



**EASTERN GAS PIPELINE**

**SUBMISSION TO**

**NATIONAL COMPETITION COUNCIL**

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## Section 1 - Introduction

Duke Eastern Gas Pipeline Pty Ltd ACN 006 919 115 and DEI Eastern Gas Pipeline Pty Ltd ACN 068 570 847 of Level 33, Waterfront Place, 1 Eagle Street, Brisbane and Duke Australia Operations Pty Ltd collectively known as “DEI” as owners and operators of the Longford to Horsley Park natural gas pipeline, known as the Eastern Gas Pipeline or EGP are pleased to provide this submission to the National Competition Council to assist in its consideration of a request for coverage of EGP from AGL Energy Sales and Marketing.

This submission addresses the coverage or regulation of EGP under the *National Third Party Access Code for Natural Gas Pipelines* (the *Code*). The submission considers the criteria contained in the *Code* providing DEI’s view on their applicability to the question of coverage.

DEI is of the view that the EGP will result in intense competition between the pipelines and supply basins serving the ACT and NSW and in particular, the Sydney market. Competition in transport services will occur for standard products such as forward and backhaul, as well as for more innovative services such as parking, lending, peaking and storage. Moreover, competitive tensions can be expected to lead to the development of new physical and financial services. This is likely to occur because of the reform in the energy market and the increasing competitiveness of the domestic and world economies.

DEI submits that a coverage decision would be likely to risk the development of a competitive and dynamic energy market in South Eastern Australia. Regulation under the *Code* is designed to mitigate market power. However, the development of the EGP will mean that the Sydney market is served by multiple pipelines. Furthermore, there are significant constraints on the ability of transport providers to exercise market power. Limited competition in upstream markets, combined with over capacity in the electricity market seriously discipline the pricing decisions of pipelines. In this environment regulation under the *Code* will alter both the incentives and the risks faced by pipeline owners and operators as well as other market participants. For example:

- Revenue cap regulation reduces the incentive of pipeline owners to introduce innovative services.
- Transport tariffs based on cost-of-service are uncommercial when there is excess capacity and competing pipelines. As a result, the regulatory exercise does nothing other than increase both costs and financial risks.
- Entrepreneurial pipelines face market risks because of competition and excess capacity. Regulation of these pipelines will add regulatory risk, necessarily increasing costs and prices without any benefit to end use customers.
- Regardless of whether a pipeline is operating in a monopoly or competitive market, there are benefits to be had for both consumers and the pipeline operator from the inclusion of value consideration in price setting. Regulation under the *Code* largely removes the role of value in price setting and therefore runs the risk of distorting consumption and investment decisions. In an unregulated market pipeline, operators would have incentives to devise means by which to incorporate value in pricing decisions e.g. auction mechanisms.

This submission suggests, that with respect to the current request for coverage, the NCC make a recommendation of no coverage. This recommendation does not preclude a decision for coverage at a later date. The issue is whether or not immediate regulation is appropriate. The NCC should assess whether under the current market conditions, regulation will improve economic welfare or alternatively, increase costs, decrease innovation and diminish net social benefits.

## Section 2 - Commercial Operations Of Pipelines In Australia

*The purpose of this section is to put in context the commercial operations of a gas pipeline operator such as Duke Energy Australia Eastern Gas Pipeline by providing an overview of:*

- *some major trends affecting the Australian industry;*
- *the governance or institutional structures that facilitate the exchange of property rights to gas supply and gas transport;*
- *how the management of financial and physical risks is affecting the contractual structure of the gas market; and*
- *how government regulation operates through its effects on these arrangements.*

### 1. Trends in the natural gas and related energy markets

The commercial and technical reality of the Australian natural gas industry has led to an institutional structure that has produced outcomes that cannot be described as competitive.<sup>1</sup> On the supply side there has been virtually no inter or intra basin competition.<sup>2</sup> Risks from long-term take-or-pay gas supply contracts have been partially mitigated by similar arrangements for pipeline capacity. The structure of the existing retail market flows directly from a history of franchising and regulation.

Over the past decade, Australia has embarked on a path of microeconomic institutional reform based on the principle that those countries that are most competitive in world markets are also those that have a high degree of competition in domestic markets as well. At its core, the reform program is designed to fundamentally alter the institutional structure through which decisions about resource allocation occur. Specifically the reforms are aimed at creating institutional structures that increasingly rely on decentralised competitive forces rather than centralised administered decision-making to deliver socially beneficial outcomes.<sup>3</sup>

The impetus for the economic reform process in Australia, as it was in other countries, originated materially from technological and commercial innovations occurring in an environment where the ability of centralised agents to collect, analyse and appropriately act on information was being reduced. Moreover, the reform process itself has improved the environment for additional advances in competition, further reducing the probability that “planned” outcomes will be welfare maximising. Nowhere is this cycle more obvious than in energy markets.

Structural changes occurred in the generation of electricity in the 1980’s as a result of technological advances and regulatory reform. In particular there was a dramatic reduction in

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<sup>1</sup> For a concise summary see “Overview and Major Conclusions” in *Australian Gas Industry and Market Study* prepared by the Industry Commission, 1995.

<sup>2</sup> Joint ventures in the Cooper and Gippsland Basins are responsible for almost all (over 95%) of the gas sales from the two regions.

<sup>3</sup> The importance of the institutional structure is explicitly emphasised in the Hilmer Report. “The institutional framework for implementing a national competition policy is critical to its success and, ultimately, to the efficient operation of markets in Australia...Achieving the most appropriate institutional framework for a national competition policy is at least as important as the detail of the policy itself.” *National Competition Policy: Report by the Independent Committee of Inquiry*, 1993, pp313-314.

the cost structure of electricity produced by small-scale gas fired generators. As a result, the production of electricity is no longer considered to exhibit natural monopoly characteristics – larger plants do not necessarily produce cheaper power. These innovations have had significant dynamic effects in the natural gas market in particular and the energy market in general. Specifically:

1. In order for the output of small and large-scale generation to compete, electricity as a commodity and transmission as a service had to be separated. This has led, in various ways, to the restructuring of the electricity markets around the world.
2. There is no longer any commercially meaningful separation of gas and electricity as commodities. Similarly, the value chain in the gas industry is directly affected by decisions in the electricity market and vice versa. Thus, for example, transmission pricing in gas or electricity will have increasingly direct effects on each other as well as the overall energy market.
3. Disaggregation of business activities – into production, transmission, distribution or reticulation, and retailing – has significantly reduced the ability of integrated entities to internalise their risks through physical investment. Moreover, increased liberalisation of trade and the opening of world markets, in combination with microeconomic reform means that customers are less able and willing to accept the financial consequences of risks they can neither manage nor reduce.<sup>4</sup>
4. Unbundling of products has blurred or even eliminated the traditional division of energy markets into wholesale (production and transmission) and retail (distribution/reticulation and retailing) sectors. In electricity, embedded generation and demand side management, compete directly with generation and transmission. At the same time products delivered by the transport system compete directly with generation.<sup>5</sup>
5. Industry structure is changing as businesses try to: achieve economies of scale, create synergies among related energy operations and services, optimise cash flow by merging cash-rich and cash-poor activities, extract value by merging up and down the value chain, build the customer base by aggregating customers to facilitate retail or distribution energy strategy implementation, and focus on selected business segments by rationalising asset ownership.<sup>6</sup>
6. The changes in the commercial and technological environment have necessarily altered the scope and exercise of regulatory authority. Over the past several years this sentiment has

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<sup>4</sup> According to Juris, “Shippers’ unwillingness to sign long-term transportation contracts has created serious problems for interstate pipeline companies in the United States. Long-term contracts for about 50 percent of available pipeline capacity will expire by 2002. Although experts expect that about 75 percent of that capacity to be recontracted, pipeline companies will not be able to sell long-term contracts in regions or pipeline corridors with excess capacity. This will expose them to substantial revenue risk...” Andrej Juris, *Development of Natural Gas and Pipeline Capacity Markets in the United States*, The World Bank Policy Research Working Paper 1897, March 1998, p38.

<sup>5</sup> For example, investment in the electricity network can negate the need for new generation and can reduce the ability of generators to exploit rents that occur from constraints. In gas, on pipelines where there is excess capacity or dissimilar demand patterns, parking and lending services can reduce the demand for gas storage.

<sup>6</sup> See *Natural Gas Trends 2000* produced by Cambridge Economic Research Associate, p93.

been consistently stated publicly by the Federal Energy Regulatory Commission in the United States and other regulatory bodies.<sup>7</sup>

The picture that emerges is of a dynamic industry that is still undergoing material change in structure and scope. Into this environment and with respect to the activities carried out by transmission and distribution providers, Australia has introduced the *National Third Party Access Code for Natural Gas Pipeline Systems* (the *Code*). The overarching objective of the *Code* is to establish a national access regime for gas pipelines. Within this institutional framework the terms and conditions of access for pipelines that have been “covered” through a decision by the relevant Minister must have their Access Arrangement approved by the relevant regulatory authority.

## 2. Physical and financial flows and risk management in the natural gas supply chain

The supply of gas to end users requires the exchange or transfer of property rights between gas suppliers/producers, transport providers and other market participants including aggregators, retailers and large end users such as electricity generators and manufacturers. These exchanges are governed by the contractual and regulatory structures in the industry and involve the transfer of various property rights.<sup>8</sup>

In the case of gas pipelines, economic property rights rest with the owner of the infrastructure or assets.<sup>9</sup> Legal property rights over gas infrastructure are provided for through *Gas Pipeline Acts* that licence the construction and operation of gas pipelines.

The exchange of economic rights necessarily involves transaction costs which are largely determined by the governance structures or institutions that prevail. These structures may take a

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<sup>7</sup> In a speech given on 13 March 2000, Chairman James J Hoecker of the FERC noted that “*we are witnessing dramatic corporate consolidation based on the drive to attain scale and manage risk; convergence of the natural gas and electric industries, either formally or as a matter of mutual interest; a major shift from regulated to unregulated activities; and a renewed imperative to provide customer service and maintain reliability. Industry and its regulators must accommodate these changes and reinvent the energy economy.*” (Speech given to the Energy Council’s 2000 Federal Energy and Environmental Matters Conference, Washington, D.C.). Additionally, Commissioner Linda K. Breathitt of the FERC on October 27, 1999 noted that “*the significant changes that are occurring have also caused us to take a careful look at how we have done our jobs in the past and have created the need for us to make fundamental changes in our traditional organizational structures and regulatory missions...The Commission has realized that, given the enormous changes occurring in the energy industries, it must change the way it operates or risk being unable to respond appropriately to the changing industries it regulates.*” (Speech given at the Electricity Competition Symposium, Washington, D.C.).

<sup>8</sup> The concept of property rights carries two distinct terms in economic literature. The first, primarily developed by Alchian and Cheung is essentially the ability to enjoy the benefits of property or assets (Alchian, A.A (1977) *Economic Forces at Work*, USA: Liberty Press and Cheung, S (1969) *A Theory of Share Tenancy*, Chicago: Chicago University Press). The other, much more prevalent, is the assignment of rights to a person by the government. The first can be designated ‘economic property rights’ and the latter ‘legal property rights’. An economic property right over a commodity defines the individual’s ability, in expected terms, to consume the good (or the services of the asset) directly or to consume the benefits indirectly through exchange. In turn legal property rights are the rights recognised and enforced by the government and the legal system, a major function of which is to accommodate third party adjudication and enforcement (Barzel, Y (1997) *Economic Analysis of Property Rights*, Cambridge: Cambridge University Press).

<sup>9</sup> The residual claimant to an asset is generally considered to be its economic owner in that the owner is able to gain from an increase in its value and has incentives to maximise revenue flows from the asset.

number of possible forms including spot markets for the exchange of products, contracting and vertical integration.

The emergence of different governance structures arises for two main reasons:

- (a) The cost characteristics of production which dictates the efficient size of a firm and the number of firms in a market (subject to demand considerations); and
- (b) Transaction costs, which drive firms' decisions on the degree of integration in an endeavour to seek the most efficient structure (in terms of risk, incentives and costs) for production and exchange.

In modern gas markets governance structures tend to be characterised by vertically separated agents in the gas supply chain. This vertical separation necessitates contracts to ensure the exchange of gas between producers and final end users e.g. supply agreements, transport or use of system agreements and purchase agreements. The contractual relationships govern the physical flows, the associated financial flows, and the rights and obligations of the parties to the exchange of property rights.

In the Australian gas market these relationships for the exchange of property rights may emerge between a number of parties including:

- Producers;
- Transmission pipeline owners and operators;
- Gas Marketers or Aggregators;<sup>10</sup>
- Distribution network owners and operators;<sup>11</sup>
- Retailers;<sup>12</sup> and
- End users

The exchange may occur in a number of possible ways, including:

1. Producers enter use of system agreements with the pipeline operators to sell bundled gas services directly to large end users.
2. Large end users and/or retailers enter into Use of System Agreements with the pipeline operators and also enter into Supply Agreements with the producers to supply gas.
3. Aggregators enter into Supply Agreements with Producers and Use of System Agreements with Pipelines to sell bundled products to Retailers to sell to end users.
4. Aggregators enter into Supply Agreements with Producers and Use of System Agreements with Pipelines to sell bundled products to large end-users.

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<sup>10</sup> Aggregators and/or Marketers purchase gas supply and transport capacity for on sale to generally large end users or retailers. They also provide risk management by hedging gas supply contracts and transport contracts.

<sup>11</sup> These are the reticulation companies that provide the final link in the gas supply chain, which consists of a network of supply mains and service pipes which deliver gas to end users.

<sup>12</sup> Retailers manage customer interface and supply to households and businesses. They may purchase gas supply and transport independently or from Aggregators and Marketers.



#### 5. Retailers enter into Supply Agreements with Producers and Use of System Agreements with Pipelines to sell bundled services to end users.

The structure of contractual arrangements for the exchange of property rights seems to have had a direct relationship to business risks, specifically, the financial (cost and revenue) risks associated with the physical supply chain. For example, the development of gas transmission pipelines involves a production technology that is associated with increasing returns to scale and requires large sunk costs. To manage the financial risk associated with capital intensive projects of this type gas pipeline companies have traditionally sought to manage cost, revenue and demand risk through long term take-or-pay contracts<sup>13</sup> for transport and via over-run and imbalance penalties on the pipeline.

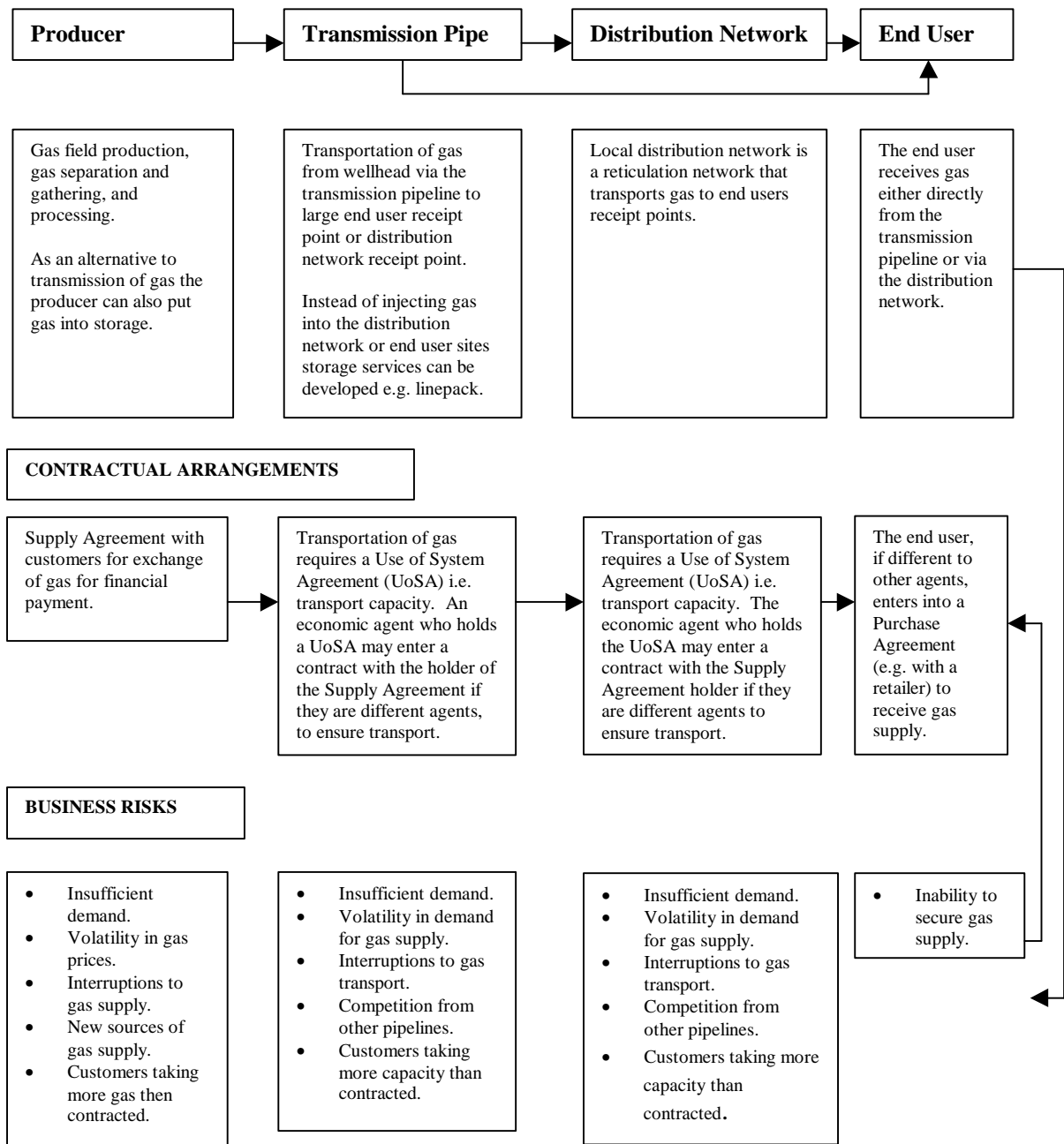
Consequently, the financial risk associated with the development of the physical supply chain coincides with the structure of contractual arrangements between the various participants in the gas market.

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<sup>13</sup> This type of risk management passes the risk down through the supply chain to end users and ties the end user to services which have fixed prices for a considerable period of time.

The following diagram shows the physical, contractual and risk features associated with the main links in the gas supply chain.

**Diagram 1: PHYSICAL, CONTRACTUAL AND RISK RELATIONSHIPS IN THE GAS SUPPLY CHAIN**



The contractual arrangements or governance structures in the gas industry match the risks associated with the physical supply chain as indicated in the diagram.

This contracting structure for gas and transport supply has largely transferred the physical and financial risk to end users. This has been facilitated by the ability for large end users and retailers to pass the additional costs on to their customers. Change in this contractual framework

between producers, pipeline operators and end users is apparent in more developed markets such as the U.S. and should be expected to occur in Australia. For example in a 1998 speech by the Chairman of the Federal Energy Regulatory Commission it was highlighted that:

*If you remember when a pipeline would sign a contract with a producer for the life of reserves you may legitimately qualify as an old-timer. Only six years ago, most gas was purchased under monthly contracts. Transportation was also arranged on a monthly basis. Today, shippers trade gas on a daily basis or even on an intra-daily basis and many non-traditional shippers, such as electric utilities (21%) and marketers (17%) hold a significant amount of firm capacity.<sup>14</sup>*

Moreover, in this same speech the Chairman notes:

*Before order No 636 risk management at the time a pipeline was built was handled through long-term contracts between and among producers, pipelines and local distribution companies. Since regulated utilities had the right to pass through prudently incurred costs, most risk was borne by utilities ratepayers. Since 1992, most pipelines have exited the merchant function. The commodity side developed a host of financial instruments such as natural gas options, swaps, and futures which have helped spread the risk of commodity prices among more players in the industry. These instruments have in turn created more opportunities to participate in the natural gas industry and have probably encouraged greater financial investment. The atmosphere is evidently a good one for exploration and development and it remains to be seen whether similar innovations can invigorate in the same way hard pipeline assets.<sup>15</sup>*

### 3. The evolving nature of risk in downstream markets

A significant element in attaining greater competitiveness for many firms is the management of the financial risks of energy inputs both in terms of supply and transport. Accordingly, gas pipeline operators now face an environment in which customers increasingly require more flexible contracting frameworks which:

- provide for greater flexibility in services - allowing the pipeline operator and the customer to respond to emerging needs, technological changes and market demands; and
- enable the customer to manage the financial risk of gas supply and thereby reduce operating costs.

Reform in the electricity market (which is a large user of gas) has placed increased competitive pressures on electricity generators and has seen the emergence of electricity traders that seek to manage financial risk for electricity customers. These pressures and market developments in the electricity sector are likely to impose reciprocal pressures on the services and prices of gas pipelines.

Further, technological advancements such as embedded co-generation, which is reliant on gas, may have an important role in increasing the competitive tensions between electricity transmission and distribution and gas transmission and distribution. This brings into stark relief the economic importance of electricity and gas transmission prices.

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<sup>14</sup> FERC (1998) *The FERC's Role In Emerging Energy Markets*, p3.

<sup>15</sup> FERC (1998) *The FERC's Role In Emerging Energy Markets*, p3.

Gas pipeline owners have significant exogenous market pressures and incentives to manage service prices and to offer products and services which enable customers to better manage their own financial risk. Indeed as noted by the FERC:

*Now that pipelines compete and are infused with both cost and consumer consciousness, they are thinking more strategically than in the days of the static monopoly. Continuing to provide adequate pipeline facilities is matched by companies' efforts to provide new services such as wheeling, parking, loaning, title transfer, and peaking services as well as more flexible pricing of capacity. More customers have more choices than ever before.*<sup>16</sup>

The dynamic nature of markets cannot be predicted with certainty and consequently neither can the forces of change on the gas industry. However, what is apparent is that the need to respond to market dynamism requires the gas industry to have the latitude to address market requirements and not leave supply and transport risks with consumers.

#### **4. Pipeline services in the new environment**

In response to the changing market environment, pipeline owners and operators are revisiting the services offered to their customers – who are increasingly aggregators rather than end users or even retailers. In particular, the services must offer customers increased flexibility to allow for more efficient risk management. Moreover, increased competition, especially when alternative transportation routes exist, provides an incentive for pipelines to be proactive in ensuring that gas is a preferred fuel and the exchange mechanism is efficient. Examples of products or services that pipelines are either offering or facilitating in order to accomplish this include:

- Operational Balancing Agreements;
- Imbalance Trading;
- Parking and Lending;
- Peaking;
- Blended services (e.g. combining 'firm' and 'as available'); and
- Commodity linking and pricing.

##### ***Operational balancing***

The physical transfer of gas from the field to the user is comprised of several sequential (physical) transactions. These transactions can and do occur under a myriad of different decision-making mechanisms. Moreover, the outcomes engendered by these decision-making structures are potentially different in their effects on price, quantity, and even institutional, as well as market structure.

As has been discussed earlier, commercial and technological imperatives are creating new tensions for the old decision-making mechanisms in the gas industry. These mechanisms, while effective in physically transferring gas from the field to the consumer, are not particularly well suited to managing financial risks or creating efficient commercial outcomes. However, when these structures were created it was the physical, and not the financial, aspect of the transaction

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<sup>16</sup> FERC (1998) *The FERC's Role in Emerging Energy Markets*, p4.

that was of most concern. Markets for the intermediate or final products from Australian producers were closed or had little competition so that large users of gas were able to mitigate the financial risks arising from long-term take-or-pay gas supply/transport contracts through long-term contracts for their output. Franchise arrangements, in addition to eliminating competition for smaller customers, provided an incentive for vertical integration in the retail market. The introduction of competition has created tensions that will only be resolved by changing the decision-making structure by which the price, quantity and quality of gas is determined.

An example of how this tension leads to changes in the decision-making structure is provided by the Operational Balancing Agreement (OBA) currently being negotiated between the Eastern Gas Pipeline, the East Australia Pipeline and AGL Gas Networks. The primary purpose of the OBA is to eliminate the commercial effects of physical variances from nominated gas flows at interconnection points. If it is effective, the OBA will facilitate gas trading and, as a result, will enhance the information content of price signals in the market. This result can be expected to improve the efficiency of exchange.

The primary question then, is how will the OBA facilitate the trading of gas on the three interconnected networks. Pipeline operation requires information from aggregators, retailers, or even end-users about the volume of gas that they expect to use. This “nominated” quantity will almost always differ from the actual quantity that is used. The difference between nominated and actual can be physically accommodated by changes in linepack, “borrowings” (both positive and negative) from other customers, increased supply or possibly even through the creation of a shortage (i.e. some customers may not be able to receive their nominated quantities).

In the situation where the pipe is a single dedicated asset with a unique operator<sup>17</sup> then decisions pertaining to divergences can be internalised by the pipeline operator. In this regard, the operator has complete information about the physical status of the gas volumes flowing through the pipe. This information allows the operator to accommodate physical overs/unders in different ways and in real time. Moreover, it is within the operator’s discretion to meter, reconcile, and bill, with whatever frequency is either required to keep the system functioning or demanded by the customers. In other words, the integration of the system as a result of the single owner/operator creates a centralised decision-making structure to address the problems caused by divergences between nominated and actual quantities.

Where there is an interconnection between pipelines or networks with different owners/operators who offer different products/services and terms and conditions, then dissimilarities in the physical treatment of divergences between nominated and actual quantities increases transaction costs. For example, the owners of one (or more) of the assets that form a network, may, for whatever reason, want to limit deviations between nominated and actual quantities and, as a result, may apply a steep price penalty when divergences occur and require that imbalances be eliminated very quickly. Other asset owners in the network may not have these same preferences or capacity constraints and may price differently or require a different time frame for rectifying discrepancies. While aggregators and/or retailers are involved in financial transactions, the physical requirements imposed on them by Use of System Agreements (i.e. access arrangements) can increase the costs of trading. In simple terms, the aforementioned OBA attempts to separate the non-material physical effects of discrepancies between nominated and

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<sup>17</sup> i.e. there are either no connections with other pipelines or networks with different owners/operators.

actual quantities from the financial transaction of buying and selling gas. It does this by creating a structure whereby pipeline/network owners can co-operate in the management of physical interfaces in the system. This then allows the aggregators/retailers to conduct their business using nominated quantities thereby providing them with a degree of certainty over their purchase amounts while at the same time eliminating delays in the allocation of transmission costs.

### ***Imbalance trading***

Gas imbalances occur when nominations at the receipt point and at the withdrawal point differ, or when the actual flow of gas in and out of the transmission pipeline or the network differ. It is necessary to keep imbalances within prescribed limits to ensure the delivery of gas at required pressures.

Generally, pipeline operators allow shippers a range within which they must keep their balances without going into imbalance i.e. shippers in this range have a zero imbalance. Anything above or below these established limits or ranges means the shipper is in imbalance.

Traditionally, imbalance problems have been addressed through an imbalance charging regime. This means that if a customer gets into a position whereby their debit or credit of shipped gas exceeds the set limit of imbalance, then they are charged a prescribed rate until they nominate and attain a physical position that is within required imbalance limits. This system is centrally controlled and administered by the pipeline operator.

A viable alternative or complement to imbalance charging regimes is the trading of imbalances. Imbalance trading on the pipeline provides a means by which market participants can manage their own financial risks while ensuring the continued operation of the pipeline. Imbalance trading basically allows the various market participants to trade debits and credits between themselves at a reduced rate to that levied under the imbalance charging regime.

### ***Parking and lending***

Parking and lending refers to a service that allows for the loan of linepack<sup>18</sup> and provides for the ability to store gas in the pipeline. This service facilitates an environment in which traders, marketers, aggregators and end users can manage their exposure to gas supply prices.

Parking and lending provides an opportunity to buy gas supply for example, when it is cheap and to store the gas in the pipeline or 'park the gas' for a period until it is required for peak operations or can be traded. Alternatively, it provides an avenue to source gas from the linepack in the pipeline to provide, possibly, for peak operations. Both of these opportunities i.e. parking of gas and lending of gas from the linepack allows market participants to manage their price risk more effectively.

Parking and lending can operate as an independent service or be attached to imbalances. That is, once a customer has an imbalance on the pipeline, above the set imbalance limits (discussed above), then they would be charged a park or lend rate. Typically the rate would be set to

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<sup>18</sup> Gas stored in the pipeline.

encourage the use of imbalance trading, rather than having the customer utilise parking or lending on a long term basis.

### ***Risk and the changing gas market***

Increasingly, pipeline operators face a situation where there is value in providing risk management services. The provision of these services allows the pipeline to make a market and encourage the use of gas. The nature and evolution of these services cannot be predicted with certainty – the market will drive service innovation but this will be heavily influenced by the actions of regulators.

## **5. Regulation operates through its affects on the contractual and institutional structure of the industry**

The contracts and institutions in the gas pipeline industry govern the financial and physical flows of resources together with risk management provisions. These reflect the property rights, methods of exchange and allocation of risks in the industry. They also set the incentives on the parties in the market. Government regulation intervenes in these contracts and institutions and has its effects by changing property rights, incentives, costs and information.

The challenge for regulators is to assess the effects of their actions on these institutional structures and evaluate which interventions are going to produce outcomes that advance the welfare interests of Australians. This exercise is largely concerned with the effects of regulation on efficiency but also involves consideration of the distribution of net social benefits arising from exchange. The capital intensive nature of the gas transport industry implies that dynamic efficiency will be most important and regulators should be mindful of the possible effects of their actions over time.

## Section 3 - The Legal Framework

*This section reviews the role of the NCC in the wider legal framework applying to gas pipelines in Australia. We develop an approach to decision-making by the NCC under the Code and show the consistency between the approach outlined and the past decisions of the Council. We suggest that the comparative institutional approach we outline is:*

- *the best way to achieve the NCC’s goals of making Australians better off;*
- *supported by the NCC’s previous decisions, and*
- *implied by the words of the Code itself.*

### 1. Introduction

As outlined in the last section, the recent past has seen a significant amount of evolution in the sophistication of contractual arrangements affecting the management of gas pipelines in Australia. Of particular importance has been achieving more efficient management of risk. With the high capital investment entailed in pipelines, and the importance of energy in the lives of households and firms, better management of risk is likely to yield significant welfare improvements.

Regulatory interventions in this environment will generate changes in market and social outcomes through their effects on risk management and private contractual arrangements. Both the incentive to invest in new pipeline capacity, and the efficiency with which existing capacity is managed will depend on the degree of certainty and quality of the regulatory framework. Thus, the quality of regulation will have a major effect on the extent to which it allows parties flexibility to evolve more efficient arrangements by leaving decision-making in their hands with appropriate incentives.

A fundamental assumption of the analysis in this section is the desirability for a reduction of regulatory uncertainty or risk. This needs to be accomplished alongside a concurrent improvement in the quality of regulatory outcomes on a continuous basis. More certain but low quality regulation is obviously less desirable to more certain and higher quality regulation. This chapter therefore seeks to set out an approach to regulation which is likely to best advance the achievement of regulatory objectives at least cost. This approach is shown to be implicit in the law governing the *Code*, and implicit in the decision-making of the NCC.

In what follows we address how the NCC might best contribute to desirable social outcomes when performing its “gatekeeper” role under the *Code*. We do this through a discussion of the NCC’s role, the objectives it has been set, and the methods underlying the NCC’s decision-making.

### 2. The NCC has discretion when acting as “gatekeeper” under the *Code*

In February 1994 the COAG (Council of Australian Governments) agreed to general principles of competition policy reform to enable third parties to gain access to “essential facilities”. As



part of that commitment to reform, COAG agreed to more specific proposals for the development of “free and fair trade” in natural gas. This involved agreement to the enactment of both federal and state legislation so that a uniform national framework applied for third party access to all gas pipelines in Australia. Each state or territory was given responsibility for passing its own legislation to import the *Code* into its law. There have now been statutes passed in most states and territories based on the original South Australian model. This legislation plus the *Code* (the *National Third Party Access Code for Natural Gas Pipeline Systems*) is referred to as the “*Gas Pipelines Access Law*”.

The NCC is a gatekeeper in this framework of law. It makes recommendations on whether or not a pipeline should be covered or regulated under the *Code* but technically has no role in the actual regulation. Regulated access under the *Code* is provided for through an Access Arrangement. It is the Access Arrangement that sets out the rights and obligations of the parties seeking and providing regulated access, including the services available, applicable tariffs, contractual terms and conditions and other elements.

As with all legal rules, when it comes to deciding coverage and to applying the *Code*, there is considerable scope for the exercise of discretion by regulatory agencies. The agencies themselves, however, control the risks and costs of achieving a desirable outcome by virtue of their choices and speed with which they conform to best practice. For the *Code* to work well the regulatory agencies involved will have to conform to best practice in their operations and consistently attempt to achieve the *Code*’s overarching objective.<sup>19</sup>

### 3. The core objective for the NCC under the *Code*

The NCC, which performs a critical role in the coverage decision, was established by the CPRA (*Competition Policy Reform Act 1995*) which amended the TPA (*Trade Practices Act 1974*). Importantly, the TPA is the primary Federal legislation for securing competition in markets and the constitution of the NCC was seen to logically fit with that Act. In this context, the most fundamental goal for the NCC must be to make Australians better off, as highlighted by Section 2 of the *Trade Practices Act 1974* (the Act which establishes the NCC) which states:

*The object of this Act is to enhance the welfare of Australians through the promotion of competition and fair trading and provision for consumer protection.*

This goal is also implied in the NCC’s mission statement:

*To help raise the living standards of the Australian community by ensuring that conditions for competition prevail throughout the economy that promote growth, innovation and productivity.*

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<sup>19</sup> This is all the more so in the framework of competing regimes outlined above, least the equivalent of Gresham’s Law in monetary policy might emerge whereby “the bad law and practise will crowd out the good”, with errors in the system only able to be corrected by costly appeal processes, both raising compliance costs and uncertainty for investors and deterring competition. Having said this, a regime of choice in regulatory regimes should work well to the extent it creates incentives for regulatory bodies to perform well relative to their counterparts, and provides the means for assessing this through comparison in performance over time, as judged by relative rates of successful appeal.

This is a laudable, but high level objective. In order to make the general goal of increasing welfare meaningful and applicable to the NCC's everyday functions, more detailed formulations of precisely what the goal means in specific instances are required.

The key legislative restriction on the NCC is that its functions and powers must be in accordance with the Competition Principles Agreement agreed by the State and the Federal Governments in April 1995.

The *Code* further helps to define how the NCC should operationalise the basic objective of enhancing the welfare of Australians. The stated objective of the *Code* is to "establish a framework for third party access to gas pipelines that:

- facilitates the development and operation of a national market for natural gas; and
- prevents abuse of monopoly power; and
- promotes a competitive market for natural gas in which customers may choose suppliers, including producers, retailers and traders; and
- provides rights of access to natural gas pipelines on conditions that are fair and reasonable for both Service Providers and Users; and
- provides for resolution of disputes."

These are reasonable intermediate objectives, consistent with the aim of improving efficiency and distributional outcomes for Australians. However, there is clearly significant discretion left to the NCC and the criteria for coverage of a pipeline under the *Code*, defines the scope of this discretion.

Under the *Code*, the NCC must recommend that a pipeline be covered if the following four criteria are all satisfied. The NCC cannot recommend coverage to any extent if the NCC is not satisfied of any one or more of the following criteria:

- that access or increased access (under the terms of the Code) to services provided by means of the pipeline would promote competition in at least one market other than the market for services provided by means of the pipeline;
- that it would be uneconomic for anyone to develop another pipeline to provide the services provided by means of the pipeline;
- that access or increased access could be provided without undue risk to human health or safety; and
- that access or increased access would not be contrary to the public interest.

Establishing a basis from which the NCC should interpret these criteria is essential to the analysis of whether the EGP should be covered and regulated under the *Code*.

#### **4. Framework for decision-making**

The framework for decision-making by the NCC is to assess whether the four criteria are met. Coverage is extended *if and only if* the four criteria are met.

Assessing the fit of each criterion involves a three-stage decision process:

- Does the underlying rationale supporting the criterion exist in this particular case?
- What are the consequences of ‘coverage’ versus ‘no coverage’?
- When should the decision on coverage be made?

*Is there is a problem in this case?*

Each criterion is predicated on the potential existence of particular problems to which regulation is directed. Therefore, the first step in any decision process must be to verify that a problem exists. If there is no problem then the criterion does not apply to the case and the conclusion must be that coverage is not justified on this criterion.

An obvious example is criterion (c) where any analysis will show that contracting for pipeline capacity does not pose any health and safety risk. Hence, there is no case to answer under criterion (c). As discussed below, a similar situation would apply to criterion (a) if analysis shows that the provision of pipeline services is competitive (rather than a monopoly bottleneck).

*What are the consequences of ‘coverage’ versus ‘no coverage’?*

If a problem is shown to exist, then the next question is whether regulation (through coverage) will enhance social welfare. Thus, the outcome likely to obtain under ‘coverage’ must be compared against that obtainable under the counterfactual of ‘no coverage’.

Since the NCC, like any other economic agent, makes decisions without perfect information and is subject to bounded rationality they must take account of the cost and probability of making a mistake. In other words, the Council can potentially arrive at any one of the four possible outcomes listed in the following table:

Table 1: POSSIBLE OUTCOMES FOR COVERAGE RECOMMENDATION

		Market Condition	
		No Market Failure <sup>20</sup>	Market Failure
NCC Recommendation	No Coverage	Correct Decision <sup>21</sup>	Incorrect Decision
	Coverage	Incorrect Decision	Correct Decision

<sup>20</sup> Where market failure includes the existence of market power.

<sup>21</sup> For the sake of simplicity we assume that regulation is successful at reducing the efficiency loss arising from market failure.

The table highlights the fact that the Council cannot avoid risk in making its recommendation:

- A decision to extend coverage carries the risk of a ‘false positive’<sup>22</sup> (i.e. an incorrect decision).
- A decision to not extend coverage carries the risk of a ‘false negative’<sup>23</sup> (i.e. an incorrect decision).

Since it is impossible to avoid these risks, the decision necessarily involves a trade-off. In the face of uncertainty about the true situation (i.e. whether there is market failure and whether regulation under the *Code* will improve social welfare) the appropriate decision is to recommend coverage *if and only if* the expected cost from making a mistake and regulating when it is not necessary is less than the expected cost of not regulating when market failure is present.

It follows that the NCC must evaluate how its alternative decisions may affect the probability and cost of making mistakes. Subsequent sections seek to perform this analysis for each of the four criteria specified by the *Code*.

The critical generic mistake the NCC needs to avoid can be termed the ‘greenfields fallacy’. This fallacy arises for any presumption that because there is a problem in private arrangements, intervention will necessarily improve outcomes. In reality, the damage done to existing structures by intervention may lead to worse outcomes, i.e. the costs of regulatory/government failure compared to the costs of market failure. The implication for regulatory decision-making is to consider how interventions may damage existing institutional structures resulting in diminished social outcomes.

The critical point is that coverage, by injecting the regulator into the process, changes the allocation of decision rights. Without regulation, these rights are primarily distributed amongst DEI and its customers and competitors. Interjecting the ACCC into the process necessarily changes the incentives and information that is available to decision-makers. For several reasons this is likely to mean that the possible loss in social welfare from regulating when there is no market failure (i.e. a false positive decision) will exceed the potential loss from not regulating when there is market failure (i.e. a false negative decision).

- First, with ‘no coverage’, decision rights rest with DEI, its competitors, and buyers of pipeline services. DEI and its competitors have strong incentives to understand the market and identify the needs of particular buyers. Through their daily interactions with customers, sellers build explicit and implicit information bases that are highly detailed and continuously updated as the market evolves. This information is costly to transfer to regulatory decision makers. Thus, both incentives and information are geared toward accurate decision-making by individual parties. Moreover, the multiplicity of decision-makers also spreads the risk of incorrect decisions by any one party.
- Second, with ‘coverage’, the institutions of decision-making change so that many important decisions are made through bilateral agreement between DEI and the ACCC. In effect, the ACCC becomes interposed between DEI and its customers, and in a technical sense may be

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<sup>22</sup> i.e. the NCC recommends regulation when there is no market failure.

<sup>23</sup> i.e. the NCC does not recommend regulation when there is market failure.

seen as performing an agency role on behalf of buyers. The ACCC's efficacy as an agent for buyers depends on its incentive structure and the quality of the information base upon which decisions are made, as well as, the methods through which such decisions are implemented.

- Third, as with any public sector body, the incentive structure for the ACCC is determined through a complex set of explicit and implicit accountability relationships. These relationships are intended to serve a wider set of objectives rather than being focussed particularly toward serving the direct interests of buyers. Moreover, the quality of information available to the ACCC about buyers' needs and preferences is also likely to be poorer than that of buyers themselves. It is impractical for the ACCC to engage in highly regular and ongoing contact with buyers of a sort that will provide a detailed understanding of buyers and how their needs are changing over time. Further, the transfer of decisions from buyers to the ACCC reduces the incentive for sellers to engage in costly information gathering and removes contract negotiations as a mechanism for gathering such information. Therefore sellers are also less well equipped to relay information to the ACCC.

In summary, the potential losses resulting from a false positive decision (i.e. coverage is chosen when there is no market failure) are likely to be greater than those arising from a false negative decision when there is uncertainty about both the true state of the world and the ability of the regulatory exercise to improve social outcomes. These losses result from the manner in which coverage alters the allocation of decision rights, thereby weakening the degree of incentive alignment in the system and adversely affecting information available to relevant decision-makers. Moreover, these losses can be expected to increase with the length of time that coverage is in place as information prior to regulation becomes progressively out of date.

In contrast, the false negatives that may result from a 'no coverage' decision relate to the specific concerns underpinning the four decision criteria of the *Code*. To the extent that such concerns do not apply in this specific then the probability and magnitude of the false negative will be limited.

### *When should the decision on coverage be made?*

The discussion above has focused on the nature of decision-making in a world of uncertainty where decisions may inadvertently cause losses relative to the preferred outcome. This section focuses on decision-making when arrival of substantial new information will reduce uncertainty in the future.

If the NCC were in the position that it must make a once-off irreversible decision either between coverage for all time or no coverage forever, then the prospective arrival of new information would be irrelevant. However, this is not the case. Instead, the choice facing the NCC is between recommending coverage today or waiting and retaining the option to cover in the future. Symmetrically, if the NCC does recommend coverage today, then at a later date it has the choice of revoking coverage or retaining the option to revoke at a later date. The NCC will always have the opportunity to recommend coverage in later periods because an unsatisfactory outcome would almost surely generate an application to do so from the aggrieved parties. Thus, the coverage choice for the NCC also involves a decision about *when* is the best time to make a decision on coverage.

A decision to wait should not be viewed as a decision to do nothing. In reality, private parties recognise that the authorities retain an option to regulate in the future if outcomes prove unsatisfactory. A credible regulatory threat – particularly if tied to specific outcomes – will help mitigate any incentives that may cause concern to the regulatory authorities and thereby promote welfare-improving outcomes. An ongoing credible regulatory threat is an inevitable consequence of a no coverage decision. This enables the NCC to wait until sufficient information becomes available at lower cost than if it were unable to change its mind later.

The benefits of waiting depend on two factors:

- the extent to which coverage today would adversely affect the flow of information that might lead to a better based decision in the future; and
- the extent to which reversing a coverage decision has costs.

If the nature and quality of information is improved by observing the actions of private parties over time then there will be a premium on waiting. If reversal of a previous coverage decision were costly this would further increase the waiting premium.

Effects on information flows seem more important than the costs of reversing a coverage decision in the current case. Substantial new information may be derived by waiting to observe how full entry of the EGP affects behaviour in the market for pipeline capacity to NSW. Waiting would allow market development and the creation of new pipeline based services. For example, consistent with developments in the UK reviewed elsewhere, it may be the case that a capacity trading or auction system develops for pipeline capacity that resolves all concerns of the NCC. Even in the absence of such systems, the authorities may observe significant new innovation in contracting to allow new and better risk management methods, as is beginning to occur in the Queensland pipeline market. The combination of substantial excess capacity and multiple pipeline operators suggests a high probability that developments of this nature will be observed.

This information about how the market is developing has two uses. First, it reduces the chance of making an erroneous decision to recommend coverage. Second, in the event that coverage is recommended, the improved information base increases the chances of specifying regulated prices and product definitions that are closer to optimal. Thus, even if regulation were to later prove to be desirable and warrant a coverage decision, waiting could endow the ACCC with a much better basis on which to carry out its regulatory function.

These considerations suggest that an early coverage decision would foreclose the receipt of highly valuable information. In general terms, a high premium should be attached to waiting to reflect the importance of a sound information base for the NCC to make any recommendation on coverage.

Nevertheless, the benefits of waiting must be weighed against the costs of potentially forgone benefits from early adoption of coverage. Clearly, to some extent waiting merely substitutes one form of uncertainty with another, namely uncertainty about what the regulator will do. If an early decision to order coverage forecloses generation of new information then the basis for revising the decision is diminished and private parties can proceed to make investments more secure that a reversal is unlikely. However, this effect is not significant in the current context

where the prospective waiting delay would be quite short relative to the 10 – 20 year horizon required for demand to increase toward pipeline capacity. A waiting time of several years would be unlikely to hinder more than a small percentage of investment decisions to generate greater demand for gas.

Waiting also poses the risk that adverse outcomes occur prior to the decision and become locked into place. However, again, if the parties know that a coverage decision could be made in the future they are able to negotiate an appropriate level of flexibility. The supplier has an incentive to negotiate in these terms because otherwise uncertainty leads buyers to find another supplier or wait until the coverage decision is made. Thus, if there is surplus value available from trading in advance of a coverage decision the parties have strong incentives to negotiate mutually agreeable contracts.

The authorities may also initiate mechanisms for reducing costs of waiting. An obvious example is to specify reporting requirements on key issues against expected developments to enhance their ability to monitor progress.

Overall, subject to the specific case analysis below, a strategy of waiting for additional information about the behaviour of the newly competitive market has a strong likelihood of being highly valuable and also low risk for the authorities. The table below illustrates how the decision criteria for ordering coverage may be applied in practice. In effect, the rule is to order coverage *if and only if* the probability-weighted cost of the false negative and benefits of early action outweighs the probability-weighted cost of the false positive and the benefits of waiting, i.e. *if and only if* the left-hand side of table is larger than the right-hand side.

**Table 2: DECISION FRAMEWORK WITH UNCERTAINTY AND INFORMATION REVELATION**

<p><b>Recommending no coverage when there is market failure (i.e. a false negative decision)</b></p> <p style="text-align: center;"><u>Possible Costs</u></p> <p>Potential monopoly/monopsony pricing Uneconomic investment</p> <p style="text-align: center;"><u>Benefits of early action</u></p> <p>Reduce regulatory uncertainty Prevent adverse outcomes</p>		<p><b>Recommending coverage when there is no market failure (i.e. a false positive decision)</b></p> <p style="text-align: center;"><u>Possible Costs</u></p> <p>Regulator agency costs (incentives, information, methods) Reduced incentives and information of sellers and buyers</p> <p style="text-align: center;"><u>Benefits of waiting</u></p> <p>Better information for coverage decision Better information for regulation Cost of reversing decisions</p>	
Total cost	x	Total cost	y
Probability	x	Probability	y
<b>Expected total cost</b>	<b>X</b>	<b>Expected total cost</b>	<b>Y</b>

## Section 4 - Developments in other jurisdictions

*This section outlines regulatory approaches to transmission pipelines in other countries, how they are evolving to take account of increasing competition and are increasingly using market mechanisms such as auctions or secondary markets to increase competitive pressures on gas transmission pipelines.*<sup>24</sup>

### 1. United Kingdom

The UK gas industry is a good example of the shift in regulation over the past decade. During the 14 years since privatisation, it has changed from an integrated monopoly with no competition to an industry moving rapidly towards full competition.

The transport sector is currently dominated by the British Gas Company Transco. Access to gas transporters facilities is governed by a Network Code introduced in 1996, this code ensures open access to transport facilities for all gas shippers. The initial open access regime caused some debate, particularly as significant capacity constraints occurred at the main entry point to the National Transmission System. As a result the regulator (OFGEM) choose to revise the open access regime and introduce the New Gas Trading Arrangements (NGTA) in October 1999. A central feature of the NGTA is the auctioning of *rights* to entry capacity on the National Transmission System (NTS). Bidding for entry capacity rights was opened in September 1999 with the final allocation being made in October 1999. This innovative regulatory solution is the first of its type for gas transmission, and reflects the effective use of a market based solution in preference to direct regulation of tariffs.

Transco conducted an auction of monthly system entry for a total period of 6 months (1 October 1999 to 31 March 2000) at six of the major input terminals. The auction took place over 4 rounds, and in each round one quarter of the total capacity was made available. A daily auction of capacity rights has also been introduced, this allows Transco to maximise available capacity on a given day. Shippers who do not use purchased capacity lose that capacity and Transco can subsequently make it available as interruptible capacity through its daily auction. The auction process for entry capacity is still being refined, though the initial evidence appears to suggest that it has operated well.<sup>25</sup> One of the key changes is likely to be the introduction of a within-day market to allow shippers to fine tune their within-day capacity needs and availability.

The UK regulator (OFGEM) and the gas industry have chosen to use an auction as their private contracting form, rather than bilateral contracts as is the case in other markets. The choice of an auction reflects the preferences of the regulator and industry, the specific nature of the UK transmission assets, and the capacity constraints in the national transmission system.

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<sup>24</sup> Cross-country comparisons of regulation are fraught with difficulties, particularly when comparing outcomes such as changes in prices or volumes, for this reason this section only focuses on broad regulatory trends.

<sup>25</sup> The New Gas Trading Arrangement: A Review of the October 1999 NTS Capacity Auctions, Office of Gas and Electricity Markets, United Kingdom.



## 2. Canada

The National Energy Board (NEB), under the *National Energy Board Act of 1959*, regulates gas transmission pipelines. The Canadian regulatory regime resembled that of the US until 1995, relying on traditional cost of service regulation. However, the NEB recognised the costs imposed by the traditional cost of service regulation and that the increased competition emerging in the gas transmission sector, required a significant change in the regulatory approach. As a result, the NEB has sought to minimise the costs of regulation while maintaining the original framework of rate cap regulation.

The NEB has encouraged negotiated settlements between gas transporters and shippers via “The Guidelines for Negotiated Settlement of Traffic, Tolls and Tariffs”. Since 1995 the NEB has approved succession of multi-year negotiated settlements, where previously owners of transmission pipelines were required to lodge tariff plans every year.<sup>26</sup> These agreements generally include incentives to reduce costs, and provisions to share cost savings between transporters and shippers. While multi-year toll agreements must still be approved by the NEB, they reduce compliance costs by eliminating annual reviews of tolls and avoiding some of the limitations of the cost of service approach.

There has also been increased reliance on complaint based regulation, particularly for smaller pipelines. Under this process the pipeline is responsible for providing shippers with sufficient information to enable them to ascertain whether tolls are reasonable. Tolls, once they are filed with the NEB, become effective, unless a complaint is received. If a complaint is received then the NEB investigates the toll. This approach avoids the costly approach of directly setting cost of service tolls, while effectively retaining the threat of regulation.

The NEB has given particular attention to the toll design for new pipelines. NEB recognises that the method of tolling can be crucial to a new pipeline’s economic viability. The large costs and high risks associated with the construction of the new pipelines have resulted in novel approaches to the setting of tolls. Such approaches seek to keep tolls as low as possible in a pipeline’s early years so that throughput increases. The NEB has recently approved a number of new pipelines that compete with established pipelines.<sup>27</sup> They have approved these pipelines when the project sponsors have indicated that they are willing to bear the risk of under-utilisation and offer capacity at market based tolls. In some cases shippers have negotiated discounts which increase according to the duration of their shipping commitments and this then assists the sponsors of the pipeline in underpinning their financing. The NEB approves these innovative approaches where they are supported by arms length agreements negotiated between pipeline sponsors and shippers following an open season in which shippers can effectively bid for capacity on the new pipeline.

## 3. United States

The regulatory environment of the gas transport sector in the US has undergone significant change in recent times. The most important changes culminated with the introduction of Federal

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<sup>26</sup> Traffic Tolls and Tariffs, National Energy Board, June 1997

<sup>27</sup> Vector Pipeline Limited, Application for Vector Pipeline, GH-5-98, National Energy Board, Canada

Energy Regulatory Commission (FERC) Order 636. This order required interstate pipeline companies to unbundle their sales and transportation services. The net result was to provide other parties with access to capacity on interstate pipelines, leading to increased competition among gas sellers and buyers, diminished market power for pipeline companies, higher throughput, and lower transmission mark-ups.

The United States gas market is unique, having a dense network of gas transmission pipelines often directly in competition with one another, and significant competition between the key supply areas. Despite this competitive environment, the regulation of gas transmission pipelines has remained heavy-handed, with cost of service regulation still in use.

However, there has been increased recognition by the FERC of the limitations of the cost of service approach, the FERC has issued discussion documents on the development of methodologies to assess negotiated/market-based rates.<sup>28</sup> They have also permitted negotiated rates between gas transport providers with no market power and shippers. Further, the FERC has permitted the use of incentive-based rates for firms with market power.<sup>29</sup> This approach is still cost based, but allows incentive clauses in contracts which allow performance improvements to be shared between transporters and consumers.

The FERC has also permitted firms to use negotiated rates with shippers, subject to the availability of a backstop recourse service. The FERC<sup>30</sup> acknowledges that negotiating different rates and service terms for individual shippers allows wide flexibility in service offerings including individually tailored seasonal service and rates, short-term services, or special rates for more flexible terms and conditions. The recourse rate tends to result in the negotiated rates being discounts, as the recourse rates act as a ceiling to prices. Under this method, the availability of a recourse service would prevent pipelines from exercising market power by assuring that the customer can default back to cost-based traditional service if the pipeline unilaterally demands excessive prices or withholds service. Thus, the recourse rate mitigates market power.

The FERC have actively encouraged the development of a secondary market in capacity. Under Order 636 a shipper with excess capacity can release it in return for a credit on its reservation charge. The pipeline owner posts the availability of capacity on an electronic bulletin board together with the offering price capped by the pipelines regulated rate. As a result of the introduction of the capacity regime, pipelines control almost no firm transmission capacity, but they have and can sell as available capacity. Despite the existence of a rate cap, there is significant amount of competition for sale of excess capacity at prices under the cap. Sales of the pipelines interruptible capacity compete with the sales of released firm capacity. In 1994 the capacity release market accounted for 13 percent of the overall volume of gas moved to market.<sup>31</sup> The FERC recently allowed market-based rates in the secondary market to be above fully allocated costs.<sup>32</sup>

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<sup>28</sup> 5 Alternatives to Traditional Cost of Service Rate Making for Natural Gas Pipelines, FERC RM95-6-000 and Regulation of Negotiated Transportation Services of Natural Gas Pipelines, FERC RM96-7-000.

<sup>29</sup> Policy Statement on Incentive Regulation, 61 FERC 61, 168 (1992)

<sup>30</sup> Alternatives to traditional Cost of Service Retaking for Natural Gas Pipelines, FERC RM95-6-000 and Regulation of Negotiated Transportation Services of Natural Gas Pipelines, FERC RM96-7-000.

<sup>31</sup> Energy Information Administration: Energy Policy Act Transportation Study: Interim Report on Natural Gas Flows and Rates. (1996)

<sup>32</sup> FERC Order 637 February 9, 2000.

State regulators in the US are also considering a range of alternatives to cost of service regulation. In some areas, competition (combined with excess capacity) is seen as sufficient to ensure reasonable rates. In others, individual rates need not be set based on costs but total revenues are cost capped. In still other areas, price (rate) caps are used to limit increases. Further, ad hoc sidebar constraints are imposed (e.g. individual rates must not increase by more than 10% of the average percent change in rates). The unifying principle underlying this trend is to let the market work to the greatest extent possible. There also is a recognition by the regulators that rigid control of individual rates based on an arbitrary ad hoc cost allocation cannot be expected to produce an efficient economic outcome.

The US regulatory environment remains relatively heavy handed, but there has been an increasing recognition that private contracts/negotiated rates are preferable to a traditional cost of service approach, subject to the existence a regulatory backstop exercised through FERC or state regulators.

#### 4. New Zealand

In New Zealand, the gas transmission network is largely owned and operated by the Natural Gas Corporation (NGC).<sup>33</sup> The prices charged by NGC for use of the pipeline are not set by regulation; the pipeline owner and customers negotiate prices themselves. Nonetheless, the price-setting process, and in particular the pipeline owner's market power, is influenced by laws and regulation.

The *Commerce Act* contains a provision stating that “no person who has a dominant position in a market shall use that position for the purpose of:

- restricting the entry of any person in that or any other market; or
- preventing or deterring any person from engaging in competitive conduct in that or in any other market; or
- eliminating any person from that or any other market”.

The *Commerce Act* also contains provisions allowing the Government to impose price control on goods and services produced in markets with limited competition if price control is “necessary or desirable” “in the interests of users, or consumers”. If the Government imposes price control, prices must be approved by the Commerce Commission.

This threat of price control is supported by regulatory requirements that gas companies disclose certain information about *inter alia* the prices they charge and the methods by which they set prices.

A group of gas companies, including NGC, has also voluntarily adopted a code, which has no statutory power, called the New Zealand Gas Pipeline Access Code (1998), which requires, *inter alia*, that participating pipeline companies must provide non-discriminatory access to their system. One of the influences that led to the creation of this voluntary code was the threat of further government regulation.

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<sup>33</sup> The Maui pipeline is owned by the Maui Mining Companies, but operated by NGC.

New Zealand's regulatory framework is permissive in the sense that prices for gas-transmission services are not set or approved by any regulatory agency but are rather determined by companies and their consumers. However, the threat of regulation has clearly had an impact on the gas transmission sector:

- There is open access to transmission pipelines, regulated by a voluntary industry access code, which sets minimum standards of service, disclosure and behaviour for pipeline owners.
- There is a separation of the transmission and shipping functions via ring fencing and a secondary market exists for capacity
- Under the access code the transmission pipeline owner must publish an information memorandum, which outlines services offered, methodologies for determining prices, queuing policies and the form of capacity entitlement.

## **5. Conclusion**

In deciding to regulate, regulators are increasingly comparing the likely outcomes from a regulated approach with those in the absence of regulation.

### *Comments*

To respond to increasing competition in the gas transmission sector, regulatory agencies are increasingly forward looking and innovative. In particular, they are relying more on the market to prevail in the gas transmission sector, with increased acceptance of direct contracting between transporters and shippers rather than imposed cost of service regulatory solutions. These changes are in their infancy and evolving in different directions, but the change is clearly towards relying more on private contractual institutions and other market based mechanisms where appropriate.

## Section 5 - Applying the Code to the DEIEGP case

*This Chapter applies the criteria under Section 1.9 of the Code to the facts of the DEI case, and assesses the relative merits of the coverage and no coverage decision on each criteria. It concludes that, the DEI facility in question should not be covered.*

### 1. Introduction

In its role as gatekeeper the extent of the NCC's discretion is limited by section 1.9 of the *Code*. It cannot award coverage unless all four criterion are satisfied, and it must award coverage if all four hold. Thus, if one criterion doesn't hold coverage cannot be ordered. Inevitably, this leaves discretion for the NCC in coverage decisions as it has to decide how each of the criterion applies to the facts of particular cases. In the exercise of this discretion, the overarching aim of the *Code*, and the role given to the NCC is to enhance the welfare of Australians. Thus, all other stated concerns need to be interpreted as secondary to this main aim, including for example consistency of treatment of facility owners

On the facts of this case the DEI facility in question should not be covered, as two of the criterion are not satisfied.

- On criterion (a), coverage would not increase competition in upstream markets (basin competition) nor increase competition in downstream markets (retail sales). It is our contention that it will only tend to reduce, or slow its evolution compared with no coverage. This is true because the current extent of excess capacity in the market, and scope for bypass in the pipelines services market, makes the market highly competitive. Interposing a role for the ACCC between competing pipeline owners and customers will only blunt this competition and deter new entrants in downstream markets in particular. If there is legitimate concern about competition in the downstream market it should focus on barriers to entry in the customer access or local distribution network market itself, not on conditions in the pipeline services market which is now very competitive.
- On criterion (b), coverage will also not prevent the building of uneconomic pipelines, it is more likely indeed to promote this outcome, while perversely preventing the building of economic ones. This is true because cost recovery based pricing prevents congestion pricing that tends to attract new entrants. Any residual doubt that may be harboured on these points by the NCC should be resolved by waiting and leaving the pipeline uncovered. The conditions are now such that competition will proceed quickly and the costs of hobbling that competition by too early a decision on coverage are potentially substantial. A "wait and see" approach is more likely to enhance the welfare of all Australians.

## 2. CRITERION A: That access would promote competition in another market

### *Defining markets*

The methods for defining markets are well developed in anti-trust cases. We can use the principles from these in coverage cases as well. According to the Australian Merger Guidelines, market definition involves four dimensions – product, geography, function and time. In this case, reasonable market definitions would be:

*Product dimension – It is at least an all-gas market, since, once it is processed to pipeline standard, natural gas is a relative homogenous physical commodity. Gas from any field in Australia can be substituted for gas from any other field. But the market must be wider than just all-gas. Gas also competes with a range of other fuels; electricity is a close substitute for many users.*

*Functional dimension – As noted early on, the natural gas production chain has four basic functional levels – exploration/production, long-distance transmission, local transport (distribution), and retailing. Of these four, only local transmission is generally considered to be a natural monopoly, and even then there is competition from other fuels to keep prices in check. Transmission may or may not be a natural monopoly on any particular route, but multiple routes are available from some fields and to some destinations. The EGP is a good example.*

*Geographic dimension – Given the existence of multiple interconnected pipelines, the relevant market could well be South Eastern Australia. This is particularly true if there is open access to all pipelines. Furthermore, the existence of electricity transmission interconnections implies a broader market still. In fact, according to the AGL/Cooper basin decision by the Competition Tribunal, the market is and/or is becoming a Southeastern Australian Market. Note also that the infrastructure in place facilitates swaps that include South Australia and Queensland (that is the infrastructure enables at least some virtual transportation within an even larger geographic area)*

*Time dimension – For industries such as natural gas, with long-lived assets and long-term planning horizons, the temporal perspective for defining markets might be longer than in other industries. The guidelines suggest just two years, which may be short but we understand this was supported in the AGL/Cooper basin decision. This influences decisions on when to time decisions on this criterion.*

In the case of the EGP, a reasonable approach would be to question whether a coverage ruling on the EGP (which is in the market for gas transmission to NSW) would boost competition in the retail gas market in NSW, or in the upstream basin markets, relative to a situation of a no-coverage ruling. As noted in the last chapter the appropriate method for making a decision on any criterion is to be clear:

- why this criterion is in the Code *and* what problem it seeks to address;
- whether the problem exists on the facts of the case;

- what would be the consequences of a coverage versus a no coverage decision in relation to the criterion; and
- when should a decision under the criterion be made.

In what follows we address these questions in turn.

### ***What is the problem criterion (a) seeks to address ?***

This criterion relates to the welfare of Australians by seeking to avoid certain distributional effects and allocative inefficiencies that may arise from the misuse of market power in relation to access to a pipeline. The problem the criterion seeks to address may arise when an owner of a single bottleneck pipeline has market power in the pipeline market, and is using that power in a downstream or upstream market with adverse consequences for social welfare.

The owner of a single bottleneck or unique pipeline could theoretically have incentives to grant access to only a single retailer. The single retailer thereby becomes a monopoly by virtue of its sole access to supply through the bottleneck and is thereby able to extract monopoly profits from end-users. The argument then goes that the owner of the bottleneck asset can then appropriate these 'rents' through its licence fee or by direct ownership of the downstream retailer. The effects one might observe from this behaviour are excessively high prices that do not reflect the true scarcity of the pipeline relative to demand, restrictions on quantity supplied, or lower than efficient quality at a given price. This will have distributional and efficiency effects.

Such a pipeline owner could theoretically also use its market power in the pipeline market to act as a monopsonist on the demand side in an upstream or factor market with adverse consequences for social welfare. The effects one might observe are underutilisation of resources available for supply, or more than efficient quality required at a given price. This will have distributional and efficiency effects.

### ***Is there a problem to address on criterion (a) in this case?***

At this stage there is no evidence at all that DEI is behaving in a manner which might raise a cause for concern on this criterion. Indeed to the contrary, DEI has submitted an undertaking to the ACCC in which it proposed access arrangements that conform with the *Code* yet enable it to retain a focus on customers, and meet competition from other existing and potential competitors. Further as the pipeline is not complete and founding contracts have only committed a small portion of capacity there could not be said to be any evidence yet to even establish a prima facie case to either confirm or deny any allegation of abuse of market power.

Ignoring the problem of lack of present evidence on behaviour, competition in pipeline services needs to be low for pipeline owners to be able to exercise market power to the detriment of upstream or downstream markets. Thus, attention should focus on

- barriers to entry;
- degree of rivalry because of excess capacity; and
- scope for bypass in pipeline services.

If competitive conditions are strong then there will be little market power, and therefore little scope for a regulator to improve outcomes. The benefits of intervention will therefore be low relative to its potential costs.

In this particular case there are several strong indicators that private contracting will take place in a strongly competitive market and yield considerable benefits in the absence of coverage. As noted in chapter two, over the past several years, the gas industry in Australia has evolved considerably. It has moved from a situation where monopoly suppliers sold gas to monopsony buyers, with the gas transported by a single pipeline from the field to the users, to one where the gas markets (both sources and users) in South Eastern Australia have become increasingly integrated and potentially (and actually) competitive. The most obvious result of this increased integration has been to provide multiple sources and transportation routes from which end users could choose. Furthermore, and most important, this increased integration and choice for gas source and transport route implies that the benefits of gas-on-gas competition is now possible.

These developments are most obvious in Victoria and New South Wales. Once Duke Energy's Eastern Gas Pipeline is completed, there will be three separate routes for gas to flow to users in New South Wales. AGL's EAPL from Moomba to Sydney will remain as the route to source gas from the Cooper Basin. In addition, two routes for Gippsland Basin gas - the interconnect that enables GPU Gasnet and the Eastern Gas Pipeline to ship gas through their systems to Sydney - will be in place.

Figures 1 and 2 below show different scenarios of the extent of excess capacity from the two main pipeline routes serving the NSW market, namely the East Australian Pipeline (EAPL) and the Eastern Gas Pipeline (EGP). The difference between the two graphs is due to different compression scenarios. Figure 1 assumes current compression and engineering specifications are maintained into the future while Figure 2 assumes capacities on the two pipelines are expanded to their full potential. Both graphs employ Australian Gas Association forecasts for demand in NSW.

Figure 1 shows that the current capacity of EAPL alone is expected to be sufficient to cater for growth in consumption until 2003<sup>34</sup>. Further, the forthcoming addition of EGP is expected to preserve excess capacity conditions through to around 2011.

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<sup>34</sup> It should be noted that the demand figures are forecast annual demand and capacity is stated in petajoules per annum assuming a 100% load factor.



**Figure 1: Forecast Demand relative to Current Capacity**

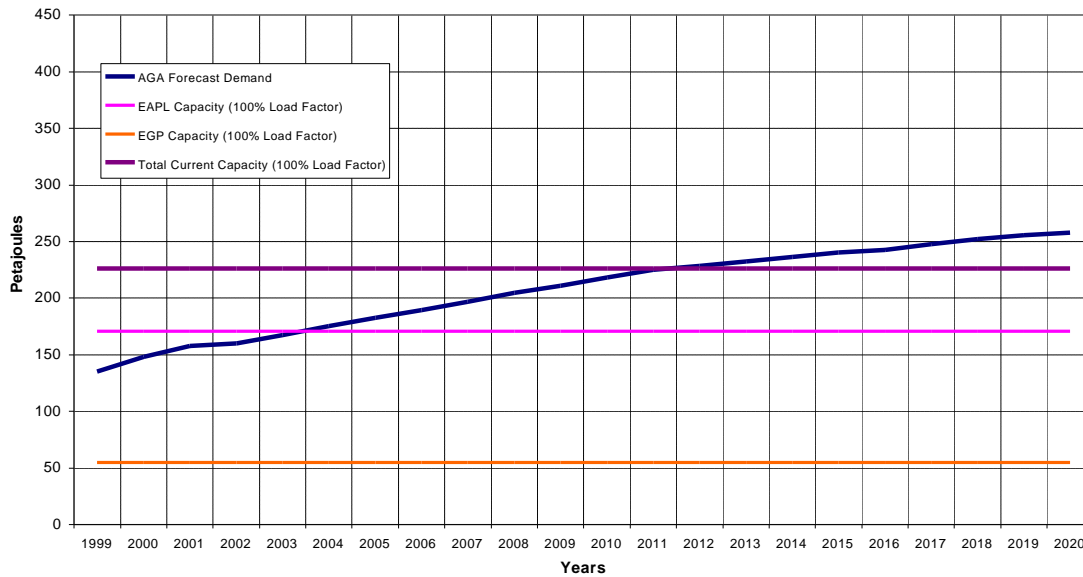
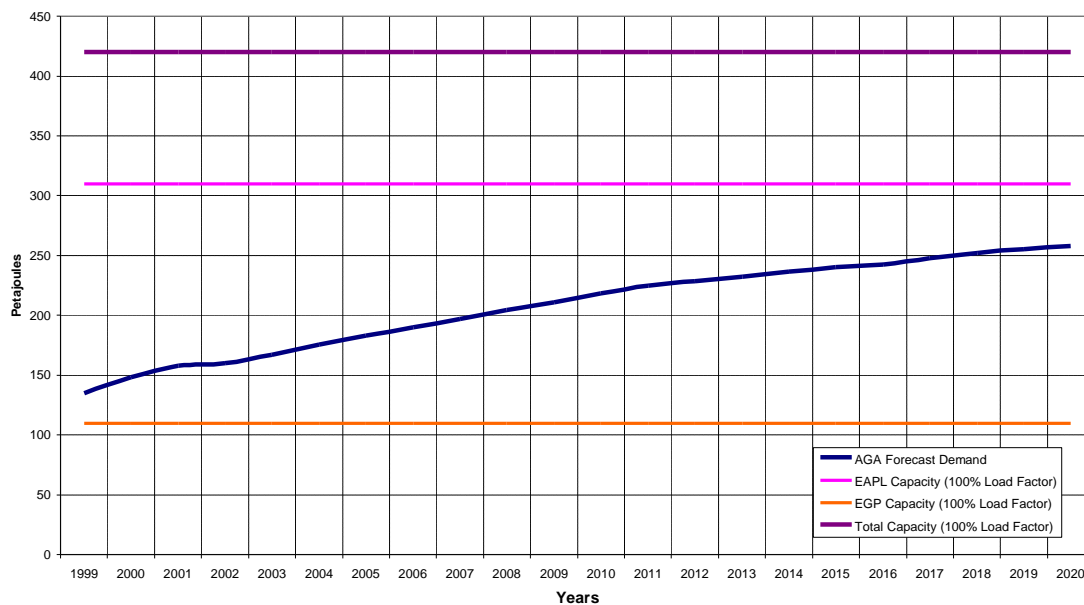


Figure 2 presents an even stronger picture of excess capacity. The figure shows that the EAPL pipeline, when fully compressed and operating at 100% load factor, has sufficient capacity to serve the entire NSW market beyond 2020. With the addition of EGP, demand as a proportion of capacity may reach only around 61 percent by 2020.

Further, this analysis excludes the Victorian interconnect owned by GPU Gas Net. The interconnect has current capacity of 13PJ but may be expanded to a limit of 90PJ. Although the interconnect does not change the total capacity supply to NSW, it does alter the proportion of capacity that may be supplied from the Gippsland basin.

**Figure 2: Forecast Demand relative to Potential Capacity**



As the above graphs show, the capacity of the pipelines will exceed the demand for gas deliveries in NSW (i.e. excess transportation capacity will exist) for some time into the future. Empirical and theoretical analysis shows that the most likely outcome of competition in capital intensive industries with excess capacity is vigorous competition. As the capacity of these pipelines – particularly the two newer pipelines from the Gippsland Basin – can be augmented relatively easily and at relatively low costs, the intensity of competition from these transportation systems should continue for the foreseeable future

The EGP is being constructed against a background of significant uncontracted capacity. DEI will assume significant commercial risk associated with the total capital and non-capital costs of the pipeline. Mitigation of this risk depends upon DEI securing contracts for the majority of the capacity in its pipeline by encouraging market growth and differentiating its pipeline services from those provided by EAPL and the interconnect. In addition, the pipeline will stimulate competition between the pipeline operators for the sale of spare capacity and existing shippers for the release of capacity. Underutilised capacity in the pipeline will compete with capacity released by shippers, and as shippers price the released capacity to meet the market and win business, the pipeline operator will lose sales of ‘as available’ capacity. This represents a real additional competitive dynamic in the market.

The relevant market is of course broader than competition between gas pipelines and geographically wider than NSW. For instance, electricity generation is a major source of increased demand for gas. With the development of the National Electricity Market, generators may locate in one state and sell energy in another. In deciding where to locate, generators will make direct comparisons of the cost of transporting gas versus the cost of transporting electricity. In this way, gas pipelines compete directly with electricity transmission lines. Gas pipeline charges are also constrained by competition from other fuels. If the delivered price of gas (including transmission charges) is not competitive relative to alternative energy sources, demand growth will be curtailed and pipeline owners will not be able to sell the current excess capacity.

Precise measures of the gains from competition that have occurred or will occur from the EGP are not easily obtained. There is no specific mathematical formula that will enable a precise determination of the additional rivalry created by the new pipeline or the generalizable gains in efficiency from three competing pipelines compared with two.

However, as a first approximation the impact on competition can properly be calculated by looking at price and output effects in the market. After all, the welfare concern, which regulation is intended to address, is that pipeline owners with market power may restrict output and hence raise prices above economically efficient levels. The initial impact on competition from DEI’s entry may be assessed by looking at first-round price effects on the market. The following table shows the changes in prices since EGP began entry into the NSW market.

**Table 3: FIRM FORWARD HAUL TRANSPORT CHARGES FROM MOOMBA TO SYDNEY**  
(EAPL AND AGLGN)

Firm Forward Haul Rates	\$/GJ
Before Entry of EGP	<b>0.93</b>
After Entry of EGP	<b>0.72</b>

DEI's original Undertaking to the ACCC in November 1999 specified a Reference Tariff that was at that time less than the existing tariff on the existing Cooper Basin – Sydney Pipeline (EAPL/AGL), i.e. \$0.86GJ versus \$0.93GJ. In response AGL moved swiftly to reduce prices (in its Access Arrangement Revision process), resulting in a transport cost to Sydney from Moomba of \$0.72GJ

***What are the consequences of ‘coverage’ versus ‘no coverage’***

With regard to the coverage decision, the NCC needs to be mindful of two possible pitfalls:

- while there may be “problems” under no coverage, the remedies provided through regulation under the *Code* may not necessarily create better outcomes;
- the apparent lack of competition and innovation in the gas industry under the current regulated regime does not mean that this situation would continue under no coverage.

The effects of a coverage decision on competition in another market depend on the degree of competition in pipeline services. If competition is present, then any likely benefit will be, at best low, and may even be negative. There is ample evidence that DEI's entry into this pipeline market will create considerable competition and a competitive market. This reduces substantially, and indeed may even eliminate, the potential for coverage to increase competition via mandating access. Indeed, regulatory intervention in these circumstances may reduce competition by inhibiting flexibility, and distort competition or transform it from competition for customers to competition for influence over regulators.

Internationally, regulators in evolving markets are increasingly being led to question whether the outcomes they will at best be able to achieve will be as good, from a national welfare perspective, as those that would exist without regulation (after allowing for the costs of regulation). This approach is described as a comparative institutional methodology. It involves explicit modelling and consideration of a regulated option as against the unregulated option. The proper basis for such a comparison is to determine which decision-making framework (regulated or unregulated) will lead to decisions being made by entities with knowledge relevant to the decision, the competency to make the decision, and the incentive to exercise decision rights in a manner that leads to gains in national welfare.

The evolution of the gas industry in South Eastern Australia from a rather early stage of development to one where competition - not regulation – governs the industry is at a critical

juncture. The reason for this and for the major recent developments in the market is the impending run down of the AGL/Cooper Basin contract and the long delayed acknowledgement by Victoria that sufficient reserves are available from the Bass Strait to allow interstate sales. The risk and costs of hobbling pending market developments by regulatory intervention that takes decision-making power out of the hands of customers and pipeline companies could be particularly high. Not only because it will diminish the ability to realise gains on the current investment, but also because it may reduce incentives for others that would almost certainly follow.

There are many ways to organise decision-making including non-profits, for-profits, vertically integrated decision-making, horizontally integrated decision-making, bilateral contracts (long term and short term), auctions and organised markets. This competition can occur not only between firms but also in means of organisation. The different contracting forms may be seen as institutions that compete against each other to produce the greatest net benefit to participants.

In general, therefore, it is not efficient to prescribe a single contractual structure for all situations. In most cases, it is in the public interest to permit parties to enter integrated, bilateral contract, and organised market relationships on a mutually agreeable basis. To interpose the ACCC and the form of contracting involved in the *Code* in the market at this stage will forestall and prevent the evolution of efficient contracting arrangements, with consequences for the existence of markets and competition in markets both upstream and downstream.

The mechanism through which this will occur is that use of reference price setting under the Code will inhibit developments such as auctions, something which holds great potential for the industry. Auctions of capacity rights would achieve more efficient investment and capacity utilisation decision-making. Auctions and other forms of organised market have advantages under several circumstances: when it is important to ensure equal and open access for all potential buyers, when anonymity of traders is important (particularly when one of the parties may be engaged in competing activities), and when the valuations and willingness-to-pay of sellers and buyers either differ substantially in an unobservable way.

There will still be access to the pipeline whether coverage under the *Code* is imposed or not. The relevant question, therefore, is whether market outcomes (in a market other than the pipeline market) will be better under the *Code* or under the alternative scenario. As noted the extent of any problem needing to be remedied by intervention appears low for three reasons:

- Competitiveness in pipeline capacity services is high: the NSW market already has two pipelines supplying it, each with excess capacity. If one pipeline owner seeks to reduce competition and extract profits from a downstream market then the other party will have an incentive to take market share from them in that downstream market.
- The pipeline owner is not involved in the gas market downstream or upstream (and thus has few incentives to limit access to the pipeline to protect its other business from competitors).
- DEI EGP has already made a commitment to open access.

It is crucial for the NCC to recognise that access to the pipeline will still be provided, even if the decision is not to cover the pipeline under the *Code*. This is a major shift in perspective for the NCC, which often seems to assume that in the absence of regulation there would be no access, or access only at “monopoly prices”.

Regulating access under the *Code* appears likely to involve costs, the possibility of error, and a reduction in the scope for dynamic evolution.

The basic reason for these adverse effects is that it moves decision rights out of the hands of customers and pipeline owners to the ACCC. The ACCC deals with the 'covered' pipelines, not their customers. It therefore does not gain direct information about which services are valued by end-users. Further, the inevitable need for the ACCC to set standard contracts and prices may mean the ability of competing pipeline owners to compete for niches offering specialised services, or for market share by short run loss leading prices will be forgone.

The mechanisms through which these effects emerge are twofold in that the ACCC has to specify services and set reference prices. The consequences of these interventions include:

- **Product Definition:** The ACCC must first either accept or deny private parties' proposals or set the default in the absence of a proposal. This places compliance costs on pipeline owners and customers in the negotiation of contracts and possibly limits the feasible set of contracts. This means some products may be misspecified, others may be not defined and incentives and ability to innovate limited.
- **Price Setting:** A capped maximum price for a service does not permit congestion pricing (i.e. does not permit sufficient variability of price over time to efficiently allocate demand as capacity becomes exhausted). Relative prices between alternative services are held rigid between review periods (i.e. there is limited ability for efficient risk management decisions by buyers and sellers).
- **Revenue Caps:**
  - Under no coverage a pipeline operator with excess capacity has an incentive to reduce prices in initial periods to grow demand and capacity utilisation, with the expectation of recouping revenue in future years through rationing demand or congestion pricing. Coverage under the code (or a revenue cap regulatory regime) institutes an environment in which a gas pipeline operator with excess capacity will have limited incentives to provide an additional unit of capacity unless it can retain the revenue associated with the sale of the capacity. Provided the marginal revenue from the sale of capacity is greater than or equal to the costs of supplying the marginal unit of capacity, a revenue cap that restricts the retention of that additional revenue will have detrimental outcomes to competition. Competition is likely therefore to be reduced by lowering supply and increasing prices.
  - Under no coverage a gas pipeline operator has an incentive to maximise productive efficiency by providing services up to the point where marginal revenue equals marginal costs. Under a revenue cap regime a gas pipeline operator has incentives to minimise service quality in order to maximise profits. That is, with revenue capped the regulated pipeline operator can only increase profits by reducing the costs of providing services this can either be achieved via productive efficiency improvements or by reducing service quality.
  - Under no coverage a pipeline with excess capacity has incentives to increase capacity utilisation through the provision of innovative services. No coverage is therefore likely to result in a greater degree of dynamic efficiency. On the other hand coverage under a revenue cap regime provides few incentives to innovate as revenue from innovative services may not be retained.
  - Revenue caps also have a general tendency to provide incentives to elevate costs, invest unnecessarily in assets and enter into rent seeking behaviour. These incentives are

exemplified under revenue caps, as opposed to price caps, since financial risks are largely transferred to consumers. An inappropriate allocation of risk under revenue caps has implications for allocative, productive and dynamic efficiency.

- Cross effects: Contracting needs to be seen in its entirety, and product definitions impact on the efficiency and levels of pricing. Thus if risks are allocated to those who can manage them best, then prices will be lower.
- Regulatory Risk: The scope for error is factored into investment decision-making and deters dynamic evolution.
- Regulatory creep. Over time the ACCC is driven to extend coverage progressively wider as 'covered' companies seek new ways of earning profits beyond that permitted by the restrictions under the *Code*.

The risks or possible costs arising from coverage are the potential for errors in product definitions, higher prices, and costs, leading to an inability to develop innovative contractual arrangements.

The consequences of 'no coverage' is to allow private contracting processes to take place. Suppliers of pipeline capacity deal directly with customers (or their informed agents) and have a high incentive to identify profitable service offers. They understand the interdependency between products and that the potential economies of scope create efficiencies from developing multiple product services. Compared with private contracting, the result of extending coverage is allocative, productive and dynamic inefficiency.

### ***When should the decision on coverage be made?***

If extending coverage immediately reduces the scope of information upon which the NCC can base its decision at a later date then this increases the risk of regulator error.

There are several points in favour of waiting including:

- The pipeline is not operating which means there is no basis for the Minister or NCC to judge the effects of a coverage decision relative to no coverage;
- It is a relatively competitive market and is evolving in the directions observed in other markets and can be expected to do so; and
- The costs of intervention appear high with DEI Queensland Gas Pipeline illustrating the benefits of allowing innovation in direct contracting between pipeline owners and customers rather than interposing a regulator

The evolution of a competitive market in Australia is underway. It will however take time. This is because the real world process of contracting in this context usually involves a number of phases. These include:

- Investment or business planning including in-house development of financial and economic modelling to assist in the process of decision-making as to whether to proceed and on issues that arise as the investment unfolds;
- Analysis and choice of potential strategic partners and in particular those with aligned interests and complementary skills or assets who can share in the risks of the investment;

- Design of contracting strategies involving consideration of the interests of potential partners identified and the design of contract offers likely to receive a positive response;
- Negotiation of contracts with key founding partners to form a basis for long term relationships, in which the contract has to be seen in its entirety with terms over product offerings, decision rights and risk bearing, duration of contract terms and exit arrangements developed simultaneously with pricing policies; and
- “Going to Market” the simultaneous implementation of the investment strategy and evolution of contractual arrangements to incorporate new players and changes in the interests or position of founding partners.

A wait and see policy is the best option at this stage.

### **3. CRITERION B: That it would be uneconomic for anyone to develop another pipeline to provide the services provided by means of the pipeline.**

#### *What is the problem criterion (b) seeks to address?*

This criterion relates to welfare by seeking to avoid duplication of pipelines where this would be inefficient. The potential for inefficient investment arises due to the possibility of excess (i.e. oligopolistic) pricing in markets where only a very small number of pipelines (sometimes only one) are likely to be economic. The concern is that the small number of participants may result in collusive behaviour, with prices set sufficiently high as to induce entry of a further pipeline even though such a pipeline cannot be justified economically. However, since inducing entry cannot be in the interests of existing participants, the underlying concern must be that existing parties induce entry by mistake by over-estimating the level of the trigger price required by a new entrant.

It is thought that the *Code* can improve welfare because the cost characteristics or production technology associated with gas pipelines (i.e. increasing returns to scale) may provide the pipeline operator with the incentives and the means (i.e. market power) to restrict access and increase price for pipeline access to the detriment of social welfare.<sup>35</sup> The *Code* aims to prevent ‘so-called destructive competition’ by preventing new entry and ensuring prices are set at a level sufficient to enable owners to recover their investments.

#### *Is there a problem to address on criterion (b) in this case?*

Two arguments point strongly to the conclusion that inefficient entry is not a relevant issue in this case. First, to the extent that the *Code* was designed to prevent entry of the EGP it is too late. The major portion of the investment has already been made so that the pipeline is now past the point of no return. Second, looking forward from this point, the new entry has or is about to create highly competitive market conditions that are likely to result in substantial downward pressure on prices, as has already been described earlier.

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<sup>35</sup> National Competition Council (1996) *The National Access Regime: A Draft Guide to Part IIIA of the Trade Practices Act*.

The failure – if there was such a failure – was that capacity prices were too high prior to entry by EGP. There is little point in compounding problems by ordering coverage to a competitive situation.

At a more general level, the notion that the production costs for pipeline capacity necessarily render such facilities as natural monopolies prone to inefficient investment is increasingly being called into question. In contrast to the 1970s, there is no longer a wide spread consensus among regulators, industry analysts, owners, and economists that most, perhaps all, mainstream network industries are natural monopolies. Facilities previously included in this category were airlines, oil and gas pipelines, gas distribution networks, electricity networks (including generation assets), telecommunications networks, postal services, and railroads. Since the 1970s, however, there has been a gradual, but fundamental change in thinking, with many of the activities listed above no longer considered as natural monopolies.

This change in thinking is in part due to technological change and in part to a long-overdue re-evaluation of competitive possibilities. The long and varied list of activities once thought to be a natural monopoly reveals how difficult it is to forecast with any degree of certainty where competition might emerge and in what form it might take. Legislative restrictions on competition understandably fail to predict technological and organisational changes that alter the availability and quality of information, create new markets, and open up competition within and between markets.<sup>36</sup> Nor can industry specific legislative measures consider events in other, seemingly unrelated, industries that often undermine market power. For example, it was not competition from other railway owners that broke the monopoly of the railway barons, but the commercial development of the motor vehicle and air-travel.

Consumers of telecommunications, airlines and railroads services in the United States were among the first beneficiaries of this shift in view. Regulatory initiatives reduced or eliminated the regulation of prices, service quality and terms of access in these and subsequently other industries. These regulatory initiatives allowed competition and the threat of competition to develop and led to improved service levels and lower prices.

As a consequence of these changes, the concept of natural monopoly itself has undergone increased scrutiny. Where the notion of monotonically decreasing costs was once taken for granted, it is now accepted that such views have been superseded by technological developments (e.g. the use of wireless technologies to compete with wireline technologies in telephone and cable television), market evolution (e.g. the ability to design sophisticated, real-time markets to trade and deliver electricity and gas over existing networks) and the exhaustion of scale economies as the magnitude and scope of economic activity has increased.

Marketplace competition cannot be said to occur unless the actions of the parties involved are rivalrous in some manner in a marketplace context (as opposed to the courts or in some administrative forums). In this context, it is generally not the absolute number of competitors that is important – indeed market structure is nothing more than a proxy economists use to measure competition. Rather it is rivalry among competitors that results in prices and outputs that are efficient. Competition, critically, is a process that generates correct signals to the market over time so that resources are allocated efficiently.

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<sup>36</sup> Competition between markets occurs as gaps between substitution possibilities narrow. The convergence in modes of communication is an example.



The Australian regulatory framework is consistent with this change in thinking in that gas pipelines are not automatically subjected to price and access regulation. The NCC is charged with considering requests for coverage of pipelines on a case-by-case basis against national welfare criteria.

For the reasons discussed above, there is a strong argument that the underlying rationale for this criterion does not apply in this case.

### ***What are the consequences of ‘coverage’ versus ‘no coverage’?***

Nevertheless, if the NCC disagrees with our assessment that no problem exists in terms of this criterion then it is necessary to consider the costs of committing false positive and false negative errors. In the context of this criterion, a false positive would occur if the NCC mistakenly determined that coverage is required to prevent uneconomic entry when in fact further entry would not occur in the absence of coverage. Similarly, the false negative for this criterion would occur if the NCC mistakenly determined that coverage is not required to prevent further entry and in fact further uneconomic entry does occur.

Given the facts of this case in terms, i.e. the extent of excess capacity forecast to be available during the next 10 – 20 years, the probability of further entry (i.e. false negative) is surely negligible. If it occurred, the cost would be high but the probability would be close to zero. Equally, the probability of a false positive is very high and involves all the costs associated with unnecessary regulatory intervention described earlier. Again, these arguments point strongly toward a ‘no coverage’ decision on this criterion.

An additional issue not discussed earlier is that coverage creates a moral hazard problem. This goes back to the definition of the problem underlying this criterion. The essence of the problem was that a monopoly pipeline owner, or collusion between a small number of pipeline owners, may result in excessive prices and that the parties mistakenly trigger entry by a new participant. Further, the new entrant may over-estimate the price elasticity of demand and thereby fail to appreciate that entry will cause prices to fall dramatically in a situation of no coverage.

In either case, although the entry may have been preventable by the authorities, the source of the problem is decisions made by either the incumbents or new entrant or both. A decision to order coverage has the effect of protecting these parties from bearing the full costs of their mistakes, since cost of service based tariffs effectively pass on costs to end-users. This creates a moral hazard problem and may encourage further new entry. Thus, in this circumstance a decision of no coverage has the beneficial incentive effect of requiring supplier’s shareholders to bear the costs of uneconomic entry.

A sharp fall in capacity prices down near short-run marginal costs would also have significant distributional outcomes. Clearly, end users would benefit from lower prices generate by excess capacity competition. Coverage, with its ‘cost of service’ pricing approach, actually would result in prices increasing above their *current* levels to recover the higher associated uneconomic entry. Thus, coverage would have distinctly adverse consequences for end-users whereas no coverage has will have a positive impact relative to current prices.

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### ***When should the decision on coverage be made?***

Similar arguments also imply that waiting has a high premium in terms of this criterion. The substantial excess capacity forecast to prevail for at least the next 10 to 20 years, and perhaps much longer, implies there is no urgency to address the potential for entry of a further pipeline. No benefits from early action have been identified with respect to this criterion.

## **4. CRITERION D: That access would not be contrary to the public interest.**

### ***What is the problem criterion (d) seeks to address?***

This criterion relates to welfare by providing that there may be situations where Australians care about certain social objectives to the extent that they are willing to trade-off less economic efficiency for greater fulfilment of a particular social objective. Section 1(3) of the *Competition Principles Act* provides a non-exhaustive list of matters that may be taken into account in considering the trade-off between efficiency and social outcomes:<sup>37</sup>

- Government legislation and policies relating to ecologically sustainable development;
- Social welfare and equity considerations, including community service obligations;
- Government legislation and policies relating to matters such as occupational health and safety, industrial relations and access and equity;
- Economic and regional development, including employment and investment growth;
- The interests of consumers generally or of a class of consumers;
- The competitiveness of Australian businesses; and
- The efficient allocation of resources.

More generally, anything deemed to be of value to the community could be judged to be in the public interest. No guidelines are available on the weighting to be given to the factors listed above.

### ***Is there a problem to address on criterion (d) in this case?***

The open-ended nature of this criterion makes it difficult to be conclusive about whether an issue exists in this particular case. Moreover, the trade-offs between efficiency and social objectives are essentially determined by informed political judgement about the preferences of Australians. As such this proposal makes no further comment on what these issues may in this particular case and the appropriate weighting that should be applied.

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<sup>37</sup> See National Competition Council (1996) “Considering Public Interest under the National Competition Policy”.

## Section 6 - Conclusion and Recommendations

- In our opinion and on the facts of this case the DEI facility in question should not be covered. This is because two of the criterion do not hold on the facts of the case.
- On the first criterion, coverage would not increase competition in upstream markets (basin competition) nor increase competition in downstream markets (retail sales). It will only tend to reduce it, or slow its evolution compared with no coverage. This is true because the current extent of excess capacity in the market, and scope for bypass in the pipelines services market, makes the market highly competitive. Interposing a role for the ACCC between competing pipeline owners and customers will only blunt this competition and deter new entrants in downstream markets in particular. If there is legitimate concern about competition in the downstream market it should focus on barriers to entry in the customer access or local distribution network market itself, not on conditions in the pipeline services market which is now very competitive.
- On the second criterion coverage will also not prevent the building of uneconomic pipelines, it is more likely indeed to promote this outcome, while perversely at the same time preventing the building of economic ones. This is true because of the role of cost recovery based pricing in underwriting uneconomic investment, while preventing congestion pricing that tends to attract new entrants.
- Any residual doubt that may be harboured on these points by the NCC should be resolved by waiting and leaving the pipeline uncovered. The conditions are now such that competition will proceed quickly and the costs of hobbling that competition by too early a decision on coverage are potentially substantial. A “wait and see” approach is more likely to enhance the welfare of all Australians.