 77-78.

for long distance services have decreased significantly less than the costs of providing those services[8].

The impact of any increased risk of Type I errors on investment can be seen in the analysis of Bittlngmayer who examined a set of 21 major industries in the United States covering 1947-1991 to investigate the statistical association between antitrust case filings and investment.[9] Each extra antitrust case filing is found to be associated with a significant decline in investment in the industry at issue. There are many potential causes for this association, but the increased risk associated with anti-trust activity, including the risk of Type I errors is considered pivotal.

As is the case with administrative costs, error costs are not solely a function of the complexity of the case at issue. Error costs are also more likely if the regulator does not bear any responsibility for incorrect decisions. In systems where the regulator is allowed to commence actions and/or design remedies with impunity, there is limited incentive for the regulator to ensure that all decisions are based on rigorous foundations.

Accordingly, aside from the need to ensure that regulation applies only where there is demonstrable evidence of market failure, there is a concomitant need to ensure that regulatory decision-makers are thoroughly accountable for their decisions, by, for example, providing adequate merits review rights in respect of the regulator's decisions.

3.3 Structure of the market

Another important issue which should be considered when determining whether regulation is necessary is the nature of demand for the service. If there is competition with the service provider from other modes of service delivery then perhaps the perceived inefficiencies which regulation is attempting to correct may not really arise. For example road transport competes directly with rail freight services, even if there is only one rail operator.

Similarly, in some instances the demand for a service is clustered among few customers, each of which may exhibit significant market power. This is the case for airports and ports where significant commercial pressures can be put on infrastructure owners by large customers. Where commercial agreements can be made to the satisfaction of all contracting parties there is no need for regulatory intervention, the costs of which are large.

Finally, the costs of regulation must be weighed with the size of any benefits which could flow to customers. Again, in the case of both airports and ports the proportion

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8 P. MacAvoy, 1996, The Failure of Anti-Trust and Regulation to Establish Competition in Long-Distance Telephone Services, the MIT Press, Cambridge Mass and the AEI Press, Washington DC at pp 105 – 174.

9 See generally G. Billingmayer, Investment and Antitrust Enforcement, http://www.gsm.ucdavis.edu/gnbittli/ (1999)

of total costs to the consumers of those services which is provided under a regulatory regime is very small. Given all the informational and resourcing costs of regulation under an effective rate of return regime, combined with the potential for the creation of a disincentive effect on investment, it must be questioned whether the benefit of regulation in these cases outweighs the costs.

4 Importance of infrastructure to the economy

Efficient infrastructure is particularly important for a country like Australia. Not only does Australia have to offset its labour cost disadvantage relative to its Asian neighbours, it also has to overcome very large distances over which goods and services must be transported. Having more efficient infrastructure services than its competitors is one way by which Australia can gain a competitive advantage.

Infrastructure businesses have a number of other characteristics which have led governments to provide services directly, or to regulate private providers. These characteristics set infrastructure apart from other sectors of the economy and create the need for a complex interaction with the government if the private sector is to provide services.

Infrastructure is an essential contributor to the production of other goods and services. If the provision of an infrastructure service is disrupted there can be widespread multiplier effects across the economy leading to significant costs.

Infrastructure often exhibits large natural monopoly elements such as increasing returns to scale, low marginal cost of production and consumers often have a limited choice for the provider of the service. Infrastructure assets are also often highly capital intensive. There are therefore high sunk costs associated with creating infrastructure assets and the investment profile is discontinuous. These traits enhance any natural monopoly characteristics. Infrastructure assets have correspondingly long lives and pay-back periods.

For these reasons Governments have generally chosen to regulate infrastructure service providers (both public and private) in order to avoid the inefficiencies which can be generated by monopolies compared with the situation which would prevail in economically competitive markets.

However, from the point of view of investors and operators, infrastructure investments are also of a peculiar nature. Infrastructure businesses typically rely on limited use assets. If the business becomes unviable its assets cannot easily be used to provide an alternative service or moved to a different location. Hence investments are relatively inflexible. To a large extent then, investments in infrastructure are 'sunk costs'. This means that investors will be very sensitive to the risks associated with those investments. Any increase in risk, or the perception of risk, will result in a reduction in the capital available for investing in infrastructure or an increase in the returns demanded by that capital.

Given the importance of infrastructure services to the economy, the Government has a key responsibility in ensuring those services continue to be delivered to an appropriate standard. One part of ensuring this occurs is to set policy to encourage efficient investment in infrastructure assets in order to enhance reliability and service standards in the long run.

5 The regulatory contract

5.1 Regulatory risk

Put simply, regulatory risk is the risk that the regulatory regime as perceived at the time of investment will not be applied throughout the life of that investment.

An examination of the record of regulation internationally and in Victoria demonstrates that regulatory risk is a function of the underlying regulatory regime, the surrounding institutional protections and behaviours or conduct associated with a regulator. Regulatory risk manifests itself most clearly when regulatory contracts (usually post privatisation) are broken[10] or the regime encourages or allows Regulators to "intervene" to achieve selective outcomes, generally short term price reductions for consumers. Typical behaviours will include inconsistency, subjective judgements, cherry picking methodologies or benchmarks, use of false benchmarks such as other regulatory decisions and asymmetrical approaches that can not be consistently maintained into the future eg company specific post-tax measures of the cost of capital.

The risk of regulatory interventions can be influenced by the magnitude of unexpected or anticipated windfalls. Regulators are more likely to intervene at or between scheduled reviews if they view the outcomes under a plan as unfair. Such actions weaken the incentive effects of price cap plans substantially.

Another source of regulatory risk is associated with "benefit sharing". Electricity regulators in both the UK and Australia have chosen to share benefits with customers immediately, to achieve greater political and or popular support. In comparing gradual X factor adjustments with initial price cuts, risks are magnified if efficiency gains are transferred immediately rather than gradually. The former approach is more likely to lead to a sudden change in returns. This raises expectations of earnings volatility which in turn increases utilities' cost of capital.

The broader issue remains, however, as to what framework for establishing price controls best contains regulatory risk. Containing such risk does depend partly on legal safeguards and the institutions to support and enforce these protections. These safeguards are more firmly established in the U.S. than in the U.K. or Australia and particularly Victoria, partly because of the longer history of regulation and perhaps also because the American legal framework is more grounded in constitutional principles.

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[10] In Victoria the most blatant example of regulatory risk has been the breaking of the "regulatory contract" made with the privatised electricity distribution businesses. In spite of clearly documented assurances and policy representations from the Government of the day and the first Regulator-General, the second and current regulator-General has chosen to adopt methodologies which are inconsistent with the reasonable expectations of the new owners. This has lead to a significant value transfer from business to customers. ie customers have been rewarded twice, once through the very significant sales proceeds generated from the assurances of future regulatory behavior and second through the substantial immediate price reductions awarded by the ORG.

Whilst not diminishing the importance of supporting institutions the RBF continues to believe that the methods used to regulate utility prices has the greatest influence on stability and regulatory commitment.

As outlined in the philosophy of regulation commitment becomes more difficult when prices are set largely on what the Victorian ORG terms "licensee-specific benchmarks". However, the use of company-specific data creates much stronger incentives to "game" the information provided to regulators rather than applying resources and intellect to becoming efficient and competitive. Gaming and adversarial relationships can, in turn, lead to unexpected outcomes that invite future regulatory intervention. This approach also generally has more extensive information requirements than that using "industry-based benchmarks", which relies on fewer but more comprehensive performance measures. Greater information requirements multiply the potential for error and unpredicted outcomes and further appeals as currently evidenced in Victoria with electricity. A licensee-specific approach also relies heavily on forecasts of company-specific variables, such as capital spending. Making reliable forecasts can be difficult for even the most knowledgeable industry participants operating in good faith. Again, there is a potential for mistakes that invite "corrections".

Some of these problems are mitigated with independent benchmarks, especially when they are combined with well-defined rules for sharing efficiency gains. This approach can create more objective and clearly understood performance standards. Benefit sharing with customers can also be more transparent. However, it is also true that an industry-based approach may lead to greater differences in profits among companies in the industry, and these differences may lead to pressure for adjustments.

International experience suggests that regulatory commitment is stronger when price caps rely on independent benchmarks. Price cap regulation in the U.K. (which has adopted a predominantly licensee-specific cost of service approach) has been characterized by game playing and arbitrary decisions designed to transfer wealth. There are fewer instances of this type of behavior in U.S. price cap plans. The greater stability of U.S. price cap regulation results from differences in the institutional environment and importantly the regulatory methodologies adopted. Given the experience to date, it is hard to understand why Australian regulators have adopted the licensee-specific cost of service approach which has not created any regulatory commitment in the U.K. and has lead to increasing cost of capital.

6 Philosophy of regulation

Cost of service and/or rate of return regulation has been subject to widespread criticism. Many regulators, utility managers, and academic observers believe that cost of service methods fail to generate maximum benefits from the provision of regulated services. Economists have analysed these problems extensively and have developed a persuasive critique of this regulatory system.

According to this analysis, information asymmetries are at the heart of problems with cost of service regulation. If regulators knew the minimum cost of service and the efficient set of utility prices, they could simply set allowed revenues equal to these costs and establish the corresponding tariffs. However, even experienced utility managers find it difficult to recognise which services should be offered and

the minimum achievable cost of providing them. Regulators therefore face a daunting task in identifying "just and reasonable" prices, particularly since they are apt to know less about the utility business than Company managers.

This fundamental problem is largely responsible for the difficulties with cost of service regulation. Regulators can never have enough information to "impose" efficient outcomes. However, the desire to overcome information asymmetries leads naturally to demands for substantial amounts of data from regulated companies. Information asymmetries therefore give rise to the well-known information burdens of cost of service regulation.

Regulators also know that companies' superior knowledge and the substantial sums of money at stake can create incentives to "game" regulatory processes. This reinforces their perceived need for information. It can also motivate micro-management and regulatory second-guessing of the data provided by companies. These factors all tend to make cost of service processes highly contentious and costly for consumers and businesses.

Efforts can be made to contain regulatory costs, but such measures often promote inefficiency and limit customer benefit. For example, price adjustments can be based on a company's own unit cost rather than an objective standard of operating "prudence." This decreases information demands but will also reduce the incentive to contain unit cost. Regulation may also be simplified by keeping the rate structure simple and limiting service offerings, but this hampers a utility's ability to respond to changing market demands. By distorting incentives and attempting to achieve efficient outcomes via mandates, cost of service regulation often resembles a "zero-sum game" where one party (*e.g.* utility shareholders) gains only at the expense of another (*e.g.* customers). This regulatory system therefore inevitably creates tradeoffs between customer benefit and incentives for efficient utility performance.

The problems with cost of service regulation become even more pronounced in competitive environments. As competitive pressures increase, utility managers must have maximum incentives to contain unit costs. They must be able to respond quickly to unanticipated market developments. The unwieldy and information-intensive nature of the cost of service regulatory process is not well suited to dynamic environments and indeed often works against the evolution of traditional natural monopoly industries to more competitive markets.

Many of these problems can be overcome through incentive or externally based regulatory models. In the US it is often referred to as performance-based regulation (PBR). PBR is a regulatory approach that uses well-designed rules rather than detailed examinations of utility operations as the basis for regulation. These rules are designed to simulate the outcomes of competitive markets, which helps to ensure that prices are just and reasonable. Company rates are also linked to external performance measures that do not depend on the actions of utility managers. Because allowed rates are not linked directly to company actions, utilities have maximum incentives to perform efficiently. PBR can also be designed so that customers share in these efficiency gains without distorting performance incentives. Hence rather than being a zero-sum game, PBR can lead to "win-win" outcomes where both customers and shareholders are better off than under cost of service regulation.

Fundamentally, PBR promotes greater efficiency because it encourages information asymmetries to be exploited in a socially productive manner. Under cost of service regulation, utilities' superior information spawns information demands and contention. The regulatory process that results tends to distort incentives and destroy customer value. By creating the right incentives, any superior knowledge that companies may have under PBR is channeled towards reducing costs and serving customer demands. This ultimately produces greater benefits for all parties.

6.1 Case study – Melbourne Ports Corporation

The ORG's recent review of prices set by the Melbourne Ports Corporation (MPC) provides an illustration of the frustrations a business can have in focussing on best serving its customers while under a rate of return based regulatory regime. The MPC's capital expenditure profile is necessarily lumpy and uncertain. For example the MPC is considering construction of new terminal facilities and new road and rail linkages, however investment decisions have not yet been made.

Given this uncertainty the MPC did not build the required revenues to fund these projects into its submission to the ORG. Instead it argued that the regulatory regime should be more flexible and that a review should be undertaken if the MPC went ahead with this additional expenditure. It should be noted that the new investments are intended to better serve the MPC's customers by alleviating capacity constraints.

To resolve the issue of balancing financial risks with securing benefits for port users and ultimately the Victorian economy, the MPC sought the ORG's agreement to bring forward the next price review, which is scheduled to take effect from 1st July 2005, should the MPC be able to demonstrate that certain criteria had been met.

The ORG declined the MPC's request and determined that the next regulatory period would not commence until 1st July 2005. However, at the same time, the ORG did not take into account any portion of the above projects in making its Price Determination for the current regulatory period.

In effect, the MPC is now constrained from undertaking any additional expenditure not considered in the current regulatory review in spite of the fact that it may be in the best interests of its customers, and the State of Victoria, that it made those investments. This situation would not occur under true incentive regulation as only the prices the MPC charged its customers would be regulated and no account of its costs would be necessary. There is also an argument that the MPC's services should not be regulated at all given the concentration of demand for its services and the competition it experiences from other ports and other modes of transport.

7 Regulatory framework

7.1 Independence of the regulator

It is vitally important that the regulator keep a balanced view on ensuring long-term investment, quality and pricing outcomes of regulated industries. This is best achieved by ensuring the regulator is independent of government, industry and

consumers whose short-term interests from time to time may conflict with long term efficient outcomes.

Independence from Government has two facets. The first relates to ensuring that regulatory decisions are not made for short-term political purposes. The second, which is less obvious, relates to ensuring that the decision about whether to regulate, how and for what purpose, are not made by the regulator, but by Government (or the Parliament). Care is needed to ensure that "regulatory creep' does not occur. This is the situation where the scope of regulation slowly expands over time beyond the scope of what was originally intended. If not prevented, confidence in the system will likewise diminish over time leading to investment problems down the track.

To ensure public confidence, the regulator must be seen to be independent of regulated industries. Whilst it is important that there be an effective on-going dialogue between the regulator and regulated businesses, it is important to ensure that the regulator does not become an advocate of industry – this is known as regulatory capture. If a commission-based structure were adopted, it would not be appropriate for there to be an industry representative on that commission however that should not serve as a barrier to people with industry experience serving on such a commission.

It is equally important for the regulator not to be seen as an advocate of consumer interests. If a perception develops that short-term price reductions are given priority over longer-term investment issues, firms will be less likely to invest in more risky projects. It is therefore not appropriate for there to be consumer representatives on a commission if that structure was chosen. There would also be a question of balancing the competing issues of different types of consumers. Consumer interests are best represented either through Government or consumer and industry groups. Again, there should be no bar on people with a background in consumer advocacy serving on a commission but they should not be seen as representatives.

7.2 ESC structure - a person or a commission?

Some jurisdictions have opted for a single person to discharge regulatory authority (such as the current regulator general) whilst others have chosen to have a commission (such as the Australian Competition and Consumer Commission) which exercises authority collectively.

The advantage of a commission-based structure is that enables a wider range of experiences and skills to be brought to the final decision making process than might be possible in the case of a single individual. It also protects, in the first instance, against the prejudices of any given individual and enables for a degree of specialisation where there the regulatory function has a relatively broad scope. A commission based structure necessarily also enables stakeholders to have greater access to regulatory decision-makers than would be the case if authority were invested in a single person.

The principal advantage of a single person acting as a regulator is to be found in avoiding problems associated with committees. There is potential for second best compromise decisions to emerge with a more collegiate structure which may be

avoided by a single decision maker. The risk of conflicting messages is also avoided.

On balance, a commission-based structure is probably preferable. However, ultimate success of the regulator depends on the approach and skills of the person or persons involved not their number, and the processes that the government put in place to guide the regulator's conduct.

8 Regulatory complexity

8.1 Cross jurisdictional issues

An overall objective of the ESC must be to avoid duplication of activities of other regulatory bodies at both state and national level. At the same time a consistent approach is needed.

Regulation of natural monopolies in Victoria includes activities undertaken at both the national level by the ACCC and at the state level, currently by the ORG. The nature of the relationship between economic regulatory bodies, together with the relationship between such bodies and other statutory regulatory bodies like the Office of Gas Safety, will clearly have a bearing on the overall success or otherwise of the ESC.

In this context all arrangements entered into between various bodies should be transparent, public, aim to avoid regulatory overlap and reduce overall costs. Consistent regulatory approaches across national energy markets must be more than "encouraged" as suggested in the issues paper; they are essential if security and diversity of supply in national energy markets is to be achieved.

Given the current status of energy market reform, where a range of national and state regulatory bodies have already been established through various inter-governmental agreements, it is essential that regulatory bodies (both technical and economic) work together in developing market driven solutions, rather than rely on ever more detailed regulatory intervention.

The means by which the Victorian Government intends to address differences that may emerge between regulatory bodies at national and state level will assume greater importance over time. In fact the ESC role, as defined in the issues paper, is a very narrow one and the Victorian Government should set out a more detailed account of the exact role and responsibilities of the ESC in the national energy market and establish a strategy to address the interface between the various regulatory bodies, including technical regulatory bodies (such as the Office of Gas Safety) and national bodies like the ACCC.

The ESC must also agree, in consultation with asset owners, realistic expectations on service delivery standards against a background that recognises that significant regulatory risk has already emerged as a result of recent economic regulatory decision making, leading to significant disincentives for investment.

9 Reliability of supply

The Government has stated in its consultation paper that "Victoria has experienced instances of shortages in supply of gas and electricity... The Government wishes to identify how the ESC could contribute towards more reliable utility industries".

The Victorian economic regulator (the ORG) is responsible for administering distribution network access arrangements in the State of Victoria. This responsibility includes the regulation of prices and service standards for gas and electricity distribution.

Performance reports and other documents published by the ORG clearly indicate that the reliability of electricity distribution has improved significantly since privatisation. These improvements have been delivered within an initial framework of relatively light-handed regulation, suggesting there is no justification for the imposition by the ORG or its successor of tighter performance standards to address perceived problems of electricity supply reliability.

The ORG is yet to publish performance reports on gas distribution, but there is no evidence to suggest a deterioration in performance of the gas networks since privatisation.

The causes of the recent disruptions to Victoria's gas and electricity supplies have been:

- a catastrophic failure of gas production facilities; and
- in the case of electricity, a combination of events including the unexpected failure of generation plant, coinciding with industrial action and hot weather, leading to supply restrictions.

The causes of supply disruption are in areas outside the jurisdiction of the ORG. Regulatory arrangements relating to reliability of energy production activities are summarised below:

- In electricity, a competitive wholesale market has been established to provide the necessary signals for investment in new capacity, and maintenance of adequate generation reliability. In the case of market failure, responsibility for determination of generation reliability standards, and associated market intervention triggers is the responsibility of the NECA Reliability Panel. NEMMCO manages the day-to-day operation of the market and the power system, and is responsible for maintaining system security in the event of an imbalance of supply and demand.

- In gas, a competitive wholesale market has also been established. VENCorp is responsible for specifying supply security standards for the gas transmission system, and for providing information and other services to facilitate decisions for economically efficient investment and use of resources in the gas industry. VENCorp also executes the role of independent gas market and system operator, having operational responsibilities for maintenance of system security.

State-based economic regulatory agencies, along with other stakeholders have a legitimate role to play in contributing to the development of policy on the management of supply reliability issues in immature wholesale energy markets. However, bodies such as the proposed ESC should not seek to duplicate the regulatory or market intervention activities of the existing State and national bodies.

The Victorian economic regulator's involvement in regulating supply reliability in the electricity and gas markets should be limited to:

- overseeing the design, implementation and monitoring of schemes aimed at promoting the delivery of optimum levels of network performance;
- the monitoring of the supply-demand balance in the wholesale energy markets; and
- more generally, administering its regulatory regime in a transparent and predictable manner so that regulatory risk, and the associated disincentives for investment are minimised.

The long term security of supply is dependent upon the design of the competitive wholesale and retail energy markets. It is highly unlikely that any shortcomings in this regard can be effectively overcome by the intervention of a regulator. Indeed, any action by a regulator runs the risk of introducing further distortions which may adversely affect the efficient operation of the market. Issues relating to the fundamental design of competitive energy markets are a matter of public policy which rests with the Government and should not be abrogated to a regulator.

10 Transparency and coordination

10.1 The regulator's approach

It is vitally important to regulated firms that regulators exhibit consistent conduct and it must be said that the recent comments by the ORG about its inability to guarantee such consistency are most concerning. Indeed, it could be argued that if the regulator is unable to deliver certainty, then the Government or the Parliament might need to act to ensure certainty is available.

Information lies at the centre of most regulatory decisions. The information impacts on all stakeholders in terms of access and cost can be considerable but can be alleviated to some extent by sensible regulatory design. It is also critical for all parties to have access to the information used by the regulator and for that information to be robust and testable.

Regulators must take care in using anecdotal information, especially that which is provided under commercial confidentiality. Procedural fairness is critical and regulators must avoid selective quoting of material provided to them.

10.2 The regulator's staff

Officers of regulatory agencies rather than regulatory decision-makers themselves are the primary points of contact for regulated businesses. All regulated firms can recount examples where they have been told one thing by officers and see another

thing emerge from decisions. This is not to say that officers are wilfully misleading firms but rather it is a further demonstration of the problems associated with regulatory commitment. Putting in place well-defined rules, processes and principles will reduce the need for firms to undertake "regulatory discovery" and will also help officers to provide guidance to firms. Needless to say, it is important for regulators to be properly resourced both in terms of numbers and in respect to the quality of staff. Regulated firms are constantly concerned about the lack of relevant industry experience possessed by staff and often by regulatory decision-makers themselves.

10.3 Rights of appeal

Regulators are ultimately discharging administrative discretion under some statutory basis. At a minimum, their decisions should be subject to the same level of administrative review as any other statutory decision-maker. The right to appeal to an independent body should be available to all stakeholders and should not depend upon the regulator's concurrence.

10.4 Regulatory Review

Technologies and markets develop over time. Appropriate regulatory policy similarly will change over time. The need to regulate in some places will diminish whilst new challenges will emerge. To ensure that dynamic efficiency is not unduly impaired, it is important that regulation be kept up to date. Ideally, if the purposes of regulation are properly specified, it may be possible to monitor the need to regulate on an on-going basis. However, what should be explicit in every regulatory structure is a review of the industry, the regulatory structure and the conduct of all stakeholders, including the regulator, no less regularly than every five years.

11 Conclusion and recommendations

To follow

Appendix A – RBF participants

NOTE: Draft – will delete all but confirmed participants. Organisations in red are to be specifically targeted for sign-on.

Confirmed

Association of Australian Ports and Marine Authorities
AusCID
Australia Pacific Airports Corporation
Australian Gas Association
Australian Gas Light Company
Australian Pipeline Industry Association Inc.
Brisbane Airport Corporation
CitiPower Pty
Deutsche Asset Management (Australia) Ltd
Electricity Supply Association Australia
Freight Australia
Hasting Funds Management
Melbourne Port Corporation
Sydney Airports Corporation
Telstra
TXU Australia
United Energy
Westralia Airports Corporation

Attended Meetings

Alstom Australia Pty Ltd
AMP Asset Management
AMP Private Capital
Australasian Railway Association
Australian Rail Track Corporation
Babcock & Brown Pty Ltd
Commonwealth Bank Australia
Duke Energy International
Envestra
FreightCorp
National Rail Corporation Limited
QueenslandRail
Rail Access Corporation
Serco Asia Pacific
Sydney Ports Corporation
Transfield Pty Ltd
United Utilities Australia Pty Ltd
Victorian Channels Authority
Water Services Association Australia

Other Target Organisations

Adelaide Airport
Alinta Gas
Apache Energy
Australian Southern Railways
Bunbury Port Authority
Canberra International Airport
CGE Australia
City West Water
CMS Gas
Energy Equity Corporation
Energy Resource Managers
Epic Energy
Fremantle Port Authority
Great Southern Rail
GPU GasNet
Integral Energy
Leighton Holdings
Lend Lease Infrastructure
Macquarie Infrastructure Group
National Express Group
National Rail Corporation Limited
Powercor
Purac Pty Ltd
Rail Services Australia
Santos
Sydney Water
Thames Water Asia/Pacific
TXU
SPI PowerNet
WA Water Corporation
Western Power
WestRail
Yarra Valley Water Limited

Appendix B – RBF Issues and objectives

REGULATED BUSINESSES FORUM

Common Issues in Regulation

The RBF has identified several key issues for regulated businesses which span sectors and jurisdictions. These are related and not in any particular order.

I Unnecessary complexity

- The regulatory system is too complex. There are too many regulators and the legislation which underpins them is unnecessarily complex.
- National Competition Policy is being applied poorly in the various legislative interpretations set up to underpin the regulators.

II Regulatory risk

- While initially being created to administer a light handed regulatory approach most, if not all, regulators are moving to heavy handed regimes. These result in the introduction of significant regulatory risk for businesses and investors.
- One manifestation of this is the prevalence of 'micro management' and the use of complex algorithms to determine outcomes. These lead to unpredictable results. A simpler and more easily understood 'high level' and output focussed approach would be preferable.

III Lack of incentive regulation

- There is a need for true incentive-based regulation that allows efficiency gains to be shared fairly between customers and owners/investors. The current, heavy handed, approach reduces incentives for businesses to invest in efficiency gains.
- This will allow for much more innovative infrastructure asset management that will benefit both asset owners and customers rather than setting up arrangements where there can only be a winner if there is a loser elsewhere in the system.

IV Stable and national governance system required

- A stable and clear national governance structure needs to be created. This should include a framework for managing any changes in regulatory approach. This system should include the creation of an independent appeals process and a nationally agreed and consistent framework for infrastructure regulation. This does not necessarily mean a single Federal regulator.
- One possible model would see the regulator as an independent 'judge' with the office of the regulator as 'prosecutor'. Regulators should not be giving policy advice. There should be a further, independent, appeals process to support this.

V. Regulation to be consistent with original National Competition Policy Principles

- That senior policy and political oversight of trends in regulation be instituted to ensure that regulation is always consistent with the original twin aims of national competition policy:
  - to foster competitive market outcomes that will allow greater choice for consumers and more competitive prices; and
  - the provision of certainty required to encourage the development of privately provided infrastructure.
- The tendency to emphasise the first objective and ignore the second is a policy failure that political and policy operators need to address rather than regulators alone.

VI. Regulators need to be properly resourced and more fully informed about the sectors they are regulating

- This is important so that regulators factor in business/commercial aspects of the assets they are regulating.
- It is important that benchmarking is used appropriately. ie. the characteristics of the business and the asset must be considered.

REGULATED BUSINESSES FORUM

Objectives

(these are not in order of importance)

- To reach agreement among regulated infrastructure businesses on the major issues of regulatory concern from the perspective of infrastructure owners and to develop strategies to address these concerns;

- To lobby senior political and policy representatives to ensure regulatory arrangements governing private infrastructure industries are consistent with the twin national competition policy objectives of fostering competitive outcomes AND providing the certainty required to develop and maintain Australia's privately provided infrastructure. ie. To raise an awareness that the current approach requires review and modification ;

- To establish the grounds for co-operation between infrastructure users and asset owners for joint approaches to regulation where both parties benefit in a sustainable way rather than the development of a 'zero sum game' mentality;

- To sponsor and host from time to time forums and meetings between the industry and politicians, policy advisers and regulators on infrastructure regulatory matters;

- To facilitate interaction between regulated businesses, regulators and policy makers;

- To show the benefits of an improved regulatory system to policy makers and consumers;

Appendix C – Paper by Professor Stephen King and Associate Professor Joshua Gans