AEMC Gas Access Regime Advice

10 August 2015

1 Introduction

You have asked us to consider the appropriateness of the national access regime (as set out in the National Gas Law and the National Gas Rules) for the emerging interconnected East Coast gas transmission network and market.

In this paper, we:

- Set out an analytical framework for considering whether the rules and processes through which the regulatory coverage of gas pipelines is secured meet the needs of the kind of gas market that the policy makers would wish to emerge
- Apply this framework to the scope of the test, the key economic criteria (criteria (a) and (b)) and the 15-year no coverage provisions
- Identify the broad direction of possible reform to the extent such reform is necessary.

This paper does not attempt to answer the question of what is the desirable end-state for the design and operation of the East Coast gas market. However, we consider the directions in which the market may evolve and the degree of change that may be required. Overall, we conclude that the access regime—either in its present or a possibly modified form—is not the right tool to address possible obstacles to the development of the market.

To arrive at this conclusion, in Section 2, we start by defining the possible end-states for the East Coast gas market. Clear definition of what a regulatory regime may be asked to achieve is an essential first step to considering whether it is capable of achieving it.

We then, in Section 3, move to a discussion of what an access regime is and what it is not: that is, how an access regime differs from other regulatory regimes and what problems it is primarily designed to address.

Finally, in Section 4, we consider in detail how the national access regime actually works through the application of the criteria which must be satisfied before an asset is declared (in the language of the Part IIIA regime) or coverage is granted (in the language of the National Gas Law).

In section 5 we develop our conclusions.

2 Fit for What?

In considering whether the coverage regime is fit for purpose, it is obviously essential to have a clear view of what that purpose is. In this case, the relevant question is what kind of gas market the regime should be expected to facilitate. We can consider two market archetypes:

- A "commodity" market is characterised by deep and liquid trading of standardised spot delivery contracts. In this setting—similar to the energy-only electricity market—buyers and sellers of gas can enter into long-term financial hedges, but the physical and financial flows are separable.

  The essential feature of this market is that gas production (injection into the transmission system) and gas consumption (withdrawal from the system) does not require a bilateral relationship between buyers and sellers. Numerous independent producers and off-takers are able to participate in the market. Any market participant can reasonably expect that at any time they would be able to buy all the gas they need or sell all the gas they want at the going price.

  In this setting, the development and operation of the transmission network typically needs to be driven through "central planning" by the system operator, with the costs of the network substantially socialised (at least in the sense that the system operator has the ability to require the costs to be incurred and a process for recovering those costs from the market participants)

- A "contract" market, by contrast, is characterised by long-term bilateral relationships between the buyers and sellers of gas. Such long-term contracts are essentially physical in nature: that is, the financial and the physical flows are not separable. Gas production is under-written by the take-or-pay obligations of the off-takers, rather than by the ability to sell any quantity at the going price in a deep and liquid market.

  The physical nature of the contracts means that gas producers know where their particular gas is going to be consumed, and have to actively participate in securing the capacity to deliver their gas to that location. Hence, gas shippers and pipeline operators enter into long-term contracts. In this setting, the development of the transmission system is driven by such long-term contracting.

There are a number of important features of the "contract" market which enhance its efficiency and can begin to blur the distinction between the "contract" and the "commodity" arrangements:

- A "contract" market requires some mechanism to respond to short term variations in demand (and occasionally, supply). Balancing arrangements involving spot trading of gas delivery contracts may over time evolve from bilateral deals to a formalised wholesale market with well defined rules

- Short-term variations in demand also mean that pipeline capacity utilisation by various shippers will vary. Again, in a reasonably efficient market, we would expect some evolution of arrangements for short-term trading of capacity. In some instances, these may evolve towards some form of common carriage, with the cost of congestion socialised across all pipeline users

- As shippers seek to minimise their costs, gas swaps and "reverse flow" contracts may become more common, breaking the strict physical link between gas production and consumption.

However, despite a degree of convergence, it is unlikely that a "contract" market would ever evolve into a fully-fledged "commodity" market without some policy-driven push:

- The very fact that in a "contract" market gas production must be underwritten by long-term physical contracts makes it difficult for independent producers to emerge. Hence, such markets are likely to be characterised by a relatively small number of vertically integrated producers and sellers of gas
- Inevitably, in this setting, the flexibility arrangements would tend towards bilateral deals, rather than standardised "impersonal" trading. Each market participant will have an incentive to internalise the benefits of flexibility, rather than share them with others
- Balancing and carriage arrangements will differ between pipelines, depending on the specific needs of the original shippers whose take-or-pay contracts have underwritten that pipeline
- Since each increment in the system—whether a new production location or a new transmission pipeline—will have to be supported by long-term contracts, there will be limits to coordination and standardisation in such a market.

The reason this distinction matters for our analysis is that a gas market with long-term physical contracts at its core will inevitably have different ways of paying for and different forms of access to transmission pipelines than a centrally coordinated "commodity" market. In considering the fitness for purpose of an access regime, we need to be clear what question we are asking. We need to distinguish between wanting to know if the access regime is fit for the purpose of enabling:

- The existing "contract" gas market to develop workable flexibility mechanisms
- The "contract" market to transition to a "commodity" market structure in response to industry led initiatives
- The creation of a "commodity" market through a policy-led initiative.

This paper focuses on answering these questions from two perspectives:

- Under what circumstances could pipeline coverage be secured and would these circumstances include all the cases where an intervention may be required to overcome coordination problems that may be preventing the development of a more efficient market?
- If the coverage is secured under the existing access regime, would it provide the regulatory instruments required to develop a more efficient market?

However, it is clear that to answer these questions it is essential to have a clear idea of what constitutes an efficient market. In this context, it would also be necessary to consider whether the marginal gain in efficiency in transitioning from a workably well-functioning "contract" market to a fully-fledged "commodity" market outweighs the marginal cost of market design, detailed regulation and centralised system operation required to implement such a market on the East Coast. As an aside, the currently contemporaneous review of the Victorian Declared Wholesale Gas Market should help inform this analysis. The Victorian market design is based on the "commodity" market concept and—as would be expected in such a market—passes decisions about the

planning of the transmission network to a central system operator (AEMO), while recovering the costs of the network through the market pricing mechanism. It would be important to consider whether the costs of such interventions justify the outcomes.

To anticipate the answers from the analysis that follows, we conclude that:

- The current access regime under the National Gas Law is definitely not fit for the purpose of enabling the creation of a "commodity" market either through policy leadership or through industry initiatives
- The regime may also not be fit for the purpose of removing structural barriers to further development of the full range of efficiency mechanisms within the existing "contract" market.

3 What is an Access Regime

An access regime is not a comprehensive regulatory instrument designed to solve a broad range of policy problems that may affect complex markets. Rather, it is a narrowly targeted tool for enabling third parties to use the existing bottleneck infrastructure in those relatively rare circumstances where the owner of the infrastructure does not wish to make it available, and where such use would promote competition in other markets.

In addressing the specific problem for which it is designed, an access regime must carefully balance the risks of interfering with private property rights against the benefits of greater access. Interference with property rights may both reduce the incentive for future investment and reduce the efficiency of the infrastructure facility in the short term.

Given the inevitable complexity and uncertainty, any access regime may produce two types of error:

- It may grant access where it would be inefficient to do so, or
- It may deny access where it would have been efficient to grant it.

The recent policy debate about Part IIIA of the Competition and Consumer Act (CCA) has been in essence a debate about which type of error is more damaging, and whether the access regime should be tilted to minimising one error over the other. The recommendations of the Productivity Commission's review put a greater onus of proof on the access seeker and hence would tend to minimise the risk of inefficient access. In coming to this conclusion, the Productivity Commission emphasised that very strong evidence of public benefit is required before it is worth interfering with private investment decisions and the existing property rights.

Even under the current formulation of Part IIIA, there is strong emphasis on protecting the interests of the owner of the infrastructure facility. There is a clear distinction between the open access principles used by regulators in other settings, and the access regime set out in Part IIIA. In general, open access regulatory models are based on the notion of vertical separation, and aim to promote competition by ensuring that all downstream users of infrastructure are treated equally, regardless of whether they were vertically integrated with infrastructure or not. In fact, in such regimes (such as in electricity open access), vertically integrated infrastructure owners are specifically required to give other users the same physical terms of access as to their own downstream business. By contrast, Part IIIA recognises priority of the asset owner's needs. In particular, while access regulation in general aims to achieve effective vertical unbundling, Part IIIA explicitly recognises legitimate commercial interests associated with vertical integration.

This is perhaps best reflected in the Re Services Sydney Pty Limited [2005] ACompT 7 (Sydney Water) case, where the relevant service was declared, subsequent commercial negotiations broke down and the ACCC arbitrated the dispute[1]. Although the access seeker, Services Sydney Pty Ltd, in the end never accessed the declared services on the basis of the pricing methodology set by the ACCC in its final decision, this case illustrates how the regime is intended to work.

In this case the ACCC adopted a form of Efficient Component Pricing Rule (ECPR) pricing commonly referred to as a retail-minus (or Baumol-Willig) approach. The retail-minus methodology involved the determination of access charges with reference to Sydney Water's retail prices less the costs avoided from not having to supply services in the retail market. For Sydney Water, the resulting access prices allowed it to recover all the costs associated with providing access as well as to maintain its profit margin. For the access seeker, retail minus methodology meant that for it to be competitive in the downstream market it would have to be more efficient in that market than the facility owner.

The key point is that, in general, Australian regulators have tended to reject the use of the ECPR when setting prices under open access regulation. This is because the ECPR allows the facility owner to preserve any monopoly rents it may have been earning. The fact that the ACCC used ECPR in the only arbitration under the Part IIIA regime is telling. It shows that the ACCC indeed viewed the access regime as being different to general open access regulation.

Similarly, the owners of the facility or its existing users are expected to be able to preserve any priority rights or other technical conveniences which they may currently enjoy.

The National Competition Council emphasised these points in its recent draft decision on the application for the declaration of the Port of Newcastle:

> *3.16 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.*
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> *3.17 Where a service is declared and access is determined through arbitration, there may be a determination as to price. The opportunity for the ACCC to determine prices for infrastructure services under Part IIIA only arises where all five declaration criteria are satisfied and when arbitration of an access dispute requires determination of the price for a declared services (and this can be done consistently with the requirements imposed on the ACCC in undertaking arbitrations under Part IIIA—for example the requirements of ss 44V and 44W of the CCA).*

[1] ACCC Arbitration report available at http://www.accc.gov.au/content/item.phtml?itemId=852591&nodeId=42c60919002f38d8ea73088b1fbeda82&fn=Determination.pdf.

3.18 Not all, indeed possibly only a small subset of, price disputes or situations where prices may appear or be "excessive", "monopolistic" or "gouging" will fall within the ambit of Part IIIA. The declaration criteria, in particular criteria (a) and (b), limit the ambit of the National Access Regime to situations where services are provided by facilities that are uneconomic to duplicate and where the price or other terms and conditions of access are such that competition is restricted in a market other than the market for the infrastructure service.

3.19 A classic example of such a situation is where a vertically integrated business controls a monopoly facility as well as competing in a dependent market which is otherwise open to competition. Where such a business tries to advantage its position in the dependent market through how it prices access to the monopoly facility, regulatory intervention may be necessary to promote competition in the dependent market.

It is important to observe that the National Gas Law (NGL) goes somewhat further than the Competition and Consumer Act. It allows two types of remedies in the event of pipeline coverage:

- Light-handed regulation which, in essence, mirrors the negotiate-arbitrate model of the Part IIIA regime
- Full regulation, which is more akin to the standard open access regime.

However, even the National Gas Law strongly tilts in the direction of protecting existing private property rights:

- The Law puts obstacles in the way of obtaining full regulation. Most of the pipelines that have been covered to date have been subject to light-handed regulation
- The ability to obtain a 15-year exemption from coverage provides recognition that regulation may deter private investment.

Overall, an access regime—whether under the CCA or the NGL—is concerned with the subset of policy problems relating to the exclusion of competitors from markets. This relatively narrow concern is revealed not only in the conditions for obtaining coverage (discussed further below) but also in the remedies available once coverage is granted:

- Even with full regulation under the NGL, there is only limited ability to order expansion to the pipeline. For example, it is likely that investment which interconnects the pipeline to a hub but which extends beyond the existing length of the pipeline (and hence, requires new right of way) would be regarded as an expansion
- It is not clear whether in regulating the carriage regime on a pipeline the AER would be able to over-ride the existing contractual arrangements. It seems more likely that the AER would have to accept whether the pipeline is already common carriage or contract carriage, and then apply regulations to that framework.

To conclude, an access regime is not designed to provide a platform for market design or for the solution of coordination problems.

What this means can be illustrated by an example from the electricity sector. Investments in electricity transmission are both substitutes for and complements to investments in generation. Transmission must respond to the needs of load and generators, but equally, the availability of transmission will influence the location decisions of the grid's users. In

the National Electricity Market, each State manages its own transmission grid. Within each integrated grid, the regulatory regime attempts to solve the above coordination problem by applying the grid investment test and a pricing methodology to transmission assets.

By contrast, inter-state interconnectors are generally expected to result from merchant investments. The decisions about interconnector capacity and, conversely, the degree of congestion across the entire NEM arise from the decisions about specific investments rather than from the integrated and a centrally guided network plan.

The access regime is relevant to the situations of the interconnectors. It is not designed to replicate the coordination of the integrated grid.

With respect to the emerging East Coast gas market, even if coverage could be secured for all the transmission pipelines, it is unlikely that the access regime could be used to:

- Ensure coordination of balancing arrangements across all the pipelines
- Ensure coordination of carriage terms across all the pipelines
- Enforce investment for the benefit of the market as a whole, but the benefits of which may not be commercially captured by the specific users of each pipeline.

4 How the Tests to Secure Coverage Work

We now turn to considering the tests for securing the coverage.

4.1 Scope of coverage

You have asked us to consider whether the scope of coverage is a single pipeline or whether it can include a combination of pipelines. In our view, the current legislation is unambiguous: the test is to be applied to a specific facility. The facility may include more than one pipeline, but only if the pipelines are:

- Owned by the same party
- Have common and integrated contractual and operating arrangements.

In our view, this is consistent with the logic of the access regime: the policy is designed to address the behaviour of individual asset owners.

In principle, it is possible to cover the whole market through applying for coverage of every pipeline in the market. However, apart from very high transactions costs, such an approach would have to deal with a key constraint: the scope of coverage also defines the scope of the application of the tests. That is, the coverage criteria would have to be satisfied for each pipeline facility on a bilateral basis, rather than being satisfied for the transmission network as a whole.

As we discuss later in the report, this is particularly important for the application of the test of increased competition in the upstream or downstream markets. For example, it may be possible that coordination of balancing and carriage rules between pipelines as well as additional investment to connect pipelines to trading hubs could lead to increased competition. However, it appears that the existing access regime does not allow such competitive gains to be considered: the "with coverage" counterfactual used for the analysis cannot include presumed coverage of other pipelines. Equally, it cannot include presumptions about how either light-handed or full regulation would be applied in the event those other pipelines get covered.

4.2 Uneconomic to duplicate

Following the decision of the High Court in the Pilbara rail access case, Part IIIA has moved from a focus on the natural monopoly to the US-style essential facilities doctrine. The US-style essential facilities doctrine asks whether it is privately possible (profitable) to develop an alternative facility or to use alternative means of meeting the need. By contrast, the previously assumed interpretation was that the criterion which needed to be satisfied was that it would be socially inefficient to duplicate the facility.

The two tests converge if the only source of market power across all upstream and downstream markets is the bottleneck facility itself. In that case, it would never be privately profitable to duplicate a facility if it was not socially efficient to do so. However, if there is existing market power either upstream or downstream, it may be privately profitable to duplicate even if it were socially inefficient to do so. This is because socially inefficient duplication could be "subsidised" by rents or quasi-rents from these other markets.

So, what are the implications of this change? The key argument in favour of the US-style essential facilities doctrine is that the proper way to draw the boundary between the relevant property rights is that an owner of an infrastructure facility should have complete freedom to choose its commercial counterparts and to deal or not to deal, unless there was no viable way for competition to occur in an upstream or downstream market. The focus, typically, is on the downstream markets: will consumers be harmed in the absence of access.

In the Pilbara case, Professor Willig developed an elegant argument that, if it is privately profitable (economic) for a party to develop an alternative facility, but it is socially uneconomic for such development to proceed (i.e. the joint demand can be supplied at less cost by the existing facility), then the parties would have an incentive to come to a private deal. This is because the joint profit from the private deal is going to be higher than letting the alternative facility go ahead, while the fact that an alternative facility is privately profitable means that the access seeker will have leverage over the incumbent owner. If the incumbent owner does not agree to come to a private deal, it would be acquiescing to a competing investment which could undermine its own profitability.

Professor Willig made the point that if it is privately unprofitable (uneconomic) for a party to develop an alternative facility, a private agreement may not be possible. The access seeker would have no leverage over the owner of the existing facility, and there may be no deal even if the joint use of the existing facility is jointly profit-maximising and socially desirable.

In other words, the argument goes that it is always socially undesirable to provide access if there is an incentive for the parties to come to a private deal, as would be the case if it is privately profitable for the access seeker to develop an alternative facility. Whenever there is such private incentive to reach an agreement over access, but no agreement exists, the outcome should be interpreted as strong evidence that the incumbent has genuine efficiency reasons to deny access.

The problem with this approach is that there will be many situations where the incumbent infrastructure owners have an incentive to deny access in order to raise their competitors' costs, even if they know that it is privately profitable to develop an alternative facility, and that competition will emerge anyway. For example, this would occur if the infrastructure owner was not sure that it could capture all the monopoly rent through the access charges—a very reasonable belief if conditions in the dependent

markets change regularly, while infrastructure access is provided under a long-term contract.

The key point is that with the criteria under Part IIIA interpreted as applying only to situations where it was privately unprofitable to develop an alternative facility, the access regime becomes relevant only for a small subset of a broad set of situations where national resources could be used more efficiently through the utilisation of the existing facility.

The shift to the "privately unprofitable" test may have a particularly strong effect on the ability to secure coverage for gas pipelines under the National Gas Law. Already, we can see that the majority of pipelines are uncovered, and a number of pipelines have had their coverage revoked due to the emergence of multiple connections. However, it is further likely that the gas market is one of those markets where rents may exist outside of the monopoly rents available to the owner of the bottleneck facility.

Globally, the price of a natural resource such as gas would tend to be set by the cost of the marginal producer. With the emergence of the LNG export trade this price will feed back into the Australian market through the LNG-netback price. Hence, to the extent that Australia has infra-marginal gas producers, they would enjoy quasi-rents from the resource. The existence of such quasi-rents could make the construction of alternative pipeline facilities privately profitable even if it were socially optimal to maximise the utilisation of the existing facility. Overall, we expect that there would be relatively few circumstances where this criterion would be satisfied for the purpose of obtaining coverage.

However, the public interest in maximising the utilisation of the existing facilities does not go away just because the criterion defined in terms of the US essential facilities doctrine is not satisfied. If the society can economise on the level of investment required to generate the same amount of economic activity, there would be powerful social and political pressures to do so. If the national access regime does not deliver, the focus will switch to State access regimes, or to obtaining results through license conditions and other forms of direct, case specific interventions.

In our view, this is precisely what we observe in the United States. While the essential facilities doctrine appears to deliver a well-defined boundary between the owners' and the access seekers' property rights, with a heavy emphasis on the rights of the owners, a veritable swarm of Federal, State and municipal licensing and regulatory arrangements takes up the slack. The outcome is infinitely more complex and probably less efficient.

A critical aspect here is the perceived need to ensure fair access through public ownership. Many infrastructure sectors in the US are characterised by much greater public ownership than in Australia, or most other OECD countries. The reluctance to privatise is in part explained by the absence of a well-defined and accepted access regime, and the belief that public ownership is necessary to balance the interests of the owners and the users.

4.3 Increase in competition in upstream or downstream market

Criterion (a) under the CCA makes it clear that the access regime is concerned with the increase in competition resulting from (i) access or (ii) increased access on (iii) reasonable terms.

This analysis is easy to apply when there is clear denial of access in the counterfactual (including denial through offering access on unreasonable terms). In that case, the

criterion involves consideration of counterfactual with access against the factual of no access.

However, the analysis becomes considerably more complicated where access is generally available and where the terms of access—whether they are efficient or not—do not by themselves prevent the access seeker from entering the market.

In this—much more common—case, the analysis requires a clear definition of what increased access would entail. There are few relevant precedents in the NCC decisions to draw from. However, in general, it seems that the NCC tends to consider "increased access" in volume terms—that is, the ability to deliver greater volume to the market or the ability of more market participants to emerge in the upstream or downstream markets. Where there are already many participants—a sufficient number to make the downstream or upstream markets competitive—such additions may have little effect on competition.

It appears unlikely that the term "increased access" would encompass a possibility of securing more efficient market outcomes such as:

- More liquid trading of gas as a result of coordinated and appropriately designed balancing arrangements
- More efficient locational decisions through congestion pricing
- More efficient management of the line pack and greater trading of capacity reservations.

In essence, the analysis required under criterion (a) of Part IIIA (and its equivalent under the NGL) does not envisage comparison of a factual and a counterfactual in which the difference is the conduct of competition on the basis of a more efficient market design that may be possible if the pipeline is covered and the access is regulated compared to conduct by the same parties in a less coordinated setting.

Similarly, while the analysis can include a counterfactual that results from pipeline expansion that may be made possible by the coverage of the pipeline, it cannot take into account the integration benefits that could result from separately regulated expansions to a number of different covered pipelines.

Finally, "on reasonable terms" does not appear to provide a basis for comparing a more elaborately designed market with less well-structured unregulated arrangements. Rather, on our reading, the existing regime asks whether the existing terms are so unreasonable as to exclude some participants from the market, and then seeks to compare this factual with a counterfactual where the terms are sufficiently reasonable for the access to occur.

Overall, according to the Full Federal Court in the *Sydney Airport* case, the test requires the NCC to undertake:

> *"a comparison of the future state of competition in the dependent market with a right or ability to use service [the counterfactual scenario] 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 [the factual scenario]".*[2]

At least in the case of the gas market, such comparison appears to be too coarse to be able to compare the quality of market coordination that can be achieved within and without coverage.

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[2] Sydney Airport Corporation Limited v Australia Competition Tribunal [2006] FCAFC 146 at para 83

More generally, it is important to recognise that competition and efficiency are not synonymous. Competition promotes efficiency, but in many circumstances it may be possible to increase the efficiency of market outcomes without an increase in competition either causing such greater efficiency or resulting from it.

Since both the competition law part of the CCA and the Part IIIA access regime ask questions about "increasing" or "lessening" of competition, there is now a well-established approach for analysing changes in competition. This approach focuses on the ability of firms to engage in rivalry in a market. In other words, it is not possible for the analysis of this criterion to ask questions of the type that we routinely ask when considering changes to the regulation of the electricity market, such as whether the intervention would lead to more efficient locational signals, would improve information available to market participants or would reduce transactions costs.

Importantly, until the recent—and so far unsuccessful—attempt to obtain declaration for access to the Port of Newcastle, all of the previous applications for declaration under Part IIIA of the CCA have involved a situation where the applicant was not able to access the services and contended that once it could gain access to the services it would be a new entrant in one of the dependent markets.

4.4 Each test must be satisfied independently

A key feature of both the NGL and the CCA is that each criterion must be satisfied independently. Following the High Court decision, the logical scheme under Part IIIA runs as follows:

- Test whether it is privately profitable to develop an alternative facility under criterion (b). If it is privately profitable, do not grant access as regulated access would interfere with welfare maximising voluntary commercial negotiations
- If the test under criterion (b) shows that it is not privately profitable to develop an alternative facility, consider whether access would promote competition in an upstream and downstream market.

However, this logical scheme does not allow for the situations where the two tests need to be considered together precisely because the private ability to duplicate arises out of uncompetitive situations in the upstream or downstream markets. This may be particularly likely with vertical integration, when vertically integrated owners of existing infrastructure refuse access (or provide inefficient access) because they would suffer competitive losses in dependent markets as a result. Yet, these situations are precisely what the access regime is all about. Moreover, this may occur even if the owners of the infrastructure can capture the full rents from granting access within the relevant infrastructure services market.

In the Pilbara rail access case this issue was illustrated by the effects of access on the market for iron ore tenements. In principle, the economic rent associated with the ownership of the railway infrastructure is the difference between the cost of transporting iron ore via access to the existing facility, and the cost of using alternative means of transport, such as trucking iron ore. In other words, in granting access, the owner of the infrastructure facility is able to set prices which are just below the cost of the alternative. This would enable the infrastructure owner to capture all economic rents, and would mean that the financial viability of the tenements is pretty much the same with and without access.

However, the ability to access rail infrastructure is likely to change the dynamics of the rivalry for the right to own a tenement. On the face of it, the ability to access rail should not alter the value of the tenement, as long as the price of rail access is essentially no different to the cost of using alternative means of transport. The discounted cash flow of such a tenement may appear to remain the same.

But this would ignore the key driver of real world markets—the transactions costs. There are significant transaction costs incurred by firms when they bid for iron ore tenements. Profit maximising firms are disinclined to incur these costs if they have a low probability of successfully acquiring the tenement.

As long as there is no access to rail infrastructure, bidders for financially viable tenements (that is, tenements which can be profitably exploited while using alternative means of transporting iron ore from mine to port), would always know that, depending on the tenement location, the existing owners of rail infrastructure could outbid them. This is because vertically integrated infrastructure owners could always pay a price for tenements that incorporates some of the capitalised economic rent from the monopoly infrastructure facility. By doing so, they would capture the remainder of the rent.

Overall, for the same level of transaction costs involved in acquiring a tenement, declaration under Part IIIA would increase the probability of success for independent bidders. This is because with access, the owners of rail infrastructure would capture all the relevant economic rents in the price of access, and hence would have no incentive to outbid independent acquirers in the market for tenements. Declared access makes it more worthwhile incurring the transactions costs associated with bidding for tenements. Hence, the rivalry in the market for tenements would increase.

It is quite likely that the prices of tenements would also increase, even though their cash flows would appear to be unaffected. This is because firms value reduction in risk and complexity. To put it in finance theory terms, the cash flows may be the same, but the discount rate would be lower. This is because delivery of iron ore by rail over long distances represents the standard model for the iron ore industry. Market participants understand this standard, and can evaluate the technical and financial risks associated with using it. Alternative means of iron ore transport over long distances may be technically possible and financially viable, but precisely because they are less common and less tested, they would be seen as being more risky. Even if the average risk was the same, the risk profile would be different. For these reasons, it would be rational for the incumbent infrastructure owners to deny access in order to increase the option value of any potential future acquisition of tenements, or joint ventures with tenement owners, or of purchase of companies whose key assets comprise tenements.

How is this relevant to the gas market? Hypothetically, developers of new gas sources could deny access to the new pipelines they need to build to open those sources for precisely the same reason that the owners of iron ore tenements in the Pilbara wanted to deny access. If an area is rich in gas resource, it is unlikely that the developer would want to invite other gas producers into the area. Rather, they would likely prefer to keep the option value of the area for themselves.

In this context, it is important to distinguish between the ownership of the existing pipelines and the process for the development of the pipelines. At present, most pipelines are owned by independent infrastructure investors who do not participate in the gas market. This creates the impression that the issue of vertical integration is not significant in the context of the gas market. However, we think it is misleading:

- Some existing pipelines and likely many future pipelines are developed by the resource owners. While the pipelines may be subsequently sold to third parties, the structure of the contracts as well as the physical design of the pipeline would likely lock in the interests of the original owners
- Even if a pipeline were developed by an independent party in the first instance (for example, through a tender), it would be under contract to the incumbent user or a group of users. Again the contract structure would likely lock in the interests of the incumbents.

In the gas market, the denial of access may not take the form of an outright refusal to deal of the type shown by BHP and Rio Tinto in the Pilbara case. Rather, denial of access may take the form of not providing the balancing arrangements or carriage terms that would facilitate competition and enable independent gas producers to operate.

Even if the independent infrastructure owner was not tied into the arrangements which favour the incumbents, they may have little incentive to provide access if it causes them inconvenience or disrupts existing ways of doing things.

While neoclassical economic theory focuses on profit-maximising behaviour, it is important to remember that in reality, firms do not pursue every profit opportunity available to them. Given the complexity of managing a large corporation, it is entirely rational for firms to concentrate on their core business, and to leave profitable opportunities on the table when they fall outside the core.

For example, in the Pilbara rail case, both BHP and Rio Tinto made it clear that their core business was the production of iron ore for sale on global markets. Their business was not the provision of third party rail access to other miners. Accordingly, it would be neither surprising nor irrational for them to refuse access to other miners even if it is profitable to do so.

In other words, it may be commercially rational for an infrastructure owner not to provide third party access, even if they have no interests in the upstream or downstream markets. However, while focusing on their core business is commercially rational, it may not be in the wider public interest as it may result in an economically inefficient use of resources and reduce economic activity elsewhere in the economy. It is the purpose of regulation, and in particular Part IIIA, to align private and social interests. Hence, setting the test under criterion (b) so that the access regime can never apply to situations when a voluntary private agreement is hypothetically possible but is not forthcoming substantially weakens the access policy.

Box 3.1: Firm specialisation and strategic decision making

Firms gain competitive advantage by specialising and focusing on their core business activity. This specialisation occurs even if it may be profitable to enter other markets by producing other goods and services.

For example it is technologically possible for Electricity Distributors to provide broadband internet services to customers. Theoretically, the joint provision of broadband and electricity services would represent an economically efficient use of electricity network infrastructure, such as poles, wires and IT systems.

Despite these theoretical benefits there are, to date, no major electricity companies offering this type of service. This is understandable however when consideration is given to the many and complex challenges that an electricity distributor would face in providing a broadband service, including:

- the delivery of broadband services requires a firm's workforce to have a different set of technological skills and knowledge
- broadband and electricity have different target markets and would require a different marketing focus
- the provision of electricity and broadband are subject to different regulatory regimes
- there is a risk that the provision of broadband would adversely affect the quality of service, efficiency and customer service levels of the provision of electricity services.

Taking these factors into account it is entirely reasonable for the management of the electricity distributor to make a strategic decision not to enter the broadband market but instead focus on their core business which is electricity distribution.

With respect to gas pipelines, pipeline owners may feel disinclined to take commercial risks or disrupt the entrenched operating arrangements if they perceive their core business as operating the pipeline for the benefit of the existing contract holders.

4.5 Absence of a cost-benefit framework

The introduction of the "privately profitable" test for criterion (b) of Part IIIA effectively removes the economic cost benefit test for the analysis of intervention under the CCA.

In essence, from an economics point of view, criteria (a), (b) and (f), taken together, should pose an economic cost-benefit test for the declaration (criterion (f) asks if access is in the public benefit). Each criterion comprises a logical building block of a comprehensive economic framework. From the perspective of economic analysis, the criteria are logically distinct precisely because they refer to discrete but inter-connected aspects of the overall economic analysis. However, this only worked as long as criterion (b) considered the social costs of duplication.

Clearly, it is easy to imagine circumstances in which it would be privately profitable to develop an alternative facility even if it were more costly and relatively wasteful compared to being granted access to the existing facility. As we explained, the relatively low mining and extraction costs in Australia compared to other global suppliers could enable Australian minerals producers to waste resources at other points in the delivery chain, and still be profitable.

So, when "uneconomical to develop another facility" is interpreted as asking whether it is privately profitable to construct an alternative facility, the test becomes devoid of any notion of economic efficiency or of minimisation of costs. It simply becomes a test of whether sufficient economic rent can be recovered from the price of the final output to enable producers to remain profitable even if they cannot get access to a more efficient facility.

This means that the entire economic cost-benefit test becomes delegated to criterion (f). Yet, the NCC has made it quite clear that it does not see criterion (f) as requiring it to conduct an economic cost-benefit analysis.

In our view, interpreting criterion (b) as a social test fitted more logically with the economics framework. In that case:

- Criterion (a) considered if access to the facility affected downstream and upstream markets. In essence, this criterion signalled that the access regime was not concerned with the distribution of economic rents, but rather with the efficient use of national resources. The question we ask under criterion (a) is whether access would have an effect on competition in the upstream and downstream markets even if the incumbent owner of the facility recovered the full monopoly rents associated with that facility.
- Criterion (b) then compared the social costs of obtaining the specified services with and without access. In essence, criterion (b) asked if more or less of the national resource would be used with access. Clearly, even if access were to increase competition in the upstream and downstream markets, it would not be in the national interest if in the process it led to a more wasteful use of resources.
- Finally, criterion (f) considers if there are any externalities or other considerations which could affect the overall Australian public interest. For example, in some circumstances, increased competition in upstream markets could be against Australian public interest if it benefits foreign consumers at the expense of Australian producers.

This coherence has now been lost.

5 Conclusion

If we go back to the foundations of the Australian access regime, the Report by the Independent Committee of Inquiry on the National Competition Policy (1993) clearly draws a distinction between natural monopoly facilities in general, and natural monopoly facilities owned by the vertically integrated businesses. The Inquiry made it clear that where "the owner of an essential facility is not competing in upstream and downstream markets, it would generally have little incentive to deny access" (p 240). The access regime under Part IIIA was designed to target the situations where access is denied due to interests in other markets. As it they were originally designed, the criteria under the access regime (later imported into the National Gas Law) primarily addressed policy-makers concerns about the incentive on the vertically integrated owners of natural monopoly infrastructure facilities to use their market power to distort competition in the upstream and downstream markets.

The change in the interpretation of criterion (b) from the socially uneconomic to the privately unprofitable duplication of the facility has significantly diluted the usefulness of the regime in addressing the misuse of market power by vertically integrated monopolists. This loss of usefulness is particularly important in relation to bottleneck infrastructure serving various resources sectors in Australia. The existence of rents and quasi-rents in the upstream resource extraction frequently makes it privately profitable to duplicate infrastructure facilities even if it is inefficient from the national point of view. The Australian mining regions are littered with multiple rail lines, airfields, water treatment plants, pipelines and other facilities built for own use.

However, in our view, the dilution of the access regime is a relatively minor issue for the evolution of the East Coast gas market. Rather, a more significant consideration is that a regime primarily designed to address the misuse of market power by vertically integrated monopolies is of limited relevance to a market which requires closer coordination and careful design.

In preparing this paper, we were not able to consider in detail whether there are genuine barriers to the emergence of more efficient flexibility and trading mechanisms within the current contract market or if the full introduction of the vertically unbundled commodity market would be desirable. However, if we ask what it is that could potentially create barriers to further market development:

- Market power that leads to the ability and incentive to deny access to pipeline services or
- Lack of incentive to participate in the development of a liquid, inter-connected gas market.

The answer appears to be the latter. Market power may contribute to such lack of incentive (e.g. a lazy monopolist may not be interested in introducing changes that could contribute to volatility of revenues—such as common carriage—even if they were profit maximising), but wrong incentives may exist even in the absence of market power.

An access regime is simply not the tool to solve the policy problems involved in the design and coordination of a complex market. One can imagine a number of changes in the legislation which could potentially make the access regime much more relevant to the issues facing the gas market:

- The scope of coverage could be re-defined to apply to the entire transmission network
- The "uneconomic to duplicate test" could be explicitly restored to focus on social rather than private costs
- The "increase in competition" test could be changed to an "increase in efficiency" one.

These changes would allow coverage to be obtained for the entire East Coast transmission network. With further changes to the type of regulation that the AER was able to impose once the coverage is secured (including regulatory measures to improve the coordination of the sector), this extension of the access regime could lead to the implementation of a comprehensive market design which may integrate gas transmission and gas trading.

However, such an exercise would appear to be pointless. Since such changes in the legislation would be driven by a particular view on what is the desirable structure and regulatory regime for the East Coast gas market, it would appear much more straight-forward and sensible to drive reform through specific and directly relevant legislation, rather than try to force the round peg of market design through the square hole of an access regime.