

Commercial Regulation of Greenfields Pipelines - A New Paradigm

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INTRODUCTION

Ever since the first draft of the National Third Party Access Code for Natural Gas Pipelines (the “Code”) was issued in 1996, there has been debate about whether the application of the Code was appropriate for so-called “greenfields” natural gas transmission pipelines. While pipeline developers assert that the application of the Code discourages new pipelines and bureaucrats and regulators are of the contrary view, it remains that no company has committed to a major new pipeline that it considers will be covered by the Code since the Code was put in place in November 1997.

A reluctance to invest in new pipeline infrastructure in Australia has serious implications for the natural gas industry. However, the effects on the adequacy of our electricity systems to meet rising demand, and on our ability to phase in the use of more environmentally friendly gas fired generators, are far more serious and need to be addressed by government policy changes.

This paper addresses the reasons why developers are unwilling to commit to investment in new pipelines, particularly those with initial spare capacity, in the current regulatory environment, and how that regulatory environment might be altered to accommodate greenfields pipelines.

GREENFIELDS PIPELINES

The adjective “greenfields” has been applied to a number of proposed pipelines, but it is worthwhile addressing the characteristics of such a pipeline:

- A transmission pipeline, not part or all of a distribution system
- Provides a new source of gas to a new or existing market
- Provides a new market for a new or existing gas production basin or field
- Provides an alternative route for supply of gas from a supply basin or to a market
- Provides additional capacity on an existing pipeline
- Provides some or all of the services of an existing pipeline

However, there are other attributes that apply to a high risk, greenfields or entrepreneurial pipeline, which distinguish it from a low risk, fully contacted pipeline. Those attributes are:

- Has capacity in excess of its initial market share
- Supplies a market that has a major influence on delivered gas price – e.g. supply to a electricity generator, or to a processing plant that produces an internationally traded commodity
- The investor/owner takes the risk of market growth
- The investor/owner does not have an associate company that controls the upstream supply or the downstream retail sales

The fact that greenfields pipelines are often built with excess capacity means that an investor which commits to building a new pipeline will probably earn low or negative rates of return in the initial years of operation. That is, the entrepreneur or developer must rely on market growth – increased and more efficient use of his capital asset – to achieve his long-term hurdle rate of return. This usually requires an investment horizon that stretches for many years and recognition by the investor that its primary goal must be to grow the market to increase throughput to achieve break-even as soon as possible.

This fact was clearly recognised by the Australian Competition Tribunal in its decision to reject a Ministerial decision to “cover” or regulate Duke Energy’s Eastern Gas Pipeline, in which it said: *As matters currently stand, the Tribunal accepts that Duke sees its commercial interests as being served by maximising throughput through the EGP, rather than in restricting it.*¹

The risks of failure to grow the market are high and mostly outside the control of the pipeline investor. The only risk control measures that can be exercised by the investor are those of pipeline tariff settings and the provision of services that best meet the target market’s requirements.

The pipeline tariff must be set in the context of the equilibration of risk across the value chain. This implies that a similar risk/reward balance should apply to gas producers, the pipeline and the end market. Too often, in Australia, the shrillest advocates of regulation of pipelines are those who wish to be the beneficiaries of most of the available economic rent, whether or not the acquisition of that rent is related to the risks they face.

Greenfields pipelines will only be built if the investor is reasonably confident that it will secure an adequate reward to match the risks involved. This requires an assessment to be made of the size and growth expectations of the market, the long-term market price for the gas and the price, life and capabilities of the gas supply. This is not a trivial process and always results in a detailed financial model, which inevitably contains many informed assumptions as to the risk weighting of each input.

Preliminary contracts and other agreements between the pipeline investor and other parties will best represent the sharing of risk along the value chain and will certainly be negotiated between parties having considerable knowledge of each other’s business drivers. The resulting negotiated set of tariffs and terms and conditions will represent a competitive outcome, which can serve as a benchmark for third party access.

This negotiated risk allocation process means, quite simply, that new pipelines will only be built in a free market (if there is no government intervention to tilt the financial environment) where the parties have given proper consideration to all of the risks. If regulatory risk is also present and unable to be quantified in the long term, then history has shown that new pipelines with spare capacity will not be built.

¹ [2001] ACompT 2 (4 May 2001) - Australian Competition Tribunal, *Decision on Application under section 38(1) of the Gas Pipelines Access Law for review of the decision by The Minister For Industry, Science And Resources published on 16 October 2000 to cover the Eastern Gas Pipeline pursuant to the provisions of the National Third Party Access Code For Natural Gas Pipeline Systems and the Gas Pipelines Access Law*, Paragraph 112, 4 May 2001

Statements have been made by the Chairman of ACCC that the best rate of return a pipeline investor could expect was a return on equity that equalled the long-term returns on funds invested in the All Ordinaries share index². These statements are clearly misinformed and misplaced. In fact, if the diversified risk returns available from the stock market are equal to those in the much riskier environment of a greenfields pipeline, then there are no incentives for an investor to put money into a pipeline.

This paper argues that there is a need for significant changes to government policy for the regulation of access to natural gas transmission pipelines. The current regulatory regime, defined by the Natural Gas Pipelines Law³, is an inappropriate instrument to regulate access to pipelines and requires substantial alteration to ensure that greenfields pipelines will be developed.

APPLICATION OF THE CODE TO GREENFIELDS PIPELINES

There have been a number of comments made by representatives of the National Competition Council (“NCC”) and members of the Natural Gas Pipelines Advisory Committee (“NGPAC”) and their consultants that the National Third Party Access Code for Natural Gas Pipelines (“Code”) is flexible enough to accommodate the special needs of greenfields pipelines.

In its recommendation for coverage of the Eastern Gas Pipeline, NCC stated: *“The Council does not accept that the National Code has the effect of stifling innovation and is ill-equipped to regulate “greenfields” pipelines. The Council considers that many of the criticisms levelled by Duke and others against the National Code have not been substantiated and that the National Code has sufficient flexibility to consider the circumstances of individual pipelines⁴.”*

In its submission to NCC on the coverage of the Eastern Gas Pipeline, the South Australian Office of Energy stated: *“I consider that there is sufficient flexibility in the National Code to enable Access Arrangements made under it to consider the individual circumstances of each Pipeline or Pipeline System against a common yardstick. Pipeline owners are represented on the National Gas Pipelines Advisory Committee (NGPAC), which is responsible for recommending changes to the National Code to Ministers. They can readily present proposals for Code changes to this forum.⁵”*

These assertions demonstrate a lack of understanding of the Code’s application to natural gas pipelines which do not serve an established market, face high levels of risk, commence operation at a low level of capacity utilisation and depend on market growth to justify their investors’ returns.

An attempt was made in 2000/01 by pipeline industry representatives on NGPAC to have changes made to the Code to better facilitate the development of greenfields pipelines. Epic Energy and the Australian Pipeline Industry Association proposed that the Code should be amended to provide, as an alternative, the use of an Undertaking pursuant to Section 44ZZA

² ACCC, *Media Release on Draft Decision on Moomba to Adelaide Pipeline Access Arrangement*

³ The “Natural Gas Pipelines Law” is a generic term for the collected Acts and Regulations of all States, Territories and the Commonwealth that resulted from the *Natural Gas Pipelines Access Agreement*, signed by the Prime Minister and all Premiers and Chief Ministers on 7 November 1997. The *National Third Party Access Code for Natural Gas Pipelines* (“Code”) forms the centre-piece of this collection of legislation.

⁴ National Competition Council, 29 June 2000, *Final Recommendation - Application for Coverage of Eastern Gas Pipeline (Longford to Sydney)*

⁵ South Australian Energy Office, 3 April 2000, *Submission to NCC on an application for coverage of Eastern Gas Pipeline*.

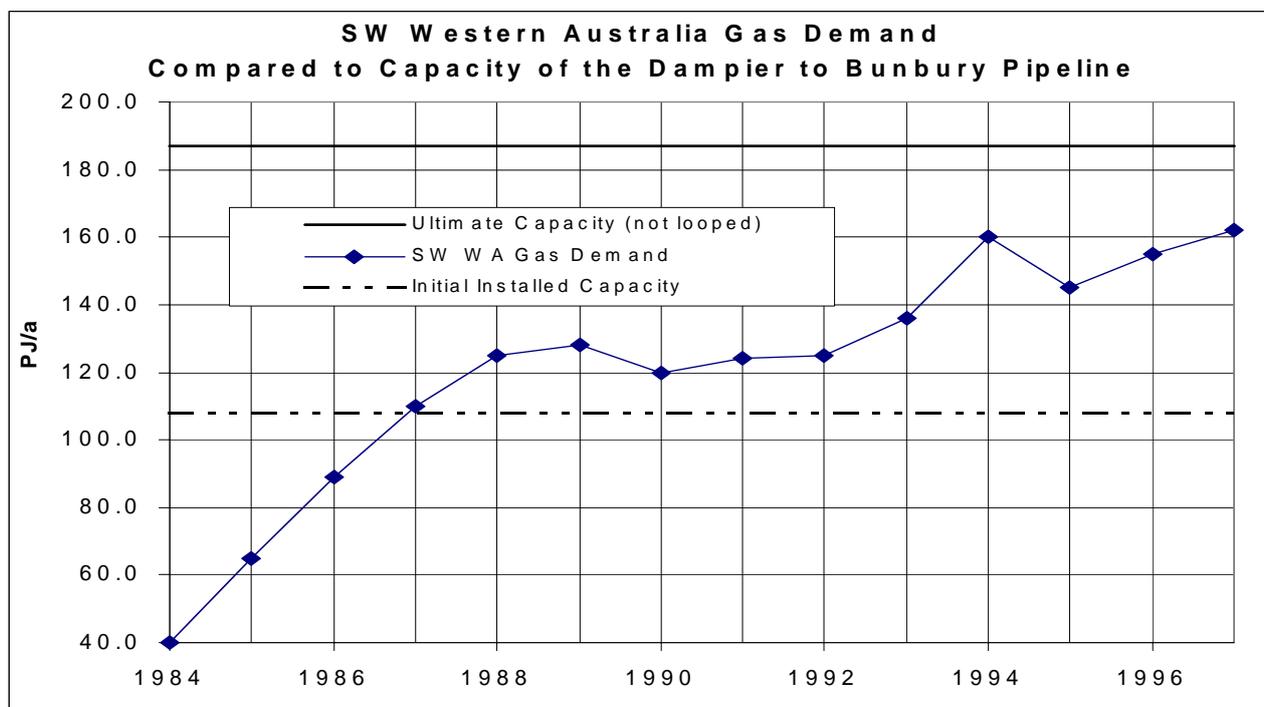
of the *Trade Practices Act*, in place of the strict application of the Code. While several jurisdictions supported this amendment, it was withdrawn because regulatory bodies insisted on changes to the original proposal that made its application no different from the original Code, and hence unacceptable to developers of greenfields pipelines.

This paper proposes an alternative approach to tariff setting and defining terms and conditions for access to natural gas transmission pipelines. This alternative will provide developers with the means of management of risk, governments with the ability to oversee compliance with the *Trade Practices Act*, will encourage pipeline developers to offer open access to bona fide access seekers and provide additional capacity beyond that required by foundation shippers.

HISTORICAL PERSPECTIVE ON PIPELINES WITH INITIAL EXCESS CAPACITY

During the development of Australia's natural gas industry, all the major natural gas transmission pipelines were constructed to serve initial markets that were much smaller than their ultimate capacities. The benefits this provided to Australia's states and territories are immense, but will not be repeated unless changes to government policies in respect of the Code are enacted.

Three such pipelines were the Moomba to Sydney, Roma to Brisbane and Dampier to Bunbury, though there were many others. The following chart, for the Dampier to Bunbury pipeline, is representative of most of Australia's major gas pipelines that were built with excess capacity for the benefit of Australia. The chart shows the load growth profile for gas supplies to south west Western Australia, and compares it with initial and fully developed capacities⁶. The Dampier to Bunbury pipeline was oversized for its initial market and its foundation shippers underpinned around 50% of the pipeline's capacity.



⁶ Capacity is defined in this case as 80% of the maximum steady state quantity of gas that can be shipped from end to end of the pipeline, determined by the physical configuration of the pipeline and the contractual pressures and gas specification. In some cases the initial installed compressors set the initial capacity.

Data Source: Historical gas demand and capacities figures from industry sources

This is just one example of where the development of Australia's economy and its natural gas industry were enhanced because governments or unregulated companies took the long-term risk of providing more capacity than the market needed initially. Energy users, the environment and governments have secured great benefits from this approach.

Australia's needs in respect of current pipeline developments are not significantly different. There are numbers of proposals being put forward by governments and companies for the development of new pipelines, which will be seeking new markets, or providing competition for existing infrastructure, these include:

- Longford to Bell Bay, Hobart and Port Latta
- Offshore Otway Basin to Adelaide and Port Pirie
- Extension of the Central West Pipeline in NSW
- Gladstone to Townsville or Rolleston to Townsville
- Darwin to Mt Isa/Moomba and Townsville (Timor Sea Gas)
- Bunbury to Albany in Western Australia

However, the circumstances for certainty of investment and the management of long-term risk are now much different to the environment which faced the developers of the pipelines built in the two decades from 1969. The Code and its application by regulators have very short-term horizons, with the ongoing risk of regulatory re-sets that inhibit the ability of the owners and developers to manage the long-term risk.

In response to the current regulatory regime, pipeline developers have the option of only providing for the short term. It is possible that some of these proposed pipelines might be constructed if they were to be regulated under the current version of the Code. However, it is likely that they will be built with no more capacity than that required by their long-term foundation contracts. No additional capital to provide more capacity will be put at risk. In fact, Epic Energy has made this point in respect of its proposed Darwin to Moomba pipeline. This means that the concept of third party access will be irrelevant and further development of gas-based industries will be inhibited.

Changes to government policy, changes to the Code and the way in which it is applied are essential to the development of these pipelines. The changes have to be implemented quickly to ensure that no opportunity is lost and that all the preliminary work is not wasted.

COSMETIC CHANGES TO THE CODE ARE NOT PRACTICAL

Loss making or low rates of return for greenfields pipelines in their early years of operation (up to 10 years) makes irrelevant the application of currently favoured cost of service models, where prices are derived from asset values, O&M costs, and return of and return on capital. Whether dressed up in the cloaks of "net present value" or "internal rate of return", the regulators throughout Australia persist in using cost of services methodologies.

The irrelevance of the cost of service approach stems from the fact that regulated prices derived for new pipelines carrying less than their capacity almost always exceed those prices that the market can bear. Instead of the application of economic "sleight of hand"

such as negative depreciation (as with the Central West Pipeline), it would be preferable for the Code to recognise the inappropriateness of cost of service models for greenfields pipelines.

The Code needs to appreciate explicitly the risks that affect both greenfields and existing pipelines. To achieve appropriate recognition by regulators of risks it would be necessary for the Code to incorporate minimum requirements to which the regulator needs to give consideration, for example:

- volume risk on the downstream markets being serviced
- risk of gas reserve shortfalls
- risk of substitution of gas by other fuels
- expected market growth and probabilities of different scenarios occurring – some of which may result in a complete loss of market, for example the mine or mineral processing facility may close as a result of a down-turn in commodity prices or failure of ore-body;

While it is possible that the Code can be re-written to address these issues, it is unlikely that bureaucrats have the necessary background in commercial risk management to shepherd such changes through the NGPAC process. Further, it is unlikely that regulators would possess the appropriate and up to date commercial acumen to apply the new rules. Rather than attempt to modify the Code to address its serious short-comings, it would be far better to establish a process of “behaviour” regulation to provide a new paradigm to address the generally held view that all the terms and conditions for access to natural gas transmission pipelines should be supervised, on the basis that such pipelines may have market power.

ADD BEHAVIOUR REGULATION TO THE CODE

Michael McDanold and Max Kimber suggested such a process in July 1997, in which they submitted a paper on behalf of PG&E⁷ to the Gas Reform Implementation Group (GRIG), when the Group was considering the contents of the Code. The McDanold/Kimber paper provided a method by which greenfields pipelines could be accommodated under the Code. This paper was summarily rejected by GRIG. It is now relevant to revisit that paper. The paper has proven to be quite accurate in respect of the outcomes of the various decisions by regulators and highlights the way in which the present Code’s contents and application are hostile to the development of greenfields pipelines.

The McDanold/Kimber paper summarises its approach as follows:

Fundamentally, the essential purpose of an open access regime is to allow and promote the vigorous gas-on-gas commodity competition that will reduce consumer prices, facilitate infrastructure development and catalyse gas demand growth. This submission suggests an alternative regulatory framework, which will assist in creating appropriate market behaviour and incentives for transmission service providers who desire to promote and develop the natural gas market.

⁷ Kimber, M.J., McDanold, M.J. *Submission to the Gas Reform Implementation Group on July 1997 draft on the National third Party Access Code*, 24 July 1997

As presently drafted, the Code ignores the objective of promoting free and fair trade in natural gas and concentrates on policing negative behaviour by pipeline operators through highly prescriptive and heavy handed regulation. This proposal strikes a balance between the objectives of policing negative behaviour by certain service providers, and promoting and developing market-based, open and transparent transmission services with tariffs and access provisions which provide incentives to stimulate and develop the natural gas market.

The current draft of the Code will not work for entrepreneurial pipeline operators and developers because of its pre-occupation with cost of service tariff setting under the watchful eye of a regulator and users with access to detailed financial information about the provision of pipeline transport services. In contrast, this suggested regime will promote entrepreneurial pipelines to serve developing markets where the proponent is prepared to take long-term market risk with the expectation of long-term rewards.

Indeed, we are convinced that, without that balanced approach, the overall CoAG objectives of free and fair trade in natural gas may well be unattainable. Free and fair trade in natural gas is most likely to take place when there is active competition from multiple suppliers and multiple consumers. This depends on the availability of adequate, reasonably priced transmission infrastructure connecting supply and markets. An objective of GRIG, therefore, should be to establish an Access Code, which encourages the development of adequate transmission infrastructure to create the necessary competitive forces for gas reform, which maximises the benefits to natural gas consumers.

Further, in the hands of a service provider with pro-competitive objectives, the operation of the transmission infrastructure can facilitate the market and supply development necessary for significant growth in energy-intensive industries. This is accomplished by implementing non-discriminatory principles for open access to the transmission system at uniform, published rates for service with tariffs that send effective and up to date price signals from market to supply. Properly established, these tariffs will provide incentives to the operator of the transmission system to participate actively in developing markets and supply sources.

Even though the “behaviour regulation” model was firmly rejected at the time of the development of the Code, it must be reconsidered as an option for the application of light-handed regulation in accordance with the recommendations made by Professor Hilmer and the statements made by Governments in the lead up to the Inter-Governmental Agreement on gas.

Behaviour regulation is even more relevant now than in the mid 1990s, since ownership changes have resulted in unbundling of the gas supply chain and stand-alone pipeline companies now dominate the natural gas transmission pipeline sector. These companies have no incentive to inhibit access to their pipelines and can only prosper if their pipelines are more intensively used.

Behaviour regulation can be implemented by amendments to the Code that require the pipeline developer, owner or service provider to

- demonstrate that it is conducting the business of a “Competitive Market” transmission service provider independently of a natural gas producer, major

consumer or retailer. This attribute is designed to ensure that the service provider's decisions in the marketplace regarding tariffs and capacity expansions are made independent of any pecuniary interests in upstream or downstream activities in the natural gas industry. In other words, this attribute will ferret out those service providers who have an inherent conflict of interest associated with vertical integration.

- The service provider must demonstrate that it will provide non-discriminatory open access to all available and developable capacity on the transmission system. This attribute is designed to ensure that all parties are given access to the transmission system on a completely non-discriminatory basis, an essential element to market growth.
- The service provider must demonstrate that it will offer non-discriminatory tariffs for equivalent services. This attribute is necessary to ensure that market-induced changes in tariffs or conditions of service are reflected in the transmission services for all similarly situated customers. This in turn will provide that there will be no arbitrary distinctions in service provided to consumers who are competing in the same competitive markets.
- The service provider must use, as its reference tariffs and other terms and conditions, those that it negotiated with its foundation customers. This attribute is necessary to assure the market and governments that the tariffs for all the most popular services are based on those derived from a competitive market environment, when the pipeline developer was seeking customers to underpin its investment. This approach was endorsed by the Australian Competition Tribunal in its decision in respect of the Eastern Gas Pipeline, where it said:

The EGP is the subject of foundation contracts with ESSO/BHP which take up less than the pipeline's existing or ultimate capacity. It is the applicants' case that the EGP is an open access pipeline offering a range of gas transmission services on a non-discriminatory basis. The operator has every incentive to secure contracts for the provision of those services and has published tariffs based on the price negotiated with the Gippsland producers and reflected in the foundation contracts. Those tariffs are available to all customers, regardless of the volume of gas they wish to transport⁸.

- The service provider must provide real time open access to data and information on tariffs, terms and conditions of service, operations, and available capacity. This should be Web-based and will provide up-to-date information to users, potential users and other interested parties of operating conditions on the pipeline, applicable tariffs and terms and conditions of service, available services, booked and available capacity along the transmission system either from the system operator or in the secondary market, capacity expansion plans, and standard procedures for obtaining access to the transmission system. The on-line information will have a powerful influence on the market because it will act as a clearing-house for critical commercial

⁸Australian Competition Tribunal [2001] ACompT 2 (4 May 2001), Paragraph 25

information necessary for existing and potential users of the system, including suppliers and consumers.

- The service provider must allow for the development of a secondary market in capacity by allowing shippers to assign contracted capacity on an open access basis. The existence of an active secondary market in capacity is essential to ensuring that competitive forces directly influence negotiations for available capacity, specifically providing for competition for capacity between the secondary market and the transmission system operator. This secondary market will ensure that competitive market forces establish the tariffs and conditions of service applicable to the transmission system.
- The transmission service provider must provide financial information on individual pipeline investments to the marketplace in accordance with the requirements for a publicly listed company under Corporations Law and Australian accounting standards. By providing this pipeline specific information to the commercial marketplace, users and potential users of the transmission system will have the necessary market knowledge to enable them to engage in meaningful negotiations for tariffs and terms of service. This information should also be published in electronic format on the Web.
- The service provider must agree to an undertaking with the Regulator to ensure oversight of the service provider's compliance with the access provisions defined by the above attributes. This will establish a system for dispute resolution consistent with the market-based oversight.

SUMMARY

This proposal does not incorporate the concept of an access "holiday" that has recently been promoted for pipelines and other infrastructure. Access to pipeline services on a non-discriminatory basis should be mandatory, but on commercial terms set by the market, not by a regulator. An access holiday merely defers the implementation of cost of service regulation and imposes long term regulatory risk on the owner of the facility.

Changes to the Code to reflect the philosophy described above are essential if Australia is to have a progressive and risk taking natural gas transmission pipeline infrastructure that will continue to serve its energy needs efficiently and encourage a natural gas based energy economy for the benefit of Australians and our environment. There may be some reluctance to change from the gas regulatory "industry" that has built up since 1997. Hence NGPAC is probably not the appropriate vehicle for change.

The proposed changes to the Code do not spell the death of regulation; far from it, since the changes require ongoing supervision of the behaviour of pipeline service providers. Where service providers are content with prescriptive regulation and feel that they can manage their risks through the first edition of the Code, then regulators still have a significant role to play.

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