Assessment of the coverage criteria for the gas pipeline access regime

Australian Energy Market Commission

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INCENTA

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1. Introduction and summary of findings

1.1 Purpose

We have been commissioned to assess the appropriateness of the "coverage test" under the national gas regime (comprising the National Gas Law (NGL) and National Gas Rules (NGR)). This test is the threshold for assessing whether price regulation and associated measures should be applied to – or removed from – a gas pipeline. It is also the threshold that is applied to test whether a "regulatory holiday" should be applied to a prospective greenfield pipeline.

We observe that once coverage is applied, there is a choice of the level of regulation of either formal price control (referred to as "full regulation"), or a price monitoring regime (referred to as "light regulation"). This second decision is the subject of a different test in the regime.

We have approached this task by:

- First, asking how we think the threshold for regulation should be defined if the task was approached on the context of a blank sheet of paper.
- Secondly, we have asked how closely the coverage test compares to the "blank sheet of paper" test, either in structure or in the outcomes that are produced. This provides, in effect, an assessment of whether the coverage test was ever appropriate, albeit exercising the benefit of hindsight since the coverage test was first empowered (as a provision of the original version of the National Third Party Access Code for Natural Gas Pipeline Systems) in 1997.
- Thirdly, we have then considered the observed trends in the gas market (and the gas transmission segment in particular) as per our terms of reference and asked whether the potential coverage tests (those being, the current coverage test, or our "blank sheet of paper" test) remain robust to those trends or, alternatively, how the detail of the test should be defined so that it does remain robust.

In undertaking this assessment, we have considered decisions made under the National Access Regime that is given effect by Part IIIA of the *Competition and Consumer Act 2010.* However, we note that relevance of the National Access Regime stems from the close correspondence between the drafting of the threshold for declaration under Part IIIA and coverage under the gas regime. We do not offer any comment on Part IIIA.

1.2 Findings

1.2.1 Blank sheet of paper test for coverage

The trigger for regulation should focus on the particular source of "market failure" that is the concern. We conclude that the most relevant potential market failure in relation to gas pipelines is market power. The possible costs that market power may cause are well established, and include:

- The potential for inefficient under-utilisation of the infrastructure (the allocative efficiency loss)
- The possibility that the firm with market power may become slack in its operations (a productive efficiency loss, also known as X inefficiency), and
- A wealth transfer from customers to producers.

We note that whether the last cost should be "counted" depends critically upon whether the objective being pursued – the National Gas Objective (NGO) in this case – is interpreted as promoting economic efficiency or delivering long term customer benefits. Indeed, the choice of whether to regulate is one of a few cases where the precise interpretation of the objective matters.

Against this, the costs of regulation are also well established and are not to be ignored, and include:

- Direct costs (such as administrative costs), which can be very material
- The potential to alter the decision making of the regulated firm so that productive efficiency is compromised, which may include investing more than is efficient (or "gold plating")
- In cases where there is a material risk associated with an investment project (and the consequent potential for the threat of regulation to impose asymmetric outcomes), the potential to dissuade efficient investment[1]
- A tendency to stifle innovation, which stems from the difficulty of dealing (within the framework of cost-based regulation) with investments whose payoffs are very uncertain, probably deferred and potentially extend for a substantial period, and
- A tendency to stifle the development of competition in the infrastructure service itself where this may be feasible.

In addition, when weighing up the benefits of regulating (being the costs of not regulating) versus the costs of regulating, it is important to take a realistic view about extent of the efficiency losses (or customer losses) that would be remedied by regulation in view of the known imperfections of regulation.

We observe that we do not think that the use of market power in the pipeline segment to impede competition in related markets is a particularly pressing potential market failure. We note that the gas pipeline (both the transmission and distribution segments) are – to our knowledge in all material cases – vertically separated. In this context, rather than impede development of competition in related markets, the interests of pipelines is to maximise it, as this:

- Maximises the extent for rent extraction in cases where the pipeline has market power, and/or
- Minimises the exposure of the pipeline to stranded asset risk – as pipeline investments are (literally) sunk, owners have an incentive for the vibrancy and longevity of the gas market to be maximised.

Given the discussion above, our view is that a "blank sheet of paper" test for coverage would be one that is focussed directly on asking whether the benefits of regulation exceed the costs of regulation. We are aware of at least one circumstance where a regulator has tried to quantify the benefits of regulation and compared this to the costs. However, we note that this assessment is more commonly reduced to one of asking whether the market power of the pipeline in question is sufficient to justify regulation. To this end, the form of regulation factors in the NGL are likely to be instructive.

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[1] To be clear, regulation has the potential to encourage over-investment in some circumstances, and to deter investment in others.

1.2.2 Test for coverage in the national gas regime

The coverage test in the national gas regime is not focussed specifically upon whether the pipeline in question has market power. Rather, its key criterion is directed to whether access will promote competition in a related market. Notwithstanding the focus of the test, our view is that the operation of the test:

- Would be expected to require pipelines to have substantial market power for coverage to be imposed. It is clear from the relevant decisions that, in order for access to a pipeline to create a promotion of competition in a related market, the pipeline must have market power. Thus, the coverage test would be unlikely to lead to an over-regulation of pipelines.

- To date, the test appears to have led to pipelines with substantial market power being covered, although there is some risk as to whether this is a proper outcome of the test or that it will persist.

To expand upon the second point, where a pipeline is vertically separated, then the pipeline already has the incentive to maximise competition in related market (as discussed above), and so the imposition of access regulation would not be expected to improve the prospects for competition in those markets. There are some economic arguments that could be run to the effect that monopoly pricing in a pipeline may affect competition in a related market – such as by causing players in the related market to go out of business – but this requires the infrastructure portion to be very substantial, and seems very unlikely where charges are levied on a retailer and in turn passed on and absorbed by final customers. In this case, it would be quite plausible that the pipeline in question would have substantial market power, but that regulation would not have any discernible effect on competition in related markets. Indeed, this is precisely what the National Competition Council (NCC) warned in its recent draft recommendation in relation to the Port of Newcastle.[2]

Indeed, in our view, whether the coverage test as currently drafted would approximately align with our blank sheet of paper test depends upon how the phrase "access (or increased access) to" that appears in criterion (a) is interpreted and/or whether it is amended. This is the debate about whether criterion (a) should be applied by looking at the world "with or without" regulation, or "with or without" access.[3]

- Criterion (a) was initially interpreted as requiring a test of whether declaration (or coverage) of the facility in question would promote competition in related markets.

[2] NCC, 'Declaration of the shipping channel service at the Port of Newcastle, Draft recommendation', 30 July 2015.

[3] There is also a debate about whether the term "uneconomic to duplicate" as used in criterion (b) should be interpreted as asking whether duplication of a facility is privately profitable (the recent, new interpretation) or as implying a test of whether a facility has a natural monopoly technology (the original test). We think economic principles suggests that it should be the latter – that is, as providing for a test of whether there is the potential for technology-driven structural barriers to entry so that regulation is the only means of addressing the market failure – and so agree with the Productivity Commission's recommended change to this provision and disagree with the Harper review. However, we do not think the interpretation of this clause is likely to be particularly important to coverage decisions for pipelines.

  - For the reasons given above, under this interpretation we think it is difficult to make sustainable economic arguments that this would indeed follow for a pipeline that was vertically separated.

- However, this interpretation of criterion (a) was overthrown by the Court in *Virgin/SACL* case,[4] where it was found that the wording just required one to ask whether any use of the facility in question was necessary for competition in the related market – whether the imposition of *regulation* had any discernible effect on the level of competition in related markets was irrelevant.

  - Under this interpretation, the fact that there may be effective competition even in the absence of regulation is irrelevant – if the use of the pipeline is needed for competition in related markets, then it would pass criterion (a). In our view, this would most likely occur in most circumstances where the pipeline was found to have substantial market power.

Having said that, it is not certain that the current operation of criterion (a) will persist. Both the Productivity Commission and the recent Competition Policy Review (Harper Review) have recommended that the test in Part IIIA be redrafted to restore the original operation of the test as asking whether the imposition of regulation (declaration) promotes competition in a related market, which we assume would cause some pressure for this to flow through to the national gas regime. We also note that the National Competition Council's most recent application of Part IIIA is not obviously consistent with the interpretation of the clause in *Virgin vs. SACL* and would appear to be closer to a "with or without declaration" test.

Our view is that restoring the operation of this clause to its original operation (i.e., requiring an assessment of whether the imposition of regulation will promote competition) would make the coverage criteria less likely to cover all pipelines for which price regulation *for monopoly regulation purposes* would be justifiable.

In addition, we note that the coverage cases to date also suggest that there are at least two situations where the current coverage test may not lead to a pipeline being covered, even if it had substantial market power, which are:

- *Where the related market is for the use of gas for a nationally or internationally traded product* – as the related market in this case would already be effectively competitive (and with this being achieved without access to the pipeline), there would be no "promotion of competition" in that related market. In contrast, the pipeline serving that customer (or group of customers) may have substantial market power (i.e., while the larger product market may impose a constraint on the price the pipeline may charge, this constraint may cut in at a price that is materially in excess of cost).

- *Where there are unaddressed barriers to competition upstream or downstream of the pipeline in question* – that is, where access to the pipeline would be necessary for competition, but other barriers (such as "capacity hoarding") upstream or downstream may preclude that competition. In this case, the likely conclusion would be that access does not promote competition, even though the pipeline in question may exhibit substantial market power and so be able to set prices materially above cost.

4 Sydney Airport Corporation Limited v Australian Competition Tribunal [2006] FCAFC 146.

It follows from the above that we do not think there is a pressing need to align the test for regulation under the national gas regime with that of the national access regime under Part IIIA. This is because the purpose of the two instruments are different, and indeed we have doubts that linking the coverage test in gas to the Part IIIA test for declaration achieves (or is expected to continue to achieve) the proper objective in the context of the gas regime. As the National Competition Council explained, the purpose of Part IIIA is to remove the barriers to competition being created in markets related to infrastructure, with a particular emphasis on vertically integrated markets. The national access regime was never intended to provide a regime for price regulation in instances of market power – indeed, this matter was addressed as a separate chapter in the original Hilmer report (chapter 12 dealt with “Monopoly Pricing” whereas chapter 11 dealt with “Access to ‘essential facilities”).[5]

1.3 Robustness of the coverage test to observed trends for the gas market

The Commission has identified that there are a number of developments that have occurred in the gas market that raise the question of whether the current approach to pipeline coverage remains fit-for-purpose. The developments include changes in gas flows, increased interconnectedness, some consolidation in pipeline ownership and the possibility that some shippers have contractual entitlements to capacity that exceed their needs that in turn may be creating a barrier to competition in related markets and/or impeding the efficient use of pipelines. One question that we understand has emerged is whether regulation should continue to be tested for each individual pipeline, or applied instead on a network-wide basis.

Turning first to this last point, we think the application of the coverage test should continue to be applied to each individual pipeline and continue to be available to be reapplied over time (so that the test for regulation is refreshed) as is currently the case. This view applies irrespective of whether the current test for coverage remains, or whether the test is changed to look more like our “blank sheet of paper” test. We say that the test should be applied to individual pipelines because it is technically feasible for gas pipeline customers to choose whether to use individual pipelines – the flows across the network can be controlled to make this possible – so that pipelines within the same network may compete. This is an area where the technical characteristics of gas are materially different to electricity. We also say that the scope should remain for the test to be reapplied over time – this requirement is necessary to ensure that regulation (or its absence) remains appropriate in light of the trends identified above. We observe that changes in the pipeline network, gas flows and pipeline ownership all have the potential to change materially whether or not a particular pipeline has substantial market power and ability to exercise it – none of this means that there is a flaw in the test, however, as the facts change so may the outcome.

It is apparent that the interconnected nature of gas pipelines have increased the importance of services that pipelines may provide other than the simple transport service. In particular, gas pipeline owners might increasingly be required to provide “hub services” at the interconnection between pipelines. It is our view that the emergence of these services justifies a shift from the focus of a coverage test from the *pipeline* being covered to the coverage test asking whether certain *services* offered by a pipeline should be covered.[6]

[5] National Competition Policy (Hilmer) Review, Final Report, 1993.

[6] We observe that if the test for coverage is reframed in terms of services then this may lead to additional regulation at the transmission level (such as various hub services, if indeed market power exists and is

We understand that the Commission is concerned that parties that hold capacity rights on a pipeline do not appear to be trading their excess capacity to parties who value that capacity more at a particular time. There are a number of potential sources of this market failure, one of those that has been suggested is market power held by the capacity holder.[7] In the case where the cause of the market failure is the market power held by the capacity holder, rather than the pipeline owner, the framework for coverage of gas pipelines is not the appropriate means of addressing this market power. In this case some other means are required in order to address this cause of market failure.

As discussed above, one issue that does arise in the context of fully contracted capacity and the test for coverage is that, under the current construction of the test, coverage may be not applied despite the pipeline for which coverage has been sought possessing substantial market power. This is because if there is no spare capacity in upstream or downstream pipelines, then access to the pipeline in question will not promote competition. This problem would be addressed by changing the test for coverage to focus more directly upon whether a particular pipeline has market power as we propose. This is because it does not refer directly to the promotion of competition and instead focuses on the presence of market power specifically.

We understand that the AEMC is considering whether certain regulatory measures could improve the coordination of use of pipelines across the network, and thus improve the efficiency with which the infrastructure is used. We also understand that a view may exist that such measures may be more easily implemented if the pipeline network was regulated (i.e., "covered" under the gas framework).

We note first that we would caution that it would be important to establish first that regulatory measures were required to achieve the coordination efficiencies sought. As discussed above, given that pipelines in Australia typically do not participate in related markets, their interests would normally be aligned with efficiency in upstream and downstream segments, provided that due regard is had to transitional issues.[8]

If it is established that regulatory measures applied to pipelines would nonetheless be required to achieve the coordination efficiencies sought, whether this should affect decisions over the coverage of pipelines depends on whether the regulatory measures needed to encourage coordination require price regulation in order to be put into effect.

- If the regulatory measures for coordination could be applied to a pipeline without also applying price regulation, then the outcome is straightforward – the coordination measures should be applied to pipelines if the benefits exceed the costs (judged against the NGO), irrespective of

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sufficient to warrant regulation) but may lead to a reduction in the scope of regulation at the distribution level, both of which may be appropriate.

7 We note, however, that it has been identified that there may be legitimate commercial reasons for retaining this capacity, so that the presence of market power should not be assumed.

8 One of the possible current inefficiencies that we have been asked to consider is the absence of a liquid market for the trading of pipeline capacity rights. However, if such a market were created, then one outcome is that pipelines may sell fewer capacity rights. This is because, absent any trade, pipelines would sell capacity rights equal to the sum of each customer's own maximum demand, whereas with a perfectly functioning market, the pipeline would only sell capacity rights equal to the (diversified) maximum demand on the pipeline, with individual customers trading on the spot market where their own maximum demand that occurs at a different time to the market's. Thus, in the short term, the pipeline may also lose revenue. However, this loss of revenue would naturally be ameliorated as the prices in contracts were reset (or immediately if the prices in contracts were reset to reflect the greater scope for trading of capacity rights).

whether the pipeline is covered for price regulation purposes. We observe that the greatest potential costs from regulation stem from capping prices (and hence returns) as this is what may have the deleterious effect on investment, innovation and competition. If the regulatory measures for coordination can be imposed without requiring price regulation, then it would be much easier for such measures to meet the NGO.

- If, however, the regulatory measures for coordination can only be applied if price regulation is applied, then it would be necessary to modify the coverage test. That is, it would no longer be appropriate to focus only on whether a particular pipeline had substantial market power (as this is a proxy for the traditional costs of monopoly). Rather it would also be necessary to ask whether there may be other benefits from regulation, and to permit the outcome that a pipeline that did not have substantial and enduring market power should nonetheless be price regulated (a test for coverage that focussed more generally on whether the benefits of regulation were expected to exceed the costs would achieve this). However, in light of the very large costs that price regulation can impose, it would be necessary for coordination benefits to be quite large and for there to be some confidence that they will emerge.

Finally, we recommend that the current opportunity for pipeline operators to apply for (and obtain) a 15-year no coverage determination should be retained. This reflects our view that the potential for regulation to be applied in the future if the pipeline is a success (i.e., asymmetric truncation) may have a material effect on the economics of a new pipeline development.

1.4 Structure of this report

The remainder of this report is structured as follows:

- Chapter 2 considers the first principles case of what should be the the threshold for whether price regulation is applied to gas pipelines
- Chapter 3 goes to the question of the consistency between the current test for coverage and our blank sheet of paper, including whether the current test is appropriate, and
- Chapter 4 considers whether the potential coverage tests remain robust to observed trends in the gas market.

2. Case for the regulation of gas pipelines

2.1 Introduction

In this chapter we consider the first principles case for why regulation might be applied to gas pipelines and what that regulation may seek to address. We consider also the costs and benefits of price regulation and what this might imply for the threshold for when regulation should be imposed. Drawing on this analysis we then ask how we think the threshold for regulation should be defined if the task for gas pipelines was approached in the context of a blank sheet of paper.

2.2 Economic rationale for economic ex ante regulation

Gas transmission and distribution pipelines transport gas from its production source to customers. The technical characteristics of this transportation service are consistent with those of a natural monopoly. That is, they possess substantial economies of scale meaning average costs decline as capacity increases. The economies of scale for gas pipelines exist in relation to:

- The pipeline diameter
- The expansion of capacity through the addition of compressor stations and looping, and
- A large proportion of total costs that are fixed.

These technical characteristics mean that it can be more efficient for one pipeline, rather than two or more, to supply gas to a market.

It is well accepted in mainstream economics that the act of rivalry in competitive markets is the best means of promoting economic efficiency. However, the natural monopoly characteristics of gas pipelines may create a high barrier to entry for competition. Barriers to entry have the potential to restrict the prospect for competition and in turn confer market power onto a provider. As such, in the absence of competition providers are able to behave in ways that are contrary to the achievement of economic efficiency. The key sources of inefficiency from unchecked monopoly in the gas pipeline sector are expected to be:

- Prices set at monopoly levels, which in turn creates the potential for inefficient under-utilisation of the infrastructure (the allocative efficiency loss)
- The possibility that the firm with market power may become slack in its operations (a productive efficiency loss), and
- The prospect that monopoly pricing encourages inefficient pipeline bypass (i.e. duplication of the pipeline) which is another potential productive efficiency loss.

In addition to these economic costs, we note also that market power through unchecked monopoly can lead to a transfer of wealth from customers to producers. The extent this is considered to be a problem depends critically on the objective being pursued. We comment more on this matter below.

In the case of gas pipelines the relevant markets that might be impacted by market power that may be conferred on gas pipelines are the gas producer market and the retail market for gas supply. These

markets tend to be geographic specific given gas needs to be sourced from a particular location where it is plentiful and customers reside in a fixed position.

One form of inefficiency, or market failure, that can arise under monopoly of essential facilities that is not expected to occur for the gas sector is the denial of access.[9] This is because of the vertical separation in the gas sector. Unlike for vertically integrated firms (such as arise in telecommunications), if a firm does not compete with its customers in dependent markets, it has a strong incentive to seek to sell access to its facility to a numerous set of customers. This is the reverse of the incentive that might arise under vertical integration. In that sense, we can expect, everything else equal, quite vigorous rivalry in dependent markets in the gas sector.

2.2.1 Constraints on the use of market power

It is important to understand that even where a facility has a natural monopoly technology – such as a gas pipeline – this does not mean that it ultimately must have substantial market power. Rather, the market power that in principle would be expected from its technology may nonetheless be constrained by:

- The existence of facilities that compete, which may be facilities that provide a duplicate service (i.e., extend from the same production basin to the same location of consumption) or that either start or terminate at the same location and so provide alternatives to either producers or consumers.

- The existence of substitutes for the gas service, such as electricity.

- The existence of competitive markets downstream from a facility that can impose an indirect price constraint on the price of transport, with this price constraint occurring at a point that precludes returns being earned that are substantially in excess of cost (including a reasonable return).[10]

- The existence of countervailing buyer power which can arise where users of a service have strong negotiating power, such as where they are few and well resourced.

The perspective that a natural monopoly facility is not determinative of the presence of market power has been acknowledged by the NCC in the past:[11]

> *In addition, a finding that the service provider has the ability and incentive to exercise market power to adversely affect competition in a dependent market is likely to mean that the barriers to entry in that market result from the natural monopoly characteristics of the facility and its bottleneck position. In the usual case, this finding would mean that access would reduce barriers to entry and promote competition in that dependent market. By contrast, the*

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9 As will be discussed further below, some have claimed that monopoly prices can be set so high as to deny access to potential access seekers. It is our view that this behaviour would be inconsistent with the incentives you would expect from a vertically separated pipeline owner.

10 For instance, where a product is traded on an international market a facility owner may need to lower its price so that its access seekers are able to compete in the international market. Absent the ability for its access seekers to effectively compete, demand for the facility service would fall.

11 NCC, 'Gas Guide', October 2013, p. 36.

> *service provider may not have the ability or incentive to exercise market power to adversely affect competition in the dependent market(s) where:*
>
> > *(a) the facility does not occupy a bottleneck position in the supply chain for the service*
> >
> > *(b) the service provider is constrained from exercising market power in the dependent market(s), perhaps by competitive conditions in the dependent market(s) and/or the market power of other participants in the market(s),or*
> >
> > *(c) the incentives faced by the service provider are such that its optimal strategy is to maximise competition in the dependent market(s). It may be profit maximising, for example, for a service provider to promote increased competition in the dependent market(s) and maximise demand for the services provided by its facility.*
>
> *Access is unlikely to materially promote competition in the dependent market(s) if the service provider does not have the ability and incentive to exercise market power to adversely affect competition in the dependent market(s).”*

The implication of this is that whether a particular facility is expected to be able to exercise substantial market power is not something that can be known without an assessment of the specific circumstances of the facility in question.

2.3 Costs and benefits of price regulation

Regulation is a tool that can be used to limit the efficiency losses that would otherwise arise through firms using whatever market power they possess. Regulation can be used to achieve a number of objectives depending on the market failure that emerges from the use of market power. Most relevant in the context of gas pipelines is for regulation to:

- Constrain prices closer to costs and so reduce monopoly rents being earned, and
- Provide incentives for firms to strive for cost efficiency.

Regulation can also permit regulators (appropriately or otherwise) to impose other requirements onto firms, or to deliver incentives for the achievement of other desirable goals. For instance, it can permit central planning or coordination of decision making. Regulation has also been used in the past to achieve certain social policy goals, such as postage-stamped pricing which provides for consistent price levels irrespective of a customer’s location.[12]

It is important to recognise, however, that while the purpose of price regulation is to address the costs caused by substantial market power, it is far from perfect in achieving this goal. Importantly, price regulation has the potential to impose substantial direct and indirect costs on regulated firms and the broader economy. Where regulation is applied inappropriately the outcome can be efficiency losses that are greater than those it is attempting to address.

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12 Postage-stamped pricing is generally inconsistent with an efficient price given it is typical for the cost of supply in the energy sector to vary depending on a customer’s location.

The costs of regulation can include:

- Direct costs (such as administrative costs), which can be very material
- The potential to alter the decision making of the regulated firm so that productive efficiency is compromised, which may include investing more than is efficient (or "gold plating")
- In cases where there is a material risk associated with an investment project (and the consequent potential for the threat of regulation to impose asymmetric outcomes), the potential to dissuade efficient investment[13]
- A tendency to stifle innovation, which stems from the difficulty of dealing (within the framework of cost-based regulation) with investments whose payoffs are very uncertain, probably deferred and potentially extend for a substantial period), and
- A tendency to stifle the development of competition in the infrastructure service itself where this may be feasible.

In addition, when weighing up the benefits of regulating prices (being the costs of not regulating) versus the costs of regulating, it is important to take a realistic view about the extent of the efficiency losses (or customer losses) that would be remedied by regulation in view of the known imperfections of regulation.

Price regulation can never be as dynamic as market competition. As noted by the Hilmer Review, it is for this reason that it should be seen as a last resort and approached with caution:[14]

> *In either monopoly or poorly contestable markets, the nature of the intervention will be important. Regulated solutions can never be as dynamic as market competition, and poorly designed or overly intrusive approaches can reduce incentives for investment and efforts to improve productivity. There are costs involved in administering and complying with pricing policies. Finally, from a government's perspective, resort to price control might be seen as an easy and popular way of dealing with what is in reality a more fundamental problem of lack of competition in an area. Since price control never solves the underlying problem it should be seen as a "last resort". For all these reasons, regulatory responses to monopoly pricing concerns must be approached with caution.*

The costs associated with price regulation were also identified by the Productivity Commission when it reviewed the gas access regime. Specifically, it noted the prospect for regulation to make investment less efficient than intended. Indeed, it is our view that impact on investment is one of the more significant, albeit indirect, costs of price regulation. [15]

> *In theory, regulation can be used to constrain monopoly pricing. However, regulation has limitations and there is an extensive literature demonstrating the potential for regulation to make investment less efficient than intended…*

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[13] To be clear, regulation has the potential to encourage over-investment in some circumstances, and to deter investment in others.

[14] National Competition Policy (Hilmer) Review, Final Report, 1993, p. 271.

[15] Productivity Commission, 'Review of the Gas Access Regime – Inquiry Report', June 2004, p.102.

…

The greatest concern for this inquiry is that the Gas Access Regime's form of cost-based price regulation leads to inefficient investment because of:

- *regulatory error — mistakes are made in applying regulation*
- *regulatory risk — uncertainty about how regulation is applied increases the riskiness of investment*
- *asymmetric truncation — profit is curtailed if it is better than expected.*

Regulatory error can lead to regulated prices that are either much lower or higher than efficient costs. Regulatory risk introduces an additional source of variability to profit that will make investment less attractive, since investors are risk averse. Asymmetric truncation can reduce expected economic profit below zero (box 4.4) [box omitted]. Economic profit is the difference between revenue and the opportunity cost of all inputs including capital. This differs from accounting profit, which focuses on monetary outlays.

2.4 Threshold for price regulation to be applied

Given the costs associated with price regulation it should only be implemented where the case that these costs will be outweighed by the benefits is compelling. It is our view that price regulation should be reserved for those instances where market power is substantial, the likelihood of that power being used is very high, and such use of market power would lead to substantial economic harm.

A number of commentators have remarked on the hurdle that should be reached before resort is made to price regulation. For instance, the Productivity Commission remarked in the context of its review of the gas access regime in 2004 that market power is a necessary condition, but not sufficient condition to impose price regulation given its costs:[16]

The presence of market failure is a necessary condition, but not a sufficient condition, for government intervention to increase efficiency. Intervention should only occur if it leads to a better outcome than that which would occur in its absence, after accounting for the costs of implementing the intervention.

It is important to recognise that governments generally cannot regulate to achieve a first best outcome because, for example, their ability to intervene is limited and intervention introduces new issues and costs to the community. Regulation is thus often a second best outcome compared with competition — a notion that is well acknowledged.

The observation that market power should be substantial before regulatory solutions are contemplated is consistent with the application of competition policy across other sectors of the Australian economy. The text book standard of perfect competition is observed in few, if any, real-world markets. Indeed, many of the markets in Australia are subject to high levels of concentration. As such, it is widely understood that the best that can be expected in real world markets is workable

[16] Productivity Commission, 'Review of the Gas Access Regime – Inquiry Report', June 2004, p.83.

competition, which may entail a degree of market power for an extended period. This was noted by the Western Australian Supreme Court which stated:[17]

> *The expert evidence and writings tendered in evidence suggest that a workably competitive market may well tolerate a degree of market power, even over a prolonged period. The underlying theory and expectation of economists, however, is that with workable competition market forces will increase efficiency beyond that which could be achieved in a non-competitive market, although not necessarily achieving theoretically ideal efficiency.*

2.4.1 Test for coverage in the national gas regime

As will be discussed in the following chapters, a test for whether regulation should be applied to gas pipelines is already set out in the NGL. This approach is heavily based on the national framework for third party access. In this section we put the current framework to one side and ask, if given a "blank sheet of paper", what test might apply to gas pipelines. In doing so our objective is to focus on what we consider to be the main economic problem, namely monopoly pricing.

It is our view that a "blank sheet of paper" test for coverage of gas pipelines would be one that is focused directly on asking whether the benefits of regulation exceed the costs of regulation. We are aware of at least one circumstance where a regulator has tried to quantify the benefits of regulation and compared this to the costs.[18]

While correct in theory, attempting to quantify the costs and benefits of price regulation can be problematic. The most basic problem is one of estimation. That is, a number of assumptions need to be made in order to derive quantitative estimates. As with all estimates these are prone to error. The extent that these errors are significant can impact on whether price regulation is implemented in the appropriate circumstances or not. This perspective is consistent with the views expressed by the Productivity Commission about the implementation of a cost-benefit test in the context of the national third party access regime:[19]

> *The Commission is unconvinced that a cost–benefit assessment would enhance certainty for service providers and access seekers. A cost–benefit assessment may be interpreted as casting criterion (f) in the same 'technical' light as criteria (a) and (b) — and therefore, consistent with the High Court's Pilbara rail decision, more open to review. Given the contestable nature of many of the costs and benefits that must be considered, a high level of judgment will always be required in public interest assessments. Attempting to process such judgments through a formalised cost–benefit framework would, perversely, increase unpredictability in the application of Part IIIA — in turn increasing the administrative costs of the declaration process and weakening investment incentives.*

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[17] Re Dr Ken Michael AM; Ex Parte Epic Energy (WA) Nominees Pty Ltd & Anor [2002] WASCA 231, Para.128.

[18] In New Zealand in 2003 the Commerce Commission was asked by the relevant Minister to make recommendations on whether or not supply of gas pipeline services should be regulated. Part of the approach taken by the Commerce Commission was to apply a cost benefit test. See: http://www.comcom.govt.nz/regulated-industries/gas-pipelines/gas-archive/2003-gas-pipeline-inquiry/

[19] Productivity Commission, 'Inquiry Report, National Access Regime, No. 66', 25 October 2013, p. 177.

We note also that if a quantitative approach is taken to assessing costs and benefits that the interpretation of the NGO can also have a large impact on outcomes. We discuss this matter specifically in Box 1 below.

It is our view that while an assessment of the costs and benefits as described here is the "first best" approach to the decision on whether price regulation should be imposed on gas pipelines, a far more straightforward test to implement may achieve the same outcomes and, therefore, be more appropriate. That is to ask whether the market power of the pipeline in question is sufficient to justify regulation. We consider that this would be where the pipeline owner has substantial and enduring market power.

Box 1: Impact of the interpretation of the NGO on the decision to impose price regulation

The objective for the gas regime is contained in section 23 of the NGL and is as follows:

> *The objective of this Law is to promote efficient investment in, and efficient operation and use of, natural gas services for the long term interests of consumers of natural gas with respect to price, quality, safety, reliability and security of supply of natural gas.*

The objective is clearly focused on economic efficiency, given the specific use of the term 'efficient'. However, efficiency is to be sought for the long term interests of consumers. This raises a question of whether wealth transfers to customers should be given explicit regard when making decisions.

In most circumstances a focus on the long term interests of consumers will reduce to a focus on the promotion of economic efficiency; which would see wealth transfers ignored. This is largely due to the qualifier of "long term", which guards against the risks of short term outcomes for consumers, such as price reductions, being preferred over incentives for investment which might require higher prices.

The case of when to regulate is a circumstance where the precise interpretation of the objective matters. Under a cost benefit test for regulation, if wealth transfers are given explicit regard, transfers between producers and customers can impact on whether regulation is imposed or not. As such, price reductions that benefit customers but take away from producers would need to be given explicit consideration. We note in the case of New Zealand that the decision of whether regulation should be imposed has turned specifically on the question of whether such transfers are factored into decisions or not.[20]

If the test was reduced to an assessment of market power, it is our view also that the Form of Regulation Factors in the NGL are likely to be instructive[21]. This is because these go to matters that are squarely focused on the extent that a provider has market power or not. As such, there may be merit in the relevant decision maker having regard to these factors in forming their decision. We set out the Form of Regulation Factors, and their relevance to the question of the extent of market power held by a pipeline owner, in Box 2 below.

[20] The fact that the choice between a customer benefit test (referred to in that case as the "net acquirers benefit" test) or an efficiency test (referred to in that case as a "net public benefit" test) was critical is most apparent from the subsequent judicial review (at appeal stage): see Powerco Limited v Commerce Commission and Anor CA56/2008 [11 August 2008], para.2ff.

[21] The Form of Regulation Factors are contained in section 16 of the NGL.

Box 2: The Form of Regulation Factors

The form of regulation factors and their relevance to the decision on whether substantial and sustained market power is present is as follows:

- The presence and extent of any barriers to entry in a market for pipeline services - Barriers to entry can insulate incumbent service providers from the discipline of competition. It is important to recognise that some barriers to entry may be evident in any market. What is required in this case is that the entry barriers are sufficiently high that the prospect of alternative providers emerging is unlikely.

- The presence and extent of any network externalities between natural gas services provided by a service provider and any other service provided by the service provider in the natural gas market or any other market - The shared nature of gas pipelines means that network externalities can be expected. We note, however, that traditionally the end-to-end nature of gas pipeline services has meant that pipelines could be operated independently without a substantial loss of efficiency. The increasing interconnectedness of the gas pipeline network suggests that this assumption may need to be challenged.

- The extent to which any market power possessed by the service provider is, or is likely to be, mitigated by any countervailing market power possessed by a user or prospective users - Where users of a service have strong negotiating power, for instance where there are a small number of large and well-resourced customers who have credible alternative options, the extent that a service provider can use market power can be considerably constrained.

- The presence and extent of any substitute, and the elasticity of demand, in a market for a pipeline service in which a service provider provides that service and in a market for electricity or gas (as the case may be) - Where substitutes are available customers are able to choose an alternative to their current supplier. This is effectively the scope for competition in a market. Further, if a service is particularly inelastic it suggests that there is limited capability for customers to either avoid use, or chose an alternative, when prices rise.

- The extent to which there is information available to a prospective user or user, and whether that information is adequate, to enable negotiations to be on an informed basis - This factor goes to the extent of information asymmetry between pipeline owners and users or potential users. In a case where there is substantial market power it is more likely that information provision will be particularly limited given a single party holds almost all of the information and would have limited incentive to disclose it to others.

We note that one indicator of the extent of market power that is perhaps not addressed specifically in the form of regulation factors is that of market shares. Market shares are relevant given economic theory and empirical evidence suggests that there is generally a positive relationship between market shares and profitability. We note, however, that market shares are not, on their own, evidence of substantial market power.

Finally, while it is not a matter that we have been asked to address specifically, it is our view that there is merit in ensuring that whatever test is applied that it is done so by a body that has a healthy distrust for regulation. That is, an independent body that is separate to the regulator that would be responsible for the administration and enforcement of the regime. We take this view because there is a greater risk that a regulator may under-estimate the costs of regulation and overweight its benefits.

Having a body external to a regulator make the decision increases the prospect that the assessment will be undertaken objectively and also the prospect that regulation is only undertaken in those circumstances where it is beyond reasonable doubt that the benefits outweigh the costs.

3. Assessment of the current coverage test for gas pipelines

3.1 Introduction

The purpose of this chapter is to assess the current criteria for coverage of gas pipelines in order to consider whether they remain appropriate for the purposes of testing whether price regulation should be applied to gas pipelines. This means questioning whether they focus on the economic problem at hand and lead to price regulation in the appropriate circumstances.

For the gas regime there are four criteria that are required to be satisfied before a pipeline can be "covered" and therefore subjected to price regulation. Importantly, it is necessary for each of the criteria to be met before regulation is imposed. As such, if three of the criteria are met, but one is not, the pipeline will not be covered under the regime. This means it is important to consider the criteria in their entirety when considering whether they remain appropriate for application to gas pipelines. The coverage criteria contained in section 15 of the NGL are as follows:

> *The pipeline coverage criteria are—*
>
> *(a) that access (or increased access) to pipeline services provided by means of the pipeline would promote a material increase in competition in at least 1 market (whether or not in Australia), other than the market for the pipeline services provided by means of the pipeline;*
>
> *(b) that it would be uneconomic for anyone to develop another pipeline to provide the pipeline services provided by means of the pipeline;*
>
> *(c) that access (or increased access) to the pipeline services provided by means of the pipeline can be provided without undue risk to human health or safety;*
>
> *(d) that access (or increased access) to the pipeline services provided by means of the pipeline would not be contrary to the public interest.*

For this analysis we have focused on all of the criteria aside from criterion (c). The reason for this is that criterion (c) is not directly focused on the economics of whether price regulation is justified or not.

There is a high degree of consistency between the criteria in the generic third party access regime and the one that applies to gas pipelines. As such, the interpretation of the criteria in this context tends to flow through to the interpretation of the criteria for gas pipelines. On this basis we consider the application in the national third party access regime where appropriate.

3.2 Assessment of criterion (a)

3.2.1 Design and interpretation of criterion (a)

Criterion (a) seeks to limit coverage to situations in which access to the pipeline would promote a material increase in (at least one) dependent market. In past decisions in relation to gas pipelines,

criterion (b) has been found to be met, so that decisions over coverage have largely turned on the assessment of this criterion.[22]

The test in this criterion can be understood as comprised of three key elements:

- Bottleneck facility: Access to the facility needs to be pivotal to competition in dependent markets, in that the degree of competition would be higher with access to that facility than it would be without access[23]
- Dependent markets: This is concerned with competition taking place in dependent markets (upstream or downstream markets), and
- Material increase: The increase in competition in dependent markets derived from access should be material, which implies that a mere incremental increase would not be sufficient.

Taken together, the test essentially amounts to demanding that the facility in question be a bottleneck facility in the sense of its criticality to competition upstream or downstream, and that the increase in competition that access to it creates is of significance.

Bottleneck facility

The feature most worthy of note about the current criterion (a) is that it is not a direct test of competition in the market in which the pipeline sits. That is, it does not ask the direct question of the extent to which the pipeline provider has market power. Rather, the focus is on the impact that access to the facility has on competition in dependent markets.

It is apparent, however, that even though the direct question does not go to the extent that the pipeline owner possesses market power, this is in fact what part of the NCC's assessment of criterion (a) has reduced to. That is, the interpretation of the clause has found that a pre-requisite for access to the pipeline in question to promote competition in a related market is that the pipeline in question exercise substantial market power. The rationale for such an approach is likely to be that the extent a pipeline owner has market power is influenced by the presence or otherwise of genuine alternatives for the users of that pipeline. As such, if a pipeline owner has substantial market power this is likely to derive from the absence of genuine alternatives. In this case it is legitimate to classify the facility as a "bottleneck" to which access may be required in order to promote competition in dependent markets.

To this end, in its declaration guideline the NCC has cited statements by the Tribunal that reveal the view that whether access will promote competition depends critically on whether the access provider has market power that could be used adversely:[24]

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[22] As we note in the following chapter, the interpretation of criterion (b) has now changed, and as a consequence the past consideration of pipelines under this criterion need not necessarily be indicative of what may prevail into the future.

[23] We discuss important points of interpretation over this phrase below, particularly in relation to what is meant by "access."

[24] NCC, 'Declaration of services, A guide to declaration under Part IIIA of the *Competition and Consumer Act 2010* (Cth)', February 2013, p.33

> *3.38 In the Duke EGP decision, the Tribunal concluded that whether access will promote competition critically depends on whether the access provider has market power that could be used to adversely affect competition in the dependent market(s). The Tribunal said:*
>
> > *Whether competition will be promoted by coverage is critically dependent on whether EGP has power in the market for gas transmission which could be used to adversely affect competition in the upstream or downstream markets. There is no simple formula or mechanism for determining whether a market participant will have sufficient power to hinder competition. What is required is consideration of industry and market structure followed by a judgment on their effects on the promotion of competition. (at [116])*

Further, it identifies that barriers to entry are expected to be a key determinant of whether a service provider has market power or not.[25]

> *3.41 If a service provider is unable to exercise market power in the dependent market, then declaring the service so as to provide an enforceable mechanism to determine the terms and conditions of access to the service would not promote competition or efficiency in that market.*
>
> *3.42 Barriers to entry are a primary determinant of the existence of market power. Only in the presence of significant barriers to entry can a firm sustainably raise prices above economic costs without new entry taking away customers in due course.*
>
> *3.43 The ability and incentive for a service provider to exercise market power to adversely affect competition in a dependent market is a necessary (although not sufficient) condition for access to promote competition. Prima facie, regulation of the terms and conditions of the provision of the service by the service provider in these circumstances is likely to promote competition.*
>
> *3.44 In addition, a finding that the service provider has the ability and incentive to exercise market power to adversely affect competition in a dependent market is likely to mean that the barriers to entry in that market result from the characteristics of the facility and its bottleneck position. In the usual case, this finding would mean that access would reduce barriers to entry and promote competition in that dependent market.*

"Access" versus "Declaration"

The meaning of the term "access" in criterion (a) has been a matter of focus over recent years. The issue of contention is how the "factual" and "counterfactual" are framed when applying the test, with the choices being whether the test is to be applied by asking whether:

- declaration (coverage) of the facility is likely to promote a material increase in competition compared to the situation where there is no declaration (coverage) – the "with/without declaration" test, or

[25] NCC, 'Declaration of services, A guide to declaration under Part IIIA of the *Competition and Consumer Act 2010* (Cth)', February 2013, p.34.

- access to the facility is likely to promote a material increase in competition compared to the (possibly hypothetical) situation where there is no access to the facility – the "with/without access" test.

As we discuss further in the following section, this interpretation can have a material impact on whether a gas pipeline might be expected to meet this criterion or not.

The early interpretation of criterion (a) was clearly the first of the two interpretations above (that is, the "with/without declaration" test). This point is explained by the Productivity Commission in its 2013 review of the access regime:[26]

> *Prior to 2006, the NCC and decision makers applied criterion (a) as requiring that declaration would promote competition in a dependent market. The approach adopted was to compare the status quo against the future state of competition in a dependent market with declaration of the infrastructure service.*

The previous interpretation of the term "access" was subsequently overthrown by the Full Federal Court in the *Virgin/SACL* case.[27] In this decision it was found that the wording just required one to ask whether any use of the facility in question was necessary for competition in the related market – whether the imposition of *regulation* had any discernible effect on the level of competition in related markets was irrelevant, and indeed whether there was already access to the facility (and the terms of that access) were also irrelevant. The relevant statements of the court are as follows:[28]

> *We agree with the submission of Virgin that the relevant enquiry in s 44H(4)(a) is the comparison between access and no access and limited access and increased access. That is what the words say. They do not say that it is necessary to examine whether declaration of the service would promote competition; they say "access or increased access … would promote competition."*
>
> …
>
> *We disagree with this approach whereby "access" becomes "declaration under Part IIIA". Whilst Part IIIA is entitled "Access to Services", the two stage approach, if engaged, does not necessarily lead to access or increased access to the service for anyone. It is a convenient and meaningful heading, in particular in the light of the terminology and nomenclature of the debate, discussion and background leading up to the passing of the amending Act. But "access" is an ordinary English word. Taking into account the context and background, we think that in this part of s 44H, the word "access" is being used in its ordinary English sense. Virgin is correct in its submission that all s 44H(4)(a) requires is a comparison of the future state of competition in the dependent market with a right or ability to use service and the future state of competition in the dependent market without any right or ability or with a restricted right or ability to use the service.*

[26] Productivity Commission, 'Inquiry Report, National Access Regime, No. 66', 25 October 2013, p.17.

[27] Sydney Airport Corporation Limited v Australian Competition Tribunal [2006] FCAFC 146, paras.81, 83-84.

[28] Sydney Airport Corporation Limited v Australian Competition Tribunal [2006] FCAFC 146, paras.81, 83-84.

> *We do not accept the Tribunal's basis for rejecting the submission that it would be unrealistic to undertake a counterfactual analysis which discounts the fact that Virgin has access. That, with respect, is not the point. The terms of s 44H(4)(a) do not incorporate the requirement for comparison with what is factually the current position in any given circumstances. Once a declaration is made any potential user can take advantage of it. Thus, it is an unnecessary constriction of a provision by way of pre-condition, to engage in a detailed factual enquiry heavily dominated by the past and the present.*

As we discuss further below, we think that this interpretation is fundamental to the application of criterion (a) in the context of a vertically separate infrastructure owner – in that case, we think it is difficult to maintain sound economic arguments that declaration (coverage) would lead to a promotion of competition in related markets if all that the infrastructure owner is doing is setting a monopoly price, but it is much more likely that access (compared to no access) will promote competition.

Despite what we read to be clear statements as to this interpretation from the full bench of the federal court, we read some uncertainty in the NCC's subsequent application of the test, and indeed find it difficult to reconcile some of the NCC's statements with those of the court. For example, in apparent contrast to the decision of the Court, the NCC has stated in its guideline for gas pipeline coverage that it interprets "access" in criterion (a) referring to a right to access upon coverage under the NGL, so that the test implicitly is a test of the effect of providing that right:[29]

> *The phrase 'access (or increased access) to pipeline services' refers to the right to access pipeline services consequent upon coverage under the NGL. That is, it refers to a regulated right to access pipeline services under the NGL rather than access that may be available under individual commercial arrangements.*
>
> *The context in which the phrase appears in the NGL indicates that access must be provided on terms and conditions that give effect to the efficiency objective in the NGL and, accordingly, seek to replicate the outcome of a competitive market. The provision of services at a competitive market price, for example, will result in an optimal level of demand for access to the services. The reference to 'access (or increased access)' describes the conditions that would derive from access under the NGL as opposed to the conditions that would result in a less than effectively competitive dependent market for the services provided by means of the pipeline.*

We read this statement – which albeit is some way from unambiguous – as closer to a "with/without declaration" test than to a "with/without access" test.

In the NCC's most recent statement on this matter – being its recent draft recommendation on whether the Port of Newcastle should be declared – the NCC's interpretation of criterion (a) has evolved somewhat again, to one where it has said that where there is already access to the facility in question, the relevant question is the effect of additional usage on competition in the related market. The NCC stated as follows:[30]

> *Criteria (a) and (f) require an examination of the effects of "access (or increased access)" to the service for which declaration is sought on competition and the public interest*

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[29] NCC, 'Gas Guide', October 2013, p. 32.

[30] NCC, 'Declaration of the shipping channel service at the Port of Newcastle, Draft recommendation', 30 July 2015, para 3.9.

> *respectively. The words "access (or increased access)" mean that these criteria contemplate situations both where there is currently no access to the service sought to be declared, and where access is, in some form, already available. In situations where access is already available, consideration needs to be given to what "increased access" would entail.*
>
> …
>
> *As part of considering the effect of increased access on competition the Council has assumed a scenario where "reasonable terms and conditions" of access entails prices that are lower than those otherwise charged by PNO and which would rise at a more predictable rate than would otherwise be the case. The prices that might flow from declaration may not, however, be as low as those which were in place prior to PNO assuming operation of the Port and may exceed those proposed by PNO.*

This is a third interpretation of the criterion, and this interpretation we read as only subtly different to the "with/without declaration" test. Like the with/without declaration form of the test, we think that this version of the test would make it difficult for criterion (a) to be satisfied in the case where a vertically integrated facility was activity promoting access but setting monopoly prices. We observe that the NCC has also made it clear – consistent with our belief – that the version of the test that it applied in the Port of Newcastle case would not be expected to address (and justify declaration or coverage) in situations where the only concern was of monopoly pricing. Specifically the NCC states:[31]

> *Declaration under the National Access Regime is not a mechanism for imposition of price regulation and was never intended to be such. "Excessive", "monopolistic" or "gouging" pricing per se is not the focus of Part IIIA. Where such pricing in one market merely transfers income or value from one party in a supply chain to another without materially impacting competition in any other market, Part IIIA does not provide a remedy. The focus of the Regime is on promotion of competition in markets where the lack or restriction of access to infrastructure services provided by facilities that cannot be economically duplicated would otherwise limit competition.*

We note also that some have interpreted comments from the Tribunal in the context of the *Pilbara* case as supporting an interpretation of "access" as being synonymous with "coverage", or access on fair and reasonable terms and as effecting a modification to the test, in particular the Productivity Commission who stated:[32]

> *[i]n the Pilbara rail case, the Tribunal may have re-raised the hurdle for satisfying criterion (a). Referring to the Federal Court's decision in the Virgin Blue case, the Tribunal considered that it should 'assume that access is on reasonable terms and conditions…' (para. 1066)…*

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31 NCC, 'Declaration of the shipping channel service at the Port of Newcastle, Draft recommendation', 30 July 2015, para 3.16. The NCC notes that it is conceivable that service charges could be set so high as to make the sale of coal unprofitable, which in turn could have a detrimental impact on competition. In this case it notes that declaration, and subsequent price regulation, could promote competition and therefore satisfy criterion (a). However, would appear to a high hurdle to meet, which the NCC's comments quoted above appeared to accept.

32 Productivity Commission, 'Inquiry Report, National Access Regime, No. 66', 25 October 2013, p. 171.

> *The Federal and High Courts did not comment directly on this aspect of criterion (a) in the Pilbara rail case. However, the Federal Court did accept the Tribunal's approach of assuming that 'access' in the public interest test (criterion (f)) is access on reasonable terms and conditions, and the NCC (sub. 9) considered this provided some authority to the Tribunal's decision. The NCC now assesses criterion (a) as requiring a comparison of the state of competition under the status quo against the state of competition where access is granted on reasonable terms and conditions (NCC, pers. comm., 23 April 2013). Allan Fels (sub. 40) cautioned that there is some uncertainty as to whether this approach is consistent with the Virgin Blue decision.*

It is a matter for legal advice as to whether the subsequent decisions permit a modified interpretation of criterion (a) and should be taken to impliedly override the direct decision of the full bench of the federal court on this matter, as discussed above.

More generally, we note that both the Productivity Commission and the Harper Review have assessed the relative merits of the two interpretations and concluded that a "with/without declaration" test should be preferred, and the law changed to create this effect. That is, the Productivity Commission supported an interpretation of "access" as being the equivalent of "declaration" as this allowed for a better target of the economic problem the regime is intended to address. This perspective was supported by the Harper Review. We observed, therefore, that even if the correct interpretation of criterion (a) is as a "with/without access" test, pressure exists for the national regime to be amended to restore a "with/without" declaration test.

3.2.2 Implications for gas pipeline regulation

From the discussion above, we conclude that under the current coverage test:

- There is little risk of over-regulating gas pipelines – this follows from the fact that all relevant authorities have accepted that the facility that is the target of the declaration or coverage application must have market power in order for access to promote competition in a related market; however
- There is a prospect that gas pipelines that have market power and engage in monopoly pricing – but do nothing else – may not be regulated.

As discussed above, whether or not the second of these outcomes is real depends critically upon how the phrase "access to" that appears in criterion (a) is interpreted, that is, whether this test is applied as a:

- *"With/without declaration" test* – which we think creates a material risk that facilities for which price regulation may be justified when applying a more direct test may nonetheless not be covered, or
- *"With/without access" test* – in which case there is little risk that a gas pipeline that would be regulated under a more direct test of whether price regulation was justified would pass the test for coverage.

As discussed above, there is some uncertainty as to which of these tests are currently embodied in the NGL, and pressure for the law to be changed to apply the first of these tests.

Just to elaborate upon our views about the significance of the interpretation of "access to", as we indicated in Chapter 2, the gas market is vertically separated. Both theory and practice tells us that a vertically separated operator of a bottleneck facility does not have an incentive to deny access to its facility, or to diminish competition up/downstream. Indeed, given the firm does not compete with its customers in dependent markets, its prevailing interest is generally the reverse – that is, to do all that it can to maximise competition in related markets. Rather than a problem of the denial of access, the issue with respect to gas pipelines is one of monopoly pricing. It is our view that criterion (a) is not centrally focused on this question, which in turn raises a prospect that price regulation may not be applied when it is justified.[33] More specifically:

- If the test is interpreted as requiring an assessment of whether the application of regulation (coverage) will promote competition in a related market, it is difficult task to mount a sustainable economic argument that this will be achieved by regulation, even where monopoly pricing is evident.[34] Moreover, where such a test was applied to a pipeline that was suspected of engaging in monopoly pricing but nothing more, the assessment would have to focus on the effect of monopoly pricing on competition in a related market. This is a difficult issue to analyse, and one that may be a poor proxy for the correct test, which is the effect of monopoly pricing on economic efficiency and/or on customers.

- If, however, "access to" is interpreted as merely requiring that use of the facility is required to promote competition, then the test for whether a pipeline should be covered effectively reduces to a test of whether it has substantial market power.

As discussed already above, our view about the scope of facilities that will be caught within the declaration (coverage) criteria – and the potential that instances of monopoly pricing alone will not be addressed – is consistent with the NCC's views, which we quoted above. In addition, we observe that the Hilmer Review clearly separated the concepts of the access problem that derives from vertical integration to the pricing problem that arises from monopoly more generally. Indeed, it is our view that the national third party access regime, upon which the gas access regime is based, was never intended to provide a regime for price regulation in the instance of market power. Indeed, the question of price regulation was dealt with in a separate chapter in the original Hilmer Review report. This is reflected in the quote below from the Hilmer Review:[35]

> *Where the owner of the "essential facility" is not competing in upstream or downstream markets, the owner of the facility will usually have little incentive to deny access, for maximising competition in vertically related markets maximises its own profits. Like other monopolists, however, the owner of the facility is able to use its monopoly position to charge higher prices and derive monopoly profits at the expense of consumers and economic efficiency. In these circumstances, the question of "access pricing" is substantially similar to*

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33 As noted above in the context of the Port of Newcastle, we are aware that there are some economic arguments that could be run to the effect that monopoly pricing in a pipeline may affect competition in a related market – such as by causing players in the related market to go out of business. However, this requires the infrastructure portion to be very substantial, and seems very unlikely where charges are levied on a retailer and in turn passed on and absorbed by the final customer.

34 As we noted above, there are circumstances where monopoly pricing may impact upon competition in a related market

35 National Competition Policy (Hilmer) Review, Final Report, 1993, p.241.

> *other monopoly pricing issues, and may be subject, where appropriate, to the prices monitoring or surveillance process outlined in Chapter 12.*
>
> *Where the owner of the "essential facility" is vertically-integrated with potentially competitive activities in upstream or downstream markets — as is commonly the case with traditional public monopolies such as telecommunications, electricity and rail — the potential to charge monopoly prices may be combined with an incentive to inhibit competitors' access to the facility.*

3.3 Assessment of criterion (b)

3.3.1 Design and interpretation of criterion (b)

The drafting of criterion (b) of the coverage test for gas pipelines is directed to whether it would be uneconomic for anyone to develop another pipeline to provide pipeline services. The interpretation of this criterion has changed substantially over recent times. This in turn may have an impact on whether price regulation is expected to be imposed in the right circumstances.

The previous interpretation of criterion (b) was focused on whether the facility had technical characteristics that mean it is uneconomic to duplicate. That is, the NCC and others had interpreted the criterion in a manner that focused on the costs and benefits of duplication from the perspective of society, not any particular firm. In this regard, those interpreting the criterion considered the choice of the word 'uneconomic' significant, in that it invoked what concerns economists, namely economic efficiency. This interpretation is exemplified in the Tribunal's comments in *Duke Eastern*:[36]

> *58 In Sydney International Airport the Tribunal gave attention to the meaning of "uneconomical", where used in the TPA equivalent of criterion (b). Criterion (b) is expressed in terms of whether it would be "uneconomic" (as opposed to "uneconomical") to develop another Pipeline (as opposed to another "Facility"), but at least in the present context, nothing turns upon this difference in language.*
>
> *59 The Tribunal said in that case that in deciding whether it is "uneconomic" for a person other than the provider of the existing pipeline to develop another pipeline, the enquiry is not limited to a narrow accounting view of "uneconomic", or simply issues of profitability. Rather, "uneconomic" is to be construed in a broader social cost benefit sense, in which the total costs and benefits of developing another facility are brought to account. The Tribunal said that its preferred view was given added weight by economic evidence given in that case as to the perverse impact, in terms of efficient resource allocation, of adopting the narrower view.*

And:[37]

> *We agree with the submissions of NCC that the "test is whether for a likely range of reasonably foreseeable demand for the services provided by means of the pipeline, it would*

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36 Re Duke Eastern Gas Pipeline Pty Ltd [2001] ACompT 2 (4 May 2001), para. 58 and 59.

37 Re Duke Eastern Gas Pipeline Pty Ltd [2001] ACompT 2 (4 May 2001), para. 137.

> *be more efficient, in terms of costs and benefits to the community as a whole, for one pipeline to provide those services rather than more than one.*

Thus, the test was generally interpreted as essentially asking whether or not the facility was characterised by natural monopoly production technology. From a societal point of view, duplicating a natural monopoly would be considered wasteful (assuming that the allocative efficiency issues of monopoly can be otherwise addressed).

The interpretation of the criterion was impacted significantly following a 2012 High Court decision in *Pilbra Infrastructure Pty Ltd v Australian Competition Tribunal.* In this decision the High Court found that rather than focusing on the broader costs and benefits to the economy from duplication that instead a "privately profitable test" should apply:[38]

> *The better view of criterion (b) is that it uses the word "uneconomical" to mean "unprofitable". It does not use that word in some specialist sense that would be used by an economist. Further, criterion (b) is to be read as requiring the decision maker to be satisfied that there is not anyone for whom it would be profitable to develop another facility.*

The Court further said that:[39]

> *… the central assumption informing and underpinning this construction of criterion (b) is that no one will develop an alternative service unless there is sufficient prospect of a sufficient return on funds employed to warrant the investment. And criterion (b) is read as directing attention to whether there is "anyone" for whom it would be economical (in the sense of profitable, or economically feasible) to develop another facility to provide the service.*

The Court recognised that a private profitability test may indeed result in the duplication of a natural monopoly. However, it explained that duplication would occur if it would be profitable for another party to develop an alternative facility, which in its view would only occur if the new facility is more efficient than the existing facility. The Court said that, conversely, if the new facility is not more efficient than the existing facility, "it is to be doubted that development of the new facility in competition with a natural monopoly would be profitable", especially given that the capital costs of establishing the new facility would necessarily be very large. (at [102])

The NCC's application of the High Court's decision can be seen in its 2014 coverage decision[40] in relation to the Dawson Valley Pipeline:

> *The wording of declaration criterion (b) and coverage criterion (b) is essentially the same. Furthermore, Part IIIA of the CCA and the NGL share a similar genesis, as do the declaration and coverage processes and criteria contained in each. In the Council's view there is no basis for distinguishing the interpretation of coverage criterion (b) from that given to declaration criterion (b) by the High Court. Coverage criterion (b) therefore requires*

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38 High Court of Australia, 'Pilbra Infrastructure Pty Ltd v Australian Competition Tribunal', 14 September 2012, para. 77.

39 High Court of Australia, 'Pilbra Infrastructure Pty Ltd v Australian Competition Tribunal', 14 September 2012, para. 82.

40 NCC, 'Dawson Valley Pipeline, Application under the National Gas Law for a revocation of coverage, Final Recommendation', 4 August 2014, para 5.3, p. 17.

> *consideration of whether anyone could profitably develop another pipeline to provide the pipeline services provided by means of the DVP.*

In response to the new interpretation of criterion (b) the Productivity Commission has expressed concern that the approach creates a greater risk of error in the decision on whether regulation is applied. As such, it has proposed to refocus the test back towards a test for natural monopoly. Specifically, it has recommended that the test be amended so that it is satisfied where total market demand could be met at least cost by the facility. It has also recommended, should the current interpretation remain, that it should be amended such that the definition of "anyone" excludes the incumbent provider.

The Harper Review's recommendations on this matter are in contrast to the Productivity Commission. It considers that the criterion should continue to ask the question: whether it is economically feasible to bypass the facility. Its basis for this view appears to be that duplication of facilities on commercial grounds is consistent with outcomes that could be expected in workably competitive markets.

Finally, it is worth noting also that the High Court's decision has also changed whether the pipeline owner itself is considered in the context of whether it is economic for "anyone" to develop another pipeline. Specifically, the High Court stated that "anyone" in criterion (b) includes existing and possible future market participants.

3.3.2 Implications for gas pipeline regulation

It is our view that the original interpretation of criterion (b), as well as the Productivity Commission's proposed changes, are consistent with the original intent of "access" regimes as articulated in the Hilmer Review. That is, the focus should be on:

- Avoiding wasteful duplication in the economy, and
- Ensuring that the "access" regime is only applied in circumstances of natural monopoly – that is, where there was enduring market power that was a consequence of the technology employed – noting that other measures are likely to be more appropriate where the cause of market power is derived from other sources.

We note, for instance, that the Hilmer Review was explicit that a feature of natural monopolies was that they cannot be duplicated economically:[41]

> *Some economic activities exhibit natural monopoly characteristics, in the sense that they cannot be duplicated economically. While it is difficult to define precisely the term "natural monopoly", electricity transmission grids, telecommunication networks, rail tracks, major pipelines, ports and airports are often given as examples. Some facilities that exhibit these characteristics occupy strategic positions in an industry, and are thus "essential facilities" in the sense that access to the facility is required if a business is to be able to compete effectively in upstream or downstream markets. For example, competition in electricity generation and in the provision of rail services requires access to transmission grids and rail tracks respectively.*

[41] National Competition Policy (Hilmer) Review, Final Report, 1993, p.240.

It is our view that the new interpretation, focused on whether it is privately profitable to duplicate a gas pipeline, may raise the hurdle for regulation and may result in inefficient duplication of infrastructure that would have been avoided if there was coverage.

We do not think the effect of the change in interpretation to have a substantial impact in gas coverage in practice, however. The difference in interpretation is likely to be most marked where there are few very large access seekers for whom it is feasible to club together and sponsor a duplicate facility and for whom the value of access is very high. This is something may be a characteristic of some access issues (namely the Pilbara case, where there was one access seeker in the midst of a booming iron ore market). However, in relation to gas infrastructure that supplies a large number of customers, it would be difficult for them to coordinate to undertake investment even if the current pipeline owner is able to exert market power and impose monopoly prices.[42] We also question whether a pipeline that could be (privately) profitably duplicated would be adjudged to have the necessary market power to pass criterion (a).

While we take the view that the impact on the new interpretation may be immaterial for the gas sector, it must still be recognised that the chances that this criterion is not met for the gas pipeline sector has increased, if only marginally. This is because it is more likely that a pipeline could be found to be privately profitable to duplicate than it is that it not be found to be a natural monopoly. This in turn increases the risk, again probably only marginally, that a pipeline for which price regulation was justified would not be covered under the regime.

For completeness, we also agree with the Productivity Commission's views that a profitability test is more difficult to apply as it requires the decision maker to opine on unmeasurable and controversial items – like required rates of return. A natural monopoly test, in contrast, is a simpler test (and, as we noted above, one that is a more sensible test).

On the matter of the High Court indicating that the "anyone" that may find it possible to profitably duplicate the facility may include the facility owner, it is our view that it is preferable that the interpretation of "anyone" exclude the incumbent. We take this view because there may be circumstances where it is theoretically privately profitable for a pipeline owner to duplicate its facility even though it never would do so. This in turn increases the chances that the market power of a pipeline remains unchecked. We note, in any event, that the NCC's apparent interpretation of this matter for gas pipelines arguably reduces the prospects of a finding that an incumbent would find it privately profitable to duplicate its own facility. This is because it suggests it would need to be more cost efficient for the pipeline owner to duplicate its own facility rather than merely being a possibility. Specifically, the NCC has identified that where the assessment of the profitability of a new pipeline is restricted to the incumbent the assessment should:[43]

- Be based upon the development of a separate, new pipeline, and

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42 We note that we do not consider that there is a strong prospect of an independent alternative provider constructing a duplicate pipeline in the hope of serving a disparate customer base (but without having contracts signed prior to commitment). In this case, the strategic options available to the incumbent, including pricing down to marginal cost for a period of time, would likely make the risk of duplication particularly high given the sunk costs involved. A circumstance where this may be possible would be where there was sufficient demand expected to emerge in excess of current requirements.

43 NCC, 'Gas Guide', October 2013, pp. 42-43.

- Examine why the existing pipeline provider would develop a new pipeline where the existing pipeline may be capable of servicing the requirements at lesser cost through augmentation, such as changes in compression and pumps used on the pipeline.

3.4 Design and interpretation of criterion (d)

Criterion (d) requires that access (or increased access) to the pipeline would not be contrary to the public interest. In essence, it is focused on whether the community would be worse off if there was access, or increased access, to a gas pipeline.

The interpretation of criterion (d) has tended to focus on the costs of regulation. In that sense, it has worked as a check on those circumstances where the case for regulation is marginal. That is, it would not be in the public interest to impose price regulation where the costs of that regulation would not be outweighed by the costs it would avoid.

The NCC has stated that it considers that a broad range of matters can be addressed under criterion (d), specifically it has stated:[44]

> *Coverage (and revocation of coverage) determinations are decisions by relevant Ministers that go to the scope of regulation. They hinge on an assessment of whether coverage is in the public interest and whether the benefits from regulated access outweigh the costs. They require the decision maker to balance the potentially conflicting goals of promoting competition in dependent markets and ensuring appropriate investment incentives, and to consider the likely effectiveness of regulation and its costs. The Hilmer Committee recognised that the power to make such a decision appropriately rests with a politically accountable Minister acting on (but not bound to follow) independent expert advice. It said that,*
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> > *[a]s the decision to provide a right of access rests on an evaluation of important public interest considerations, the ultimate decision on this issue should be one for Government, rather than a court, tribunal or other unelected body. (Hilmer Report, p 250).*

It is important to recognise also that criterion (d) is drafted in the negative. This implies that benefits that might extend beyond those that are within the realm of criteria (a) and (b) cannot be considered. An example of this might be broader benefits of regulation to those that derive from a restriction of competition; such as coordinated planning and use of networks. This is consistent with the NCC's interpretation, which is that it will seek to identify matters that might be contrary to the public interest only, and then identify the likelihood that these lead to a conclusion that access is not in the public interest:[45]

> *The Council considers that the preferable approach to coverage criterion (d) is to seek to identify any matter that could mean access (or increased access) might be contrary to the public interest and then assess whether the likelihood and consequences of that matter lead to a conclusion that access is contrary to the public interest. The Council considers that this approach is consistent with the Pilbara HCA decision in that it involves a judgment that the Council is well able to advise on, and a Minister is well placed to make, rather than a*

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[44] NCC, 'Gas Guide', October 2013, para 3.106, p. 47.

[45] NCC, 'Gas Guide', October 2013, para 3.112, p.48.

> *detailed technical examination of costs and benefits for which only partial information is likely to be available.*

We note that the Productivity Commission has recommended that the criterion be reframed away from the negative so that broader benefits can be considered. It takes this view on the basis that regulation should only be imposed where it likely to generate net benefits to the community.[46]

3.4.1 Implications for gas pipeline regulation

It is our view that the current construction of criterion (d) is unlikely to have led to material errors in decisions on whether a pipeline is covered or not. This is because it at least allows for the costs of regulation to be taken into account and is weighed against the main benefits of such regulation, namely the matters considered in criteria (a) and (b).

We acknowledge the perspective of the Productivity Commission and consider that its views are consistent with ours in the sense that the total costs of price regulation should be outweighed by its total benefits, irrespective of what those costs and benefits are. However, it is our view that this can be done in a more straightforward way for the gas pipeline sector given the target for regulation is far clearer in the absence of vertical integration.

3.5 Case for continued consistency between the Part IIIA regime and the gas access regime

On the basis that we consider that the regime under Part IIIA is focused on addressing a different economic problem to the one that emerges from substantial market power held by gas pipelines, it follows that we do not think there is a pressing need for the continued alignment between this regime and the one for gas access coverage. As demonstrated by the Hilmer Review, the national access regime was never intended to provide a regime for price regulation in instances of market power. By continuing to apply a form of test focused on providing regulated access to a circumstance where regulation should focus more on price, there is an increased risk that regulation is not applied in circumstances where it would otherwise be justified.

It is our view that the potential risks of under or over-regulation that arise under the current regime for gas coverage can be addressed by asking a more straightforward question, namely: do the costs of regulation outweigh its benefits. In this case, this question can largely be answered by asking whether a gas pipeline owner possesses, and is able to apply, substantial and enduring market power, as we discussed at more length in Chapter 2.

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46 Productivity Commission, 'Inquiry Report, National Access Regime, No. 66', 25 October 2013, pp 178-179.

4. Robustness of the coverage test to observed trends for the gas market

4.1 Introduction

The Commission's report for the East Coast Review identified that changes that are underway in the gas market are affecting the nature of demand, and therefore, the investment and use of gas transportation services. The developments for the gas sector that have been identified by the Commission include:

- The development of new economically viable sources for gas has shifted the direction of flows of gas across the east coast of Australia
- There has been an increase in the demand and volatility of flows
- New investment in pipeline capacity has increased the interconnectedness of the system, and
- There has been consolidation of pipeline ownership.

In this chapter we consider whether the potential coverage tests (those being, the current coverage test and our "blank sheet of paper" test) remain robust to these observed trends, or alternatively, how the detail of the test should be defined so that it does remain robust.

We have separated our analysis into two categories:

- What the test is applied to, which considers whether the test should continue to apply at the pipeline level, or across a broader group of pipelines, or to pipeline services, and
- How the test is applied, which considers the implications for the test for coverage from "capacity hoarding" and the potential efficiency improvements from capacity use coordination.

4.2 What the test is applied to

It is our view that there are a number of developments in the gas market that warrant a consideration of what the decision maker focuses on when applying the coverage test. At present the test focuses on an individual pipeline, and then the decision is whether or not to impose regulation on all of the services provided by a physical asset. In addition, the test is structured so that it is able to be applied and reapplied again. While we think the focus on individual pipelines remains appropriate and the ability to have the test refreshed is very important (given the trends in the gas market), we think there is merit in re-orienting the test to apply to services rather than physical assets in view of the change in role of pipelines in the network. We elaborate on this below.

4.2.1 Should coverage be assessed for the services provided by individual pipelines, or should the test be applied to a network?

Until fairly recently gas transmission pipelines have largely provided only a point-to-point service. That is, the delivery of gas from a specific gas field to a distribution network or large industrial customer. In this sense, the pipeline itself was more or less synonymous with the "network" for

regulatory purposes. In this case there is little ambiguity about what geographic expanse the decision over whether to impose price regulation should be applied. However, with the emergence of interconnection amongst pipelines, as well as consolidation of ownership amongst these pipelines, it is relevant to ask whether the approach of testing for regulation of each individual pipeline should continue.

Our view is that the current approach of testing for regulation on a pipeline-by-pipeline basis continues to be appropriate even with the emergence of an interconnected network of pipelines. The principal reason for this is because the technology of gas pipelines allows competition to occur between pipelines even in the presence of a network.

The case of electricity is a stark contrast to that of gas. In this sector the entire interconnected network is regulated rather than regulation being applied on a route-by-route basis. This is done because for electricity there are substantial efficiencies associated with constructing highly meshed networks and operating those networks as a single system. This highly meshed nature of electricity networks implies that there is limited scope for customers to choose the source of their electricity supply, instead relying on the network as a whole.

Unlike for electricity networks, even where gas pipelines are interconnected, it is reasonably straightforward to assign rights over the capacity of the pipeline and to control the physical flows of gas within the network to match the capacity rights.[47] This in turn creates the opportunity for pipeline-to-pipeline competition. That is, customers may have a choice about which pipeline to use to receive their gas supply. The fact that competition could exist for gas pipelines implies that it should not be automatically assumed that market power is sufficient for price regulation to be imposed. This includes in the case of interconnected networks. Indeed, for the gas pipeline sector it is conceivable that new investments or retirements can see the extent that a pipeline owner has market power change considerably over time. For this reason, we would recommend that assessments for coverage continue to be made on a case-by-case basis.

We note in this context that one of the trends identified is the consolidation of ownership. We do not think this requires a change to the application of a coverage test on a pipeline-by-pipeline basis. Rather, to the extent that there is this consolidation, then that would be considered when deciding on the extent of market power held by any single pipeline – thus, if that pipeline being tested also owned or controlled all of the pipelines that would otherwise compete, then it would be straightforward to infer that the decisions of those other pipelines would not constrain the pricing decisions of the pipeline being tested.

Lastly, we observe that the presence of trends like the construction of new pipelines and the consolidation of ownership of pipelines makes it important for the test of coverage to be capable of being reapplied over time so that the decision of whether or not to regulate remains consistent with the facts as they exist at any time. That is, the construction of new pipelines and consolidation of ownership have the potential to alter the extent of market power that any pipeline may possess (with the two factors operating in different directions). It follows that a decision made at one point in time as to whether to regulated may not remain appropriate at a later date.

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[47] It is of course possible also to assign capacity rights over electricity networks. However, as demonstrated by the Commission's recent analysis on an Optional Firm Access model, this is a considerably more complex prospect than it is for gas networks.

In summary, it is our view that the ability to consider coverage issues on a case-by-case basis for gas is a virtue of the regime rather than a limitation. It allows for changing circumstances to be taken into consideration and better protects against this risk of regulation being applied when the circumstances do not justify it.

4.2.2 Applying the test at the facility or service level

The primary service provided by a given pipeline is essentially the gas transportation service from one point to another. This is also the service that has been of most concern with respect to the question of whether a pipeline owner possesses substantial market power. Given this circumstance there is arguably little risk associated with the test for coverage focusing on the facility itself rather than the service.[48] That is because, to a large extent, they are one and the same thing. To the extent that pipelines provided other incidental services that did not warrant price regulation the option was available for the AER to exclude these from the price control.

The increased interconnectedness of pipelines potentially increases the range of services over which market power concerns might arise. That is, it is possible for pipelines to have market power in services other than the traditional point-to-point transport service. An example of this are "hub services" which, while still centred on the transport of gas, arise at the intersection of pipelines and provide for the redirection of gas between physically proximate pipelines and / or gas compression. In the face of the increasing importance of such services there is a question about whether the continued focus of the coverage test on pipelines as a facility remains appropriate.

The general issue that can emerge in the context of services other than the traditional point-to-point transportation service being the focus of a market power assessment is the risk of over-regulation or under-regulation. If an entire pipeline is covered – due to the test considering the pipeline monolithically – it may overlook areas where there is potential or actual competition over a service. For instance, over-regulation can arise where all services are, by default, included within a decision to cover a pipeline, but there are in fact constraints on the extent of market power that can be exerted for some of the services. The current approach does not provide the ability to carve out these services in advance and instead requires the AER to decide whether or not price regulation should apply to the service.[49]

Conversely, it is possible that a no-coverage determination is made on account of a pipeline's traditional gas transportation service not passing the criterion, while significant market power over the hub-service remains. In this case, because the pipeline is considered in its entirely, regulation would not be imposed given the substantial costs that regulation of the transportation service would involve without a correspondingly large benefit. However, if the hub service was considered independently it is conceivable that it may be covered and subject to price regulation.

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48 Specifically, the coverage criteria refer to services provided by means of a pipeline. Further, a pipeline is what is regulated under the NGR.

49 We understand that the distribution businesses believe that there are a range of services they provide over which they do not have market power, but over which regulated either does or could apply, with the decision resting with the AER rather than an independent entity. This concern would also be addressed by reorienting the coverage test so that it focusses on individual services.

We note that this issue is arguably most pronounced where a single asset provides multiple services. In this case a 'facilities' based approach, which might allow for segmenting of a facility, would be incapable of delineating different services and the extent that market power across each may differ.

Given the potential risk of under or over-regulation that is created by a blunt focus on a pipeline, we consider that there are advantages in the gas regime for coverage focusing instead on services. This would be consistent with the approach taken to the national third party access regime.

It is our view that a focus on services might see an increase in coverage in the transmission segment of the sector but potentially a decrease in the level of coverage for gas distribution networks. In particular for distribution businesses, we understand that there is a perspective that there are a range of services they provide over which they do not have market power, but over which regulation either does or could apply. Under the current approach the decision on price regulation rests with the AER rather than an independent entity. Concerns about the inability for different approaches to apply to "declared pipelines" in light of the evolution of the services provided by distribution businesses was expressed by Jemena in its submission to the Productivity Commission's review of the national access regime:[50]

> *At the same time it is important that regimes should be able to accommodate changing circumstances. For example, it is conceivable that, with new technologies and practices, network businesses in particular will be subject to competitive forces that reduce or even eliminate their monopoly positions over time. As that occurs, lighter handed regulation or revocation is likely to be appropriate. In that context, Jemena is concerned that, under the national gas regime, a light regulation determination cannot be made in respect of a number of "declared pipelines" in South Australia, Victoria, and Western Australia.*

It is our view that this concern could be addressed by reorientating the coverage test so that it focuses on individual services.

4.3 Robustness of coverage tests to the "hoarding" of capacity and measures for improving the efficiency of pipeline use across the network

In this section we address whether the current (or our alternative) coverage test remains appropriate in light of two other concerns, which are:

- The possibility that there may be "hoarding" of capacity rights on part of the network by a shipper on the network, and
- Whether the coverage test properly factors in other possible advantages of regulation – such as the ability to impose measures to improve the efficiency of use of pipelines.

We conclude that the possibility of "hoarding" of capacity rights on part of the network is a further reason to prefer a coverage test that focusses specifically on the market power of a pipeline rather than on whether there has been a promotion of competition. This is a case where the current coverage test may not lead to regulation even when the pipeline being tested has substantial market power.

[50] Jemena, 'Submission to the Review of the National Access Regime', 6 February 2013, p. 2.

In terms of the other possible advantages of regulation, we think this matter is more difficult. However, we underscore that the threshold question is whether price regulation is necessary in order to implement the measures for encouraging coordination that are being contemplated. If the coordination measures can be applied without price regulation, then these should be imposed as separate measures – and the hurdle for justifying such measures should be reasonably low. However, if price regulation is an essential ingredient of the coordination measures, then the coverage test would need to be framed more widely, and allow for the possibility of a pipeline that does not have substantial market power being regulated.[51] However, given the large direct and indirect costs of price regulation, it would be necessary for the expected benefits from the coordination measures to be very large before the imposition of price regulation on a pipeline without substantial market power could be justified.

4.3.1 Impact of contracted demand on coverage decisions

The Commission in its East Coast Gas Review Stage 1 final report has identified that a failure for primary capacity holders to release capacity is an issue that deserves further investigation.[52] Here we consider this matter in the context of the criteria for coverage of a gas pipeline.

It is our understanding that principal issue is that someone, other than the pipeline owner, holds the rights to the capacity on a particular pipeline but is unwilling to release it to others even where it is not using that capacity itself. This has been referred to as capacity hoarding. We have identified two issues that might arise in the context of capacity hoarding and the criteria for the coverage of a gas pipeline. These issues are:

- The coverage framework for gas pipelines is not designed to address this problem, and so cannot resolve it, and
- Capacity hoarding may, nevertheless, prevent a pipeline with substantial market power from being regulated.

A shipper that holds the rights to capacity on a pipeline is not captured by the regime for coverage of gas pipeline. This is because it is not the owner of a gas pipeline and so therefore cannot be regulated in accordance with the NGR under the NGL. As such, if it is found that a shipper possesses substantial market power, and is able to use that market power to hoard capacity, the coverage regime for gas pipelines is not the means for addressing this issue.[53] Instead, this issue needs to be addressed through some measure other than the regime for the coverage of gas pipelines.

Nevertheless, the presence of capacity hoarding can also have an effect on whether a pipeline becomes covered or not, we turn now to this matter.

As we demonstrated above, it is our understanding that the dominant interpretation of criterion (a) is that it is, in essence, focused on whether access is necessary for competition or not. Where someone

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[51] Indeed, it is our view that the coverage test would need to be framed more widely so that coordination benefits that are incidental to the application of price regulation can also be considered.

[52] AEMC, 'Stage 1 Final Report, East Coast Wholesale Gas Market and Pipeline Frameworks Review', 23 July 2015, p.58 and p.62.

[53] We understand it is an open question as to whether the failure to release capacity is indeed evidence of anti-competitive conduct and may be legitimate business practice, e.g. retaining capacity as a risk management tool.

holds the rights to all of the capacity of a pipeline there is the potential for a finding that competition cannot be promoted through access. This is because there is no spare capacity available that a potential competitor could use to enter the market even if access was provided. Given this interpretation, the full contracting of capacity can have impacts on the assessment under the coverage criteria where the use of one pipeline is dependent on the use of another, fully contracted pipeline. That is, it might be found that access to a dependent pipeline cannot promote competition given all the supply upstream from that pipeline is already fully contracted, hence no further competition can emerge.[54]

The issue of a fully contracted pipeline can create a circumstance where a pipeline may have substantial market power but may not meet the threshold for regulation given the design of the test. That is, despite the presence of market power, competition cannot be promoted for that particular pipeline and so it will not be covered.

We note, however, that even if the coverage test is changed so that a direct assessment is made of the costs and benefits of regulation (as recommended by the Productivity Comission), then it is not certain in our hypothetical example (i.e., where there is hoarding of capacity rights on an upstream pipeline) whether regulation would be imposed. We would expect that one argument that could be made is that even if the downstream pipeline is regulated, the party that is hoarding the capacity rights could simply extract the benefit provided by regulation – so that a transfer is created from the regulated pipeline to the hoarding shipper, while the customer's position is unchanged. It is not clear to us how this matter would be decided, and it would be dependent on the facts of the case (i.e., if the customer already has a contract with the hoarding shipper that allows the pass through of pipeline charges, then the customer would benefit from regulation). By reframing the test, however, at least the correct analysis would be performed – and, if the conclusion were made not to regulate because an upstream shipper is hoarding capacity then the deleterious effects of capacity hoarding would be made transparent.

4.3.2 Coordinating the efficient use of capacity in a gas network

Where independent pipelines, and the users of those pipelines, within a network are able to coordinate effectively it allows for the efficient use and operation of the network. In particular, it can promote the efficient use of spare capacity on a network. For instance, increased interconnection has allowed for gas customers to source gas from different locations and have that gas "delivered" through an interconnected pipeline. Conversely, where coordination is ineffective it has the potential to lead to an inefficient allocation and use of pipeline capacity; that is, pipeline capacity is wasted, or not used to its greatest benefit.

[54] We note that such a finding has been made in the past. See: National Competition Council, 2012, Final Recommendation: Application to the South East Pipeline System, April, paras.6.15-6.17. The Council decided in this matter that there would be no promotion of competition because (i) an alternative retailer could not cost-efficiently enter the retail market because all of the capacity of an upstream pipeline was contracted, (ii) upstream gas production was already competitive (i.e., it had alternative markets that did not require use of the South East Pipeline System), (iii) local gas production was unlikely and (iv) the customer seeking access used gas to produce toilet paper, which was already produced in a competitive market. Accordingly, it was decided that access to the pipeline would not promote competition. It is noted, however, that the Council also decided that access would be contrary to the public interest because of the small size of the pipeline and even under its assumption that light regulation would be applied.

We understand that certain regulatory measures are being considered to enhance the coordination of use of the pipeline network. As a parallel, we note that in the electricity sector network capacity in a region is managed centrally so that capacity constraints are avoided wherever it is efficient to do so such that spare capacity is efficiently used.

The issue that we are addressing is whether the potential for such coordination-improving regulatory measures is something that would have an impact on the test that is applied when deciding whether to apply price regulation to a pipeline.

We note that the first matter to consider is whether regulatory measures are indeed required to achieve the coordination sought. We think this is a real question to be answered. As we argued above, the vertical separation of the gas sector means that pipeline owners should have an incentive to promote the efficient use of capacity and the vibrancy of the gas market more generally, at least if valid transitional issues are addressed.[55]

The next question is, if it is decided that regulatory measures should be pursued, can these measures be structured in a manner that they can be applied without also applying price regulation. This is very important because it is the regulation of price – and hence the capping of returns – that imposes large direct and indirect costs (the latter being a real risk that investment and innovation will be discouraged). Thus, if the coordination measures can be applied independently to price regulation, then the cost of such measures would be reduced substantially. It would be appropriate in this case simply to apply the regulatory measures for coordination to covered and uncovered pipelines alike if the measures are expected to promote the NGO. If the measures can be applied separately to price regulation – and hence, not bring with them the substantial costs of price regulation – then it would be much more likely that the application of the regulatory measures would be justified.

If, however, the application of price regulation to pipelines would be a necessary requirement for applying the regulatory measures to encourage coordination, then the issue is more complex and may impact upon the form of the coverage test (which is the topic of this report). In essence, the potential that would need to be considered is that price regulation of pipelines may be justified even where they do not possess substantial market power because of some other benefit that regulation brings – in this case, the ability to impose measures to encourage greater coordination.[56]

If such benefits were considered to exist, the current test for coverage, on its own, may be inappropriate. This is because the measures being contemplated may not promote competition – as the dependent markets may already be deemed to be subject to effective competition – but merely provide

[55] One of the possible current inefficiencies that we have been asked to consider is the absence of a liquid market for the trading of pipeline capacity rights. However, if such a market were created, then one outcome is that pipelines may sell fewer capacity rights. This is because, absent any trade, pipelines would sell capacity rights equal to the sum of each customer's own maximum demand, whereas with a perfectly functioning market, the pipeline would only sell capacity rights equal to the (diversified) maximum demand on the pipeline, with individual customers trading on the spot market where their own maximum demand that occurs at a different time to the market's. Thus, in the short term, the pipeline may also lose revenue. However, this loss of revenue would naturally be ameliorated as the prices in contracts were reset (or immediately if the prices in contracts were reset to reflect the greater scope for trading of capacity rights).

[56] We note, however, that depending on the approach to regulation it should not be assumed that regulation will deliver the optimal use of spare capacity either, in particular, due to information asymmetries between the regulator and pipeline owners and users.

a reduction in the price. The only element of the current coverage regime where such a matter could be considered is criterion (d), which is focused on public benefits. However, this criterion is drafted in the negative which implies that the *benefits* of regulation cannot be explicitly considered.[57] In the context of the current test for coverage, the proposed changes by the Productivity Commission may permit the benefits of regulation for coordination to be considered.[58]

It is also not clear that all of the alternative tests we have discussed would be appropriate. In particular, it would no longer be sufficient to focus on the presence or otherwise of market power to an individual pipeline. Rather, there would need to be the capacity to investigate all possible benefits of regulation and allow regulation to be imposed even where it would not be justified on the basis of market power. The preferred test, if it was intended to permit a consideration of the benefits that may flow from regulatory measures to promote coordination, would be one that was expressed in terms of a holistic assessment of the costs and benefits of regulation and so did not limit the decision maker to assessing whether substantial market power existed.

We observe, however, that for regulation of a pipeline that does not have substantial market power to be justified, the anticipated benefits from the coordination-related regulatory measures being contemplated would need to be very large and there would need to be a high degree of confidence that the benefits would be realised. We observe in particular that the instances where price regulation is most difficult – and where the prospect for error is the greatest – is where the regulated asset faces material risk independent of the regulatory regime, which would be expected to be the case for pipelines that do not have substantial market power. To the extent that a regulated asset faces material market risk, the standard simple approaches to depreciation and cost allocation may not be sustainable, and nor would it be possible for the regulator simply assume that stranded asset risk is immaterial. Similarly, the conditions under which price regulation may deter investment – namely where there is substantial risk regarding returns and where regulation may remove the upside but be incapable of protecting the regulated business from the downside – similarly would be present.

4.4 Greenfields pipeline investments

The gas access regime allows for pipelines to apply for a 15-year no coverage decision such that there is a commitment that regulation will not apply for a duration of time irrespective of any changes in circumstances. The objective of this approach is to address concerns of asymmetric truncation of returns. It is our view that there is merit in retaining the option for greenfields pipelines to apply for a regulatory holiday.

Asymmetric truncation is a problem in regulation where there is the prospect of price regulation being imposed if ex post monopoly rents appear to be accruing, but where there is no prospect of the asset owner being protected to an equivalent degree from losses if the investment proves to be unsuccessful (in most cases, the compensation would not occur simply because the asset never entered the regulatory net). Hence, the potential for action by the regulator is seen as being asymmetric given only high returns would be curtailed. The important outcome, however, is not so much that the

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57 Noting that where market power is the problem the benefits of regulation are inherent in identifying that market power exists and is sufficiently substantial and enduring to cause substantial economic harm.

58 However, it is still an open question as to whether regulatory benefits that extend beyond those necessary to address market power could be considered in this respect.

distribution of returns is made asymmetric, but that the potential for high returns to be trimmed together with an expectation that losses would be borne in full, resulting in a reduction in the expected return to the investment. The reduction in the expected return that is caused by the potential for regulatory action, in turn, might discourage otherwise efficient investment from preceding.

The Productivity Commission, which is the body that originally agitated for the inclusion of a regulatory holiday for greenfields pipelines, explained the problem this way:[59]

> *Investments are risky and so have a distribution of possible profits. The mean of an investment's profit distribution is often used to measure the investment's expected profit.*
>
> *In essence, expected economic profit is constrained to zero (in net present value terms) under the Gas Access Regime to encourage competitive behaviour ex ante (economic profit is the difference between revenue and the opportunity cost of inputs). However, the presence of risk means that actual economic profit might not be zero. That is, a high actual profit can be consistent with competitive behaviour. Nevertheless, regulators might tend to interpret a high actual profit as evidence of monopolistic behaviour because of the following:*
>
> - *asymmetry of observing regulatory errors — failure to constrain monopoly profits is easier to observe than mistakenly regulating competitive behaviour*
> - *regulator risk aversion — when in doubt about the existence of monopolistic behaviour, the regulator tends to err on the side of caution by regulating behaviour*
> - *regulatory capture — the regulator's consumer advocacy role biases regulatory decisions in favour of consumers at the expense of economy-wide benefits*
> - *mistrust of regulated businesses — the regulator perceives that businesses try to mislead it by withholding or distorting information. Hence, regulators might be tempted to curtail high profits. This is termed asymmetric truncation because only high profits are curtailed.*

In our view, the potential for asymmetric truncation to deter new investment is real, and is most material for projects that could have obtained a 15 year no-coverage guarantee (noting that this requires the decision maker to decide that the coverage test will not be satisfied over the period).

If the capacity for this ex ante regulatory certainty for greenfields pipelines were to be removed, then it would necessary for the rules related to *ex post* price regulation to be amended to require the AER to provide explicit compensation to preserve the *ex ante* expected return of a greenfields project (or at least to ensure that the ex ante expected return exceeds a commercial threshold). Actually quantifying the compensation required in practice is extremely complex. Moreover, as the potential for the AER to make a pricing decision would only occur some time after the (irreversible) investment had been made, we would anticipate potential investors to question why the AER would not seek to minimise any such compensation. Thus, absent the ability for qualifying pipelines to obtain the 15 year no-coverage decision, some dissuasion of investment may well be inevitable.

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[59] Productivity Commission, 'Review of the Gas Access Regime – Inquiry Report', June 2004, p. 103.

Given the importance of investment – and greenfield investment in particular – we think the current ability for qualifying pipelines to obtain a 15 year no-coverage decision remains appropriate.