

12 September 2003

Mr Tony Hinton
Presiding Commissioner
Gas Access Regime Inquiry
Productivity Commission

By email to gas@pc.gov.au

Dear Mr Hinton

APIA SUBMISSION – REVIEW OF NATIONAL GAS ACCESS REGIME

The Australian Pipeline Industry Association (APIA), the peak national body representing Australia's gas transmission sector, welcomes the opportunity to make the attached submission as an initial contribution towards rectifying the unintended consequences of the application of the Gas Access Regime to Australia's gas transmission sector.

Two major conclusions may be drawn from a range of recent public inquiries on issues relating to Australia's natural gas transmission sector:

- major expansions and/or new pipeline development will be needed to meet projected gas demand growth; and
- there is too much regulatory uncertainty surrounding pipeline development.

APIA notes and supports the primary aims of the Review which are to:

- Examine the extent to which current gas access arrangements balance the interests of relevant parties;
- Provide a framework that enables efficient investment in new pipeline and network infrastructure; and
- Assist in facilitating a competitive market for natural gas.

It is essential that the Review provides a comprehensive and balanced basis for implementation of recommendations flowing from the Productivity Commission's review of the National Access Regime and the independent CoAG Energy Market Review.

APIA believes that the Review will ensure detailed examination of the issues that have beset the gas transmission industry since implementation of the Gas Access Regime which have resulted in unacceptably protracted regulatory processes and escalating levels of legal challenge against regulatory decisions.

It is important to recognise that the most critical need of the gas transmission sector is to ensure that proposals arising from the Review provide the clarity and detail needed to ensure effective implementation of recommendations. APIA wishes to emphasise that



providing clarity in the final recommendations (preferably in the form of legal drafting of proposed amendments to the regime) will be essential; otherwise the scope for reinterpretation at the policy implementation stage would add to, and not reduce, the current high level of investor uncertainty.

APIA's submission examines the operating environment relevant to the Australian gas transmission sector. In summary:

- transmission investments generally tend to be large and require underwriting by long-term foundation contracts;
- transmission owners are highly reliant on individual customers for ongoing support of their investments;
- transmission investments tend to be “lumpy” in capacity terms and often involve initial overcapacity due to strong economies of scale;
- transmission pipelines have a very small customer base, with customers having a high degree of countervailing market power;
- transmission assets can be highly exposed to reserve depletion and bypass risks;
- new pipeline development is a highly contestable process in Australia; and
- transmission companies have strong incentives to meet the legitimate needs of their customers.

Against this background APIA seriously questions the apparent perception that monopoly power conferred by the natural monopoly characteristics of gas transmission necessarily equates to monopoly abuse. In fact APIA strongly believes that the characteristics of the gas transmission sector make it a strong candidate for a substantial “rolling back” of the current regulatory regime to a more light handed framework.

The primary focus of this submission is to build on conclusions of previous reviews and to align the solutions put forward by the gas transmission pipeline sector with the clear policy objectives set out by government including:

- Rectify the significant deficiencies in the National Access Regime that have been identified;
- Address concerns that access regulation has the potential to deter investment;
- Enhance the prospects for negotiated outcomes;
- Streamline and improve the quality of economic regulation across energy markets, to lower the cost and complexity of regulation facing investors, enhance regulatory certainty and lower barriers to competition; and
- Further increase the penetration of natural gas.

APIA's recommendations can be summarised as follows:



- The need for an objects clause that emphasises the primacy of encouraging investment in the regulatory decision making process;
- The need for a strengthened coverage test to ensure that only pipelines that misuse market power are covered;
- The commitment of the transmission industry to develop a voluntary behavioural Code of Conduct for uncovered pipelines to provide access seekers with confidence that they can negotiate access in an open and fair commercial manner; and
- The need for a revised Code to be based on a negotiate-arbitrate model consistent with Part IIIA rather than the current intrusive, costly and time consuming regime.

The submission also discusses principles and issues associated with the concept of regulation free periods and makes the point that any such scheme must be of sufficient duration to have any value and that such arrangements should be seen as a supplement to a revised regulatory framework, rather than as a substitute for it.

Whilst the submission does not seek to analyse existing regulatory mechanisms and structures, APIA holds the view that:

- An effective regime must provide for merit appeal rights on all key decisions;
- Effective separation of the Code change and regulatory functions must be maintained (it is important to ensure that the role of the regulator is to implement the Code, not develop policy, and this requires a very clear and transparent “separation of powers” between the regulatory and Code change functions - this lack of clarity and conflict represents one of our criticisms of the NGPAC process); and
- There should not be direct regulator participation or involvement in the Code change process.

We have sought to provide a range of relevant material and case studies in support of this submission. As the Review proceeds, APIA would welcome the opportunity to elaborate on or expand on this material in response to requests for further information from the Commission.

Yours sincerely

Allen Beasley
Executive Director
Australian Pipeline Industry Association



Australian Pipeline Industry Association

Submission to the Productivity Commission Review of the Gas Access
Regime

September 2003



This submission has been prepared by APIA's Membership in conjunction with Network Economics Consulting Group Pty Ltd.



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List of Abbreviations

ABDP	Amadeus Basin to Darwin Pipeline
ACT	Australian Competition Tribunal
AGA	Australian Gas Association
AGLGN	AGL Gas Networks
APIA	Australian Pipeline Industry Association
APT	Australian Pipeline Trust
ACCC	Australian Competition and Consumer Commission
ABARE	Australian Bureau of Agriculture and Resource Economics
CAPM	Capital Asset Pricing Model
CGBP	City Gate to Berrimah Pipeline
CGP	Carpentaria Gas Pipeline
CoAG	Council of Australian Governments
CWP	Central West Pipeline
DEI	Duke Energy International
DBNGP	Dampier to Bunbury Natural Gas Pipeline
DORC	Depreciated Optimised Replacement Cost
EAPL	East Australian Pipeline Limited
EGP	Eastern Gas Pipeline
GGT	Goldfields Gas Transmission Pty Ltd
GGP	Goldfields Gas Pipeline
GJ	Giga Joule
IGA	Inter-Governmental Agreement
LNG	Liquid Natural Gas
MAPS	Moomba to Adelaide Pipeline System
MSP	Moomba to Sydney Pipeline
NCC	National Competition Council
NCP	National Competition Policy
NDAP	Non Discriminatory Access Policy
NSW	New South Wales
ORC	Optimised Replacement Cost



PJ	Peta Joule
PWC	Power and Water Corporation
QGP	Queensland Gas Pipeline
RBP	Roma to Brisbane Pipeline
SA	South Australia
SWQP	South West Queensland Pipeline
WACC	Weighted Average Cost of Capital
TGP	Tasmanian Gas Pipeline
TJ	Tera Joule
TPA	Trade Practices Act 1974
WA	Western Australia



1 Introduction

Natural gas is widely recognised as being an ideal energy source for the 21st century as it is a clean burning, low carbon fuel of which Australia has abundant proven and probable reserves. Even allowing for major exports of LNG, these reserves should last for in excess of 100 years. The environmental benefits together with the promise of enhanced security of supply associated with natural gas as a fuel source and the regional development opportunities further development of reserves offer, provide strong public policy reasons for natural gas to play an increasing role in the nation's fuel mix.

In 2000-01 Australia consumed around 966 PJ of natural gas providing about 19.2% of the nation's primary energy needs.¹ ABARE has forecast that gas consumption will increase by around 3.7% per annum until 2020 with its share of Australian primary energy consumption projected to increase to 26% over this period (to some 1,932 PJ per annum). This forecast is relatively conservative as it assumes a lower growth rate for gas consumption than the 6.9% achieved over the last 25 years. ABARE also identify a high demand growth scenario where demand is forecast to grow to in excess of 3,000 PJ per annum by 2020.²

With the exception of the Cooper Basin (where production has plateaued) and the possibility of major coal seam methane production (which is as yet unproven for large scale gas production in Australia), major gas basins are located offshore and distant from major markets. Some 90% of Australia's probable and proven reserves are located in far north western Australia (from the North West Shelf to the Timor Sea).

The combination of a significant increase in gas consumption and the remoteness of reserves from major markets highlights the critical part that new and existing gas transmission infrastructure will need to play if gas is to achieve its potential as a major source of clean energy for the 21st century.

¹ ABARE (June 2003), Australian Energy – National and State Projections to 2019-20 Report for the Ministerial Council on Energy

² Dickson, A. and Noble, K. (2003), Eastern Australia's Gas Supply and Demand Balance, APPEA Journal, at p 135



With recent investments, which were largely committed to prior to the implementation of the Gas Access Regime³ or on the basis that the regulatory framework would not apply to the operation of some of these investments, Australia has nearly 20,000 km of gas transmission pipelines with a likely replacement cost in the order of \$7 to \$10 billion. APIA believes there is a crucial need for an additional \$4 billion of investment in new pipelines and extensions and expansions of existing pipelines over the next 5 to 10 years (see Attachment 1 for details) to avoid regional supply shortfalls and ensure that demand can be satisfied. One of the most significant benefits of this investment is that it will provide consumers with a secure, timely and competitive gas supply.

Just as new infrastructure is required to deliver gas to the market, there is also a need to ensure that the existing infrastructure is enhanced and maintained in a manner so as to optimise its economic life.

However, the application of the current regulatory framework is leading to significant uncertainty and industry concern as evidenced by major transmission pipelines:

- either being in, or having been in, dispute with the regulator over Access Arrangement decisions (DEI with its QGP, Epic Energy with its DBNGP and MAPS, GGT with its GGP and GasNet with its Victorian transmission system).
- minimising regulatory exposure by:
 - becoming unregulated (CMS Energy's Parmelia Pipeline);
 - seeking revocation of covered pipelines (GGT's GGP and APT's MSP);
 - only funding enhancements of regulated infrastructure capacity when the new capacity is fully contracted or is funded by the users themselves. There is clearly a risk that adopting such an approach will result in expansions failing to fully exploit the benefits of economies of scale that are available through investing in "entrepreneurial" spare capacity at the outset (which, in the long run, leads to users having to pay more for their transportation tariffs);

³ The Gas Access Regime comprises the National Third Party Access Code for Natural Gas Pipeline Systems ("Code") and the Gas Pipelines Access Law.



- only constructing new infrastructure where it was thought that the pipeline was unlikely to be regulated (such as DEI's EGP and TGP and SEAGas' Victoria to Adelaide pipeline);
- removing (or at least limiting) regulatory exposure through derogations that preserve the environment from previous regimes (for example the Queensland pipelines including APT's RBP, APT's joint venture CGP, DEI's QGP and EPIC Energy's SWQP).

As such, the Productivity Commission's review of the Gas Access Regime is timely and APIA hopes that this submission will assist the Commission identify solutions to address the current difficulties with the regime.

As the peak pipeline industry body, APIA's submission represents the views of transmission pipeline owners. This submission is based around a number of key themes, namely:

- the need for an objects clause that emphasises the primacy of encouraging investment in regulatory decision making;
- the need for a strengthened coverage test to ensure that only pipelines that misuse market power are covered;
- the commitment of the industry to the development of a voluntary behavioural code of conduct for uncovered pipelines to provide access seekers with confidence that they can negotiate access in an open and fair commercial manner;
- the need for a revised Code to be based on a commitment to a negotiate-arbitrate model consistent with Part IIIA rather than the current intrusive and costly regime; and
- a discussion of the benefits of adopting mechanisms (such as a 20 year regulatory holiday) to provide regulatory certainty for greenfields pipelines.



2 Key transmission sector characteristics

2.1 Introduction

Gas transmission infrastructure exhibits several characteristics that affect regulatory design, including:

- sunk costs and scale economies;
- typically small numbers of large, commercially sophisticated customers with countervailing market power;
- contestability in the development of new pipelines⁴;
- an increasingly interconnected network; and
- limited market power.

2.2 Sunk costs and scale economies

Gas transmission infrastructure is long-lived and capital intensive costing around \$500,000 per kilometre for a major pipeline with a capacity in excess of 100PJ/yr. Pipeline infrastructure investment is sunk⁵ which means that pipeline assets are particularly vulnerable to stranding and regulatory risk. Regulatory risk increases capital costs and with them, the cost of providing gas transmission services. By increasing capital costs, regulatory risk will also adversely affect investment, which imposes significant social costs through:

- destroying the incentive to invest – where regulatory risk causes an otherwise commercial investment to no longer be viable, society foregoes the entirety of the surplus that would be generated from the investment;

⁴ A contestable market is one in which competitive pressures from potential entrants exercise strong constraints on the behaviour of incumbent suppliers.

⁵ A sunk cost is a cost that once made, cannot be recouped. Typically sunk costs involve investments that produce a stream of benefits over a long horizon.



- delaying investment – the increased risk associated with regulation means that investment can be delayed until, for example, greater throughput can be achieved (or a target level of throughput becomes more certain) making the investment less risky and thus commercial. This imposes a cost on society to the extent that the benefits from the investment are foregone for the duration of the delay; and
- distorting investment – regulatory risk will tend to result in smaller pipelines being built as a means of protecting investors against regulatory risk. Limiting pipeline size is especially attractive if there is a risk that regulators will strand any excess capacity without allowing an offsetting premium to be earned when at-risk capacity experiences high demand. Reducing pipeline size imposes cost on the community on account of foregone scale economy benefits and increased likelihood of capacity constraints.

Gas transmission infrastructure offers significant scale economy benefits. The physical characteristics of pipelines are such that increases in pipeline diameter disproportionately increase throughput capacity (and in turn, subject to sufficient demand, reduce unit cost). Consequently, at the initial design phase of a pipeline, the developer is faced with making a decision on what diameter pipeline to build. Where there is a likelihood of increasing demand for the pipeline's services, the developer will have the choice of constructing a larger diameter pipeline or installing compression (or looping) to meet growing demand.

Other things being the same, larger diameter pipelines are more expensive to build initially but less expensive to expand than smaller pipelines which require compression earlier. The key issue is the uncertainty as to extent and timing of demand growth and the cost of capital for the pipeline, which in turn is affected by regulatory risk. A simple example of the financial impact of compression versus a larger diameter pipeline is provided in Case Study 1.



Case Study 1 Pipeline economics - compression versus larger diameter

In any proposed project, the developer must weigh up the probability and timing of future demand growth and whether it is best to build a smaller diameter pipeline with the thought of increasing capacity in the future via an option such as adding additional compression or simply building a larger diameter pipeline in the first instance which will be capable of satisfying future forecast demand. A simple example of the impact of this trade off which reflects the relative costs of the different options is as follows:

	Scaled to Initial Demand (300 mm)	Scaled to Future Demand (400 mm)
Demand	100 TJ/Day	180 TJ/Day
Construction Cost \$/KM	\$225,000	\$300,000
Compression Cost \$/KM	\$150,000	-
Total Cost \$/KM for 180 TJ/Day	\$375,000	\$300,000

At a 10% real discount rate these two options are equivalent in net present value terms where the rate of growth in demand (from the base level of 100 TJ/day) is 4.4% per annum. However, if a 12% real discount rate is applied, then a 5.3% per annum growth in demand is required. More rapid growth or a future demand in excess of the 180TJ/day assumed in the example would result in the larger diameter pipeline option being preferred. However, making a decision to invest the additional funds upfront requires the firm to accept greater demand risk. If that demand risk is compounded by regulatory risk, it is likely to be in the firm’s interests to build the pipeline to meet initial demand with additional capacity only added where it can be contractually underwritten (as can be seen by the impact of the higher discount rate above).

The presence of regulatory risk will reduce the willingness of developers to invest in initial uncontracted capacity and instead will result in only higher cost developable capacity being available. Moreover, the development of partial spare capacity can only enhance a pipeline owner’s incentive to increase throughput.

The key point to emerge from Case Study 1 is that where there is a degree of uncertainty as to how future returns will be dealt with in a regulated environment, then this is likely to decrease the attractiveness of the entrepreneurial pipeline project and encourage the construction of a pipeline built to meet the initial market demand only. This in turn increases gas transmission charges for two reasons:

- the higher capital cost incurred by investors on account of regulatory risk increases the returns necessary to attract capital; and
- the impact of regulatory risk in causing initial pipeline diameter to be reduced induces another cost arising from the foregone scale economies.

The regulatory risk created by regulatory discretion under the Code is also illustrated in relation to the ACCC’s draft decision in the MSP (refer Case Study 2). The concern for investors is that if regulatory outcomes under the Code are perceived to demonstrate an



arbitrary bias which is antagonistic to investors, then investors will simply find better investment opportunities elsewhere. Therefore, the application of the Code to existing infrastructure materially affects future investment decisions. This reflects the potential “chilling” effect of regulation on investment.

Case Study 2 Sensitivity of pipeline investment to regulatory risk

One embodiment of regulatory risk is the wide scope available to regulators under the Code to materially affect the value of a regulated pipeline investment by altering its economic life. Regulators are able to make arbitrary judgements that are internally inconsistent, as the following example illustrates.

In its Draft Decision on the Access Arrangement for the Moomba-Sydney Pipeline, the ACCC estimated the DORC valuation for the MSP mainline section at \$389.3m, based upon an ORC valuation for the same asset unit of \$748.8m. The actual age, A, of that section was 24 years at December 2000. These figures imply a remaining life (R) of:

$$R = A \times \text{DORC} / (\text{ORC} - \text{DORC}) = 24 \times 389.3 / (748.8 - 389.3) = 26 \text{ years}$$

Hence, for the *purpose of its DORC calculation*, the ACCC assumed that approximately half of the MSP mainline’s life has been consumed by 2000. However, the ACCC estimated a year 2001 depreciation charge for the MSP mainline pipeline assets of \$7.051m implying a remaining life of 61.4 years. In other words, for the *purpose of establishing its permitted depreciation charge*, the ACCC assumed that less than one quarter of the economic life of the mainline pipelines (which account for most of the asset value) had been consumed by 2000. The derivation of depreciation in this manner assumes recovery of remaining depreciation for the Moomba – Sydney mainline (excluding Young to Culcairn) over a 56 year period, rather than the 36 year period which is the remaining economic life adopted for the calculation of DORC for that section of the pipeline.

The best that can be said of the ACCC’s treatment of depreciation is that it is internally inconsistent in a manner which serves to underestimate the MSP’s true revenue requirement*. The seriousness of this particular underestimate can be calculated directly. For the sake of demonstrating the point at issue, let us use the ACCC’s own estimates of ORC, real pre-tax WACC, and non-capital costs¹. To calculate actual ages we employ the actual commissioning dates for the various asset components (with the actual commissioning dates for the Central west and Riverina laterals and the Bulla Park and Young compressors averaged).

If one varied nothing in the ACCC calculation except:

- the method of deriving DORC from ORC; and
- the method of deriving Depreciation from DORC,

to make these internally consistent, the revenue requirement would rise to \$70.71m in the year 2001, if a 60 year mainline pipeline life is assumed. If instead an 80 year mainline pipeline life is assumed, the revenue requirement would actually be higher: \$72.84m. These figures can be contrasted with the ACCC’s proposed year 2001 access arrangement revenue figure of \$59.31m.

From this calculation it is clear that remedying the inconsistency between DORC and Depreciation alone would increase the permitted revenue by \$11m - \$13.5m per annum. This would increase proposed access arrangement tariffs by approximately 20%, and improve the return on assets by 25% or more.

The current building block approach to setting reference tariffs conveys enormous potential for regulators to negatively impact on asset values and revenues through the application of regulatory discretion. For the MSP simply adopting a consistent approach to asset valuation and depreciation (based on a 60 year asset life) would have increased revenues by 20% compared to the ACCC’s Draft Decision.

* Note: EAPL has not accepted straight line depreciation of ORC as the appropriate economic basis for estimating DORC, and has demonstrated that the straight-line approach is not consistent with the economic basis set out by the ACCC in its Draft Statement of Regulatory Principles for Electricity Transmission.

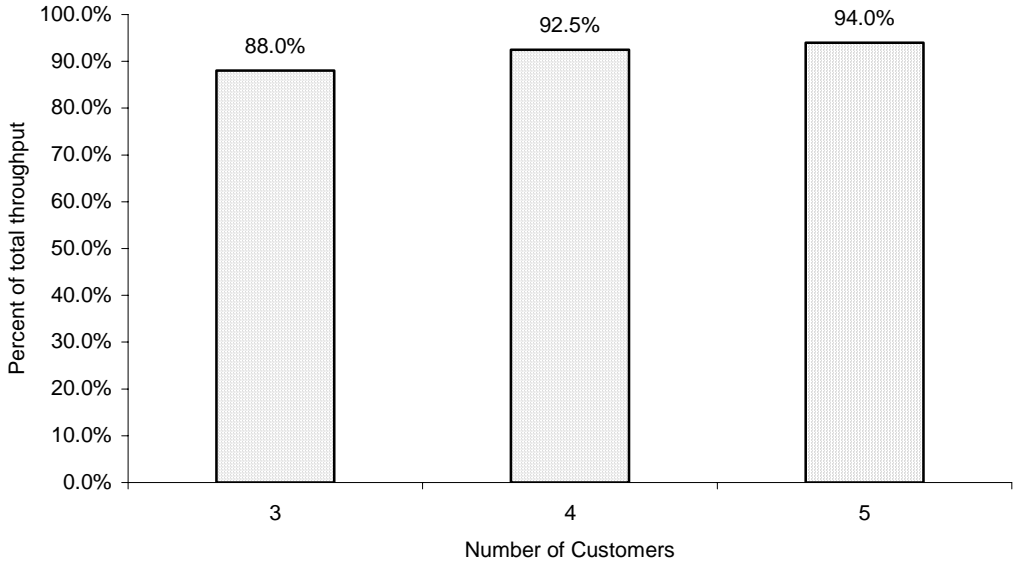


Another consequence of the existence of scale economies is that the incremental cost of serving additional throughput for an existing pipeline with surplus capacity is very low. The direct operating costs (excluding fuel) are unlikely to amount to more than 8% of the total costs of providing the service even when the pipeline is fully compressed. This means that the viability of pipeline projects tend to be very sensitive to throughput.

2.3 Customers with countervailing market power

Transmission pipelines operate at very high pressures (up to 15,000 kpa) and generally have only a handful of injection points and off takes. For example, there are only 11 active receipt and delivery points on DEI’s EGP. Similarly, pipeline companies tend to have a limited number of very large customers. Figure 1 illustrates that on average across all major pipelines, the top three customers represent 88% of the throughput with this percentage increasing to 94% when the top 5 customers are considered.

Figure 1 Concentration in pipeline customers



Further, different pipelines will often have the same major customers, whether a gas retailer (such as AGL) or a major industrial consumer (such as BHP Billiton). Consequently, pipeline customers tend to be significant and experienced users of pipeline services. Given that information on the economics of pipelines is readily available from engineering consultancy firms, pipeline customers are well informed and well placed to negotiate for the provision of services.



Finally, recent experience has highlighted the fact that customers themselves are able to effectively vertically integrate upstream into the provision of pipeline services. A good example of pipeline users executing such a strategy is the SEAGas pipeline, which is currently being constructed.⁶ In addition, the SEAGas project highlights the contestability of new projects.

2.4 Contestability of new pipeline projects

Competition between rival projects to secure customers prior to pipeline construction is not uncommon. This may take the form of direct competing projects such as the SEAGas and DEI/GasNet proposals for the South Australian pipeline (see Case Study 3) or between projects based on different sources of supply such as the PNG pipeline versus the potential Darwin to Moomba project. In either instance, generally rival projects will be competing to attract the same group of major customers, as there is unlikely to be sufficient demand to justify more than one project. However, in the case of user pipelines the primary focus of pipeline development will be “own use” requirements in determining pipeline sizing parameters. This focus on meeting the immediate needs of own use requirements raises the potential risk of higher long term costs being incurred in meeting expanded market demand over time.

⁶ The fact that there was vertical integration by several pipeline users has significant implications for the economic principles affecting the regulatory environment and in particular, the desirability of the negotiate-arbitrate model.



Case Study 3 SEAGas user pipeline

The SEAGas pipeline is a 680 km high pressure gas pipeline joining Port Campbell and Adelaide. Origin Energy and Australian National Power (who were to be the principal shippers) proposed the project in early 2001 in response to a SA Government sponsored initiative.

DEI and GasNet launched a competing project designed to meet the Government's needs. This project was reliant on securing commitment from a sufficient number of customers to underpin its development and was to be scaled to provide additional capacity to meet expected market demand growth. The aim of the DEI/GasNet proposal was to get to the point where a single pipeline could be constructed capable of meeting all projected loads and delivering the lowest possible tariff. However, the DEI/GasNet project could not secure sufficient demand to make the project commercially viable, leaving one of its largest potential customers (TXU, operator of the Torrens Island gas fired power station in SA) without a gas transport option. Subsequently, TXU joined the SEAGas alliance and became a partner and foundation shipper on that pipeline. As a result, the SEAGas project was increased to two parallel 350 mm pipes for 338 km plus a 450 mm pipeline for the remainder of its 680 km length.

The SEAGas project highlights both the contestability in the development of new pipeline infrastructure as well as the capacity of pipeline users to develop their own pipeline infrastructure.

2.5 Interconnections providing inter-basin competition

Increasingly, the Australian gas market is characterised by interconnection via transmission pipelines providing gas from competing sources of supply. For example, Sydney is supplied with gas from the Cooper/Eromanga basin via APT's MSP as well as from the Gippsland Basin via DEI's EGP as well as the Interconnect (and therefore the MSP). Thus, not only do Sydney gas consumers get the benefit of two pipelines competing to provide transport services but also the benefits of gas sourced from two competing gas basins – benefits which include increased price competition and security of supply.

These benefits were recognised by the Australian Competition Tribunal in the EGP decision:⁷

In considering the application of criterion (a) to the facts of this case, it is not disputed that the construction and commissioning of the EGP has resulted in a not insignificant level of competition at the wholesale and retail levels for the sale of gas in NSW. Nor is it disputed that the construction of the EGP produced at least

⁷ Duke EGP [2001] AcomptT 2 (4 May 2001), paragraphs 81 and 82.



the environment for basin on basin competition. In and of itself, the construction and commissioning of the EGP has been pro-competitive.

The competition between the pipelines serving the Sydney market has had flow-on effects into the market for gas in Sydney. This flow-on occurs because it is the delivered price of gas, comprising the wellhead price and the transmission charge, which determines the price of gas. The competition was evident in two ways. First, there was a reduction in the price of gas transmission services on the MSP in response to the (then) proposed opening of the EGP. There was also a price decrease on the AGLGN pipeline which connects to the MSP at Wilton, although there was disagreement about whether this resulted mainly from the proposed entry of EGP or the actions of the NSW regulator. Second, there were changes in the supply of gas between the Cooper and Gippsland Basins, with the latter now supplying a significant amount of gas into NSW which previously came from the Cooper Basin. The indirect effect of the fall in demand for Cooper Basin gas in NSW is that gas from that basin is now being sold into Victoria and being transported along the Interconnect. The pipeline and basin competition has also been associated with a reduction in the price of using the Interconnect through discounting of the reference tariff.

This situation is soon to be repeated with respect to Adelaide where the SEAGas pipeline will provide gas from the Otway basin in direct competition to gas sourced from the Cooper/Eromanga basin via Epic Energy's MAPS. Accordingly, the major markets of Sydney, Adelaide and Melbourne effectively all have (or in the case of Adelaide will shortly have) access to alternative service providers (Melbourne gas users can use back haul arrangements to access the EGP)⁸. The development of more sophisticated derivative services on pipelines is likely to enhance this effect over time.

In the future, if gas supplies are sourced from the major reserves located in either the Timor Sea or North West Shelf, competition between producers will intensify, with producers from the same basin competing for market share. However, for this to happen there will need to

⁸ The interconnection of transmission pipelines has also been promoted by the recent completion of DEI's VicHub interconnection facility. VicHub is an innovative new development which consists of a pipeline and associated facilities interconnecting DEI's EGP and TGP with GasNet's Longford to Dandenong Gas Pipeline



be significant investment in additional transmission infrastructure to connect these areas with the main markets in southeastern Australia.

2.6 Limited market power of pipeline owners

APIA believes that the owners of gas transmission pipelines rarely possess substantial market power. As such, in the following section, APIA has briefly compared the Commission's approach to assessing market power issues at airports with gas transmission pipelines.⁹ APIA notes that the Commission identified barriers to entry and price elasticity of demand as two critical issues in assessing market power.

2.6.1 Barriers to entry

APIA notes that, depending upon competitive conditions, gas transmission pipelines can exhibit many of the natural monopoly characteristics identified by the Commission¹⁰ including lumpy investments, significant economies of scale and sunk investment (but not economies of scope)¹¹. However, in contrast to airports, we see interconnections providing pipeline on pipeline competition in several Australian markets.

While the presence of multiple pipelines servicing a single market will provide network reliability benefits to end users, APIA considers that individual pipelines do not exhibit significant network effects (in contrast to airports). Finally, while the construction and operation of gas transmission pipelines is subject to technical regulatory oversight, in comparison to airports it remains relatively easy to gain the approvals necessary to construct a new pipeline as the presence of a pipeline has a limited impact on surrounding land use.

⁹ Productivity Commission (January 2002) Inquiry Report Price Regulation of Airport Services pg355

¹⁰ Productivity Commission (January 2002) Inquiry Report Price Regulation of Airport Services at Box 5.1 pg 98

¹¹ The areas where economies of scope are exhibited will principally be gas services such as park and lend (that is the provision of a service to allow shippers to temporarily store gas in the pipeline or to withdraw gas from the pipelines initial line pack).



Thus, compared to airports, APIA believes that gas transmission pipelines exhibit significantly lower barriers to entry, a view that is supported by the fact that in recent years we have witnessed investment in competing pipeline infrastructure including the EGP and the SEAGas pipeline.

2.6.2 Factors impacting on price elasticity

The second component of the Commission's assessment of market power of airports revolved around factors that impacted on the price elasticity of airport services. As for airports, the demand for pipeline services is a derived demand, that is, it is a function of user's demand for energy which will be related to factors such as the demand for the product which a user is producing. The Commission outlined four "Conditions for assessing price elasticities of derived demands"¹². APIA believes that this framework might usefully be applied to gas transmission, namely:

1. Elasticity of demand for the final product or service

APIA notes that the gas transport service provided by pipeline companies is an input into a broad range of final products. For example, the final product may be aluminium from a smelter destined for export which may exhibit a relatively high demand elasticity or it may be health services (ie major hospitals) which are likely to exhibit extremely low demand elasticity. Overall, the largest direct customers for pipeline services tend to be energy intensive industries such as smelting and refining where the final products are likely to be mainly exported and faced by significant demand elasticity.

2. Availability of alternative sources of supply of the service

An assessment of the impact of alternative sources of supply is best considered prior to a potential user committing to a gas contract. At this time, new users have substantial choice as to both location and choice of fuel. It would therefore be expected that new users would have relatively elastic demand at this time, from which relatively favourable long term contracts could be secured. Even at the end of a contract, users are likely to enjoy significant countervailing market power on account of the size and commercial significance of most gas

¹² Productivity Commission (January 2002) Box 5.2 at pg 108 derived from Stigler G (1969), *The Theory of Price*, 3rd ed Macmillan, London



transmission customers (refer Figure 1). Since, on average, around 90% of transmission capacity is purchased by just three customers, gas transmission pipelines become extremely vulnerable to any failure to renew contracts with major customers who constitute the vast majority of demand.

3. Proportion of the total cost that the price of the productive service comprises

Gas transmission services comprise only a small proportion of the total delivered cost of gas. Even for major industrials the transport component is unlikely to exceed one third of the total cost. For example, the indicative transport tariff on the MSP is currently around 66 cents/GJ (Moomba to Wilton firm forward service at 100% load factor¹³) out of an estimated \$3.30 to \$3.71/GJ (GST exclusive)¹⁴ total delivered wholesale price of gas or approximately 20% of the total. In turn, the wholesale gas price will generally represent a small proportion of the total cost of the final product although this will vary depending on the product. APIA notes that while gas transmission costs are a small proportion of users total costs, the same does not apply in reverse. Since gas pipelines have strictly limited numbers of major customers losing such a customer will have a dramatic impact on the pipeline's financial performance.

4. Elasticity of supply of other inputs

The highly diverse nature of final products as discussed in point 1 above suggests that it is not feasible to make a generic claim as to the elasticity of supply of other productive services.

2.6.3 Conclusions on market power and comparison with airports

APIA believes that the above discussion indicates that gas transmission pipelines are likely to have significantly less market power than airports on account of lower barriers to entry and relatively more elastic demand. This in turn suggests that it would be highly desirable to recommend adoption of a regulatory framework for covered pipelines that is no more heavy handed than that applied to airports.

¹³ <http://www.pipelinetrust.com.au/4/4-1set.html>

¹⁴ NCC (November 2002), Moomba to Sydney Pipeline System; Revocation Application under the National Gas Code. Final Recommendations. Table 6 p.77



2.7 Summary

In summary, gas transmission pipelines have the following characteristics:

- long life, high capital intensity and substantial sunk investment;
- extreme sensitivity to risk, including regulatory risk;
- large scale economies which encourage developers to take on significant market risk;
- a very small number of large, sophisticated and well informed customers;
- considerable scope for contestability in the development of new projects; and
- limited market power.

Together, these factors suggest that a relatively light-handed form of regulation can, and should, be applied to transmission pipeline assets.



3 Historical perspective on the Code's implementation

3.1 Introduction

The Gas Access Regime has now been in operation for more than five years. During that time, the industry specific “light handed” regulatory framework that was foreshadowed has proven to be invasive and heavy handed in its application. There are numerous examples of heavy-handed regulation, including:

- the “all in” approach to regulation under the Code;
- the mechanical “heavy handed” process required by the Code;
- the protracted process that has been experienced in the assessment of Access Arrangements under the Code and the costs that have been imposed on the industry (and in turn, pipeline users) during the process; and
- the regulatory risk that has been created, such as the refusal of regulatory bodies to accept derogations from the Code.

The following sections address these concerns, followed by a review of investment that has occurred in pipeline infrastructure since the Code was promulgated.

3.2 “All In” coverage

The first indication that the Code was in fact heavy handed was the inclusion of virtually all existing and several proposed pipeline systems (with a few seemingly arbitrary exceptions) within Schedule A of the Code as covered pipelines despite the Code itself setting out a coverage test. This presumption is at odds with the intent of the Hilmer Report, the Competition Principles Agreement and Part IIIA of the TPA. For example, under the TPA, the services provided by infrastructure can only be declared for access where the declaration test is met, which includes, amongst other matters, that the infrastructure be nationally significant.



At no point was a transparent assessment made of whether the pipelines in Schedule A satisfied the relevant coverage criteria. There was simply a presumption that every pipeline should be covered. Indeed, since then some 17 pipelines and distribution systems have had to invest significant resources in order to overcome the onus of proof and have their coverage status revoked so as to avoid unnecessary regulatory intervention.¹⁵ One such example of a pipeline that should never have been covered is the NT Gas City Gate to Berrimah pipeline outlined in Case Study 4.

Case Study 4 NT Gas City Gate to Berrimah Pipeline

The City Gate to Berrimah Pipeline (CGBP) was built in 1996 to extend gas supply into the small industrial zone in the Berrimah area on the outskirts of Darwin. The riskiness of the venture has been demonstrated with the CGBP realising less than 10% of the projected load and continued operation has only barely managed to be justified. Whilst the ACCC accepted that it was appropriate to grant extensions for submitting an Access Arrangement on the grounds that no access was being sought and that the cost outweighed the benefits, the ACCC recently advised that continued use of its extension power was not consistent with intent of the Code and required either submission of an Access Arrangement or that revocation be sought. Consequently a successful revocation application was made at a cost that represented 23% of annual revenue from the pipeline. In NT Gas' view, given the marginal nature of the pipeline and the absence of disputes about access, no benefit arises from any such expenditure.

This example highlights the negative impact that unnecessary coverage can have on a pipeline.

Moreover, DEI spent in the order of \$2 million overturning the coverage decision on the EGP. Similarly, APT have been pursuing a revocation application on the MSP since June 2001 and are currently awaiting the Minister's decision in light of the recommendation of the NCC that coverage be continued. In the case of CMS' Parmelia Pipeline – a pipeline that demonstrated through the revocation process that regulation was unwarranted, total regulatory costs amounted to more than \$600,000 up to the point of revocation. This is a particularly perverse outcome as not only should the Parmelia pipeline never have been covered, but a number of other Western Australian pipelines were never covered. Those that were excluded were done so on an apparently arbitrary basis. All of those significant pipelines that were covered including the Parmelia Pipeline, had pre-existing arrangements that ensured open access was provided.

¹⁵ The 17 successful revocation applications are set out in Attachment 3.



The adverse impact of automatic coverage has been exacerbated by the failure of regulatory bodies to apply the Code in a manner that is sensitive to commercial realities of each pipeline.

3.3 “Heavy handed” nature of the Code

One indication of the heavy handedness of the Code has been the seemingly universal belief of regulators that the Code requires all pipelines to be treated identically irrespective of individual circumstances. This is clearly illustrated by the ACCC’s approach to APT’s ABDP pipeline (refer Case Study 5).



Case Study 5 Amadeus Basin to Darwin Pipeline

The ABDP was built in 1986 to supply gas to power stations owned by the Power and Water Corporation (PWC) and provided open access for other users prior to the introduction of the Gas Code in 1998. The foundation contract with PWC specified the charges that would be paid by PWC until 2006 to underwrite the ABDP development.

At the time of submitting a proposed Access Arrangement to the ACCC, the ABDP was (and remains) fully contracted and the gas fields supplying the ABDP were understood to have no reserves to contract. Despite having access to ABDP's contracts, the ACCC's Draft Decision proposed a tariff that was significantly below the price paid by PWC for access to the ABDP. The Draft Decision arrived at this result because of a perceived need by the ACCC to arrive at an initial capital base of DORC and not take into account the contractual arrangements necessary to establish the pipeline. It was only because of strenuous submissions made to the ACCC by NT Gas following the Draft Decision – and possibly the Epic Decision on the DBNGP - that the ACCC arrived at tariffs for third parties which were at an appropriate level above the PWC tariff.

However, the Access Arrangement process cost in the order of half a million dollars, despite the fact that no capacity was available nor was it likely to be sought in the foreseeable future. It is arguable that the ABDP should not be covered as under all the surrounding circumstances it is unlikely to meet the Code coverage criteria. However, NT Gas formed the view, once well into the Access Arrangement process, that compliance with the Code from that point was less expensive than embarking on the revocation process.

This case study highlights the fact that every pipeline is different and cannot be adequately dealt with by application of a one size fits all framework.

3.4 Code application results in unreasonable delays

APIA believes that the Code establishes an environment in which the assessment of Access Arrangements is unnecessarily protracted. The Code's requirement to determine efficient costs of necessity leads to an information intensive approach to establishing reference tariffs. Inevitably, this results in delays in finalising Access Arrangements together with a litigious environment where, because of the focus on removal of all perceived monopoly rents, the regulator generally adopts a fundamentally different view on key decision variables, even in instances (such as those cited above) where actual access is completely improbable.

The result of the construction and focus of the Code has been to create unreasonable delays in finalising Access Arrangements, undermining the very commercial negotiations that the regime was intended to facilitate. Importantly, the extended review periods experienced in



the application of the Gas Access Regime to the transmission sector are completely at odds with the entire basis for establishing the Access Arrangement model¹⁶:

The alternative to the Access Arrangement model is the negotiate-arbitrate model. Comparatively, the approval of an Access Arrangement will tend to create greater certainty for all parties and reduce the scope for, and the number of, disputes.

For example, Table 1 highlights the time taken and current status of access arrangements for a number of the major pipelines while Case Study 6 details the chronology of the DBNGP regulatory process.

Table 1 Length of regulatory processes¹⁷

Pipeline	Duration of Regulatory Process	Current Status of Process
DBNGP	3 Years 9 Months	Final decision May 2003 with revised access arrangement lodged August 2003
MAPS	4 Years 5 Months	Appeal to Australian Competition Tribunal ¹⁸
MSP ¹⁹	4 Years 4 Months	Draft Decision
GGP	3 Years 9 Months	Awaiting Amended Draft Decision

Another consequence of the heavy-handed nature of the Code is that the regulatory process has become very expensive. APIA estimates that the first round of regulatory reviews (excluding litigation) involved costs in the order of \$14 million for service providers. If the costs associated with litigation are included, this cost increases to approximately \$27 million.

¹⁶ Gas Pipelines Access (Commonwealth) Bill 1997 - Explanatory Memorandum (at paragraph 42)

¹⁷ Delays in finalising access arrangements are not necessarily the fault of any one party but rather, are indicative of the failings of the current regulatory framework.

¹⁸ The MAPS Access Arrangement is effective notwithstanding the appeal.

¹⁹ Some of the extended process relates to the revocation application for the MSP and changes in circumstances since the original access arrangement was submitted.



These estimates exclude the costs of the regulatory bodies themselves. Table 2 illustrates the costs of each of the regulatory bodies involved in gas transmission regulation over the period 2001-02. Whilst clearly the activities of the majority of the regulatory bodies extend well beyond gas regulation, it is not unreasonable to suggest that the cost of regulatory bodies around Australia in gas transmission regulation is in the order of \$4-\$5 million per annum over this period. Overall direct compliance costs would therefore be in the order of some \$35-\$45 million.

Table 2 Cost of regulatory bodies involved in gas transmission (2001-02)

Regulator	Industry Sectors	2001-02 – Expenditure - Total (\$000)
ACCC	All	72,176
NCC	NCP	3,485
OffGAR	Gas transmission and distribution	1,997
Total		77,658

Source: Annual reports of regulatory agencies



Case Study 6 Chronology of DBNGP Access Arrangement Approval Process

DATE	EVENT
15/12/1999	Epic Energy lodges access arrangement and access arrangement information documentation
17/12/1999 to 17/3/2000	First public consultation period Deliberations by Regulator on confidentiality of certain submissions
20/4/2000 to 12/5/2000	Second public consultation period
12/05/2000	Regulator's deliberations begin
13/6/2000	Regulator grants 2 month extension of time to the 6 month approval period to allow it to complete the regulatory approval process
28/7/2000	Revised access arrangement information document lodged
11/8/2000	Regulator grants 2 month time extension to allow him to complete the regulatory approval process
13/10/2000	Further 2 month extension
15/12/2000	Further 2 month extension
14/2/2001	Further 2 month extension
12/4/2001	Further 2 month extension
15/6/2001	Further 2 month extension
21/6/2001	Regulator issues draft decision and commences further public consultation period
1/8/2001	Epic Energy notifies regulator of intention to commence legal action to challenge validity of draft decision
18/8/2001	Epic Energy commences legal action in WA Full Court
15/8/2001	Regulator grants further 2 month extension of time to allow him to complete the regulatory approval process
28/9/2001	Closure of public consultation period
15/10/2001	Further 2 month extension
21/11 2001 to 28/11/2001	Hearing of legal action in WA Full Court
14/12/2001	Consecutive further 2 month extensions
15/8/2002	Final 2 month extension
23/05/2003	Final Decision
8/08/2003	Revised access arrangement lodged
23/8/2002	Court Decision – Declarations proposed
5/9/2002	Regulator issues Information Paper seeking further submissions
14/10/2002	Regulator grants consecutive further 2 month extensions of time to allow him to complete the regulatory approval process
14/12/2002	Further submissions lodged with regulator in response to court decision
14/12/2002 to 4/5/2003	Regulator's deliberations
4/5/2003	Regulator issues aspects of final decision to Epic Energy for comment
16/5/2003	Epic Energy provides submission to Regulator in response to final decision exerts
23/5/2003	Final Decision – to lodge revised AA by 4 July 2003
8/8/2003	Revised Access Arrangement lodged by regulator Deliberations by Regulator



APIA believes that these costs and delays are symptomatic of an unworkable regulatory framework and believes less invasive processes need to be developed that will result in more timely and market focused outcomes.

3.5 Regulatory creep

APIA is particularly concerned about the apparent belief of regulators that it is necessary to increase the scope of regulatory oversight by replacing agreements between State Governments and pipeline proponents that were recognised as derogations to the Code. These State agreements are of fundamental importance to the credibility of the Gas Access Regime because they underpinned significant private investment in the construction and purchase of gas pipeline assets that occurred prior to the development of the Code. Consequently, given the clarity of the commitments that were made to investors, any subsequent failure by regulatory bodies to respect their terms can only send an unambiguous signal that dramatically increases regulatory risk. These agreements were in fact cornerstones of the regulatory regimes in place before the Code was introduced.

The difficulty that the Queensland Government has experienced in securing certification for the Queensland Gas Access Regime on account of the derogations from the Code is a case in point (refer Case Study 7). This experience is not confined to Queensland - the GGP was built with the security of an act of Parliament to protect investors from the adverse effects of future regulation. The Access Arrangement for the GGP is currently being reassessed by the WA regulator who, following the guidance afforded him by the Epic Decision (WASCA 231), has undertaken to review his earlier draft decision that had failed to give due account to the pre-existing GGP State Agreement – despite the Agreement underpinning the original investment in the pipeline. APIA remains concerned that it took legal intervention for the Regulator to consider that this consideration was warranted. Further, APIA is also concerned that coverage is predicated upon a basis which, according to the NCC's draft recommendation on GGT's revocation application, does not apparently need to consider the development history, successful operation or specific protective clauses of the State Agreement, nor the objective of facilitating new investment which it has succeeded in achieving.



Case Study 7 Queensland Derogations

The NCC has recommended that the Queensland Gas Access Regime not be certified as effective due to a series of derogations which were agreed by all Governments in November 1997 when CoAG entered into the Intergovernmental Agreement (IGA). The effect of the derogations was to preserve the tariff arrangements that had been agreed either as part of the sale process (QGP) or during the selection of the successful proponent for the construction of the CGP and SWQP. Without these derogations, the Queensland Government may not have entered the IGA, which would have meant there would be no national gas access framework in place.

APIA believes that the consultative process that led to the signing of the Intergovernmental Agreement enabled concerns about the derogations to be raised and dealt with in the Agreement itself. Presumably the parties to the IGA agreed to it with an expectation that the derogations would meet the effectiveness requirements of Part IIIA of the TPA. Similarly, the gas pipeline industry participated in the development of the IGA in good faith and its support of the IGA and the Code was based on the understanding that the existing access principles for the derogated pipelines would be maintained.

As such, APIA is very concerned with the signal that is sent where a regulator can effectively overturn a Government decision that was relied upon to make a very substantial investment in long-lived infrastructure. This action must send a signal to investors that the level of regulatory risk is significant and needs to be considered as a fundamental factor in any future investment decision.

3.6 Reality of pipeline investment since introduction of the Code

Some regulatory authorities have claimed that the level of pipeline development that has occurred since the Code has been in force suggests that the regulatory environment has encouraged new investment. APIA believes that this is very far from the truth and that the pipeline construction that has occurred over this period has actually been **in spite of** the Code. Indeed, APIA understands that planned pipeline expansions have not occurred as a direct result of regulatory outcomes. Probably the clearest example of this is in the case of the DBNGP which Epic Energy has been unable to expand directly as a result of the adverse impact that both the WA regulator's draft and final decisions have had on the financial viability of the service provider.

Pipeline developments involve long lead times, suggesting that many of the projects were committed to prior to the pipeline companies realising how the Code would actually be implemented. Additionally and importantly, the owners of recent pipeline developments have introduced explicit strategies to minimise their chance of coverage under the Code (refer Case Study 8).



Case Study 8 New Pipelines built in spite of the Code

Since the Code was first mooted in the early 1990's and enacted initially in SA in 1997 with other States introducing enabling legislation by 1999, the gas transmission industry has continued to invest in gas transmission infrastructure as detailed in Attachment 2. The true shape of the regulatory framework has only become apparent with the emergence of regulatory precedent. As such, much of the investment occurred in anticipation of genuine 'light handed' regulation. However, a number of pipelines have been committed since the implementation of the Code. These include:

- the EGP providing a connection between Longford and Sydney was considered by the developer (DEI) to be in direct competition with the MSP and therefore not subject to coverage under the Code;
- the TGP was considered by the developer (DEI) to not have any market power and therefore not be subject to coverage under the Code;
- the SEAGas pipeline connecting Port Campbell and Adelaide considered by the developers to be in direct competition with the MAPS and therefore not subject to coverage under the Code.

Generally lateral pipelines (of less than 50 km in length) are designed for a single customer and hence are not regulated.

This case study highlights that new pipelines that have been developed have been done so not because of the certainty provided by the Code but rather because developers believed that these particular projects could be operated so as to minimise the impact of the Code.

In addition, expansions in pipeline capacity have been secured through commercial negotiation outside of the Code. For example, APIA believes that Code processes have generally not been relevant where expansion is required as pipeline owners enter into commercial negotiations with customers seeking expansion capacity and the Code has not assisted those negotiations. An example of these processes at work is given by the progressive expansion of the Roma to Brisbane pipeline (refer Case Study 9).



Case Study 9 Expansion of the Roma to Brisbane Pipeline

The construction of the Roma to Brisbane Pipeline (RBP) in 1969 was underwritten by a gas supply contract with a major industrial customer. As the gas market in Brisbane developed, residential, commercial and industrial consumers converted to gas. By the early 1980s, the RBP was operating on an "open access" basis with three producers supplying the Brisbane gas market via the RBP.

To satisfy continuing growth, the pipeline was expanded from a capacity of 35TJ/d in 1980 to its current steady state capacity of around 150TJ/d through the addition of 6 mainline compressors and 6 separate stages of looping. The majority of these expansions occurred prior to the implementation of the Code in Queensland and were the result of commercial negotiation within the framework of the prevailing Queensland legislation. Regarding the expansions:

- one was the subject of the well documented Code derogations which were agreed between the RBP owners and the Queensland government in 1996.
- in 2000, a major expansion of the RBP was commenced that was underwritten by a gas transportation agreement with to haul coal bed methane through the RBP. This expansion was underwritten by a tariff agreements negotiated outside of the Code;
- in 2002, a further expansion of the pipeline was commenced that was underwritten by a gas transportation agreement which required increased capacity in the RBP. The tariffs for this expansion were negotiated outside of the Code.

The history of the expansion of the RBP is one of commercial negotiation leading to pipeline expansion to meet emerging demand in a timely and efficient manner. Even where Code processes have been available, they have not been required with pipeline users clearly able to achieve their commercial aims via negotiation.

3.7 Conclusion

APIA believes that there is ample evidence that the Gas Access Regime has had a deleterious impact on the gas transmission sector and in any case, the regime certainly cannot be credited with facilitating or encouraging the developments that have occurred since its enactment. In the following sections, APIA outlines a light-handed approach to the regulation of those assets that satisfy a properly specified coverage test.



4 Costs and benefits of regulation

APIA notes that there are legitimate issues about the application of regulation to address market failure. In addition, APIA acknowledges that market failure can arise in circumstances where a nationally significant natural monopoly (in the sense that a service provider has a sub-additive cost function and does not have any actual or potential competitors) abuses its market power in a way that is antagonistic to the community's long term interests.

However, APIA is firmly of the view that a demonstrated market failure is a *necessary but not sufficient* condition to justify regulatory intervention in the economy. In APIA's view, for regulatory intervention to be justified, it must be demonstrated that the benefits of applying regulation outweigh the costs, viewed from the perspective of the pursuit of economic efficiency. In APIA's view, the most important consideration for the pursuit of economic efficiency is to maximise the sum of producer and consumer surplus *in the long run* – which in turn can only occur if incentives to undertake socially desirable investment are not adversely affected by the regulatory environment.

This section briefly reviews the costs and benefits that arise from the application of regulation after which APIA briefly considers the role of regulation.

4.1 Costs of regulation

As recognised by the Commission in its Part IIIA review, the costs associated with regulatory intervention can be very substantial. In a direct sense, they include the costs incurred by the regulator, the compliance costs incurred by the regulated business and other stakeholders, such as end users, in any review. For a lengthy and detailed regulatory review such as that involved in developing an access arrangement under the Code, these costs can of themselves be quite significant and as discussed in Section 3, APIA suggested that a reasonable estimate of the total of such costs since the introduction of the Code is likely to be in the order of \$35 to \$45 million.

In addition, potentially even greater costs will arise from the *unintended consequences* from the application of regulation. These costs include, for example, the foregone benefits that are lost when a regulated business focuses on managing the regulator rather than on improving their business through innovation aimed at better serving customer needs. Additionally and importantly, there are the costs that are incurred in market participants seeking to game the regulator instead of operating commercially.



Moreover, as noted by the Productivity Commission, perhaps the single biggest long-term impact of regulation is its chilling effect on investment and the associated risk that services may no longer be available in the future. One example, is the unwillingness of some infrastructure providers to continue to invest without customers funding an expansion of the pipeline²⁰.

Whilst APIA acknowledges that the Code provides a vehicle for customers to fund expansions, APIA submits that any reliance upon such a provision demonstrates the failure of the regulatory regime. Clearly, there is the investment hold-up such an approach is likely to induce (due to the lumpiness of expansions relative to customer needs). However, additionally, the outcome represents a failure of the regulatory system in that the owner of the pipeline (the entity which should most efficiently fund expansions) responds to regulatory risk by passing it to customers who are relatively poorly placed to cost effectively perform the function of funding (and selling) pipeline capacity.

4.2 Benefits of regulation

The benefits of regulation are composed of both static and dynamic elements.²¹ The static efficiency benefits associated with regulation of monopoly businesses that are misusing their market power arise from the removal of deadweight social losses. The major static benefit from the removal of monopoly rents will be the avoidance of the imposition of deadweight social losses inherent in monopoly pricing as consumers increase their consumption of services at the now lower price.

It is also sometimes argued that the application of regulation can improve the productive efficiency of the regulated entity. APIA does not accept that this is the case and in fact believes that the “rate of return” type arrangements that have been implemented under the Code could in fact reduce productive efficiency. Indeed, APIA estimates that reductions in

²⁰ As provided for in section 6.22 of the Code.

²¹ It is possible that there may be longer term dynamic benefits associated with the removal of monopoly rents. For example, subjecting a monopolist to regulation may itself encourage socially desirable behaviour by other potentially regulated businesses. APIA believes that this benefit is equally achievable simply through the presence of a threat of direct regulatory oversight where behaviour so warrants.



pipeline construction costs in the order of 10% were achieved in the unregulated environment during the 1990's. Moreover, as illustrated in Case Study 10 APIA believes that the application of the Code has had an unintended effect that imperils the continued investment in innovation that secured these productivity gains in pipeline construction. Indeed, this is not a surprising result given that the significant reductions in replacement costs enabled by this research has actually *reduced* the regulatory asset bases of the very sponsors of the research because of the approach mandated by the Code.

Case Study 10 Pipeline Research and Development

During the 1990s Australian pipeline companies were at the forefront in a number of key areas of pipeline research, leading to substantial improvements in the construction and operation of long distance, high pressure, thin-wall pipelines. The research effort was, and continues to be, directed to Australia's specific circumstances where there is a critical need to reduce the capital costs of long distance pipelines to meet the economic needs of our relatively small markets.

The research was rapidly absorbed into technical standards and then applied commercially, leading to estimated savings in pipeline construction costs of at least ten percent. For example, the research was a critical success factor in construction of the 840km Carpentaria pipeline by enabling very high rates of construction to be achieved (average of 7.7 km per day with a record of 21 km). This rapid application of research outcomes enabled new cost effective and innovative construction techniques to be implemented at reduced and shared risk. The benefits of the research were also routinely applied to a range of other pipelines built since the Code was introduced.

The value of Australia's pipeline research program is recognized internationally and APIA recently entered into a tripartite research collaboration agreement with research institutions in the USA and Europe.

The introduction of regulation has had a noticeable adverse impact on the prospects of this cooperative research effort being maintained into the future. Pipeline owners have pointed out that the regulatory parameters being applied provide no incentive to continue owner driven investment in such research. The traditional basis for the research program, whereby funding was provided for two-year research programs in order to provide continuity for researchers, was last year replaced by a one-year forward commitment. Based on discussions with pipeline companies it will be increasingly difficult to sustain even this modest effort into the future.

Because of the failure of the regulatory environment to provide sufficient return for innovation, pipeline owners have reacted by reducing their investment in research and development that has led to substantial reductions in replacement costs over time.



The principal factors affecting the size of the deadweight social cost are:

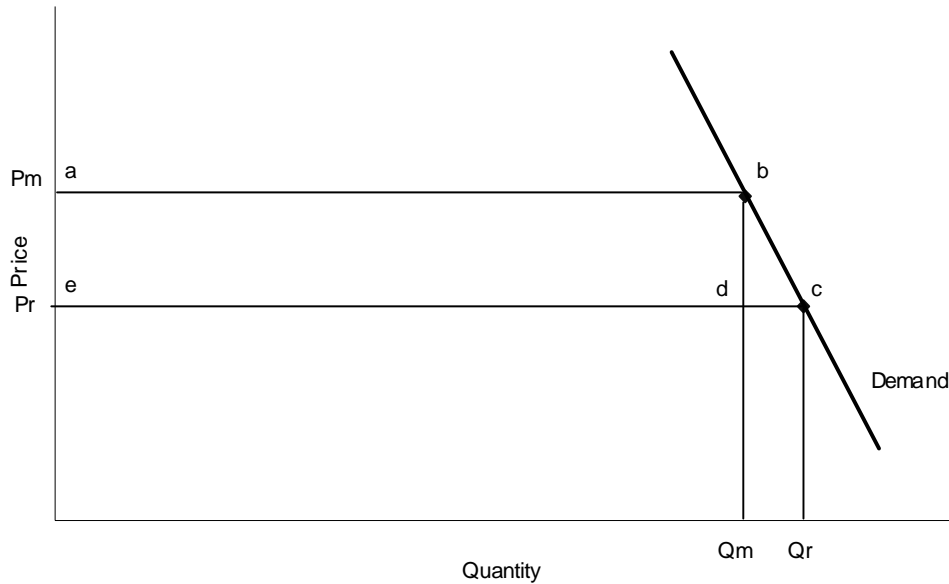
- the elasticity of demand for the service – other things being the same, the lower (higher) the elasticity of demand, the lower (higher) the deadweight social cost of monopoly pricing – in the limit, there is no social deadweight cost from monopoly pricing where demand is perfectly inelastic;²²
- the extent of monopoly rent inherent in existing prices – other things being the same, the greater the difference between “competitive” and monopoly prices, the greater the social deadweight cost; and
- the extent of efficient price discrimination exercised by the monopolist. For example (ignoring income effects) perfect price discrimination could result in no deadweight costs being imposed on society.

The deadweight social costs can be contrasted with the transfer that is associated with monopoly pricing. In general, these transfers can be large relative to the deadweight losses imposed from (linear) monopoly pricing as highlighted in Figure 2 where the dead weight loss is represented by the small triangle b, c, d while the much larger transfer is represented by the rectangle a, b, d, e. This perhaps explains why the removal of monopoly profit has attracted such a focus from regulatory decision making under the Code. However, leaving aside income effects, such transfers bear upon equity rather than economic efficiency, at least in a static sense.

²² At least in a static sense – in a dynamic sense, there can be social costs arising in such an environment.



Figure 2 Price increase required to offset the cost of regulation



4.3 Role of regulation

APIA believes that the role of regulation should be the pursuit of economic efficiency and that the most important consideration in securing economic efficiency over time concerns ensuring an environment that is conducive to socially desirable investment being undertaken. Indeed, any other basis for the application of regulation will impose an economic cost on the community. In this regard, APIA endorses the Productivity Commission’s position that:²³

.... regulation should:

- promote overall economic performance;

²³ Productivity Commission (2002), *Price Regulation of Airport Services*, Report No. 19, AusInfo, Canberra, page 94.



- minimise the regulatory burden on industry consistent with efficient outcomes; and
- be transparent and low cost.

Other desirable principles of regulation are that it, as far as possible, be predictable, promote certainty, and be open to scrutiny and regular review.

APIA believes that the Code's focus on efficient costs and the consequential focus on the removal of monopoly profit is in material conflict with the pursuit of long term economic efficiency. This raises APIA's concerns about the objects of the Code, an issue that is addressed in the following section.



5 Objects clause

5.1 Introduction

The Productivity Commission's Issues Paper raised the following questions regarding objectives:

- are improvements needed to the objectives specified in the preamble to the Gas Pipelines Access Act in order to ensure uniform third party access arrangements are implemented and applied on a consistent, national basis?
- to what extent, if any, is there conflict between the objectives stated in the preamble to the Gas Pipelines Access Act? Have such conflicts been resolved satisfactorily by regulators, the courts, and other relevant parties? If not, what improvements could be made? and
- are there any problems or ambiguities arising from the hierarchical structure of the various sets of objectives contained in the Gas Pipelines Access Acts and Code? Have these conflicts and ambiguities been resolved satisfactorily by regulators, the courts, and other relevant parties? If not, what improvements could be made?

APIA believes it is imperative that a stronger and more certain objects clause is included in the Gas Access Regime. In setting out the reasons for a stronger and more certain objects clause, the following sections:

- explain the importance of clear objectives to a legislative instrument such as the Gas Access Regime; and
- observe the particular importance of providing incentives for efficient investment for the gas pipeline industry as the fundamental object for the Gas Access Regime.

In reviewing the reasons for a stronger objects clause, APIA wishes to avoid a detailed review of the Western Australian Supreme Court's judgement in the DBNGP Decision. In APIA's view, this decision merely serves to highlight the importance of a clear objects clause. However, APIA wishes to emphasise its view of the objectives of regulatory intervention in the economy – namely to enhance economic efficiency in the long run. APIA believes that the pursuit of economic efficiency represents the fundamental principle that should guide when regulation is to be imposed on pipeline owners, and when imposed, how the regulatory intervention should be applied.



5.2 Importance of clear objectives

APIA considers that as a general proposition, an explicit statement of the objectives of a regulatory instrument is desirable as it:

- reduces the uncertainty surrounding interpretation of the Code;
- facilitates enhanced regulatory accountability; and
- reduces regulatory risk.

5.2.1 Clarifying the intent of the Code

There are at least three separate passages in the Gas Access Regime that can be considered to be statements of the Code's objectives, and they are inconsistent with each other to some degree. Whilst the decision of the Western Australian Supreme Court's judgement in the DBNGP Decision has served to clarify how the existing provisions interact in a particular instance, APIA submits that the key lesson from that case is the importance of an unambiguous statement of the objectives of the Code.

We have now seen the first round of regulatory reviews involving the development of initial access arrangements under the Code either completed or substantially progressed. APIA recognises that regulatory authorities often find themselves with a difficult challenge in applying the Code as there are clearly a range of interests to be balanced throughout a regulatory process. Nevertheless, APIA submits that the width of the discretion afforded to regulatory bodies in the Code has resulted in a failure to have sufficient regard to the consequences of regulatory error and the lack of precision of the instruments available to regulatory bodies. APIA expands on this theme below.

APIA believes that clarifying the intent of the Code with an objects clause that reflects a sound balance between the various competing factors provides an important way that policy makers can provide clear direction to the way in which regulatory discretion is to be exercised. It will also assist in promoting socially desirable outcomes by:

- facilitating enhanced accountability of regulators; and
- reducing regulatory risk.



5.2.2 Facilitating enhanced regulatory accountability

A pressing issue for the pipeline industry, and for governments, is the risk to future pipeline investment posed by regulators applying the wide discretions created by the current form of the Code. The difficulty emerges because under the current environment, there is an absence of definitive guidance to regulators on how their discretion should be exercised and, as a consequence, a limited degree of regulatory accountability for their decision. APIA believes that this absence of statutory guidance has seen the focus of regulatory activity on the removal of monopoly profit (rather than any real consideration of long term economic efficiency) and the emergence of regulatory creep in decision-making.

Removal of monopoly profit the focus of regulatory activity

APIA believes that these wide discretions have seen regulators pursue the removal of perceived monopoly profit as the principal focus of regulatory activity, rather than considering the merits of promoting economic efficiency in terms of economically efficient use of and investment in pipelines and related infrastructure. For example, APIA notes the recent comments by a senior regulator that:²⁴

(The) aim of regulation is to constrain the ability to charge monopoly prices through effective price regulation.

Whilst APIA acknowledges concerns about monopoly pricing, it hardly considers that this objective represents “the aim of regulation”. Rather, APIA believes that the focus of regulation should be on pursuing economic efficiency, and in turn, addressing the abuse of monopoly power in a way that is not antagonistic to society’s interests. Indeed, APIA finds these public statements particularly disturbing as they can only create an expectation amongst users of gas infrastructure that prices will continue to fall through regulatory processes (and that achieving low prices, rather than enhancing efficiency and competitiveness, will be seen as the goal of regulation).

In contrast, APIA considers that if proper regard is had to the pursuit of economic efficiency and competitiveness, then greater regard would be had to the limitations of definitively identifying monopoly profit and the serious implications to economic efficiency from the

²⁴ J. Dimasi (August 2003) *Regulation in the infrastructure sector- a national approach*: Australian Financial Review second national infrastructure summit, Sydney



asymmetrical consequences of regulatory error. Yet, the view consistently expressed by senior regulators and, it seems, universally implemented in regulatory decisions, is that the removal of monopoly profit represents the legitimate focus of regulatory activity.

The key point is that there is currently no express legislative guidance on resolving this tension in the Code. It is only with an explicit list of objectives that dictate the primacy of those objectives included in the operative provisions of the Code that the appropriate guidance can be provided to those appointed to make determinations under the Code and that those parties can be properly accountable (whether through merits review or other mechanisms) for their application of those objects in regulatory decisions.

Emergence of regulatory creep

In APIA's view, the absence of guidance offered by clear regulatory objectives has also contributed to regulatory creep. Over the first round of regulatory reviews, APIA's experience has been that regulators have felt it necessary to adopt an "if in doubt regulate" approach to the scope of regulatory activity. Examples of the regulatory creep that has occurred include the willingness of regulators to ignore derogations from the Code (refer Case Study 7) and the foreshadowed increasing burden of ring fencing and cost allocation requirements.

Box 1 identifies the economic drivers of regulatory creep, being poorly aligned incentives, information asymmetries and ineffective accountability mechanisms. This only serves to highlight the importance of regulatory regimes contemplating the prospect of regulatory creep in regulatory design. In APIA's view, explicitly providing unambiguous objectives to focus of regulatory activity will provide a stronger basis for regulatory design. For example, a greater emphasis on the pursuit of economic efficiency would cause a greater focus on the costs and benefits of regulator requirements before they were imposed.

APIA supports the Commonwealth Government's response to the Productivity Commission's recommendation in its Review of the National Access Regime in relation to the importance of the objects clause in regulatory decision making under Part IIIA of the TPA in suggesting that a regulator's failure to explain how its decision meets the objects clause could form grounds for a merits review of the regulatory decision.²⁵

²⁵ Commonwealth Government, 2002, *Government Response to Productivity Commission Report on the Review of the National Access Regime*, page 4.



Box 1 The Economics of Regulatory Creep

Regulatory creep refers to the tendency for regulatory discretion to be exercised in a way that expands the scope and intensity of regulatory activity over time. APIA believes the following factors contribute to regulatory creep:

- poorly aligned incentives;
- information asymmetry; and
- accountability mechanisms.

Poorly aligned incentives arise because a regulator's incentives are fundamentally different to those that drive commercial activity. The discipline of the competitive market forces participants to focus on their comparative advantage as any failure to do so bears directly upon their commercial success. However, regulators operate in a different environment. There is the desire for regulators to establish their legitimacy, especially in the early stages of regulatory activity. This has manifested itself in an overwhelming desire to remove perceived monopoly profit – resulting in a redistribution upstream to producers and downstream to large commercial customers – rather than a focus on advancing long term economic efficiency by ensuring investment incentives are not adversely affected by the regulatory environment. In addition, in contrast to the commercial environment, regulators do not bear the consequences of their errors. Moreover, once a regulator is interposed in a commercial negotiation, users find influencing the regulator becomes their most effective commercial strategy. This dynamic only serves to entice the regulator into expanding its purview.

Information asymmetry tends to reinforce the adverse effects of poorly aligned incentives. For example, the perceived earning of monopoly profit tends to be immediately apparent in that the prices and profits of regulated businesses are generally transparent, so that any failure by the regulator to act attracts immediate criticism. In contrast, the costs and consequences of regulatory error in setting prices too low are generally not transparent and certainly not amenable to immediate quantification, as the full adverse impacts typically have a long gestation period. The first adverse effect that is likely to arise from a regulator setting prices too low is likely to be that the infrastructure owner fails to maintain and invest in the infrastructure, which, over time, will create an increased risk of failure of the system. This is likely to be followed by increasing congestion over time that will overwhelm any short term benefits customers enjoyed from lower prices. Neither of these impacts is transparent and both are likely to exhibit a long lag. Finally, when these problems become apparent, there is the likelihood that they will become another regulator's problem to resolve, creating a moral hazard issue.

Accountability mechanisms also contribute to regulatory creep over time. The principal accountability mechanism for regulators is judicial review. However, judicial review, unless it involves a rehearing of the original decision, focuses attention on the quality of the *process* rather than the quality of the *decision*. One unintended consequence of the availability of this kind of judicial review is that regulatory processes are process oriented which can further slow regulatory decision-making and indeed exacerbate regulatory creep. This becomes particularly problematic given the wide discretion regulators are typically conferred. In contrast, merits review, which would focus on the quality of the decision itself, is generally not available from regulatory decisions.

Regulatory creep has a potentially significant negative economic impact as it is likely to lead to the expansion of regulation to areas which are unjustified from a cost benefit perspective.



5.2.3 Ameliorating regulatory risk

One of the greatest present disincentives to investment is the unacceptably high level of regulatory risk imposed by current legislative and institutional arrangements. Case Study 1 and Case Study 2 respectively exhibited the sensitivity of pipeline investment to discount rates and the assumptions adopted by regulators. Certainly a clearer and more effective statement of objectives will go some distance towards the goal of minimising this risk.

Accordingly, APIA considers that it is critical that the current objectives outlined in the Introduction to the Code are conferred a more substantive status as operative provisions in their own right. In addition, APIA believes that the objectives must be amended to bring them into line with the Productivity Commission's recommendations on Part IIIA of the TPA. In particular, this requires the objects clause recognise the primacy of the regulatory regime encouraging efficient investment.

5.3 Objects clause to recognise promoting efficient use of and investment in gas pipeline infrastructure

Gas transmission infrastructure is highly capital intensive. Creating an environment that is conducive to new investment is pivotal to gas continuing to significantly contribute to Australian economic growth, including through maintaining the existing asset base, delivering basin-on basin competition and meeting expected growth in demand at minimal cost.

Case Study 8 illustrated that the continued growth in natural gas transmission infrastructure is taking place despite, rather than because of, access regulation. As set out in section 2 of this submission, APIA believes that regulators have tended to use the discretion available to them under the Code to make the removal of monopoly profit the focus of regulatory activity. In so doing, APIA considers that regulators have not paid sufficient regard to the imprecision of the data inherent in cost of service based approaches and the asymmetrical consequences of error. A specific requirement for regulatory authorities to have regard to the need to promote efficient investment would go some way to alleviating this tension.



In relation to the lack of precision inherent in regulatory decision making, APIA endorses the Productivity Commission's findings in its review of Part IIIA of the TPA where it stated:²⁶

These considerations suggest that regulators should not be too ambitious in their approach, and that governments should not place too great a level of expectations upon them. A sensible goal is to improve on unregulated outcomes, but recognise that precision is not possible with the information and instruments available.

APIA believes that assessment of any regulatory intervention in the economy must recognise its weaknesses and adverse unintended effects. In the presence of uncertainty, there should be a bias towards outcomes which promote socially desirable investment as any failure to do so will not be consistent with the pursuit of economic efficiency. This asymmetry was amply illustrated and demonstrated in the Productivity Commission's review of Part IIIA where it stated:

The possible disincentives for investment in essential infrastructure services are the main concern. In essence, third party access over the longer term is only possible if there is investment to make these services available on a continuing basis. Such investment may be threatened if inappropriate provision of access, or regulated terms and conditions of access, lead to insufficient returns for facility owners.

While the denial or monopoly pricing of access also impose costs on the community (see above), they do not threaten the continued availability of the essential services concerned. Thus, over the longer term, the costs of inappropriate intervention in this area are likely to be greater than the costs of not intervening when action is warranted. The substantial information and other difficulties that confront regulators in establishing access terms and conditions, make this asymmetry in the benefits and costs of access regulation even more important in a policy context.²⁷

²⁶ Productivity Commission (2001), *Review of National Access Regime*, Position paper, Canberra, March, page 207.

²⁷ Productivity Commission, "Review of the National Access Regime. Position Paper", March 2001, pp xviii-xix.



APIA considers that the object of encouraging efficient investment should expressly recognise the asymmetrical consequences of regulatory error. The way in which uncertainty in these parameters is resolved sends very strong signals to the integrity of any regulatory commitment to promote efficient investment. This means that dispute resolution processes should err towards the high side for those regulatory parameters with a high degree of variability, that is, those values that do not lend themselves to point estimation.

It is sometimes argued that “bygones are bygones” – however, it is the treatment of past investment that signals to rational investors how new investment will be treated. In other words, the way in which regulators regulate existing infrastructure sends a very strong signal to those considering investing in infrastructure as to the nature and extent of regulatory risk. Because of the importance of this signal, promoting efficient investment in the provision of transmission infrastructure should be at the very heart of the regulatory arrangements for existing infrastructure. The fact that one of the major impacts of regulation can be its effect in distorting investment only serves to highlight the imperative for suitable guidance to be provided to regulators and the Courts in this respect.

Finally, it is worth noting that the existing Code contains a specific objective that the abuse of monopoly power be prevented. APIA reiterates that this objective in itself is not misplaced, but there is a degree of tension between it and the objective of promoting the efficient use of and investment in pipeline infrastructure.

For example, section 8 and Case Study 1 highlighted the extent to which incremental gas flows can be accommodated at relatively low marginal cost. In such an environment, there is considerable scope for socially desirable price discrimination.²⁸ However, to the extent that regulators apply reference tariff prices there will tend to be gravitation towards average cost pricing outcomes. To the extent that regulation limits the extent of price discrimination, such as can occur where a regulator adopts a simplistic focus on the removal of monopoly profit, a considerable allocative efficiency loss in the use of gas pipeline infrastructure can be imposed on the community. Such an outcome is clearly inconsistent with the efficient use of pipeline infrastructure.

Accordingly, the tension between the pursuit of economic efficiency and the removal of monopoly profit arises principally for two reasons:

²⁸ Whether on the basis of volume (second degree price discrimination) or particular customers attributes, such as a price link to electricity prices (third degree price discrimination).



- because there is uncertainty as to the outcomes of regulatory processes and this uncertainty affects the capital costs associated with gas pipeline infrastructure. The tension could be resolved if a regulator (and the investor) had perfect knowledge about the conditions under which the investment was made and the future cash flows that would flow from the investment. However, clearly this does not exist in practice – and competitive capital markets will price the uncertainty associated with the regulator’s decisions and the consequences of those decisions into the capital charges for new investment proposals.²⁹ This translates into a tension between the removal of monopoly profit and the incentives to invest in the future; and
- because the investor will not be able to capture the full social surplus that arises from its investment (especially where regulation removes or limits the scope for efficient price discrimination), the effect of regulation will be to distort the extent and timing of investments.

APIA supports the Productivity Commission’s conclusions that the primary objective should be to promote efficient use of and investment in gas pipeline infrastructure.

APIA considers that the statement of objectives for Part IIIA of the TPA, proposed by the Productivity Commission should be incorporated in the preamble to the Gas Pipelines Access Act, and given primacy in the Gas Access Regime. The following wording is suggested, consistent with that point:

‘The object of the Code is to .. promote the economically efficient use of, and investment in gas pipeline infrastructure services’.

²⁹ Whilst this uncertainty may or may not directly affect the unsystematic risk of a project, it will be reflected in valuations through the cash flows attributed to a project.



6 Coverage Criteria

6.1 Introduction

The Productivity Commission's Issues Paper raises the following issues regarding coverage:

- is the current coverage test and its application appropriate? If not, why and how could the coverage test be improved?
- to what extent has the option to revoke coverage been utilised? Are any improvements required?
- what are the advantages and disadvantages of allowing regulators to apply for coverage of pipelines which they will regulate?
- how consistent should the Gas Access Regime's coverage criteria be with the criteria for declaration in Part IIIA and coverage criteria in other industry-specific regimes? What changes might be needed to achieve the appropriate level of consistency? and
- do submitters have any views on the Commission's recommendations on the National Access Regime (and the Government's interim response), particularly where they are relevant to the industry-specific access arrangements for gas pipelines?

6.2 Background to coverage issues

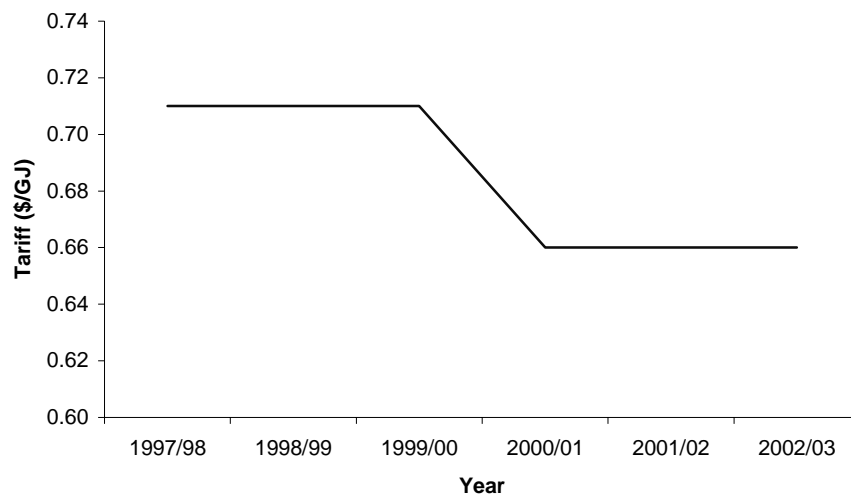
The National Gas Access Regime (the Code) was originally formulated in the post-Hilmer environment and enacted in various states between 1997 and 1999 to facilitate the introduction of free and fair trade in gas in Australia. At that time it was presumed that all transmission pipelines were monopolies with respect to their destination markets. This is in part natural, as there was then limited inter-basin or supply competition in Australian gas markets, and the present convergence trends between gas and electricity were not as evident as they are today. The industry was also influenced by the "promise" that the Gas Access Regime would deliver "light handed" regulatory outcomes.

Since that time the construction of new pipelines, particularly in South Eastern Australia, has brought the possibility of a national gas pipeline "grid" close to reality (as discussed in section 3.6, these pipelines have been established in spite of the presence of the Code). In this grid, multiple pipelines interconnect at gas fields, city gates, and hubs, providing a



multiplicity of possible transportation paths serving each gas basin and each destination. This development, crystallised by the completion of DEI's EGP and further enhanced by the recent VicHub interconnection facility, has placed gas basins in competition with each other to sell gas into major markets such as Sydney and Melbourne and for major supply basins where multiple producers are competing to capture customers (such as the Carnarvon Basin in WA). For the first time, gas producers, who are unregulated, face some pricing discipline through competitive forces. Moreover, it is clear that the choice that the EGP has provided customers has resulted in very real price pressure being exerted on the MSP since the financial commitment of EGP in 1998, as evidenced in Figure 3.

Figure 3 MSP nominal transmission prices for gas to Sydney³⁰



A national gas pipeline grid also creates benefits in the form of fault tolerance, or route redundancy. This feature proved its usefulness when the Interconnect, linking the Cooper Basin to Melbourne was used to supply gas to Melbourne during the Longford plant crisis. The Interconnect and VicHub facility also played a similar role later when a problem at the Moomba plant necessitated the shipment of gas from Longford to Sydney.

³⁰ Indicative price in nominal \$/GJ at 100% load factor excluding GST.



Another significant development since the Gas Access Regime was introduced is the increasing convergence between gas and electricity markets. The convergence of energy markets, together with the reality that pipelines bringing gas to markets currently served by other energy forms do not possess market power, highlights the fact that coverage decisions need to be considered in the context of a market test.

It is also the case that many of the pipelines that comprise the Australian gas transmission network simply do not possess any market power (and most importantly, did not do so when the terms and conditions of their operation were being determined). For example, several lateral pipelines serve individual customers and there is no basis to subject such pipelines to regulation, as their construction is the direct result of commercial negotiation between the sole user and a range of potential pipeline owner/operators.

In several significant respects, the Code has not kept pace with these developments. Many of the assumptions underpinning it are no longer valid, and will become increasingly anachronistic as present energy market trends continue. Persisting with the Code in its present form is likely to place at risk the investments which are needed to complete the transformation of Australia's energy markets to nationally integrated, flexible, highly substitutable, and fault-tolerant energy delivery systems.

6.3 Section 1.9 (a) “promotion of competition in another market” test

The coverage test in section 1.9 (a) is exactly analogous to the declaration test at clause 44G(2) (a) of the TPA.

It is important to recognise that for those cases where revocation of Coverage has been achieved by pipelines, it has almost always been the section 1.9 (a) promotion of competition test upon which revocation has succeeded. Therefore it is essential that this important test not be invoked to “cover” a pipeline (ie subject it to regulation) in cases where the downstream competitive benefits are doubtful, or extremely speculative. Hence, APIA supports the Productivity Commission's recommendation of amendments to the promotion of competition test under Part IIIA being applied to the Gas Access Regime.

In this context it would be helpful if the NCC were obliged in its reasons to outline the mechanism by which it believes competition in another market may be advanced or promoted in cases where the NCC is satisfied that the test is met.

Another issue that has arisen concerns whether the increase in competition to justify coverage should be a “substantial” or a “material” increase. APIA is not certain of whether



or not the differing expressions are significant. However, it supports maintaining the reference to a “substantial” increase in competition because of the well accepted precedent that has developed around the meaning of that term in decisions under Part IV of the TPA. As such, adhering to such a formulation is less likely to result in protracted litigation.

Consideration could also be given to replacing the word “promote” by “achieve”, or “be more likely than not to achieve.” This reflects the fact that “promote” has been interpreted to require no more than:³¹

the idea of creating the conditions or environment for improving competition from what it would be otherwise. That is to say, the opportunities and environment for competition given declaration, will be better than they would be without declaration.

This “opening the door” approach to the promotion of competition could undermine the effect of requiring the ultimate effect to be substantial – all that would be needed would be for the substantial impact on competition to be *facilitated* by declaration, as against being secured (or made likely to eventuate) by declaration.

Finally, APIA notes that the NCC has interpreted coverage criterion (a) by relying on the concept that coverage would remove a barrier to entry in upstream and downstream markets imposed by monopoly pricing by the pipeline operator.³²

The NCC cites as economic authority for these views a paper by Professor Ordover and Dr Lehr,³³ which makes a number of general statements applying to gas transmission pipelines which are heavily qualified. For example, in its concluding paragraphs, the Ordover and Lehr paper emphasises the limitations of their study:

³¹ Australian Competition Tribunal, Sydney International Airport [2000] ACompT 1 at para 106.

³² See, for example, NCC Final Recommendations, Moomba to Sydney Pipeline System: Revocation applications under the National Gas Code, November 2002, at paragraphs 7.449 and 7.490.

³³ Ordover and Lehr, “Should Coverage of the Moomba-Sydney Pipeline be Revoked?”, November 22, 2001. This paper is available on the NCC web site.



We have not engaged in a full-blown study that would enable us to opine whether the MSP meets the test for imposing coverage (or removing coverage) under the Gas Act. Our mandate has been narrower than that: we strived to offer some guidance regarding the possible interpretation of criteria (a) and (b) for imposing coverage. However, based on the limited data we have seen, we tentatively conclude that the case for removing coverage of MSP is not compelling. Plainly, MSP meets criterion (b). There is also evidence, albeit much less compelling, that MSP possibly meets criterion (a).³⁴

Ordoover and Lehr do note that,

“The combination of lower upstream and downstream margins from above-competitive transport rates, will tend to reduce incentives to invest in both upstream and downstream markets and therefore **could have** an adverse effect on competition in both of these markets.”³⁵ [emphasis added]

However they go on to outline a number of reasons why it cannot be automatically inferred from a pipeline’s natural monopoly characteristics that it is necessarily able to set prices at the monopoly level.³⁶ In fact, they also say,

“Nonetheless, we must caution that ‘competitive’ prices are notoriously difficult to estimate in network industries characterized by significant fixed costs and low variable costs.”³⁷

Moreover, APIA submits that there is simply no reason to presume that relatively higher prices in gas transmission (even if they could be obtained, which APIA doubts, given the countervailing power of buyers) will adversely impact upon competition in upstream or downstream markets. In effect, gas pipeline services are used in essentially fixed

³⁴ Ordoover and Lehr, p. 23.

³⁵ Ordoover and Lehr, p. 12.

³⁶ Ordoover and Lehr, pp. 12-13. Reasons cited include: a gas producer’s ability to sell into other retail markets via other pipelines, and the existence of other sources of supply for downstream markets.

³⁷ Ordoover and Lehr, p. 18.



proportions in both the upstream and the downstream service, and account for a very low share of the aggregate costs of those services (and would do so even at the benchmark pipeline prices for the MSP being referred to in the Ordover and Lehr study). As a result, it is implausible to argue that higher pipeline charges would so contract demand either upstream or downstream as to reduce the number of competitors and hence affect competition.

Additionally and more generally, pipeline owners have every interest in seeing intense and effective competition in both upstream and downstream markets, and would, if unregulated, promote rather than hinder it³⁸. Even if they had the ability to distort competition in dependent markets (which in APIA's view they do not), none of the conditions which would make it rational for pipeline owners to so do (such as variable proportions, double marginalisation or scope to use pipeline prices to profitably raise rivals' costs in related markets) are present in the pipeline service or in dependent markets. Indeed, Ordover and Lehr do not set these conditions out or explain why they would be plausible in the factual situation they were asked to consider. The mere assertion that an adverse effect "could" occur is hardly sufficient to make it rational for pipeline owners to cause such an effect, and is certainly not a sufficient base for treating such an effect as likely, be it in respect of the MSP or with respect to Australian pipelines more widely.

Despite the well-founded caution of Ordover and Lehr, upon whom they rely, the NCC has, in the case of the MSP revocation, come to the strong conclusion that the pipeline was setting monopoly prices, and that "*coverage would remove a barrier to entry imposed by monopoly pricing on the MSP.*"³⁹ [emphasis added] In other words, the NCC's interpretation of Ordover and Lehr has been to elevate a *mere possibility* into a *presumption*.

Somehow, the NCC has manage to invoke the views of Ordover and Lehr, who found that:

³⁸ Additionally, if exceptionally a pipeline owner did act in a way that materially distorted competition in a dependent market, there is no reason why this could not be remedied through the general provisions of Pt IV of the Trade Practices Act. As the circumstances which would make such behaviour possible or rational are largely if not entirely absent, there is no justification for special concerns with respect to potential anti-competitive behaviour by pipeline owners.

³⁹ NCC 2002. These words are found in paragraph 7.449 as regards promotion of downstream competition, and in paragraph 7.490 as regards promotion of upstream competition.



- the evidence that MSP possibly meets criterion (a) was not compelling, and
- cautioned against attempting to estimate ‘competitive’ prices in network industries with substantial fixed costs,

in order to conclude that the pipeline was monopoly pricing and that this would create a barrier to entry both upstream and downstream, so that coverage would promote competition. In doing so, the NCC has turned Ordovery and Lehr’s ‘*could have an adverse effect on competition*’ into the much stronger statement that ‘*coverage would remove a barrier.*’

This particular exercise of regulatory discretion has had far-reaching implications, as the question of pipeline coverage may hinge on such a judgement. The wording of the Gas Code’s test for coverage, which insists only that the NCC *be satisfied* of the matters contained in section 1.9, contributes to the problem because there is no requirement that the Council be reasonably satisfied, or that it provide reasons for believing that coverage would promote competition.

Certainly it is open to pipeline owners to appeal to the Australian Competition Tribunal, but they will incur high costs from doing so. The foregoing discussion has highlighted the importance, for criterion (a), of requiring the NCC to state how coverage would be more likely than not to achieve a substantial increase in competition, and to expose that hypothesis to testing before the final recommendation.

Accordingly, APIA supports the changes recommended by the Productivity Commission to clause 44G(2) (a), but believes that they should be strengthened in the Gas Access Regime.⁴⁰ The new wording of section 1.9 (a) would be:

“...and cannot recommend that the Pipeline be Covered, to any extent, if the NCC is not satisfied of one or more of the following matters:

- (a) that access (or increased access) to Services provided by means of the Pipeline would be **more likely than not to achieve a substantial increase in competition** in at least one market (whether or not in Australia), other than the market for the Services provided by means of the Pipeline;”

⁴⁰ Productivity Commission 2001, *Review of the National Access Regime*, Report no. 17, AusInfo, Canberra, Recommendation 7.1.



6.4 Section 1.9 (b) “uneconomic to develop” test

The test for coverage under section 1.9 (b) of the Gas Access Regime was evidently translated from the declaration test contained in section 44 (G) (2) (b) in Part IIIA of the TPA. The word “pipeline” was substituted for the word “facility”, but otherwise the wording is nearly identical:

“...and cannot recommend that the Pipeline be Covered, to any extent, if the NCC is not satisfied of one or more of the following matters:

- (b) that it would be uneconomic for anyone to develop another Pipeline to provide the Services provided by means of the Pipeline;”

The principle underlying the uneconomic to develop test should be that a pipeline should not be covered if it is reasonably open to an access seeker to develop some alternative facility, whether or not that facility is a gas pipeline, which can provide a service which is a good substitute for the service provided by the pipeline. ‘Development’ may consist of doing nothing (or simply putting another asset to the use), if there is already another pipeline which is capable of providing a substitute service. Viewed in terms of its substance, the test asks whether it is economic for an access seeker to bypass the pipeline in question. If so, then the pipeline is not a bottleneck, and should not be declared.

This fairly straightforward concept has become all but lost in the nuances of language employed in the current wording of the Code. Experience since the Code was legislated has revealed three problems with the current wording of the uneconomic to develop test:

- the substitution of the term ‘pipeline’ for the term ‘facility’ has unfortunate economic consequences, made all the more serious by the current convergence of gas and electricity markets;
- because the concept of the ‘services provided by means of the Pipeline’ has been construed literally by the NCC and the Australian Competition Tribunal, the uneconomic to develop test has become virtually useless in practical terms. The test is really a test for substitutability, which should invoke the economics of market definition; and
- the NCC and the Tribunal have adopted the convention of interpreting the term ‘economic’ as meaning economic from society’s point of view, rather than economic from the standpoint of an individual firm’s financial position. Additionally, the test has been seen as invoking a counterfactual which is decided on ex ante terms: i.e. assuming the pipeline at issue was the only pipeline providing the service, would it



be efficient, from a societal perspective, for a duplicate pipeline to be built? This has led to the absurd position that pipelines have been considered uneconomic to duplicate even when they have been duplicated by profitable firms acting rationally.⁴¹

All of these problems could be overcome by redrafting the test.

6.4.1 Substitution of “facility” for “pipeline”

Section 1.9 (b) has proven particularly problematic in practice. While it is clearly modelled on the Part IIIA test in section 44 (G) (2) (b), the substitution of “pipeline” for “facility” has prevented other non-pipeline facilities from being considered as possible means of bypassing the pipeline. In the present day, there are many and varied methods of substituting for the services provided by a pipeline which may not involve a gas pipeline at all. For example:

- electricity transmission can substitute for gas transmission in some cases, especially where the gas is being transported to a gas turbine—instead the gas turbine could be located near the gas field and the energy could be transported along wires instead of pipes;
- swap contracts can in some cases provide a substitute for gas transmission; and
- storage facilities, such as the Western Underground Storage system operated by TXU in Victoria and the Mondarra Storage facility operated by CMS Energy in Western Australia, can provide a peak shaving service which makes transportation of gas at peak times unnecessary.

In all likelihood, this drafting of section 1.9 (b) was inadvertent. However developments in the Australian energy markets since the Code was introduced have started to expose the problems caused by this choice of words. The result is that the test is excessively stringent to achieve its aims, which are to test whether the facility at issue is a bottleneck to competition.

⁴¹ The classic example of its type is the Tubridgi Pipeline which the NCC found was uneconomic to duplicate despite the fact that the Griffin Pipeline ran parallel to it for its entire length.



6.4.2 Correcting the “point to point” test

Second, the NCC’s expert submitted, and the Tribunal accepted in the EGP case that the service definition to be used in section 1.9 (b) is a ‘point-to-point’ definition. On this ground, the Moomba-Sydney Pipeline was judged not to be a substitute for the EGP, despite the fact that both pipelines competed to deliver gas to the Sydney and Canberra markets. Even the Interconnect, which had the same point of origin and the same destination as the EGP, was held not to provide the services provided by means of the EGP because it did not follow the same route. This same narrow reasoning has been applied by the NCC in recommending continued coverage of the MSP.

Generally speaking, it is not necessary to follow the same route as a bottleneck when one is bypassing it. Indeed, the standard economic test for bypass is whether any customer or combination of customers could profitably bypass the service that is provided – there is no basis for suggesting that the substitute service follow the same route as the service being assessed.

The essential question is whether the alternative facility provides a close substitute for the pipeline in question. Substitution effects can and should be studied with reference to the economic tools of market definition. In fact, DEI’s experts did present extensive quantitative evidence to the Tribunal which demonstrated that the Interconnect was a good substitute for the EGP, and that it was economic to develop the Interconnect to provide equivalent service to the EGP in a manner which would discipline any attempt by EGP to profit by increasing its prices above the competitive level.

While that evidence stood uncontradicted, the Tribunal ultimately applied a literal, as opposed to an economic, interpretation to the term ‘the service provided by means of the pipeline’:⁴²

... the service which the pipeline provides [is] a point to point service, regardless of the substitution possibilities which might exist at either end of the pipeline. ... The identification of the services provided by the pipeline arises independently of any analysis of the market or markets within which those services might be provided.

⁴² Duke decision of the ACT, paragraph 67.



APIA submits that this interpretation is too narrow. Ultimately, limiting the assessment under this criterion to whether the facility providing the service exhibits a sub-additive cost function ignores that the realities of the national market that is emerging from interconnected pipelines.

APIA submits that the interpretation adopted in the EGP case renders the “uneconomic to duplicate” limb essentially impotent given the scale economies that gas transmission infrastructure are well known to exhibit. The current interpretation means that, from an economic perspective, the “uneconomic to duplicate” criterion would rarely add to an assessment of whether a pipeline should be covered under the regime. This is highlighted by the curious results such a test can produce as evidenced in the NCC’s Tubridgi Pipeline decision which is briefly reviewed in Case Study 11.

Case Study 11 Tubridgi Pipeline

The Tubridgi Pipeline is duplicated along its entire length, and along the same route, from the Tubridgi gas processing facility to the Dampier-Bunbury Natural Gas Pipeline, by the Griffin Pipeline. In that case, the applicant argued that “the existence of two parallel pipelines of the same length [and running along the same route] demonstrates that it would be economic to construct another pipeline”. Notwithstanding that fact, the NCC concluded that it would be uneconomic for anyone to develop another pipeline to provide the gas transportation services provided by the Tubridgi Pipeline, and that therefore criterion (b) was satisfied.

Clearly the current interpretation of criterion (b) has resulted in nonsensical outcomes.

Indeed, one can test other forms of competition against the “uneconomic to duplicate” test and reach a conclusion that regulation would be appropriate where clearly it would not be the case. For example, consider monopolistic competition as outlined in Box 2. Few would suggest that a participant in a monopolistically competitive market should be subject to regulation yet this is a potential outcome from the NCC’s interpretation of criterion (b).



Box 2 Monopolistic competition and uneconomic to duplicate

Monopolistic competition arises where all firms supply differentiated products and consequently face a firm specific downward sloping demand curve. Firms in markets characterised by monopolistic competition therefore seek an equilibrium price that exceeds marginal cost. In addition, production output will be less than the minimum average total cost.

Thus, viewed on a firm level, at all levels of output, where the production technology involves fixed costs and lumpy capacity, it would appear that the relevant firm faces declining average cost. This would mean that (leaving aside the other limbs of the coverage test) such a firm's assets could not be economically duplicated under the NCC's interpretation of this criterion.

In essence, any service that is supplied in conditions in which producers with a fixed cost are differentiated by geographical location or by location in product space would appear to be uneconomic to duplicate, at least on the basis of the test suggested by the NCC. In such a case, demand is also firm-specific and all firms have downward sloping average cost curves, yet may be highly competitive.

APIA submits that the critical issue is whether a pipeline owner has substantial market power in respect of the services provided by the pipeline which in turn depends upon whether there exists a competitive constraint on the pipeline providing the services the subject of the declaration test. Such an interpretation focuses on the existence of alternative sources of supply. This wider interpretation would avoid the odd situation that can arise where two pipelines are competing "head to head" yet the services provided by both of the pipelines are found to be uneconomic to duplicate.

Finally, APIA notes that the Productivity Commission was conscious of the limitations of the "uneconomic to duplicate" test in its Review of the National Access Regime where it was stated:

In the Commission's view, the current state of case law has not established that there is a significant risk that facility services with natural monopoly characteristics but little market power, on account of the existence of substitute services, will be declared. Hence, at this stage of the development of Part IIIA, it does not consider that the uncertainty that introducing a significantly modified criterion could engender is warranted. (That said, the Commission reiterates its caution that it would be unwise to be complacent about the possibility of inappropriate declarations — see below.)

For the reasons outlined above, the Commission considers that provided that criterion (a) is strengthened, criterion (b) can operate as part of a two step test for determining whether a facility providing a service based on a natural monopoly technology is in a position to exercise substantial and enduring market power.



However, APIA notes that the NCC's recommendation that coverage of the MSP be retained demonstrates that amendment of criterion (b) is warranted. The fact that it has already been demonstrated that the EGP has exerted an influence on the pricing of the MSP simply highlights the competitive pressure that is already present in the market. Indeed, continued coverage of the MSP is likely to significantly and adversely affect competition between the MSP and EGP because of the impact of the reference tariff on pricing in the gas transmission market.

6.4.3 Social vs private perspective on economic duplicability

Finally, since the Tribunal's Sydney Airport decision (regarding a question of declaration under Part IIIA), it has been conventional to interpret the phrase 'uneconomic to develop' to mean uneconomic in a social sense. While this interpretation is logical in respect of a facility such as Sydney Airport, it has led to some troublesome results in the gas pipeline context.

Smaller pipelines have often been duplicated in practice. Pipeline competition has developed strongly in the past decade with the emergence of alternative supply routes to Sydney, Melbourne and Adelaide. Many of these alternative pipeline developments have been done by private firms acting rationally—seemingly demonstrating that these developments were economic.

However, the NCC has declared on numerous instances that because one large pipeline can provide the service of many small pipelines at less total resource cost to society, the existence of more than one pipeline on a particular route represents socially uneconomic duplication. On this ground, the NCC has consistently found that the uneconomic to develop test was met for every pipeline it had considered (even those pipelines for which the NCC recommended revocation on other grounds) until the Parmelia Pipeline revocation decision.

It is necessary at this point to return to the bottleneck concept which motivates the section 1.9 (b) test. If a pipeline has been bypassed, whether that bypass facility was built economically or not, then the bypassed pipeline is not a bottleneck, and it does not need to be Covered. That basic truth has become obscured by the complex argumentation and ambiguous language used in the Code.

In light of this analysis, APIA recommends the following change to the wording of section 1.9 (b) of the Code:

...and cannot recommend that the Pipeline be Covered, to any extent, if the NCC is not satisfied of one or more of the following matters:



- (b) that there does not exist and it would be uneconomic for anyone to develop another facility to provide the service or a close substitute for the service in the same market as that in which the service is provided by means of the Pipeline;

6.5 National significance test

The declaration criteria in Part IIIA contain a requirement that, to be declared, a service must be of significance to the national economy. There is no counterpart to this requirement in section 1.9 of the Code.

When the Code was enacted, a large number of transmission pipelines were automatically covered. These are listed at pages 72 – 96 of the Gas Access Regime in Schedule A. This schedule reveals that a large proportion of these covered pipelines are less than 100 km in length. In fact many are less than 10 km in length. Eventually and at some cost, the owners of many of these pipelines, which are often single-user industrial pipelines whose only customer is the pipeline owner, have succeeded over the years in achieving revocation. Arguably many of these pipelines should never have been covered in the first place.

A test of national significance would represent an efficient first-pass filter to avoid costly regulatory processes concerning the question of coverage of such pipelines.

6.6 Only bona fide access-seekers to apply for coverage

APIA believes that it is important to note that there has never been a coverage application as a result of a denial of access to a pipeline. Indeed, the coverage application made with respect to the EGP was commenced by a gas wholesaler who had not sought access on the pipeline. While APIA does not know the reasoning behind the application, presumably the wholesaler in question considered that ensuring regulation of the EGP would be in its commercial interests. That is, informed access seekers know that they will always be able to gain access at the lesser of the regulated or market price and as the regulatory process does not impact on their business, they have nothing to lose from implementing a regulatory process that may deliver them short term benefits. This is all the more the case as the vast bulk of the costs of the declaration process are borne either by the owner of the facility for which declaration is being sought or by the NCC (and hence the tax-payer). This makes seeking declaration a one-way bet from the point of view of the applicant.

The proper purpose of the Gas Access Regime, as with any natural monopoly regulation, is to prevent those possessed of very substantial market power from using that power in a way that is antagonistic to society's interests. APIA believes that the most appropriate response is



to confine coverage applications to those bona fide access seekers who believe their attempts to seek access to pipelines has been thwarted by a pipeline owner.

Limiting applications to situations in which access had been sought and not provided, or unreasonably delayed, would give greater weight to the commercial processes that should be central to the access mechanism. Moreover, by requiring access seekers to make 'good faith' efforts to obtain access before seeking declaration, it would provide a basic filter on the merit of access applications (as an applicant could not trigger the third party regime, and the costs it imposes on society, without at least attempting to obtain access on commercial terms). Related to this, it would help limit the burden the third party access regime imposes on taxpayers and on facility owners to cases where there might be genuine social gains from the incurring of that burden.

6.7 Merits review from coverage decisions

The Gas Access Regime currently provides for merits review of coverage decisions, including a full review of whether the decision should be remade. The contribution of merits review processes to coverage decision making in Australia is clear. APIA believes that there are strong reasons for continuing to protect the rights of parties to seek merits review of all coverage decisions by maintaining the existing rights.

The key reasons for promoting merits review of regulatory decisions are as follows:

- promoting accuracy in adjudication;
- reducing regulatory risk;
- promoting confidence in the regime; and
- consistency in Australian competition policy.

These considerations are addressed in turn below.

6.7.1 Promoting accuracy in adjudication

Regulation involves significant incursion into existing property rights. Australia's system of law and government generally affords a high level of autonomy to personal property. This suggests that decisions to interfere with these property rights should be able to be tested by an independent body via merits review processes both as a check against error and a means of ensuring balance in decision making.



In addition, greater accuracy in decision-making is also likely to promote public confidence in regulatory decision making.

6.7.2 Public confidence

The availability of merits review will also enhance public confidence in regulatory decision-making and in particular ensuring relevant decisions makers are able to successfully demonstrate the correctness of their coverage decisions. The importance of public confidence in this process is only highlighted by the role played by Ministers under the Gas Access Regime in coverage decisions. A judge of the Federal Court recently reflected these sentiments, when she observed that:

“Review tribunals ... bring a fresh and independent perspective to the consideration of the merits of each application in the context of the relevant law and policy. This is one of the significant advantages of having independent external merits review, particularly in relation to decisions that are politically contentious.

However, the existence of tension between agencies and administrative review tribunals should not be interpreted as something which is essentially negative. If administrative tribunals are undertaking review with appropriate regard to their proper function, tension can be interpreted as a sign of a healthy system of accountability”.⁴³

6.7.3 Reducing regulatory risk

The enhanced public confidence in the outcomes of regulatory processes will over time produce material benefits for all those affected by regulatory decision-making. This is because the process is likely to reduce regulatory risk, reducing the cost of raising funds and facilitating greater levels of investment in gas transmission infrastructure.

⁴³ "O'Connor D (June 2000), Lessons from the Past/Challenges for the Future : Merits Review in the New Millennium", Paper presented at the 2000 National Administrative Law Forum - Sunrise or Sunset? Administrative Law in the New Millennium, available at <http://www.aat.gov.au/speeches/lessons.htm>.



6.7.4 Consistency with merits review in Australian competition law

APIA is conscious of the availability of merits review in other contexts in Australian competition policy. For example, there are extensive rights to merits review from ACCC decisions under Part IV of the TPA. The ACCC Chairman has highlighted the value of such provisions:

Appeals against the ACCC's authorisation decisions can be made to the Australian Competition Tribunal, which conducts a re-hearing of the matter. This ensures that those dissatisfied with an ACCC decision can seek an independent review.⁴⁴

Bearing out the importance of merits review in this context, it is worth noting the contribution that review of Part IV decisions has made to the quality of Australian competition law. Issues such as market definition and the identification of market power, the nature of public benefits and the relation between competition and efficiency, have all been clarified in crucial respects by Tribunal decision-making.

Extensive provision for merits review of decisions is made in Part IIIA of the TPA. Indeed, the Commonwealth Government in its interim response to the Productivity Commission report on the Review of the National Access Regime accepted the recommendation that merits review be extended to ACCC decisions on undertakings. APIA agrees with this approach and considers it important that merits review for coverage decisions be maintained. APIA notes that the Hilmer Committee also emphasised the importance of appeal rights in access regimes⁴⁵.

⁴⁴ Alan Fels, *Business Review Weekly*, "Public interest reigns supreme", 18th April 2002, p.24. Emphasis added.

⁴⁵ Independent Committee of Inquiry into Competition Policy in Australia (Chairman Professor F Hilmer), 1993 *National Competition Policy: Report by the Independent Committee of Inquiry into Competition Policy in Australia*, AGPS, Pg240



7 Industry Code of Conduct

7.1 Introduction

APIA and the gas transmission industry it represents, acknowledges that concerns have been expressed about the growing number of gas transmission pipelines in Australia that are either not covered under the Gas Code or have been removed from coverage as a result of successful revocation applications or appeals.⁴⁶

However, APIA contends (as discussed in more detail in Section 3.2) that these perceptions are at least in part a result of the “all in” approach initially adopted under the Gas Access Regime whereby gas pipelines that should never have been regulated were nevertheless “covered”. In some cases the revocation of coverage has emerged as a natural consequence of the application of the coverage test and a finding that coverage would not promote competition.

APIA believes that new pipeline capacity will increasingly be found not to possess market power as they will increasingly be competing with existing gas sources, or even with electricity transmission. As a result, the share of pipelines that qualify for coverage should decline, all the more so if the coverage test is amended along the lines discussed above. Even under these circumstances, APIA believes that the presence of the coverage test and associated threat of access regulation provides, and continues to provide, a strong incentive for pipeline owners to ensure that there will not be any misuse of market power (that is, the use of market power in an anti-competitive manner) and that the test provides a remedy where such misuse of market power is established.

Nevertheless, APIA believes coverage should be seen as a remedy where commercial approaches fail and also notes that its members have a long history of responsibly facilitating the provision of third party access to natural gas pipelines. Accordingly, APIA wishes to

⁴⁶ For example, the CoAG Energy Market Review noted that significant pipelines may not be covered by the Gas Code and that no effective mechanisms exist to ensure that pipelines not subject to the Code are operated in a way that will facilitate effective competition such as maintaining appropriate ring fencing of pipeline operations from upstream or downstream interests, provision of relevant information to the market and offering tradeable capacity.



proactively address these concerns and to ensure that the basis on which pipeline owners will provide access to major unregulated infrastructure is clearly stated. Consequently, APIA has been developing a Draft Voluntary Industry Code of Conduct. This Code of Conduct is in the final stages of development and is discussed below.

The purpose of this Code of Conduct is to set out a behavioural framework of guiding principles that support non-regulated, market responsive access to uncontracted spare capacity in gas transmission pipelines not covered under the Gas Code. Because providing access and selling capacity for unregulated pipelines is necessary to success, such practices are already substantially in place in different forms developed by each pipeline. Notwithstanding the presence of such individual approaches to ensuring access, the industry is keen to see the national gas market develop and recognises the benefits of a uniform approach in facilitating its development. A uniform voluntary approach also has the benefit of providing policy makers and access seekers with confidence without the cost of associated regulation.

7.2 Outline of the Draft Voluntary Code of Conduct

The Code of Conduct enables potential customers to understand the basis for commercial access to uncontracted spare capacity, establish protocols to facilitate effective commercial dealings between the parties, and outlines principles to assist commercial outcomes in the event of a dispute between the parties to the negotiations.

The Code of Conduct is intended to apply in situations where potential customers are being actively sought and/or are a real prospect. APIA believes that there will be situations, such as the development of a lateral pipeline for a specific end customer, where a commitment to commercial negotiation will be a sufficient basis for providing access to non-regulated pipelines. Accordingly, it is considered that the voluntary adoption of the Code of Conduct presents a reasonable balance given the prospect of coverage.

It is anticipated that the adoption of and commitment to the voluntary Code of Conduct will significantly advance a pipeline owner's claim that mandating regulated access to a pipeline will not promote competition in an upstream or a downstream market. For example, the code of conduct implicit in DEI's business policies and practices, later expressed in its Non-Discriminatory Access Principles proved particularly significant in the EGP case.

Further, recognising that new transmission pipeline development arises from commercial negotiation between pipeline companies and potential customers, the proposed Code of Conduct would not normally apply to foundation contractual arrangements.



The Code of Conduct (outlined in Case Study 12) aims to respond to the underlying perceptions as expressed in the Parer Report by:

- making a commitment to open access;
- providing an effective mechanism to ensure that pipelines not subject to the Gas Code are operated in a way that facilitates effective competition;
- establishing appropriate ring fencing of pipeline operations (in particular with respect to confidential information) from upstream or downstream interests;
- provision of relevant information to the market; and
- offering tradeable capacity to the market.

The Code of Conduct also responds to a number of other issues which the industry considers important in developing arrangements for non-covered pipelines that are pragmatic, non-intrusive and market responsive. While the Code of Conduct is still in a development phase, the basic approach and high level principles are unlikely to change significantly although the exact detail of how each behavioural principle is implemented may vary in each pipeline company's application of the Code of Conduct.

Similarly, it is expected that the Code of Conduct will evolve in order to better achieve its aims of supporting non-regulated, market responsive access to uncontracted spare capacity in gas transmission pipelines not covered under the Gas Access Regime. The Code of Conduct is based on eight key principles as outlined in the following box. DEI's experience with its Code of Conduct is described in Case Study 12 below.



Case Study 12 Principles for the Draft Voluntary Code of Conduct

The eight core Code of Conduct principles are the commitment to:

1. developing market-responsive pipeline services;
2. the use of non-discriminatory tariffs;
3. public disclosure of dealings with affiliates;
4. public disclosure of key contract details;
5. protection of confidential information;
6. facilitate capacity trading;
7. performing independent external audits of compliance with the principles; and
8. binding independent dispute resolution process⁴⁷.

The principles for the Draft Industry Code of Conduct have been developed using, as a starting point, Duke Energy International's Non Discriminatory Access Policy which is currently applied to DEI's non-regulated pipeline assets (the EGP from Longford to Sydney and the newly constructed TGP).

DEI have indicated that since commissioning, the EGP has managed to capture 30% of the Sydney gas market (principally through competition with the MSP) and is currently operating at between 60% and 70% of currently configured capacity. Unlike many pipelines regulated under the Code where the only new services used are the reference services (due to the removal of the basis for negotiation discussed elsewhere in this submission), over the three years of operation of the EGP seven distinct products offerings have been developed.

DEI has indicated a willingness to offer a more entrepreneurial range of products than could be offered under the Code. An example is the service offering representing a firm forward service with the transmission price varying with the price of another product (eg gas transmission prices varying with electricity prices at the offtake point).

As part of its pipeline marketing activities, DEI posts on its web page a number of basic services (and the associated terms and conditions of access for those service) that it is prepared to offer the market at any point in time. Access seekers can review the current offerings and then approach DEI with a view to either accepting the service offering as posted on the web, or negotiating a service offering that better suits its needs (either via a minor change to an existing offering or through more substantive change). The most common areas for negotiation include the priority of the service, the path, the length of the contract, or simply the price.

...contd

⁴⁷ It is important to note that the arbitration under the voluntary Code of Conduct is limited to disputes with respect to the application of the Code itself and do not include arbitration with respect to price.



Case Study 12 Principles for the Draft Voluntary Code of Conduct (contd)

DEI's Non Discriminatory Access Policy also commits its marketing staff to respond to customer enquires within certain periods of time, to publicise available capacity and to inform the market of all contracts entered into with its affiliates. The whole basis of DEI's NDAP is to ensure maximum transparency.

Since commencement of commercial flows on EGP, DEI has entered into 15 different contracts for services. These include a range of different firm forward haul, backhaul, park and lend, and even measurement services. The wide range of service offerings that have been made available reflect the flexibility DEI's NDAP provides to pipeliners so that it can be innovative and meet needs of the market. This compares to the approach under the Code where the services offered under the access arrangement are basically a one size fits all approach.

This is a clear example of the positive impact that such an unregulated framework can have on gas transmission services and how effectively the negotiate model can work.

7.3 Effective Date for Commencement of Code of Conduct

In practical terms, effective, auditable implementation of this approach requires careful definition of a commencement date. Pipeliners have selected the date of the first commercial gas flows on an uncovered pipeline as the most practical date for commencement of this Code of Conduct and associated supporting procedures and work instructions.⁴⁸

⁴⁸ In practice, this will exclude foundation contracts from the application of the Code of Conduct. This is considered appropriate given both the practical impossibility of applying an auditable Code of Conduct to foundation contracts that are negotiated prior to project commencement and the fact that such contracts are negotiated during a time when the development is fundamentally contestable (see also section 7.4.1).



8 Basis for reform of the Gas Access Regime

8.1 Introduction

In relation to transmission pipelines which are covered by the Code, the revisions to the Gas Access Regime that APIA considers are fundamental to creating an environment that is conducive to enhancing the benefit that gas transmission pipelines can deliver to the community relate to:

- the return to the primacy of commercial negotiation through the adoption of a negotiate-arbitrate model;
- the specification of information provision requirements to inform the negotiation process;
- the adoption of less intrusive ring fencing arrangements;
- the adoption of pricing principles to guide negotiation and arbitration processes;
- the recognition that timely arbitration processes provide a necessary protection to access seekers and therefore must be available under a revised Gas Access Regime.

These issues are considered in turn.

8.2 Recognising the primacy of commercial negotiation

APIA considers that it is essential that the original approach developed under the National Competition Policy is reinstated for application to the gas transmission pipeline sector - namely, that nationally significant bottleneck infrastructure which satisfies a clear coverage test should be subject to an open access negotiate-arbitrate model.

Such a model is characterised by a framework aimed at encouraging parties to negotiate in good faith in an environment where all information critical to successful commercial negotiation is available to both parties, thereby facilitating market based outcomes where possible.



APIA agrees wholeheartedly with the Commission's sentiment expressed in the airports inquiry that:⁴⁹

“...the full benefits of privatisation of airports are unlikely to be realised if commercial relationships between airports and airlines continue to be heavily conditioned by intrusive price regulation.”

8.2.1 Origins of the negotiate arbitrate model

This negotiate-arbitrate approach to access regulation grew out of the report of the Independent Committee on National Competition Policy in 1993 (the “Hilmer Report”), which recognised the need to introduce a system of regulation in Australia to infrastructure exhibiting “natural monopoly characteristics”. The concern was that in some cases, the exercise of monopoly power could lead to a denial of access to the services of certain facilities that were essential for competition between other firms relying on the services as an input to production.

The Hilmer Report called for a “light-handed” approach to regulation based on a “negotiate-arbitrate” model, in which commercial negotiations were preferred to more prescriptive regulation where a regulator directly set terms and conditions of access. Indeed, the Hilmer Report indicated that:

it may be appropriate to allow the parties to come to their own arrangements, and only declare such a right if experience shows that access is being abused.

This was the approach that was adopted in implementing Part IIIA of the TPA. Under Part IIIA, access is intended to be negotiated privately, with the parties having recourse to binding arbitration by the Australian Competition and Consumer Commission only when they fail to reach agreement.

The development of an industry specific regime for the gas sector was flagged in the national competition policy. The resulting Gas Access Regime was intended to facilitate the introduction of “free and fair trade” in gas in Australia. Industry specific regimes such as the Gas Access Regime were aimed at ensuring a more appropriate focus and therefore a greater

⁴⁹ Productivity Commission (January 2002) Inquiry Report Price Regulation of Airport Services pg357.



level of certainty and consistency of access regulation for gas pipelines than was possible under the national access regime.

Unlike Part IIIA, however, the Code establishes a far more prescriptive, “heavy-handed” form of regulation. Despite the expressed intention in the preamble to the Code, terms and conditions of access are not (as a matter of practical fact) established by market negotiation, but by regulators who generally possess insufficient information about the commercial environment to perform this function without the risk of imposing substantial costs on the parties.

8.2.2 Access under the Gas Code

The current approach to gas pipeline access regulation is based on major reviews of access arrangements by the regulator on a roughly 5 yearly cycle. Under the Gas Code, service providers must identify those services that a significant proportion of the market is likely to seek and a reference tariff must be established for those services. While the Code specifically allows for the parties to negotiate an alternative price/service offering, it also provides that where there is a dispute over a service for which a reference tariff applies, the arbitrator, in resolving the dispute, may not vary from that reference tariff.

Further, the approach universally adopted to establishing the reference tariff is to base it on an “efficient cost” building block model, which delivers an estimate of the total revenue required by the service provider in order to continue to provide the service at the lowest sustainable cost. This total revenue is then effectively divided by forecast demand to arrive at a unit reference tariff. However, this approach requires estimation of a broad range of critical values for inputs including the value of assets employed, the weighted average cost of capital, return of capital, efficient operating costs and forecast volumes. Clearly, there will a range of possible values for these inputs and the resulting estimated price need not correlate with the price likely to arise in a competitive market, a fact recognised by the Australian Competition Tribunal in its 2001 EGP decision (para’s 109 and 110).

AGL argued that the extant competition was not efficient competition because the downstream and upstream markets were not fully competitive, and there was no evidence presented that the prices being charged by EGP were prices that would result from the operation of efficient competition. With respect to the first point, criterion (a) requires a consideration of whether competition would be promoted not whether it is efficient. With respect to the second point, the AGL argument was that a tariff set under the Code represents the price which would be produced by efficient competition because that is what the Code requires in s 8.1; it then



follows that a difference between the Duke tariff and one determined under the Code is evidence that there is not efficient competition even when there is competition in the marketplace.

This argument does not take sufficient account of the fact that regulation is a second best option to competition. The complex nature of the tariff-setting process, the number of assumptions it relies on, and the fact that the reference tariff is a publicly available price which may be varied by negotiation between the pipeline owner and user depending on the user's requirements and conditions in the marketplace, all point to the fact that the reference price is not necessarily the price which would result from competition. Indeed, ACCC in its Draft Decision on MSP tariffs pointed out that if the EGP did not exist the reference tariff for the MSP would be lower as it would be transporting more gas. This is not what one would expect in a competitive market (Draft Decision at 97).

In fact, under the Gas Code, the only pipelines likely to offer discounted services are those which should not be regulated in the first place – since it is pipelines with no market power that are most likely to be faced with taking the lesser of the market price or the regulated (reference) price.

Under the form of regulation that has been adopted, certain reference services must be mandated and the quality of these services monitored by regulatory oversight (an information intensive exercise). In circumstances where a service was commercially negotiated however, no such regulatory oversight or information burden exists, as the customer is continuously aware of the service he is receiving and has contractual redress should the service quality not meet the agreed standard. Thus the current regime stifles service innovation as it drives participants to only offer (or accept) the service associated with the reference tariff and therefore limits incentives for negotiated outcomes. APIA considers that a return to the original intention of the Gas Access Regime is required – namely that access seekers would have access to sufficient information to be able to negotiate with the access provider. Unfortunately, the construction of the Code is that it obliges the regulator to make decisions about efficiency of costs and exercise broad discretion and in so doing seek information in an increasingly detailed and intrusive manner. This is not consistent with the reality that an access seeker is capable of determining a reasonable price for access to bottleneck infrastructure such as a pipeline and engaging in commercial negotiations (with recourse to dispute resolution as necessary). Consequently, APIA believes that it should not be necessary for the regulator to be required to step in and forcibly collect (what it considers to be) the required information and calculate a "reasonable" cost of providing the service.



8.2.3 Proposed negotiate arbitrate model

APIA believes that, in contrast to the current heavy handed model, a light handed negotiate-arbitrate model will be more for the gas pipeline industry, especially when regard is had to factors such as concentrated buyers holding countervailing power and the history of successful commercial negotiation (refer section 2). APIA endorses the Productivity Commission's view that commercial negotiation provides an opportunity for more productive commercial relationships to evolve, whilst providing the discipline afforded by arbitration processes.

The negotiate-arbitrate model applicable to covered pipelines envisaged by APIA would involve a potential customer approaching a service provider either in response to an existing service offering or in order to negotiate a new or revised service offering. Both parties would provide sufficient information on the nature of the service being sought or offered to allow the parties to assess its commercial viability.

Where the access seeker is unable to reach a satisfactory outcome, they would be able to lodge notice of a dispute. This would invoke a process whereby in the first instance, the failure of the negotiations would be drawn to the attention of the chief executives of the service provider and access seeker in order to ensure that all internal avenues for dispute resolution have been addressed. Failure to reach agreement in a reasonable time frame at this stage would allow the access seeker to seek formal arbitration. The arbitration panel would in the first instance assess whether the access seeker had made a legitimate attempt to negotiate access, if so, the panel would assess the dispute and make a binding determination based on the pricing principles.

8.2.4 Efficiency of negotiate arbitrate model

APIA believes that the characteristics of the environment in which access to gas pipelines is negotiated is particularly conducive to a negotiate arbitrate approach and that in fact it will provide a significantly lower cost option than the current regulatory framework. The key issues concerning the relative administrative efficiency and efficacy of the current arrangements vis a vis the negotiate arbitrate model are as follows:

- the bargaining power of the parties involved in gas transmission disputes (should any arise) is far more likely to be equal for gas transmission than is the case in other infrastructure industries. Figure 1 illustrates the extent to which pipeline capacity across Australia is concentrated on the demand side. Similarly, the size of the customers and the magnitude of the services they purchase suggest that they would be both willing and able to enter into arbitration should this be necessary;



- arbitration processes offer mechanisms to motivate both the pipeline owner and the customer to conclude arrangements commercially without actually resorting to arbitration. For example, arbitrators will not only have the discretion to make orders as to the payment of its costs, but also the costs of each of the parties as part of its determination. APIA believes that such a power will provide a substantial motivation for interested parties to conclude arrangements commercially. The current regulatory framework provides no such mechanism – indeed, the EGP litigation was instigated at no cost by an application from a wholesaler who had not even attempted to secure access to the pipeline. Similarly, the interposition of the regulator between commercial players under the current regime invariably distorts incentives – the most cost effective option for access seekers is often to prematurely resort to the regulator rather than pursue negotiated outcomes;
- information asymmetries are not as significant for gas pipelines as with other industries. This is because pipeline economics represent the most straightforward of all infrastructure industries - any customer can quickly and cost effectively secure a thorough understanding of a pipeline’s costs. For example, it is well known that over 90% of the cost of a pipeline are capital related and these are capable of reasonably precise estimation by experienced engineers. Parties’ incentives to reach agreement would also be helped by pricing principles in the regulated regime – to the extent that principles (discussed below) can provide guidance to the parties, the likelihood of disputes can also be lessened;
- the transaction costs of the current regulatory framework are extremely high. For example, APIA’s members estimate that they have expended the sum of \$ 14 million in interfacing with the first round of regulatory reviews (with an additional \$13 million being expended on litigation associated with these reviews). To this figure should be added the regulator’s costs and those of other stakeholders being involved in regulatory processes. The light handed model proposed by APIA allows an efficacious regulatory regime to be administered for a fraction of the cost. APIA therefore considers that the inefficiencies of the current regulatory framework effectively imposes a deadweight cost to the community; and
- the economics of gas pipelines is such that they provide significant scope for socially desirable price discrimination – the fact that DEI has already developed 7 products for the EGP readily demonstrates the scope for product service offerings to be



tailored to the market. Again, the negotiate arbitrate model is well suited to encouraging the socially efficient and desirable forms of price discrimination recommended by the Productivity Commission in its Part IIIA review.⁵⁰

8.2.5 Need for change

APIA believes that it is essential to modify the regulatory framework to remove the role of the regulator as an intermediary between access seekers and service providers and that the nature of the market served by gas transmission infrastructure is particularly well suited to a negotiate-arbitrate model. It is only by doing this that both parties will be in an environment which is conducive to good faith negotiations in the knowledge that there will be an independent arbitrator available in circumstances where an access seeker's genuine efforts to negotiate have not seen a satisfactory resolution. In this respect, the specification of a negotiation framework is critical.

8.3 Negotiation framework

Having accepted the premise that there should be no automatic role for the regulator in negotiations, we must turn to what form the Code should take in order to protect the interests of access seekers.

APIA considers that the key issues revolve around ensuring transparency and ring fencing.

8.3.1 Disclosure

APIA believes that the Code needs to clearly state the obligation on access providers to inform access seekers of critical commercial information. For example:

- key service characteristics including:
 - path (receipt and delivery points). The transport path is a critical input into pricing both in terms of the amount of infrastructure used and possible

⁵⁰ Productivity Commission, "Review of the National Access Regime", Inquiry Report, September 2001, page 338 (Recommendation 12.1).



- incentives or premiums associated with under utilised paths or congested paths;
 - priority (firm or interruptible);
 - price (\$/GJ);
 - term (months or years);
 - load profile etc;
- commitment to reasonable timeframes with respect to issues within the control of the service provider.

Any failure by a pipeline to deliver this information in a timely manner should trigger the regulator's involvement. This involvement would be in the first instance an ability to issue a notice to the pipeline owner indicating deficiencies in the information provided to the access seeker. However, the focus on ensuring adequate information disclosure to support negotiation needs to recognise that the access seeker also has an obligation to provide information in a timely manner to ensure the service providers ability to respond to their application.

8.3.2 Ring fencing

With respect to ring fencing, APIA acknowledges that credible ring fencing requirements form a legitimate component of a Gas Access Regime and provide access seekers the confidence that their commercial position will not be undermined. In addition, ring fencing is important in allowing the efficiency benefits of vertical integration to be retained while ensuring the promotion of competition. As such, APIA is broadly supportive of retaining the existing ring fencing requirements in section 4.1 of the Gas Code.

However, APIA is concerned that in addressing requirement 4.1(e):

allocate any costs that are shared between an activity that is covered by a set of accounts described in section 4.1(c) and any other activity according to a methodology for allocating costs that is consistent with the principles in section 8.1 and is otherwise fair and reasonable,

regulators have added unnecessary complexity and interference in the commercial operations of pipeline businesses through requiring the adoption of regulator approved or published accounting guidelines as provided for in section 4.2. A particular example of this



is a guideline issued by the Queensland Competition Authority about collection of regulatory accounting information. This guideline was similar to a Code amendment proposed by regulators to NGPAC that sought to require Service Providers under the Code to collect accounting information in a particular form, but with a requirement to allocate shared and common costs in a particular manner. Through these guidelines, regulators are able to prescribe a method of collection and allocation of shared costs in an arbitrary manner which need not correlate with the way the business is operated and is not the way the Service Provider would allocate costs in an Access Arrangement. APIA believes it is inappropriate for ring fencing to be used to prescribe cost allocation methodologies applicable to the regulated business. In other words, APIA believes that cost allocation for ring fencing should be confined to the allocation of cost between regulated and unregulated affiliated businesses, rather than internal cost allocations by an access provider (that is, within the regulated business alone).

In addition, while not directly part of the ring fencing guidelines in section 4, APIA considers that the Section 7.1 requirement for regulator approval of associate contracts is an unnecessary requirement which has the potential to significantly disadvantage affiliates due to the potential time delay in getting such approval. APIA considers that the same outcome for non-affiliate access seekers can be achieved by including a requirement that the key terms and conditions of affiliate contracts be made public and that the same price/service offering be made to any other interested party.

8.4 Guidance to the arbitrator

Adoption of APIA's preferred negotiate-arbitrate regulatory framework makes it essential that suitable guidance to the arbitrator is available both to aid negotiation and to facilitate resolution of future disputes. Whilst the guidance to the arbitrator will be wider than pricing principles alone, APIA believes that the existing pricing objectives set out in Section 8.1 of the Code have failed to deliver the certainty required by the industry to underpin future investments as APIA believes that the application of these objectives has led to an almost exclusive focus on the removal of any potential monopoly rents.

Whilst APIA supports the Productivity Commission's view on pricing principles expressed in Recommendation 12.1 of the Part IIIA review, it notes that those recommendations if considered in isolation could be interpreted as being focused on a cost of service model. Accordingly, APIA believes that there is merit in including revised pricing principles within the Gas Access Regime to reflect a negotiate-arbitrate framework that gives due recognition to the underlying market realities. Accordingly, in the event of an arbitration, the arbitrator should be required to:



- comply with the objects of the Code
- ensure that the minimum price for a similar service must not be below the price paid by foundation customers or the price set by a Government agreement;
- have regard to other transmission contracts negotiated by the parties;
- ensure that the principle of financial capital maintenance must be observed;
- have regard to the impact of regulatory risk and regulatory error;
- ensure that decisions are consistent with what would be expected from workably competitive markets; and
- have regard to the requirements of clause 6(4)(i) of the Competition Principles Agreement.

The rationale for the inclusion of these additional principles is discussed below.

8.4.1 Comply with the objects of the Code

Clearly, the central importance provided to the objects of the Code means that all decisions under the Code must have regard to, and be determined in accordance with, these objects.

8.4.2 Foundation contract prices as minimum

Gas transmission projects are capital intensive and sunk investments which expose developers to substantial demand risk. In order to alleviate this risk, developers seek to secure long-term foundation contracts with major customers in order to make a project palatable to financiers. These contracts are signed before the project is commenced and at a time when the development is fundamentally contestable.

The Port Campbell to Adelaide pipeline provides a good example of the fundamental contestability of projects at the pre-commitment stage. Here, SEAGas and DEI competed to sign up enough foundation contract volume to underpin their respective proposed pipelines. At the end of the day, SEAGas were successful.

In any competitive process of this type, the future economies of scale that the developers believe may arise will effectively be “priced into” the foundation contracts. This is because any failure to do so will provide the competing proponent with the opportunity to “undercut” its competitor by providing more attractive foundation contracts.



Moreover, projects are eminently contestable even where there appears to be an absence of competing pipeline developers – the key competitive dimension in such cases typically relates to the *timing* of entry.

In such a contestable environment, customers (who are major gas consumers) have significant negotiating power so that the transmission contracts that are agreed are consistent with a workably competitive market. In other words, in such an environment pipeline owners are unable to extract monopoly profits.

APIA contends that foundation contracts negotiated on an arms length basis should not be able to be undermined by subsequent disputes with new access seekers. Consequently, new access seekers who seek an arbitrated price for a similar service must not be capable of securing a price that is below that negotiated with foundation customers. APIA sees this threshold as a litmus test for the credibility of any arbitrated outcome.

8.4.3 Other contracts

APIA believes that the existing terms and conditions of similar contracts that have been negotiated in the negotiate-arbitrate framework should provide information to the arbitrator on transactional history and may provide useful pricing information for the purposes of the arbitration. However, APIA does not consider it appropriate to make specific requirements of the arbitrator in this respect.

8.4.4 Financial capital maintenance

Generally, an investor would not invest in a firm if it could not expect to recoup the amount invested, that is to maintain capital intact. This is referred to as the financial capital maintenance principle and is a critical driver of the firm's future investment decisions. It follows from the financial capital maintenance principle that regulated businesses should be allowed to maintain intact the financial capital of their investors. This does not mean that a firm should be guaranteed a particular return; rather, there must be a reasonable expectation that the full value of investments will be recouped and expenditure undertaken by the regulated business will be recovered, including where there is a service obligation.

Returns in any given year may not correspond to a building block tariff, and this is not necessary for financial capital maintenance. What is important is that over the life of the asset in total the owner can reasonably expect to achieve the return of, and receives an adequate return on, the capital prudently invested. There is a distinct dissonance between the investor's life-cycle view of asset returns and the year-by-year snapshot view over a



single regulatory period by regulators who rigidly apply a building block cost of service model.

Regulatory decisions that do not accord with this principle, such as by adjusting asset valuations ex post, are a form of regulatory taking and must adversely affect incentives to undertake socially desirable investment. Thus, in terms of providing guidance for an access arbitration, APIA considers that where the value of the investment is a relevant consideration, any investment that was reasonable in the circumstances prevailing at the time the investment was made should be allowed to be recovered. Moreover, arbitrators should be expressly required to observe the financial capital maintenance principle in arbitrations.

8.4.5 Recognition of regulatory risk and regulatory error

APIA supports the pricing principles which the Government has agreed to include in Part IIIA which includes the following principle:

'The Australian Competition and Consumer Commission (ACCC) must have regard to the following principles:

- (a) that regulated access prices should:
 - (ii) include a return of and on investment commensurate with the regulatory and commercial risks involved.

APIA shares the Productivity Commission's concern that there is unavoidably a lack of precision in regulatory decision-making. For example, in estimating the rate of return regulators have applied the CAPM. However, the CAPM does not capture the impacts of regulatory risk on pipeline companies because it only prices those risks that are systematically related to the market portfolio.⁵¹ To make matters worse, when applying the CAPM, regulators have shown a propensity to adopt point estimates for parameters at the lower end of accepted ranges, or in some instances, have indicated a belief that it is possible to make an accurate point estimate of such a value.

⁵¹ Consequently, in applying a cost of service approach, adjustments to take account of this risk should be made in the cash flows.



Consequently, there has generally been no allowance for regulatory risk in regulatory processes, in spite of the Productivity Commission's recommendations on this issue.⁵² This only serves to confirm the importance of explicitly recognising the impact of regulatory risk as part of the pricing principles to guide arbitrations.

Accordingly, APIA believes that the Gas Access Regime should include explicit recognition that the rate of return on investment should be commensurate not only with the commercial risks, but also the regulatory risks involved.

APIA believes that providing this specific guidance to arbitrators will, in the long run *reduce* the cost of providing pipeline transmission infrastructure and help facilitate the delivery of all of the benefits that inter-basin competition promises to the community.

8.4.6 Workably competitive markets

In Australian competition jurisprudence the concept of a workably competitive market has been at the centre of competition analysis, including for example, whether or not a proposed change would substantially lessen competition. However, the concept that has been applied by regulatory bodies is far closer to the “perfectly contestable” model put forward in the academic literature.

Whilst not wishing to criticise the importance and contribution of the perfectly contestable markets to economic theory, APIA notes that perfectly contestable markets rarely exist in the form that they are described in the literature and therefore present an unrealistic benchmark for regulatory assessments.

This is highlighted by the recent DBNGP Decision handed down by the Western Australian Supreme Court where the Court observed that the appropriate competitive benchmark to be applied for regulatory purposes was that of “workable competition” rather than the model of perfect contestability:⁵³

⁵² Productivity Commission, “Review of the National Access Regime”, Inquiry Report, September 2001, page 338 (Recommendation 6.3).

⁵³ Re Dr Ken Michael AM; ex parte Epic Energy (WA) Nominees Pty Ltd & Anor [2002] WASCA 231, at para 128.



As such, a workably competitive market will react over time and according to the nature and degree of various forces that are happening within the market. There may well be a degree of tolerance of changing pressures or unusual circumstances before there is a market reaction. The expert evidence and writings tendered in evidence suggest that a workably competitive market may well tolerate a degree of market power, even over a prolonged period. The underlying theory and expectation of economists, however, is that with workable competition market forces will increase efficiency beyond that which could be achieved in a non-competitive market, although not necessarily achieving theoretically ideal efficiency.

The adoption of a perfectly competitive benchmark for regulatory processes is in a sense paradoxical as it results in a relatively severe competition test (being that of perfect competition) being applied in an environment where private property rights are significantly affected (being the arbitration of prices). In contrast, if gas retailers sought to merge, the impact of that merger would be assessed against the backdrop of a workably competitive market. Further, the long life, high capital and scale benefits associated with pipelines all suggest that a perfectly competitive model is inappropriate for this industry.

Moreover, APIA submits that there is no basis to assume that the outcomes of regulatory processes to date properly reflect the outcomes of perfectly competitive, let alone workably competitive, markets. Rather, in this model, pricing outcomes merely reflect the assumptions adopted by regulators in a static environment with little capacity to be responsive to customer needs given the inevitable gravitation towards the reference service.

Arguably, the focus of the Code on the removal of perceived monopoly profit reflects the focus on the unrealistic competitive benchmark of perfect competition. In a perfectly competitive market, any unilateral attempt by a market participant to raise price above marginal cost will result in that provider immediately losing all market share. However, the perfectly competitive benchmark is simply incompatible with an environment involving sunk cost – which clearly is the case with gas transmission pipelines. Accordingly, an examination of the assumptions underpinning perfect competition only serves to demonstrate the incompatibility of the benchmark with the reality of the environment in which investment in transmission pipelines occurs.

APIA believes that the negotiate-arbitrate model it has proposed more closely reflects the outcomes that would be expected of workably competitive markets (refer Box 3) than the current regulatory model. Amongst other things, the negotiate-arbitrate model will provide for an environment that is more responsive to customer needs. APIA submits that the



experience with the EGP reflects the more diverse range of offerings available than would be the case in a regulated model.

Box 3 Workably competitive markets

The concept of workably competitive markets was first introduced into the economics literature in the 1940s in recognition of the fact that the textbook model of perfect competition was not reflected in real world markets. In general, it is now recognised that there are a number of criteria for assessing the workability of markets.¹ These are divided into structural, conduct and performance criteria.

Structural criteria include:

- the number of traders should be at least as large as scale economies permit
- there should be no artificial inhibitions on mobility and entry
- there should be moderate price service quality differentials in the products offered

Conduct criteria include:

- some uncertainty should exist in the minds of rivals as to whether price initiatives will be followed
- firms should strive to achieve goals independently without collusion
- there should be no unfair, exclusionary, predatory or coercive tactics
- inefficient suppliers and customers should not be shielded permanently
- sales promotion should be informative and not be misleading
- there should be no persistent and harmful price discrimination

Performance criteria include:

- firm's operations should be efficient
- output levels and product quality should be responsive to consumer demand
- profits should be sufficient to reward investment, efficiency and innovation
- prices should encourage rational choice, guide markets towards equilibrium, and not intensify cyclical instability
- opportunities for introducing technically superior new products and processes should be exploited
- promotional expenses should not be excessive
- success should accrue to sellers who best serve customer wants.

Whilst some of these criteria do not have a strong relationship to monopoly price regulation of any sort, it criteria relating to the provision of services demanded by customers and the long run avoidance of monopoly profit being earned are clearly relevant. It is considered that over time the dynamic considerations such as responsiveness to customers needs will overwhelm the static considerations of the avoidance of monopoly rent based on a short term horizon.

It is important to recognise the failings of the current regulatory model in respect of workably competitive markets. The tendency for negotiations to gravitate towards reference services under the Code stifles the responsiveness which is an important hallmark of workably competitive markets.



8.4.7 Competition Principles Agreement

Finally, APIA acknowledges that the requirements of the Competition Principles Agreement in relation to providing guidance to dispute resolution bodies (refer clause 6(4)(i)) should also be reflected in the guidance provided to the arbitrator. APIA notes that these provisions are not dissimilar to the current clause 2.24 of the Code and hence could be deleted in a redrafted Code should the other recommendations contained in this document be adopted.

8.5 Arbitration

The second leg of the revised framework is the commitment to binding arbitration. Such arbitration would only be accessible to parties who had made legitimate attempts to negotiate in good faith and the arbitrator would be empowered to reject arbitration claims that were considered to be vexatious or where reasonable efforts to negotiate had not been made by the access seeker.

Such access disputes would be referred to an independently constituted panel of experts funded by the parties to the dispute. The arbitration panel would be required to base their decision on a commercial approach in accordance with the guidance outlined above (including the pricing principles). These principles would ensure that the access seeker could be assured of getting a commercial outcome while preserving the legitimate business interests of the service provider together with a recognition of the need to encourage investment rather than the current focus on the removal of monopoly rents.

Under this framework, arbitration would not be limited to currently available capacity but rather could be extended to developable capacity although it is critical that the asset owner not be forced to make an investment in expanding capacity. Such a provision is consistent with the approach currently adopted in the Code. Rather, access would be guaranteed where other funding mechanisms were available such as a capital contribution by the access seeker.



9 Access holiday and regulatory free periods

9.1 Introduction

APIA notes that investment opportunities are created through market opportunity and entrepreneurial ability - regulation (absent endorsing cross-subsidisation) –can only destroy (or cause to delay) to pursuit of otherwise viable investment opportunities.

In its Part IIIA review, the Commission flagged the possible use of access holidays as a mechanism to address this chilling effect of regulation on investment. This option was subsequently endorsed by the Parer Review which recommended that pipeline developers be allowed a 15 year regulation free period or access holiday.

APIA believes there is some merit in access holiday arrangements but considers that they are far from a panacea for regulatory risk. APIA's concerns with the concept of access holidays are that:

- it will mask the need for fundamental reform of the Code;
- it will be implemented in a manner that will undermine investment;
- it could distort investment in expansions to existing pipeline infrastructure;
- uncertainty about what will happen after the holiday is over; and
- subsequent treatment of earnings from access holiday period.

9.2 Fundamental reform of the regulatory framework is essential

While APIA strongly believes that the introduction of measures aimed at reducing investor uncertainty associated with greenfields investments are essential, it is considered that the best method for achieving these aims is through:

- introducing a robust objects clause that focuses on promoting efficient investment;
- strengthening the coverage criteria; and
- introducing a true negotiate-arbitrate framework with clear pricing principles for covered transmission pipelines.



These issues have been discussed in the preceding sections of this submission. Therefore, the proposed access holiday should be seen as a supplement to a revised regulatory framework, rather than a substitute for it.

9.3 Implementation of access holidays

APIA accepts that while access holiday provisions are not of principal concern for the Code review, such provisions can minimise future regulatory uncertainty to investors in entrepreneurial pipelines. For such provisions to minimise regulatory uncertainty, the following features should apply:

- access holidays would automatically apply to all new greenfields pipelines;
- access holidays would be for a fixed period of 20 years;
- at the end of the 20 year period, the pipeline would remain unregulated until a bona fide access seeker lodged a successful coverage application; and
- where a pipeline which has been the subject of an access holiday is subsequently regulated, future regulation must not penalise the pipeline for any profits earned over the access holiday period.

These are discussed in turn.

9.3.1 Automatic application

APIA believes that if an access holiday is to be introduced it should apply to all new pipelines. If it were to apply selectively there are likely to be significant administrative issues in distinguishing between what is and what is not eligible for a holiday and how long the holiday will last. APIA believes that the fundamental contestability of new pipelines provides protection against any potential misuse of market power from this provision.

9.3.2 Appropriate period

APIA believes it is appropriate to specify a fixed period for an access holiday in advance rather than attempt to determine the optimal length of the access holiday on an individual pipeline basis. While the optimal duration for the price regulation free period may vary from pipeline to pipeline, any attempt to do so simply invites all of the intractable problems



associated with any attempt to regulate greenfields investments. Therefore, it is likely to be more efficient to have a single period that applies to all pipelines.

The Parer Energy Market Review concluded that a 15 year price regulation free period would represent an appropriate balance between the desire to provide greater certainty to pipeline companies and not excluding the possibility of regulation too far into the future should it be warranted. However, APIA believes a 15-year period is too short and that the appropriate length of any access holiday should be 20 years for a number of reasons:

- in modelling pipeline economics (that is the basis upon which project revenue requirements are determined, as distinct from project financing which might conceivably be based on the assumption of a 20 year loan life with subsequent re-financing anticipated after this), periods well in excess of 20 years (rather than 15 years) are routinely utilised. The duration of the mechanism must also pay particular regard to addressing (at least in part) the truncation issue which generally emerges only towards the end of the economic life of a pipeline; and
- too short a holiday period runs the risk of access holidays only operating during the loss-making period – when demand for access is low in any case – with regulation being potentially introduced when the investment is proven at which point access seekers will want to share in the blue sky;
- for taxation purposes, 20 years was the period agreed for depreciation of pipelines. The 20 year period ultimately determined for transmission tax depreciation purposes reflected the outcome of an intense debate on the appropriate balance – recognising the need for a simple and effective solution - and the same values and principles should be reflected as the “floor” for the economic regulation free period.

Therefore, APIA believes that a simple and clear regulation-free period is most likely to accomplish its intended purpose.

9.3.3 Treatment at end of period

At the end of the access holiday period, APIA strongly believes that the pipeline in question must remain unregulated unless a legitimate application for coverage is made and it can be demonstrated that the pipeline meets the prevailing coverage test. If this is the case, the access prices that would apply to new customers must be forward looking, not seek to clawback any historic benefits or anticipated “blue sky” benefits that have not materialised by the end of the access holiday period.



Minimisation of the potential for regulatory capture of “blue sky” benefits can be achieved by provisions that strengthen the negotiate-arbitrate nature of the process and the lengthening of the access holiday period to be consistent with the economic life of the asset.

9.3.4 Subsequent treatment of earnings from access holiday period

APIA believes that in order for the access holiday to achieve the aim of addressing regulatory risk, it is essential that the history of returns over the holiday period are ignored should the pipeline become covered at the end of the holiday period. That is, to the extent that assessment of efficient costs and returns are part of the subsequent regulatory framework, such assessment should be limited to a forward looking analysis based upon a clearly understood basis for establishing the future regulatory Capital Base at the time of investment commitment. To do otherwise would reintroduce the risk of return truncation that the holiday seeks to address.

APIA also believes that further assessment of the options presented for the sharing of “blue sky” benefits beyond the holiday period are worthy of consideration.

9.4 Distortionary effect of access holidays

APIA has one major remaining concern over the introduction of access holidays and that is the potential impact they may have on distorting investment decisions between greenfields (new pipelines) and brownfields (expansions and extensions to existing pipelines).

As access holidays are only likely to apply to new pipelines, they may create a regulatory induced bias towards greenfields rather than brownfields investment. This in turn is likely to have the effect of increasing the overall cost of gas transport. This might occur where investors decide it is more appropriate, given the access holiday, to build a new pipeline instead of expanding an existing pipeline.

For example, in his analysis of the impact of regulation on the US natural gas market, Professor Paul MacAvoy⁵⁴ assessed the effect of the Natural Gas Policy Act of 1978 which sought to provide incentives for new production (through allowing unregulated prices)

⁵⁴ MacAvoy, Paul W. (2000) The natural gas market: sixty years of regulation and deregulation. Yale University pg 15-17



while preventing owners of existing reserves from benefiting from price increases (by maintaining regulated prices). MacAvoy concluded that the effect of these incentives was to create significant distortions with a massive investment in production leading to oversupply and eventual collapse in price for spot gas while existing contract holders from old reserves initially benefited from controlled prices but eventually ended up holding expensive contracts. Eventually, by 1995 all price controls on wellhead prices had been removed.

Given that this proposal is limited to its impact on pipelines the likely impact is to be in terms of distorting relative greenfields and brownfields investment. To date, the regulatory framework appears to have little impact on expansions as they have normally been developed as part of commercial negotiations outside the Code (as discussed in Case Study 9 on the Roma to Brisbane pipeline experience).

However, APIA remains concerned that in circumstances where expansions are sought under the Code, the presence of access holidays may bias investment towards new pipelines. In essence APIA's concern is that in alleviating regulatory risk for one type of investment (greenfields pipelines) whilst retaining it for another type of investment (brownfields expansions) will bias investment decisions towards the former.

9.5 Alternative options

The Parer Review also set out two alternatives to an access holiday, namely up front regulatory agreements and a truncation premium, neither of which APIA believes are effective, simple solutions.

Proposed upfront regulatory agreements will, by definition, be case by case, and will cause major project delays given the cautious approach regulators will almost certainly adopt. Regulatory requirements for public consultation will not only further delay outcomes, but also potentially expose confidential information to a wide market. Similarly the provision of a truncation premium will also represent a complicated case by case approach to the problem.



10 Recommendations

APAI recommend that:

- An operative **objects clause** be included in the Code based on the objects currently stated in the introduction to the Code. The objects clause should recognise as the primary objective of the Gas Access Regime is to:

promote the economically efficient use of, and investment in gas pipeline infrastructure services.
- Paragraphs (a) and (b) of the **threshold test for coverage** be amended as follows together with the insertion of an additional requirement concerning the national significance of the pipeline as follows:

that access (or increased access) to Services provided by means of the Pipeline would be more likely than not to achieve a substantial increase in competition in at least one market (whether or not in Australia), other than the market for the Services provided by means of the Pipeline

that there does not exist and it would be uneconomic for anyone to develop another facility to provide the service or a close substitute for the service in the same market as that in which the service is provided by means of the Pipeline

the pipeline is nationally significant
- Coverage applications be limited to those parties who have attempted and been unable to negotiate access;
- There continue to be merits review available from coverage decisions;
- The current regulatory model be replaced with a negotiate-arbitrate model with disclosure and ring fencing rules being specified
- In the event of an arbitration, the Code provide specific guidance to the arbitrator in relation to:

 - the arbitrator's requirement to comply with the objects clause;



- ensuring that the minimum price for a similar service must not be below the price paid by foundation customers or the price set by a Government agreement;
 - have regard to other transmission contracts negotiated by the parties;
 - ensure that the principle of financial capital maintenance must be observed;
 - have regard to the impact of regulatory risk and regulatory error;
 - ensure that decisions are consistent with what would be expected from workably competitive markets; and
 - have regard to the requirements of clause 6(4)(i) of the Competition Principles Agreement.
- access holidays be adopted on the following basis:
- access holidays to automatically apply to all new greenfields pipelines;
 - access holidays would be for a fixed period of 20 years;
 - at the end of the 20 year period, the pipeline would remain unregulated until a bona fide access seeker lodged a successful coverage application; and
 - where a pipeline which has been the subject of an access holiday is subsequently regulated, future regulation must not penalise the pipeline for any profits earned over the access holiday period.



Attachment 1 - Potential onshore transmission pipeline developments⁵⁵

Project	Estimated capital cost
Central Ranges Pipeline (Tamworth)	\$96 million
PNG – Queensland (ExxonMobil/AGL/Petronas)	\$2,000 million
Darwin-Moomba (Epic Energy)	\$1,500 million
Darwin-Moomba/Queensland (APT)	\$2,400 million
Northwest shelf to Moomba (Woodside)	n/a
Blacktip-Gove (Alcan)	\$500 million
Port Hedland to Telfer (Newcrest Mining)	\$100 million (estimate)
Ballera to Moomba (Epic)	n/a
Other prospective projects (estimate)	\$250 million
Capacity expansion of existing pipelines	\$500 - \$1,000 million (estimate)
Total (assuming only one northern option)	\$3,400 - \$3,900 million

Notes:

1. Does not include transmission pipelines under construction (SEAGas, on-shore construction associated with BassGas project, Kambalda-Esperance) or the Enertrade pipeline from the Bowen Basin to Townsville which is a fully committed project.
2. Assumes that only one of a number of proposals for delivery of natural gas from a new supply source in PNG/Northern Australia proceeds.

⁵⁵ Source: Pipeline Plant and Offshore Monthly, August 2003 plus APIA sources



Attachment 2 - Major pipeline developments 1998-2003

Pipeline Name	Where	Regulated	Completed ⁵⁶	Length (Km)
Inter-Connect (NSW-Vic)	NSW - Vic	Partly (VIC section)	1998	151
EGP	Vic-NSW	Unregulated	2000	795
Ballera – Mt Isa	QLD	Regulated	1998	840
Central West Pipeline	NSW	Regulated	1998	255
Mid West Pipeline	WA	Unregulated	1999	353
Cannington Spur Line	QLD	Unregulated	1998	100
Looping a - Roma - Brisbane	QLD	Regulated	1997-2002	434
Extension to Mildura	NSW	Unregulated	1999	190
South West Pipeline	Vic	Regulated	1999	152
TGP	Vic - Tas	Unregulated	2002	732
Wagga – Tumut*	NSW	Unregulated	2001	65
Seagas** Otway - Adelaide	SA	Unregulated	Under consideration	660
Burrup Extension Pipeline	WA	Unregulated	1998	24
Dampier – Bunbury Pipeline Stage 3A	WA	Regulated	2000	Additional Compression

* Government owned and developed pipeline. ** Producer Pipeline

⁵⁶ A number of these pipelines were in fact committed before the implementation of the Code.



Attachment 3 – Revocations from the Code

1. 1999 WA Beharra Springs pipeline;
2. 1999 WA Karratha to Cape Lambert pipeline;
3. 1999 SA South East Pipeline System;
4. 1999 WA Mt. Keith Pipeline
5. 1999 WA Leinster Pipeline
6. 1999 WA Parkston Pipeline
7. 2000 NT Palm Valley to Alice Springs pipeline;
8. 2000 NT Alice Springs Distribution system;
9. 2000 Qld Dalby Distribution system;
10. 2000 Qld Peabody Mitsui pipeline;
11. 2000 Qld Dawson Valley pipeline;
12. 2000 Qld Kincora to Wallumbilla pipeline;
13. 2001 SA Riverland and Mildura;
14. 2001 WA Parmelia pipeline;
15. 2002 Qld Roma Distribution system;
16. 2002 Mildura Distribution system;
17. 2003 NT City Gate to Berrimah pipeline.