



Energy Markets Reform Forum: Initial Submission

To The Productivity Commission's Review

Of The National Gas Access Regime

September 2003

Table of Contents

<u>1.</u>	<u>Introduction</u>	3
<u>2.</u>	<u>Monopoly Rents Exist But Cannot Be Identified</u>	4
<u>3.</u>	<u>Light-Handed Regulation – The UK Experience</u>	8
<u>4.</u>	<u>Regulatory Gaming – The NSW Experience</u>	9
<u>5.</u>	<u>Benefits And Costs Of The Existing Regime</u>	12
<u>6.</u>	<u>Objectives</u>	16
<u>7.</u>	<u>Coverage</u>	17
<u>8.</u>	<u>Effective Upstream and Downstream Competition</u>	17
<u>9.</u>	<u>Conclusion and Recommendations</u>	18

1. Introduction

The Energy Markets Reform Forum (EMRF) welcomes the opportunity to provide its views to the Productivity Commission's Review of the National Gas Access Regime. The EMRF comprises major energy-using and energy infrastructure-using companies operating in most Australian States and its members are drawn from the following entities:- BHP Steel, BHP Billiton, OneSteel, Amcor, Visy Paper, Tomago, Hydro Aluminium Kurri Kurri, Orica, and Boral.

The National Gas Access Regime has delivered benefits to the Australian economy and has helped improve our international competitiveness. It has been an important element in the microeconomic reform programme introduced in the 1980s and 1990s, which has contributed so substantially to the productivity growth achieved in the Australian economy over the past decade or so. But the returns from past policy programmes are becoming smaller.

Over the next few decades, accelerating Australia's productivity growth will be critical if Australia is to manage the economic and social implications of an ageing population, of which a key consequence is slower economic growth and a decline in living standards. Australia has a number of policy choices. It could, for example, succumb to the special pleading of vested interests and reverse or dilute the competition reforms and the system of access regulation of the monopoly infrastructure introduced in the 1990s, or it could continue to encourage competition where possible and where it is not, as in the case of natural monopolies, regulate in order to eliminate monopoly distortions and foster greater competitiveness in the economy.

There are deadweight efficiency losses to the Australian economy if increased monopoly rents are allowed to be recouped through looser or lax economic regulation of strategic infrastructure, thereby raising the cost levels of industries competing on international markets, as well as on the domestic market. Not only would investment in upstream and downstream industries be damaged or reduced as a result of declining competitiveness, but also investment in linking infrastructure projects.

Professor Michael Porter¹ has recognised the critical importance of strengthening (not diluting) competition policy in his major competitiveness study for the United Kingdom's Department of Trade and Industry. In terms of policy options for the UK economy in moving forward, Professor Porter recommends:-

*"The UK needs to create a policy context that raises the pressures and incentives for investment and upgrading. This includes **continued efforts to enhance competition policy**, a reform of the science and technology system to increase interaction between universities and private businesses, a comprehensive strategy for training in advanced managerial skills, **and raising regulatory standards that enable rather than constrain competition.**" (Our underlining).*

Against the above background, the EMRF's initial submission addresses key economic arguments that have been advanced by infrastructure owners and their consultants in relation to access regimes, and some of the key issues outlined in the Productivity Commission's

¹ DTI Economics Paper No.3, UK Competitiveness: Moving To The Next Stage, May 2003.

Issues Paper. Subsequent submissions will deal specifically with amendments to improve the Gas Access Regime.

2. Monopoly Rents Exist But Cannot Be Identified

In the Productivity Commission's 2001/02 Inquiry into National Access Regimes, some economic arguments were advanced on behalf of infrastructure owners along the lines that:-

- ↳ Monopoly does not exist (because there is always some competition e.g. electricity versus gas).
- ↳ Monopoly does exist but is desirable (as it brings forth investment in infrastructure which would otherwise not exist).

The first argument is quite false, as monopolies are based on exclusive or limited easements or right of way granted by Parliament, i.e. Parliaments grant monopoly privileges as unlimited freedom of entry does not exist.

The second argument is that, in a sense, the owners of monopoly infrastructure may be seen as public benefactors, even if they are extracting monopoly rents. Dwyer and Lim² in a comprehensive review of this argument concluded that:-

"The argument that either permanent or temporary monopoly rents are the price of investment is really quite remarkable in the context of received economic theory. The marginal productivity theory argues that returns can be imputed to the factors of production, that is to say, the returns to land, labour or capital will exhaust the product. What is really being argued here is that monopoly rents (a return to land easement rights) should be attributed to capital as its return. On this theory, it would be almost as logical to argue that Christopher Columbus's descendants should be charging rent to the European inhabitants of the Americas in order to have induced his setting sail."

A third argument which has been advanced is that monopoly rents exist but cannot be identified. This view has been recently repeated in an article in Business Review Weekly³. This argument acknowledges that monopoly rents exist but cannot be distinguished from entrepreneurial profits in practice and therefore regulators should practice 'light handed' regulation in order to avoid creating disincentives for investment and investment efficiency in infrastructure provision. We quote from Dwyer and Lim⁴:-

"This argument is essentially the argument that supply at some price is better than no supply or that the deadweight loss caused by an infinite price will exceed that caused by a finite price. This is perfectly true, but it does not logically follow that monopoly rents should be tolerated. This is like saying that, rather than complain about service failures, users should simply pay more to increase profits for the infrastructure provider in the hope (but with no contractual guarantee) that things will be better next time. If

² Terry Dwyer and RKH Lim, some observations on economic arguments advanced on behalf of infrastructure owners in relation to the Productivity Commission inquiry into access regime 2001.

³ Henry Ergas, 'Off With Their Heads', Business Review Weekly, 14 August 2003.

⁴ Terry Dwyer and RKH Lim, op cit..

high prices are the price of system renewal, why is not the excess earmarked to an escrow fund to be spent only on such system renewal and maintenance?

As William Vickrey (1987 p 207) pointed out long ago, escrow funds could be made mandatory whether for infrastructure augmentation, replacement or maintenance and such escrow funds could be mandated as a condition of any infrastructure franchise, just as licensees under the Life Insurance Act are required to have the certification of an actuary before amounts are released from statutory funds for distribution to shareholders as opposed to policyholders. Users have no means of observing the quality or safety of service and directors have a bias towards extracting dividends or profits for shareholders. In these circumstances, it is not irrational to deal with these conflicts of interest by requiring third party certification that licence conditions have been met. For example the British rail disaster at Hatfield was due to excessive deferral of rail maintenance but in the meantime, dividends were being declared. Rather than attempting the impossible and clawing back dividends which ignored the need for proper maintenance, prevention is better than cure and a system of certification of expenditure on maintenance and provisions for maintenance and repairs as a condition of any franchise licence may be preferable in dealing with this moral hazard.

More fundamentally, this argument forgets that monopoly supply situation only exists because the Crown grants exclusive or non-exclusive franchises. Why should the Crown, as ultimate landowner, be a passive underwriter of monopoly rents? The Crown, as trustee for the public interest, should be an intelligent and interested landlord rather than a passive and foolish one. The Crown can play-off would-be monopolists against each other by offering the franchises on leasehold basis. Rather than being a 2-player game of monopolist versus users, infrastructure is a 5-player game of infrastructure supplier, other would-be infrastructure suppliers, the Crown granting franchises and reaping taxes from increased economic activity, landholders being benefited or burdened, and users who may be producers of intermediate goods or final consumers. The argument abstracts from externalities and franchise bidding arrangements which would allow infrastructure suppliers to adjust their periodic franchise bids for onerous supply conditions or for arrangements allowing them to recouped specified, agreed, capital costs from rated lands.

At the end of the day, the problem is no different to the case of a tenant's fixtures and covenants to keep buildings in good repair. Just as a landlord grants a leasehold to a tenant on condition that he maintains the building in good repair and the lease can be forfeited for non-compliance, so the Crown can grant easements and utility franchises subject to service performance conditions and a regulatory regime which limits monopoly rent extraction. If these are too onerous no one will want to bid for the infrastructure franchise, just as no one takes up a leasehold if he is not satisfied that he will be properly compensated for sunk tenant's fixtures at the end of the lease. If a tenant proposes to quit, most landlords look for another tenant before immediately granting concessions, so why should the Crown not ensure that it can take over or engage another operator if an incumbent monopolist threatens to exit? The Suez Canal was built on a 99 year lease but that did not mean the Egyptian Government was so desperate to stop the Suez Canal Company from exiting as the lease approached expiry that it offered more monopoly rents to the Company - on the contrary, the Egyptian Government courted war to seize the rents for itself earlier!

Curiously, Gans and King (2000, p ii) in their report for the Regulated Businesses Forum acknowledge that there can - and should - be competitive bidding for franchise licenses to serve the market where those licenses specify pricing and quality standards. Neither they (nor those who commissioned their work) appear to have recognized that such an eminently sensible approach can be applied on leasehold basis - meaning that monopoly rents are competed away by would-be infrastructure providers and accrue to the Crown. In other words, the proposal to force infrastructure providers to compete for the market is an admission that –

- (a) monopoly rents do exist;*
- (b) can be identified; and*
- (c) their retention by the infrastructure investor is not necessary to induce investment.*

If it were otherwise, no one would bid for a licence.

This conclusion is fatal for the “investment incentive” argumentation put forward for light-handed regulation. It undermines the logical basis for recommendations such as those of Energex (2000, p 27) to remove access regimes or of King (2000, p 15) for access holidays or of NECG (2001, pp 27-29) for “incentive” regulation.

If monopoly rents can be captured by the Crown through competitive bidding, the real issue then becomes an entirely different one: should the Crown through infrastructure regulation aim to maximize monopoly rents extractable from franchises or should it try to eliminate them? What is the socially optimal pricing policy for infrastructure access and how can it be financed if that optimal price is a short run marginal cost below average cost?

Space does not allow us to develop the argument here but we refer the reader to the works of William Vickrey who capably defended the classic case for short run marginal cost pricing. Beneficial externalities provide the missing clue. Briefly, the answer is that maximizing monopoly rents adversely affects the productivity and hence the rents of lands served by the infrastructure (what is lost there exceeds the monopoly rents - if all roads were charged out to maximize monopoly rents for government, one can easily envisage the economic damage which would be done). The optimal pricing policy is the traditional rule of short run marginal cost. This will usually result in “access deficits” but these can be recouped by rating the enhanced values of the lands served by the infrastructure. That in turn provides a rule of thumb for new infrastructure investment: will the investment so raise the productivity of capital and labour in the area served by a spatial network that the induced increased value of lands served can be rated to pay for it? Interestingly, we observe such a “rating solution” for financing “access deficits” of public utilities precisely conforms to Hayek’s (1979, pp 43-45) prescriptions for supplying collective goods where there are negotiation problems (large numbers), externalities and free riders. It is the failure to consider the full implications of beneficial externalities which, by contrast, so limits the analysis in most of the submissions to the Productivity Commission inquiry and holds them forever in the thrall of second and third best.”

Dwyer and Lim also referred to the failure of 'light-handed' regulation in the UK, the rates of return which Australian regulators have determined for Australian business which "are at the high end of international regulatory benchmarks" and concluded that:-

"The reality is that utility owners are enjoying good returns, and that their revenues often include an element of monopoly rent which has been capitalized into their business valuations. The existing situation is far from optimal. Appeals for further access to monopoly rents by monopoly owners of infrastructure (who rarely wish to pay access fees for their monopoly rights over public and private land) should not be entertained. Rent seeking is a socially unproductive activity which constitutes a form of hidden taxation, lowering both the living standards of Australians and the productivity and international competitiveness of Australian industries."

The EMRF would add that the Productivity Commission would no doubt have in mind the crucial economic concept of deadweight loss (excess burden) which applies to excessive infrastructure charges just as much as it applies to taxes. As BHP Petroleum stated⁵:-

"Just as taxes on labour or capital distort economic choices and reduce the supply of factors of production, so access regimes which allow monopoly rents act as quasi-taxes on other producers and consumers and result in a sub-optimal economic outcome."

"It is incorrect to try to separate the existence of monopoly rents from economic inefficiency by suggesting, as the Issues Paper appears to, that monopoly rents may merely be income redistribution devices. Any monopoly rents levied by infrastructure owners represent a form of taxation of intermediate inputs to production or of consumers. As Laffont and Tirole (2000, p 86) remarked "taxpayers in a procurement context and consumers in a regulatory context are hurt when the firm enjoys a rent, since then they have to pay higher taxes and prices for the services, respectively." For example, inflated gas or electricity transmission charges feed into the cost of energy using industries and distort production and consumption patterns.

It is also erroneous to suggest that two-part tariffs eliminate the economic inefficiencies created by the extraction of monopoly rents, for example, gas pipeline owners.

This is because fixed access or connection charges are not "lump sum taxes" and do not share their optimality properties because, unlike lump sum taxes, they can be avoided by changes in producer or consumer behaviour. What is required for optimality is that no tax or charge alter choices at any margin, that no action of the user can alter the charges he faces and high interconnection charges fail this test of optimality. For example, consumers may not connect to the system or have fewer connections or producers may simply decline to locate using industries in Australia, depriving Australia of income employment and export opportunities. Indeed, high fixed access charges may sufficiently deter demand that the facility is never built.

And if a facility is built, high access charges can produce another possible undesirable – duplication of facilities by end users faced with no viable alternative. (Cf King and Maddock and Eastern Gas Pipelines). In either case, it is important to note Australia is

⁵ BHP Petroleum, 'What Price Access?', Access to Gas and Electricity Networks in Australia'. Submission to the Productivity Commission Inquiry into National Access Regime. February 2001.

not a closed economy and that distortions or inflated production costs in Australia will inevitably reduce Australian incomes and living standards – Nation Competition Policy and access regimes have serious implications for Australian competitiveness.”

The EMRF also draws attention to the Dwyer and Lim review ‘Does Access Regulation Deter Investment?’ (copy attached), and in particular, to their view that:-

“It is a general theme in the evidence presented to the Commission on behalf of infrastructure owners that the crucial issue is to avoid disincentives to infrastructure investment. One can agree to that proposition but it is a far cry to then argue that monopoly rents should be allowed as the price of that investment and security of infrastructure services. If the price of attracting capital into infrastructure investment is the destruction of profitability and investment in downstream or upstream industries the price is too high: society would be better served by revoking private utility franchises and floating public loans at bond rates to build the infrastructure at public expense.

It is precisely by removing monopoly rents that good regulation promotes upstream and downstream investment. As Harold Hotelling asked in the 1930s, what is the point of having investment in social infrastructure such as railways if they are to be priced in such a fashion as to ruin the industry of the country they were built to serve?”

3. Light-Handed Regulation – The UK Experience

In a review of the experience with the regulation of British Gas, Carpenter and Lapuerta⁶ concluded that:-

“Although attractive in theory, the implementation of light-handed regulation in the United Kingdom had faced several problems. First, light-handed regulation has not worked as anticipated to avoid the need for lengthy regulatory proceedings. Second, light-handed regulation has unintentionally created inefficient incentives for regulated companies. Third, light-handed regulation has not successfully constrained the monopoly power of incumbents.

We illustrated the problems with light-handed regulation principally by reference to the experience of British Gas. The British government established the Office of Gas Regulation, known as Ofgas, to regulate British Gas after its privatization. However, Ofgas was not able to set reasonable prices without instigating lengthy proceedings before the Monopolies and Mergers Commission that examined the costs of British Gas. We analyse a particular dispute over British Gas prices that took over four years to resolve. The desire to avoid ‘heavy-handed’ regulation of British Gas also created inefficient incentives for the pipeline to add new customers. Light-handed regulation further left British Gas the scope to abuse its monopoly over existing customers.

We conclude from the British Gas experience that the United Kingdom’s privatization policy in the 1980s did not adequately anticipate the complexities of regulating private companies with monopoly power. Other countries now establishing regulatory systems

⁶ Paul Carpenter and Carlos Lapuerta, ‘A Critique of Light-Handed Regulation’, Northwestern Journal of International Law & Business, February 1999.

will benefit from a careful comparison of international experience, and would do well to avoid the extremes of either heavy-handed or light-handed regulation.

Light-handed regulation initially promised to avoid the problems associated with traditional United States regulations. Proponents in the United Kingdom anticipated administrative simplicity and efficient incentives for privatized utilities. The reality has been more complex. Regulators have had to confront issues related to the measurement of assets, depreciation, rates of return, and cost projections. Had these issues been anticipated prior to privatization, more satisfactory solutions could have been found. Furthermore, light-handed regulation has exacerbated the information disadvantage of regulators, which has been exploited successfully by regulated companies. Finally, light-handed regulation has failed to avoid inefficient incentives. Although UK regulators were justified in their attempt to avoid the pitfalls of US-style regulation, it is evident from their experience with light-handed regulation that the examination of certain factors can not be avoided when determining the appropriate rates offered by regulated companies."

The EMRF commends the study to the Productivity Commission. We strongly consider that any moves in Australia to have light-handed regulation of the National Gas Access Regime would need to be comprehensively justified and the evidence provided. In the review of the British Gas 'light-handed' regulatory experience, it was found that:-

- British regulators have found that reasonable prices cannot be determined without an inquiry into the costs of the regulated company.
- Regulated companies have an information advantage over the regulator, and have an incentive to distort the amount of capital expenditures that will be required over the control period. (The phenomenon known as the 'underspend').
- Regulated companies have been given inefficient incentives though expansion of the through-put of the system, even if it meant adding customers whose costs exceed the revenues they pay.
- Regulated companies have exercised market power.

4. Regulatory Gaming – The NSW Experience

The EMRF had previously submitted a case study of regulatory gaming (to the Productivity Commission's earlier Inquiry into the National Access Regime) in which users' interests were disadvantaged⁷. We wish to draw to the present Review the conclusions of that submission:-

"The experience with the N.S.W. access reviews in 1996/97 and 1999/2000 clearly shows the difficulties in obtaining access to network facilities on reasonable terms and conditions and in a timely fashion. Regulated companies are responsible to shareholders and are unlikely to take actions which are perceived as against their interests. This is especially the case with vertically integrated businesses. They are well-resourced and equipped to test legal interpretations of Code provisions.

⁷ Energy Markets Reform Forum, "The Regulation Game", Third Party Access To AGL Gas Networks – A Case Study Of Regulatory Gaming, December 2000. Submission to the Productivity Commission Review into the National Access Regime.

The 'cat and mouse' regulation experience in NSW shows how third party access can be denied or delayed with the resultant costs. Yet there did not appear to be any Federal or State institution (during an access review) able to address the difficulties, particularly with respect to competition issues and practices. The consequences have been essentially a 22 months access review in 1999/2000 (with the implications for costs and competition in downstream markets) and a \$28 million gas pipeline duplication (notwithstanding efforts at negotiating access).

There are clearly aspects of the Code which either need clarification or strengthening, and the chairman of the NSW Independent Pricing and Regulatory Tribunal said as much in his foreword to the Tribunal's final report on the AGLGN access application. We suspect that this has much to do with legal challenges to IPART's powers under the Code, which may have constrained the Tribunal in its regulatory tasks.

A 'light' approach to regulating network facilities, which are part of a vertically-integrated business (and that undertakes frequent corporate restructuring) will mean (as has been shown) that consumers and potential competitors will be disadvantaged.

In a report prepared for BHP Petroleum, 'Initial comments On AGL's Revised Access Arrangement' (22 March 1999) NERA (which has evaluated gas access arrangements world-wide) made the following comments in relation to the National Gas Code:-

"The Code is comparatively new, and its language is general. Nevertheless, the basic prescriptions of the Code are entirely consistent with time-tested regulatory practices elsewhere. It covers the essential points regarding the protection of AGL's property, the protection of the public interest and the promotion of gas supply competition over regulated pipeline infrastructures like AGL'S. The Code thus provides a solid basis from which IPART can evaluate AGL's filing.

As such, the Code provides the basis for ensuring against the types of abuses about which regulators generally must be mindful. Of particular importance regarding AGL's submission, IPART must deal with the following issues:

- 1. AGL has come up short in its responsibilities to inform IPART, its current (and potential) customers and its competitors.*
- 2. AGL has not made the verifiable separations in the costs of its diversified enterprises that would allow IPART or other parties to be reasonably sure that captive customers are not cross-subsidizing AGL's unregulated activities. The Code's ring fencing provisions are not sufficient to prevent abuses in this respect, as shown by the more careful cost separation practices of other gas company regulators around the world.*
- 3. AGL appears to have performed cost allocations among customers in a fashion that raises competition and access concerns."*

Experience with the 'cat and mouse' regulation, which basically characterised the review process in 1999/2000, however, suggest certain improvements that could and should be made to the National Gas Code and to regulatory practices:-

- 1) *Regulatory charts of accounts establishing minimum data and information consistent with Attachment A of the National Gas Code (Information Disclosure By A Service Provider To Interested Parties) should be established by regulators and required to be submitted by the access arrangement applicant (in accordance with the regulators' directions) in its AA and AAI (in other words information disclosure should not be provided on a piece-meal basis, nor open to regulatory gaming practices).*
- 2) *Claims of confidentiality e.g. in relation to related party transactions, must be resolved by regulators after public consultation within a month of the submission of the AA and AAI.*
- 3) *Overt regulatory gaming abuses and practices, such as frequent changes in pricing structures and delaying practices associated with information disclosures, should not be sanctioned.*
- 4) *All disclosures of data and information must be sanctioned by auditors and directors as to their veracity.*
- 5) *The period between the lodgement of an AA and AAI and the regulator's final approval must not exceed nine months.*
- 6) *Asymmetry (in terms of information and resourcing) between the service provider on the one hand, and the regulator and users on the other, must be minimised. For instance, users' advocacy costs should be funded out of regulatory revenue (in the same way as the service provider's regulatory costs) and regulators must be adequately resourced.*
- 7) *The skills and resource base of regulatory agencies need careful consideration. There is a solid case for establishing a properly resourced national energy regulator.*
- 8) *Users' rights under the Code need to be improved, especially in relation to appeals to the Australian Competition Tribunal, Administrative appeals and recourse to an arbitrator.*
- 9) *Regulatory treatment of the ICB must be undertaken under strict principles and assumptions, and the issues of asset lives and optimisation practices require regulatory standards to be established and adopted.*
- 10) *Incentive-based economic regulation, represented by price or revenue caps, should be supported by an established set of regulatory pricing principles, in particular to prevent predatory pricing, discounting and reloading.*
- 11) *Regulatory performance should be subject to some form of accountability, for example by establishing a low cost and speedy*

process for complaints to be lodged and arbitrated during a review. Types of issues could include regulatory consistency, failure to deliver on earlier regulatory decisions, failure to deal with code requirements, lack of transparency in regulatory actions, and so on."

The EMRF commends the findings of the submission to the Productivity Commission.

5. Benefits And Costs Of The Existing Regime

EMRF member companies have achieved benefits from the implementation of the National Gas Access Regime. There have been transportation price reductions and improvements in service quality and better targeting of consumer needs have been achieved. These benefits have arisen from more effective and efficient third party access regulation (although considerable improvements are still required) and also importantly, from inter-basin gas on gas competition and emerging (albeit minimal) retail competition (especially in New South Wales).

The EMRF notes the Productivity Commission's recognition that access regulation is not merely an income redistribution device. Any monopoly rent levied by pipeline owners represent a form of taxation of intermediate inputs to production or of consumers. Downstream, midstream, and upstream benefits and efficiencies have been achieved arising from access regulation – witness the increased activity in gas development and exploration in recent years; the development of new transmission and distribution pipelines; and the increased investment and employment activities in downstream sectors such as manufacturers and gas-peaking generators.

Access regulation has also provided pipeline owners with greater certainty – greater certainty in terms of minimum regulated revenues, but with incentives for higher revenues that can be generated by outperformance in efficiencies (Australian regulators provide such incentive mechanisms).

Demand for gas is highly responsive to price movements and thus, for example, a 4% price shift resulting from a draft proposal by the ACCC on the Moomba Sydney Pipeline could have a substantial impact on demand. This is clearly established by the National Competition Council's Final Recommendation (November 2002) in relation to the revocation application for the Moomba to Sydney Pipeline System. The NCC stated that:-

"7.422 This view is supported by BHP Billiton, which argues that even a relatively small reduction in delivered gas prices would have a significant effect on margins and market outcomes in gas fired electricity generation.

A closer examination of the NECG analysis reveals a totally different picture about the potential effects on downstream industries. For example, the difference between the EAPL access arrangement application (\$52.97 million p.a. for the contract market – NECG data) and the ACCC's draft decision on EAPL (\$32.08 million p.a.) equates to \$0.28/GJ. For a combined cycle gas fired power generator, this is a difference of \$2.25/Mwh of output. With estimated new entrant of \$35.40/MWh, this is a significant difference. Thus, monopoly rents in

gas have a flow-on effect into electricity (and downstream industries using electricity as an energy source).... (BHP Billiton 2002, sub.24).

7.426 *The Council has also been informed that gas demand is very price sensitive in the fertiliser industry. Incitec, a major manufacturer and distributor of nitrogenous products (annual revenues over \$120 million) is one of the largest gas users in NSW, consuming some 10.5 PJ/a (around 9% of total NSW gas demand in 2001). Gas is used as a feedstock and for raising process steam for ammonia manufacture as the first step in the manufacture of nitrogenous fertilizers for the rural sector; and for the production of ammonium nitrate to produce explosives for the mining sector. According to Incitec, both markets are growing strongly, but are heavily import sensitive.*

7.427 *Gas represents 45% of Incitec's total manufacturing cost and 80% of variable cost for the company's Newcastle plant. Further, Incitec informs the Council that transmission pipeline charges represent about 15% of delivered gas costs.*

7.428 *Incitec states that:*

It is critical that gas be delivered to this plant on terms which allow Incitec to match import competition on a delivered Australia basis (Incitec 2001, sub.10, p.5).

7.429 *The Council notes that given the nature of import competition, and the magnitude of gas costs for the company, Incitec's operations are very sensitive to movements in the price of gas. According to information provided by Incitec, a price movement of the magnitude proposed by the ACCC regulatory process would have a material impact on costs.*

For a fertilizer producer (using gas as a feed-stock, as well as an energy source), this difference equates to \$5.50 in a product that wholesales around \$280/te (BHP Billiton 2002, sub. 24)

7.430 *This information from major gas users in the electricity generation and fertiliser industries suggests that removing monopoly rents in gas transmission (as identified by the ACCC) would result in a material increase in demand for delivered gas by major consumers – and hence, for commodity gas, gas haulage and gas retail services. In particular, a price change of this magnitude could impact on whether a major customer enters or exits the market. This would stimulate competition between gas producers to supply the load, and hence, would enhance entry incentives in upstream and downstream markets”.*

The Productivity Commission's Issues Paper lists a number of potential costs of access regulation; but we consider that the list can be considerably shorter, especially with respect to non-trivial costs.

BHP Petroleum⁸ had undertaken an assessment of the costs and benefits of access regulation in NSW. These are shown below:-

“Some parties have suggested that the cost of open access regulation for natural gas pipelines outweighs the benefits obtained by free and fair access. BHP Petroleum believes that even a cursory review of the numbers show that this is clearly not the case. We use NSW as our example. The cash costs of regulation (apart from the loss of monopoly rent for the Service Provider) comprise the following:

- ↳ The cost to the tax payer of funding the regulator;*
- ↳ The cost to the Service Provider of preparing an access arrangement and administering open access;*
- ↳ The cost to users of participating in the access arrangement approval process and any additional cost in administering an energy purchase agreement and an energy transportation agreement; and*
- ↳ The benefit is the increased economic growth and consumer welfare that flows from users obtaining services at a fair and efficient cost.*

In the 98/99 year the total cost to NSW tax payers of funding IPART, that State's independent regulator, was \$5.3 million. For their \$5.3 million tax payers got a regulator that:

- ↳ Completed a major review of pricing for electricity networks and retail supply.*
- ↳ Released a final access arrangement for Great Southern Networks gas distribution network.*
- ↳ Investigated access arrangements for Albury Gas Company and AGL Gas Networks.*
- ↳ Completed a review of gaming in NSW.*
- ↳ Undertook a review of NSW Health for the Treasurer and the Minister for Health.*
- ↳ Commenced a review of the Taxicab and Hire Car Industries.*
- ↳ Released two reports on aspects of development control fees.*
- ↳ Released reports on aspects of rail access and on rail safety.*

(Source: IPART Annual Report 98/99)

AGLGN has in publicly available documents stated that they view the cost to an efficient service provider of “maintaining a regulatory relationship” as being \$1.3 mill/pa (covering

⁸ BHP Petroleum, Case Study 11 The Costs and Benefits of Natural Gas Pipeline Open Access Regulation, in What Price Access?, February 2001. Submission to the Productivity Commission Review of the National Access Regime.

both AGL's NSW and ACT networks). This \$1.3 mill/pa covers a gas distribution system that serves in excess of 865,000 customers, transports in excess of 110 PJ/a and comprises over 25,000 km of pipe. The service provider is not "out of pocket" if its costs are efficient as the regulator allows these costs to be recovered from users via reference tariffs.

The costs of open access for a typical system end user are very low and in any case they are discretionary. The user can choose not to become involved in the process and leave it up to others and the regulator.

BHP Petroleum estimates that the total cash cost of gas pipeline open access regulation in NSW is approximately \$2.5 million/pa or less than 3¢/GJ.

The benefits delivered to consumers from open access are significant. In 1996 before the commencement of open access, large consumers (those consuming more than 10 TJ/pa) in NSW paid \$146 million for distribution and retail services. IPART determined that \$3.8 million of the \$146 million was the retail component. In 2000 IPART determined that larger consumers in NSW should pay a total of \$46 million for distribution services on AGLGN's NSW system, a reduction of \$96 million/pa. In addition, small consumers continue to benefit from real declining process for distribution services.

Another cost of not having effective regulation is the cost of inefficient duplication of infrastructure. The best example of poor open access regulation causing inefficient duplication is the extension of the Eastern Gas Pipeline from Wilton to Horsley Park. This \$28 million section of pipe was built because there was no guarantee that the regulator would prevent monopoly pricing on the AGLGN network if it were not built.

Based on this example, it is clear that the benefits of open access regulation far outweigh the cost".

The EMRF would draw to the attention of the Productivity Commission the following points for its consideration:-

- ↳ Regulatory gaming by pipeline owners, which we consider has been largely responsible for unreasonable delays in access reviews, raise the costs of transportation to gas users;
- ↳ Compliance costs of pipeline owners (e.g. at access reviews) are part of regulated revenues paid for by users;
- ↳ The case of Duke Energy's \$28 million duplicated pipeline at Horsley Park is an example of a failure in the effective implementation of the access regime;
- ↳ Regulatory failure in effective implementation of the Gas Code (see earlier) which resulted in adverse cost impacts on users.

Overall, the EMRF considers that the regime has provided a net benefit to Australia. However, there are important improvements necessary to rebalance the interests of the stakeholders. In particular, the EMRF emphasises the resource and information asymmetry problems faced by

users (as well as regulators). These imbalances would not be addressed by rolling-back or diluting the key provisions of the National Gas Code (e.g. Information Disclosures in particular) but actually strengthening them. Examples are:-

- ↳ Additional powers to regulators to access information from a pipeline operator/owner to assess that costs between relaxed parties, etc are robust and are at 'arms-length'.
- ↳ Appeal rights for users, similar to those available to the service provider to appeal against regulators' final determinations.
- ↳ Penalties to be imposed on service providers for failure to comply with Code provisions, especially in areas impacting on the ring-fencing provisions and associate contracts.

6. Objectives

The EMRF considers that the preamble to the Gas Pipeline Access Act is appropriate and provides a balance to various stakeholders' interests. We would support the following sentiments from the NSW Independent Pricing and Regulatory Tribunal⁹ viz:-

"Access arrangements need to balance the interests of customers and infrastructure owners. This is emphasised by the Hilmer report which states that,

'Neither the application of economic theory nor general notions of fairness provide a clear answer as to the appropriate access fee in all circumstances. Policy judgements are involved as to where to strike the balance between the owner's interest in receiving a high price, including monopoly rents that might otherwise be obtainable, and the user's interest in paying a low price, perhaps limited by the marginal costs associated with providing access. Appropriate access prices may depend on factors such as the extent the facility's existing capacity is being used, firmly planned future utilisation and the extent to which the capital costs of producing the facility have already been recovered".

This emphasis on balancing the interests of the various parties is reflected in the Competition Principles Agreement (CPA). Under the CPA, the arbitrator in an access dispute is required to consider, among other matters:

- o the owner's legitimate business interests*
- o the cost of providing access (excluding losses arising from increased competition)*
- o the interests of all persons with contracts to use the facility*
- o the public benefit from competitive markets.*

The National Competition Council has stated that,

⁹ NSW IPART, Access To The Distribution Network Of AGL Gas Companies (NSW) Limited: A Progress Report From The Secretariat, November 1996.

“One of the challenges for access regulation is to balance the commercial interests of infrastructure operators with those of businesses seeking to enter and compete in upstream and downstream markets.”

The Tribunal recognises that there will be some tension between the interests of the service provider and potential users.”

The EMRF considers that the Gas Code, as presently drafted, provides a balance between the competing interests of various parties. It provides regulators with sufficient flexibility, defined parameters but with an ability to exercise judgement. On the other hand, any move to make the Code less prescriptive, has the danger of introducing a good deal of uncertainty in access reviews. More importantly, it would break the nexus between cost of service and regulated prices, with the danger that regulatory over-shooting or under-shooting would be even wider.

7. Coverage

The EMRF supports the coverage test, but is concerned that strategic behaviour on the part of service providers could lead to forum shopping, thereby resulting in unreasonable delays in regulatory pricing decisions. We consider that extensive delays through the NCC coverage process has prevented the ACCC’s pricing review of the Moomba to Sydney Pipeline, to be finalised, thereby disadvantaging users’ interests.

Accordingly, these EMRF considers that clear time lines for NCC (and Ministerial) and ACCC review process be established in the Access Regime.

On the issue of the term “substantial” versus “material” in terms of Section 44G (2) (a), the EMRF supports the Commonwealth Government’s preference for “material”.

8. Effective Upstream and Downstream Competition

The Productivity Commission’s attention is drawn to the unique structure of the NSW gas market where a dominant gas retailer is also the owner of the distribution networks and a 30% owner of a transmission network. The arrangements and corporate structure involving these entities have been extensively assessed by the NCC in the revocation application of the Moomba to Sydney Pipeline System. The NCC also had access to confidential information.

The NCC’s final recommendations were for coverage of the pipeline, on the grounds (inter alia) that there was potential for vertical leveraging. The EMRF supports this recommendation

The Productivity Commission should also be aware that vertical integration is also apparent in the case of the SeaGas Pipeline from Western Victoria to South Australia. In this case, the upstream producer is also an owner of the proposed pipeline, as well as being a dominant gas retailer in South Australia.

Against that background, the EMRF would be opposed to any rolling-back or dilution of key provisions of the National Gas Access Regime which would adversely affect downstream or upstream competition.

The EMRF will be providing further submissions deal with specific issues raised in the Issues Paper to the Productivity Commission.

9. Conclusion and Recommendations

The EMRF considers that the Gas Access Regime has brought many benefits to the Australian economy: upstream, downstream, and mid-stream sectors on the gas supply chain have all enjoyed substantial gains. More importantly, consumers have also benefited.

The implementation of the Gas Access Regime has been an important element of the microeconomic reform programme introduced in Australia over the recent decade or two. As the need for faster economic growth (and hence productivity growth) emerges in the period ahead arising from an ageing population, Australia needs to sharpen and strengthen its competition policy, rather than constraining it.

No substantive evidence has been provided to attest to the assertions of pipeline owners and their consultants that investments (in pipelines) have been deterred because of access regulation.

There is no evidence tendered to show that the Australian economy has been adversely affected because of access regulation of gas pipelines. On the contrary, the benefits to the national economy, have clearly been achieved.

General calls for 'light-handed' regulation must be carefully considered and tested. The EMRF have referred to the evidence in the UK where 'light-handed' regulation had disadvantaged consumer interests, and created inefficient incentives. The onus is on proponents of 'light-handed' regulation to establish the case.

The EMRF has made several suggestions for improving the Gas Access Regime in this initial submission and will be glad to elaborate on these at the Public Hearings.

September 2003.

Productivity Commission

Inquiry Into The National Access Regime

DOES ACCESS REGULATION DETER INVESTMENT?

Dr Terry Dwyer
*R K H Lim**

July 2001

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DOES ACCESS REGULATION DETER INVESTMENT?

Dr Terry Dwyer
*R K H Lim**

The issue of whether access regulation deters investment in network infrastructure cannot be considered without first examining the nature of network infrastructure and the meaning to be attributed to investment.

Investment as physical capital formation

Investment in this context does not mean the purchase of equity securities in a firm owning or operating infrastructure. What is meant is whether access regulation deters (desirable) physical capital formation in network infrastructure assets such as gas pipelines, roads, telephone lines and electricity distribution networks.

Infrastructure assets are hybrid land/capital assets

Network infrastructure consists of two kinds of assets: land or rights over land and physical infrastructure. A gas pipeline would be worthless if its owner had no legal authority to lay it over other people's lands or over public land. Usually, a network infrastructure owner is granted rights of way or easements by Acts of Parliament to establish his legal rights to lay his physical capital over land held by others. Sometimes a franchise fee may be demanded for this right, sometimes it may have been inherited from Acts establishing predecessor public utilities. Whether or not a price has been paid for, or a value set upon, these rights over land, they are conceptually distinct from any investment in the physical capital of the network infrastructure.

Just as analysing the effect of any regulation or tax upon real estate necessarily involves analysing separately the impact upon land and buildings, so it is with infrastructure – the impact on franchise rights and physical capital formation need to be assessed separately. A tax on buildings will deter investment and buildings and reduce the demand for land, thereby reducing land value. A tax on unimproved land value does not, however, affect adversely investment and buildings though it may result in a reduced market price for land now subject to tax.

Infrastructure investment is not possible without regulation

Because all network infrastructure does require access itself over public or private lands, there is *never* “no regulation”. On the contrary, builders of gas pipelines, electricity transmission wires etc all need legislative authority or Crown licences to place their physical capital over land they do not own. Without regulation to

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guarantee access to private and public lands for infrastructure developers there would be *no* infrastructure investment at all - that was why railway promoters besieged the Parliament in London for Railway Acts in the 1840s (and were often opposed by ducal landholders). The difficulties experienced today by public utilities in Papua New Guinea which face landholder sabotage of their assets is an extreme example of why infrastructure investment requires regulation guaranteeing access. In this most basic (and usually forgotten) sense, the claim that access regulation deters investment is palpably absurd - infrastructure developers need access to sink their infrastructure physical capital into the ground and indeed seem to take it for granted. Though infrastructure developers refer to themselves in some submissions as “asset owners”, they should remember that they, in the absence of licences or franchises are trespassers, and that their property rights literally are overlaid on those of others.

No regulation is therefore never an option. Access rights over land have to be granted to infrastructure developers to overcome market failures inevitable in mass negotiation. But there is an implicit social contract which both infrastructure developers and infrastructure users need before anything can go ahead. In a sense, the whole issue of third party access over the infrastructure can be seen as part of the *quid pro quo* in a regulatory contract - “We, the Crown, will grant you, the infrastructure developer full and free access over public and private lands provided that you in turn will allow the public for whom we act to use the infrastructure on reasonable terms and conditions which do not allow you to extract monopoly rents.” Seen in this light, there will only be a disincentive effect on investment if the infrastructure developer counts the access rights given to him as having a negative value (ie he declines to apply for a franchise).

Those infrastructure owners who talk of the risks of regulation should be asked whether they wish to have *no* regulation. Do they wish to be sued as trespassers or have their infrastructure torn up by the thousands of landholders whose properties they lay their structures over? The logic of “no regulation” is negotiation logjam for infrastructure projects where, as in Papua New Guinea, any landholder can hold an infrastructure project to ransom. A situation of “no regulation” would deter investment more surely than a system of regulation which combines on the one hand free access to developers with a reasonable rate of return on invested capital. In this regard, the Position Paper at page 52 fails to understand what the “no regulation” option really is: it is reverting to the common law and allowing any landholder to block access for infrastructure developers across his property. For example, if I am content to use a mobile phone and do not care for pay TV, why should I as a landholder not seek to extract monopoly rents before allowing Telstra to run its lines across my land? It is not to the point for Telstra to argue it has an easement: that easement is the result of regulation in its favour - it is not a “no regulation” world if people are empowered by statute to come across my land without paying me for my consent.

Just as legislatures have usually been zealous to prevent recalcitrant landholders extracting monopoly rents from the community by threatening to block socially desirable infrastructure projects unless paid exorbitant charges for access, so the same considerations require that legislatures be equally zealous to prevent the extraction of monopoly rents by the infrastructure licensees. This mutuality of social obligation was perhaps more clearly seen when it was State legislatures which granted State

semi-government authorities easements and rights of way at no cost on the basis that they were non profit public utilities. In addition, some semi-government authorities, notably in water, were given rating powers to recoup towards their fixed capital costs some of the external benefits conferred in the form of added land values (yet externality seems strangely not to feature in the Productivity Commission's examination of optimal infrastructure regulation and pricing). Infrastructure owners cannot take the benefits of legislation overriding normal property rights in their favour while seeking to cavil at regulation preventing an abuse through monopoly rent seeking of the rights thereby conferred on them.

One-sided absence of regulation

Naturally, the ideal form of licensing for a would-be network infrastructure owner (if legislatures so permit) is for him to gain an exclusive licence for no payment and be subject to no price or access controls - an ideal which has not infrequently been attained where the licence was originally granted to a State-owned public utility on the basis that it would operate as non-profit public utility and which was later commercialized or privatized.

The obvious scope for abusive use of such legislated monopoly positions inevitably leads to further regulation and was indeed the genesis for the Hilmer push to open up public utilities to competition.

Good regulation deters wasteful investment

Ideally, "good" regulation does not deter *efficient* investment in physical capital formation though it should reduce or eliminate monopoly rents accruing as a result of strategic rights over land.

It should be emphasized that infrastructure investment is *not* always a "good thing" in and of itself. Indeed, "good" regulation *should* deter *wasteful* investment. One of the problems of unfettered competition in network infrastructure industries is that it can lead to wasteful competition to invest first - so as to be able to then practise predatory pricing against a new entrant.¹

Pure laissez faire not sustainable

One regulatory approach would be to grant licences to any and every would-be infrastructure provider. One objection to such a pure *laissez faire* approach is the obvious nuisance to - and resistance from - landholders faced with possibly many infrastructure developers expecting access to private lands. A more fundamental objection is that such a pure *laissez faire* approach unfortunately leads to unstable and wasteful competition. Once his capital is sunk, an incumbent has every reason to undercut any new entrant to deter entry. It can become a "war between long pockets" before there is inevitable industry rationalization. The history of railroads provides examples of such a wave of investment followed by forced mergers of bankrupted rivals.

It is interesting that APIA (representing pipeliners) essentially argues that their industry is competitive, that there are no certificates of necessity required before obtaining a long-distance transmission pipeline licence and that therefore total deregulation would be optimal. (If Australia were as densely settled as the USA one suspects certificates of necessity would soon be mandatory - and we may yet see native title objections used to block pipeline access).

While one understands why people building pipelines would see a race to build more of them as an unalloyed good, it does not follow that the result is economically optimal. Just as unalloyed competition to sink oil wells in Texas in the 1920s resulted in negative externalities through premature depletion of oil fields which had to be countered through field unitization and regulation, a race to build pipelines can merely represent a race to “corner the market” - and lots of capital can be wasted in the race to stake a claim to future monopoly rents. The hope is that the first and biggest pipeline built will be in a position to practise predatory pricing against new entrants: the incentives are the same as those which led to the enormous waste of scarce capital expended by Telstra and Optus in their cabling war (which led dual cabling of some Sydney suburbs while other streets and regional Australia went unserved) and the proliferation of mobile phone towers (before Parliament stepped in to force some degree of co-location). More investment in pipelines is not necessarily an unambiguously “good thing” if it ends up as a form of rent dissipation. As Quiggin notes this sort of competition is wasteful and rent dissipation represents social waste.²

Not only does the APIA ignore the history and theory of wasteful competition in declining cost natural monopolies: it conveniently overlooks that its thesis depends on regulation of *other* market participants - regulation which allows access for pipeliners over public and private lands and regulation to force owners of metropolitan gas pipelines to open them up for inter-connection. Would the East Australian Gas Pipeline have ever been built if AGL were free to refuse access to its Sydney customer base?

Nor is it enough to say there should be no regulation of third party access if prices are non-discriminatory. A franchised metropolitan gas distributor may be quite happy to charge as much as the market will bear whether or not it is vertically integrated with its own transmission link.

Second best “optimal” regulation in the absence of externalities

So the issue is not *whether* there will be regulation of infrastructure development: nor is the issue whether regulation hinders *some* investment or not. The real issue is *how* to regulate without impeding *efficient and desirable* (rather than duplicated) infrastructure investment: in effect, how to allow a return to physical capital investment without conferring monopoly rents on franchise holders - to reward real investment rather than licence holding.

Leaving to one side for the moment, the issue of whether a socially first-best policy of short run marginal cost (SRMC) pricing may be pursued through recouping external benefits conferred by infrastructure investment, the current debate is focussed on second-best regulation. Within this confined and incomplete paradigm, the issue is

how does a society regulate so that efficient infrastructure investment is not deterred, avoiding on the one side, the opportunity to create privatized taxes or tribute collection in the form of monopoly rents and, on the other side, avoiding a wasteful over-investment of capital in duplicated sub-optimal infrastructure which, once spent, cannot be pulled out of the ground and re-deployed elsewhere in the economy.

Good regulation can make infrastructure investment attractive

Third party access regulation offers a deal to investors - a steady income stream under a regulated monopoly versus a boom/bust revenue stream under unregulated cut-throat monopoly competition (with wasteful stranded investment). As United Energy remarked in its press release of 25 June 2001 to the Australian Stock Exchange “In these uncertain economic times there are clear benefits to having a portfolio of businesses which includes the ownership and management of regulated network assets with predictable cash flows”.

Just as it is no bad thing for regulation to deter duplicated investment, it is no bad thing for regulation substitute a steady level income stream to investors in physical infrastructure assets for a boom/bust cycle which would see insolvency and supply failures. Would people wish to see a One-Tel collapse with Telstra or their electricity being cut off because of a distributor’s financial failure while a receiver or liquidator finds a buyer?

Because, in the absence of a State franchise monopoly, private infrastructure is rarely fully vertically integrated, private infrastructure owners need access to each other’s systems. Good regulation fosters infrastructure investment by guaranteeing the necessary access and removing the risk of arbitrary inter-connect charges or terminations. In an unregulated market, Telstra would have destroyed Optus before a penny was spent on its infrastructure investment by making it perfectly plain that inter-connection would be either refused or provided at a usurious cost. The fact that Telstra and Optus have argued so bitterly on this subject highlights the need for competing infrastructure suppliers to have access to each other’s systems if investment is to proceed.

Good regulation promotes upstream and downstream investment

It is a general theme in the evidence presented to the Commission on behalf of infrastructure owners that the crucial issue is to avoid disincentives *to infrastructure investment*. One can agree to that proposition but it is a far cry to then argue that monopoly rents should be allowed as the price of that investment and security of infrastructure services. If the price of attracting capital into infrastructure investment is the destruction of profitability and investment in downstream or upstream industries the price is too high: society would be better served by revoking private utility franchises and floating public loans at bond rates to build the infrastructure at public expense.

It is precisely by removing monopoly rents that good regulation promotes upstream and downstream investment. As Harold Hotelling asked in the 1930s, what is the

point of having investment in social infrastructure such as railways if they are to be priced in such a fashion as to ruin the industry of the country they were built to serve?

Bad regulation and investment distortions

While “good” regulation can restrain wasteful competition and duplication of infrastructure, “bad” regulation can either -

- promote wasteful over-investment and cost padding, or
- deter investment and maintenance.

Wasteful over-investment under bad regulation can occur even in the absence of system duplication. As Laffont and Tirole note, old-style rate of return regulation is analogous to Pentagon cost-plus contracts and has weak incentive effects towards efficiency - it is “low-powered.”³ This lack of incentive shows up in the Averch-Johnson effect, “gold-plating” and labour cost padding and was one of the reasons State public utilities were thought to need reform (though one might wonder whether some higher level salaries have been padded in the outcome!). This defect of simple rate of return regulation is widely recognized and is the reason why American regulators have often insisted on an additional prudent investment test or certificates of necessity for new infrastructure plus audit of costs paid to related parties.

On the other side, bad regulation can deter investment, maintenance and result in failure of supply or quality.⁴ This can occur when a “high powered” incentive regulation system with capped prices and an emphasis on cost savings runs out of cost savings.

It is a curious paradox in the current debate over third party access that utilities are often arguing against rate of return regulation as being a form of price control which deters investment when they anticipate squeezing out more profit through cost savings under CPI minus X. Yet if anything, price caps under CPI minus X (a high-powered form of “incentive regulation”) are liable to deter investment far more than rate of return regulation, once the easy cost savings are used up - there is, after all, only a finite number of workers Telstra can sack without going out of business. Doubtless, CPI minus X will be denounced in due course as being inimical to investment by those currently lauding it.

Note that if all operational expenditure is accepted and repairs and maintenance are allowed under regulation there should be no catastrophic supply failure: the deterrent effect would be on new investment. The point has to be faced that all price controls are a blunt instrument and price-cap “incentive” regulation can only be a short-term mode of regulation to squeeze out inherited fat.

Does all revenue reducing regulation deter real investment?

While there is always a trade off between high powered and low powered forms of utility regulation, it should be noted that not all regulation which reduces a utility’s revenues need deter investment. If a regulation exists *ex ante*, any regulation which reduces a utility’s revenues will be discounted for in a reduced franchise fee offered for the monopoly franchise: it will have no more effect on capital investment than a royalty paid by a mine lessee. The burden of the regulatory regime will be felt by the government in reduced bids for the franchises.

Unfortunately, governments have been accused by some utility owners of doing the reverse: encouraging high bids for utility franchises with covert, improper and legally non-binding suggestions that regulation would be loose so that monopoly rents could be kept by the successful bidders with impunity. If one effect of this review is to

teach bidders for infrastructure assets that they ought not bid for licences to tax the public - and to teach governments that they have no right to sell such licences - then such a disincentive effect on that sort of spurious “investment” will have been thoroughly worthwhile.

Evidence of infrastructure investment

It is interesting to ask how one might test the theses that access regulation deters infrastructure investment (recognizing that this is not the only investment that matters). Prima facie, if *any* investment is occurring in a regulated infrastructure system, then the regulated return allowed must be above the investor’s cost of capital. If a critic argues in response that some investment is of a defensive nature (to protect the value of the existing system and maintain the franchise), it might still be noted that an implicit calculation has still been made in discounted cashflow terms that the return is worth it..

Another objection is that, though ordinary infrastructure investment may be proceeding, risky infrastructure extensions are deterred by the threat of access declaration or rate of return regulation. However, declaration and access regulation operate over a system and losses or super-normal profits can be pooled against the starting base regulated revenues. If there is a loss on the extension, that shows up as a reduced system-wide rate of return and allows price increases within the allowed rate of return. If there is a super-normal profit on the extension, it gets pooled with returns from the existing capital base and is only clawed back in a later regulatory review if the extension lifts the returns over the whole system past the allowed rate of return. That is as it should be - super-normal returns averaged over time over projects are evidence not of a return to capital but of rents attributable to the underlying franchise.

Access regulation analogous to resource rent tax

The distinction between necessary returns to induce desirable physical capital investment and land rents has been made in the resource rent tax context, where there is a similar social problem. Governments grant licences to miners and want to induce investment, growth and exports but also want to ensure that land rents go to themselves as sovereign owners.

A solution to this has been the resource rent tax (RRT) approach, which seeks to allow investors to recoup investment plus a reasonable rate of return and only appropriates super-normal returns as rent to government.⁵ While no tax system is ideal, and there are problems with ringfencing and incentive structures, the Federal Treasury has continued to think the effort to distinguish returns to capital investment and resource rents is a worthwhile exercise: one trusts the current review will take the same view on distinguishing between infrastructure investment and franchise monopoly rents.

Access regulation might be thought of as akin to system of taxing the profits of a network infrastructure owner and rebating the proceeds to users as a discount on their access charges. Whether such a tax has an adverse effect on physical capital formation in the form of infrastructure cannot be answered without considering whether the incidence of such a tax is upon the infrastructure land assets or the

infrastructure capital assets. Just as a resource rent tax is argued to have no disincentive effects upon investment because physical capital investment is allowed a tax free internal rate of return, so a tax or regulation of infrastructure access which allows a market rate of return to funds employed in the construction of physical infrastructure capital should not deter investment. One can conceive of access regulation as a form of RRT which rebates monopoly rents back to users.

Bad regulation allows monopoly rents

In the absence of proper access regulation, infrastructure owners would be allowed to secure monopoly rents. As Laffont and Tirole recognize,⁶ monopoly rents are essentially taxes. Allowing them to arise is an evil in and of itself, as it amounts to licensing private taxes on trade and commerce, rather like ancient Roman or mediaeval tax farming. (Indeed, any price above short-run marginal cost operates as a tax and is only tolerated in infrastructure pricing where it is decided to finance fixed capital costs from user charges.)

.... the prospect of monopoly rents induces inefficient infrastructure investment

If monopoly rents are allowed to be captured by infrastructure investors, there can be an inefficient and wasteful race to build capacity ahead of demand because of a desire to lock out future competitors. Once established as an incumbent monopolist, there can then be a tendency not to invest if you can extract congestion or monopoly rents. The railway manias show how this process worked historically - a rush to invest, followed by excess capacity and rationalization which left the string incumbents free to charge “what the traffic would bear” (a US railroad expression in origin).

..... monopoly rents deter upstream and downstream investment

However, the resulting economic damage done by “charging what the market will bear” led in the USA to regulation in the interests of other industries and consumers. When railroads had the power of life and death over communities and industries, the dangers of unrestrained monopoly pricing became more than apparent.⁷

.... or expropriates investment through “regulatory takings”

Equally, one can fully agree that bad regulation can deter investment. Bad regulation may deny an infrastructure developer or operator his legitimate costs. Quite clearly no investment will proceed unless ex ante it is expected to be profitable. Further, ex ante expectations of profitability will be adversely affected by experiences of opportunistic adverse ex post regulations which damage the returns to invested capital. This is analogous to the standard economic arguments against price controls, eg rent controls in Sydney after World War II or in New York in more recent times.

However, it is still necessary to distinguish carefully between disincentives to physical capital formation versus a loss of the capitalized value of the asset purchased. For example, suppose an investor purchases a house and land under a tax regime where the total value of the property is taxed at 5%. Suppose the tax regime is then altered so that a tax of 10% is levied on the land value alone. Some investors who

had bought properties with dilapidated houses and high land values would suffer from the change in the sense that the market value of the real estate parcel they had purchased would be less. Yet, the net effect of such a change would be to improve incentives to invest in physical capital formation even though some investors would face a drop in the net present value of capitalized land rents. Taking away monopoly rents which may have been bought at an inflated price in a flawed privatization process of itself has nothing to do with incentives to invest in new physical infrastructure. What counts is the likely internal rate of return on new investment and whether *that* return is likely to be expropriated by adverse regulatory change.

In that regard, we note and agree with the profound hostility shown to DORC (depreciated optimized replacement cost) in the submissions put by infrastructure owners. They are right to resent the “O” – ex post optimization by regulators which results in stranded assets necessarily requires a risk premium in threshold rates of return for investment. But, equally, users are entitled to resent the “RC” – the use and abuse of replacement cost has been a means of disguising the extraction of monopoly rents from downstream and upstream infrastructure users.⁸ As Professor David Johnstone has forcefully pointed out, the use of depreciated actual cost (DAC) avoids these injustices and economic inefficiencies from the point of view of both infrastructure owners and users.

The self-serving plea that DORC was necessary as a quid pro quo for bringing infrastructure owners under regulatory third party access regimes is legally and historically fallacious. Legally, all utilities whether publicly or privately owned, were subject to regulation in the interests of users whether through ministerial oversight and accountability to Parliament or ratepayers or through specific legislation. Indeed, the regulatory rate of return formula governing the Australian Gas Light Company under past New South Wales legislation was more stringent than the allowed rate of return now granted under current third party access regimes. From a legal point of view, the state Constitutions do not prohibit the taking of property on unjust terms, but more importantly, the Federal Constitutional prohibition against taking property on unjust terms would in no way have been violated if the use of depreciated actual cost had been mandated in Part III A of the Trade Practices Act. Just as tenant’s fixtures are commonly compensated for in private leasing contracts on the basis of depreciated actual cost, infrastructure owners would have no grounds for complaint if depreciated actual cost is now mandated in Part III A. The reality is that he who seeks equity must do equity – if infrastructure owners do not wish to be abused through opportunistic regulatory optimization they should be prepared to forswear the abuse of infrastructure users through replacement cost valuations well in excess of any costs ever really incurred.

Short-run marginal cost pricing still the optimal policy

“Mr Banks: But you’re not accusing us of advocating marginal cost pricing”

(Transcript, Sydney, 6 June 2001, p 174)

There seems to be some new “orthodoxy” in some quarters that marginal cost pricing is some form of economic heresy. This is not so. Marginal cost pricing remains the

first best economic optimum and has been continually endorsed as such by leading economists. In particular, we note that William Vickrey, the 1996 Nobel Laureate in economics, has given a vigorous and comprehensive defence of the optimality of marginal cost pricing.⁹ We also note that the Productivity Commission itself, in its April 2001 Draft report on Cost Recovery has accepted the optimality of and desirability of marginal cost pricing for government services.

A point which bears noting is that Ramsey pricing does not exorcise deadweight loss - Ramsey pricing is inherently second best and merely an attempt to reduce deadweight loss by levying “taxes” on infrastructure users according to inelasticity of demand for the service. But demand is *never* truly inelastic: there are adverse income and wealth effects as the price of infrastructure services rises while intermediate users may relocate production elsewhere. Hence the only truly efficient Ramsey taxes are those upon things *inelastic in supply* (such as the rating system on unimproved land values Sydney used to have to finance water reticulation - in effect, Sydney already had the makings of a perfect 2-part tariff with a non-distorting fixed charge).

As we have noted elsewhere, the abandonment of marginal cost pricing as an ideal rests on the assumption that there are no externalities in infrastructure provision and that the fixed capital costs necessary for infrastructure investment must be recouped solely through user charges. These assumptions are false: as Vickrey noted and Australia practised, it is perfectly feasible to finance the fixed costs of network infrastructure by rating the lands benefited.

However, we do not pursue this fundamental theoretical defect of Part III A here, but merely note that the economic optimum remains short run marginal cost pricing. The reality is that the current inquiry starts in the world of the second best and will have done well if it does not conclude in a world of the economic third best. In this regard, it is crucial that the deadweight losses caused by departure from short run marginal cost pricing not be exacerbated by the Commission’s blessing of the disguised extraction of monopoly rents under the guise of replacement cost valuations for utility infrastructure.

Externality

It is a remarkable feature of the Commission’s Position Paper that there is hardly any discussion of how infrastructure confers external benefits on others, notably landholders and treasuries (which is why historically they have often been involved - witness the Duke of Bridgewater’s canals and the colonial railways). A narrow focus on financing infrastructure solely through user charges in 2-party bargaining models obscures these vital externalities. The logic is simple. Infrastructure renders some locations more profitable places to conduct business from or more amenable places to live (eg wheat lands opened up by railways, town water put on). Since labour and capital are locationally mobile, these newly-created differential productivity advantages are capitalized in enhanced land values, providing a fund out of which to finance the infrastructure (the Union Pacific was financed by a Congressional land grant running beside the track).

Conversely, the extraction of monopoly rents by infrastructure owners reduces locational profitability, drives industry and jobs away, and diminishes land values and

tax revenues - it amounts, as Hotelling recognized, to *de facto* withdrawal of infrastructure from serving the country it was built to serve. Non-exploitative access regimes are therefore fundamental to Australia's economic development, productivity, living standards and international competitiveness.

Access holidays

The suggestion that infrastructure investment should be encouraged through access holidays is fundamentally flawed in several respects.

First, an access holiday would allow an infrastructure owner free rein to extract monopoly rents through the period of the access holiday and would allow him an agreed real rate of return later on when the infrastructure came under the access regime. This would amount to a form of double dipping. If an access holiday is granted on the basis that the infrastructure will be able to recoup his investment within the period, then at the end of the period, the invested capital should be regarded as fully recouped and infrastructure priced at socially optimal short run marginal cost. We note that the patent analogy has been urged. When a patent expires, no payment is thereafter made for the costs of developing the invention: if the patent analogy is to be followed properly, infrastructure users should only be charged marginal cost operating expenditures after an access holiday.

Second, an access holiday necessarily involves allowing monopoly rents and the creation of excess burdens, discouraging investment downstream and upstream as well as in potentially linking infrastructure facilities.

Third, an access holiday would necessarily be project dependent. No arbitrary time period would be correct in any given case except by accident – investment costs including hurdle rates of return would be either under recovered or over recovered. Instead of a time-defined access holiday, it would make more sense (in this very sub-optimal scenario) to allow an access holiday only for the period until all capital costs had been recouped with a hurdle rate of return, in a manner analogous to a resource rent tax computation.

Fourth, access holidays are like tax holidays - and distortionary in a like manner. In both cases, there is an inherent incentive to close down the factory or the pipeline at the end of the holiday and to build a new (untaxed or unregulated) one - a wasteful premature scrapping of capital investment.

Conclusion

We recognise that the Commission's review is operating very much in a second best economic world. Nonetheless, there is no economic justification for legitimating the extraction of monopoly rents by infrastructure owners. Allowing the extraction of monopoly rents, by looser regulation or access holidays, would not only damage investment and upstream and downstream industries but also in linking infrastructure projects. National competition policy was not intended to create a nation of monopolies and rentiers: it was meant to unlock strategic infrastructure and improve Australia's productivity, living standards and international competitiveness.

ENDNOTES

- I. See Geisst (2000) pp 34-35 on nineteenth century US railway infrastructure duplication under unfettered competition - new lines were started with a view to being bought out by the incumbent (who would recoup the cost from his retained monopoly).
2. Quiggin (1996) p 122
3. Laffont and Tirole (2000) pp 40-41
4. Laffont and Tirole (2000) p 54
5. See Garnaut and Clunies Ross (1975)
6. Laffont and Tirole (200) p 51
7. See Geisst (2000) pp 17-18
8. Geisst (2000) p 24 notes “Railroad management had been hostile to any suggestions that their profits were ‘excessive’ and devised ingenious schemes to mask their profitability. They falsified their accounts to make it appear that they had invested large sums of capital in physical improvements that were never actually performed.” American utility companies investing in Australian infrastructure must be bemused to find a country so ignorant of both economic theory and economic history - to be able to do legally in Australia what the New York legislature attempted to prohibit as profiteering in the 1850s must be a joy and a delight.
9. See the series of articles collected in Vickrey, William (1994) *Public Economics* edited by Arnott, Arrow and others.

REFERENCES

Dwyer, T M and Lim, R K H (1999) *Infrastructure Pricing Provision and Access: Implications for Rural Australia* Rural Industries Research and Development Corporation, RIRDC Publication No. 99/162, Canberra, October

Dwyer, T M and Lim, R K H (2001) *Infrastructure Regulation: Cost Methodologies and Processes for Rural and Regional Australia* Rural Industries Research and Development Corporation, RIRDC Publication No. 01/057 Canberra, May

Garnaut, R and A Clunies Ross (1975) *Uncertainty, risk aversion and the taxing of natural resource projects* **Economic Journal** v 85, June, pp 272-287

Geisst, Charles R (2000) *Monopolies in America*, Oxford University Press, New York

Laffont, Jean Jacques and Jean Tirole (2000) *Competition in Telecommunications*, MIT Press

Quiggin, John (1996) *Great Expectations: Microeconomic Reform and Australia*, Allen and Unwin, Sydney

Vickrey, William (1994) *Public economics: selected papers by William Vickrey*, Cambridge University Press
