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Cost Allocation for the Goldfields Gas Pipeline

Dr Tom Hird

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1 Introduction

1. My name is Dr Thomas Hird and I am a Director of CEG Asia Pacific. My qualifications and experience are set out in my curriculum vitae, which is attached to this report. The opinions set out in this report are based on the specialised knowledge that I have acquired from my qualifications as an economist and my experience in the field of regulatory economics.
2. This report has been prepared by CEG for Gilbert + Tobin on behalf of Goldfields Gas Transmission Pty Ltd (GGT), in order to assist GGT in responding to the West Australian Economic Regulation Authority's (ERA's) draft decision in relation to the Access Arrangement for the Goldfields Gas Pipeline (GGP).
3. Parts of the capacity of the GGP are "covered" under the *National Gas Access (WA) Act 2009* – which gives effect to the National Gas Law (NGL) – and others are not. The parts of the capacity of the pipeline that are not "covered" are expansions that occurred after the original pipeline had been constructed and in respect of which GGT had made a relevant election that they not be covered. These "uncovered" expansions do not form part of the covered pipeline and are not subject to the Access Arrangement applicable to the GGP and include:
 - three additional compressors installed at Paraburdoo, Wyloo West and Ned's Creek after the 2005 Access Arrangement was concluded; and
 - a more recent expansion for Rio Tinto Iron Ore and BHP Billiton Iron Ore.
4. When GGT's Access Arrangement was last revised,¹ significant consideration was given to the way in which the capital and operating costs that were common to both the covered and uncovered capacity should be allocated between services provided by the GGP pursuant to the Gas Code,² which preceded the regulatory framework comprising the NGL and National Gas Rules (NGR). The issue ultimately turned on whether the services provided by the uncovered expansions were "services provided by means of a Covered Pipeline" within s.10.8 of the Gas Code. The ERA concluded that they were not and that decision was upheld on appeal.³ As a consequence:
 - the capital costs of those parts of the uncovered additional compressors at Paraburdoo, Wyloo West and Ned's Creek were not included in the capital base when the current reference tariff was determined; and

¹ The process for the most recent revisions to the Access Arrangement was initiated on 23 March 2009. The appeal decision of the Electricity Review Board (discussed below) was dated 22 November 2011.

² More formally: *The National Third Party Access Code for Natural Gas Pipeline Systems*.

³ Electricity Review Board, *Application for review of the decision by the Western Australian Economic Regulation Authority published on 5 August 2010 to approve its own revised Access Arrangement for the Goldfields Gas Pipeline*, 22 November 2011.

- the costs of operating and maintaining the additional compressors were excluded from non-capital costs, i.e., the directly attributable non-capital costs and a share of common operating costs attributable to those compressors.
- 5. The key implication of this cost allocation methodology is that, when new customers are added to the pipeline by way of uncovered expansions, the customers procuring covered services have not been attributed a reduced portion of the costs that are common across both customer groups. Most notably, the customers of the covered pipeline continue to be allocated 100% of the costs of the pipeline itself – even though the new customers are also using it. GGT proposed to retain this approach to cost allocation in its revised Access Arrangement to apply during the period 1 July 2016 to 31 December 2019. I provided an earlier report⁴ which GGT relied on in support of its position.
- 6. The ERA has since released its draft decision on GGT’s proposed revisions to the GGP Access Arrangement and has determined that the cost of the pipeline should be shared between users of the covered and uncovered capacity. I have been asked to review the ERA’s decision in this regard. My terms of reference are extracted below.

We are seeking a further expert report from you, setting out your expert opinion in relation to the following matters:

- 1 *Whether calculating total revenue for the purposes of determining reference tariffs as the stand-alone cost of providing pipeline services using the Covered Pipeline is inconsistent with the national gas objective.*
- 2 *Whether calculating total revenue for the purposes of determining reference tariffs as the stand-alone cost of providing pipeline services using the Covered Pipeline best achieves the national gas objective.*
- 3 *Any implications of the ERA’s approach to calculating total revenue on efficiency, including any implications for investment incentives and use of natural gas services.*
- 4 *Whether, generally and in respect of the GGP, there is a risk that if all costs associated with the Covered Pipeline are allocated to covered services, the use of covered services could be dissuaded and existing capacity could become idle? Is this a relevant consideration when considering the national gas objective?*

Your responses to each of the above questions should be based on your expertise as an economist, the information contained in the Draft Decision and GGT’s access arrangement proposal, and the additional information provided by us.

- 7. The remainder of this report addresses my terms of reference and has the following structure.
 - section two addresses my approach to the national gas objective (NGO) and some issues that have been raised as to how the NGO should be approached;

⁴ CEG, Cost Allocation for the Goldfields Gas Pipeline, July 2014,

- section 3 sets out my critique of the ERA's draft decision;
 - section 4 surveys the academic literature on this issue;
 - section 5 considers the allocation of common costs that would exist in a workably competitive market;
 - section 6 discusses internal inconsistencies in the ERA's cost allocation methodology (ones that do not necessarily relate directly to the efficiency issues surveyed in section 3);
 - section 7 provides a critique of the Incenta report submitted by BHP Billiton.
8. In preparing this report I have been assisted by my colleagues Jason Ockerby and Johnathan Wongsosaputro. Notwithstanding this assistance, the opinions in this report are my own and I take full responsibility for them. I have read the Guidelines for Expert Witnesses in Proceedings of the Federal Court of Australia and confirm that I have made all inquiries that I believe are desirable and appropriate and no matters of significance that I regard as relevant have, to the best of my knowledge, been withheld.



Dr Tom Hird

2 Approach to assessment against the NGO

9. The national gas objective, set out in section 23 of the NGL, states that:

“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.”

10. As an economist, my expertise extends to opining on how to assess whether a regulatory policy will *promote efficient investment in, and efficient operation and use of, natural gas services*. I interpret the use of the use of the word “efficient” in the NGO to be equivalent to the term ‘economically efficient’. A policy or action is economically efficient if it creates, or is expected to create, benefits that exceed the costs (both broadly defined) of the policy or action. The relevant costs and benefits must be broadly defined to capture all the costs and benefits of the action.
11. BHP Billiton has submitted a report by Incenta (Mr Balchin) that addresses the interpretation of the NGO in the context of cost allocation policy between services (and ultimately users acquiring services) provided by means of the covered pipeline and services provided by means of the uncovered pipeline. Mr Balchin considers that there can be a tension between promoting economic efficiency and promoting the long term interests of end users.⁵ Specifically, Mr Balchin considers that if a regulatory policy can make consumers better off that policy may promote the long term interests of consumers even if it is inefficient.
12. This will be the case if an action or policy makes consumers of natural gas better off in the long run but makes other parties⁶ worse off by more than consumers. In which case Mr Balchin states that it is ambiguous how this action or policy would be assessed under the NGO. The action or policy would not promote economic efficiency but it would promote the long term interests of customers of natural gas.
13. I consider that it is useful to set out a concrete example where the type of tension that Mr Balchin is envisaging could, at last in theory, exist. By doing so, this allows us to consider the limits of my expertise in opining on how the type of tension envisioned by Mr Balchin could be resolved.

⁵ Incenta, Cost allocation between covered and uncovered services, November 2014, p.14, paragraphs 50 and 51.

⁶ For example, owners of natural gas assets, workers in the production of natural gas services, taxpayers, consumers of products other than natural gas, people living in proximity of natural gas facilities etc

14. Consider a scenario where reducing the allowed rate of return on existing regulated infrastructure assets below the rate of return reasonably expected by investors (given the risks involved) provided positive present value of benefits to consumers. This could, in theory, provide net benefits to consumers by virtue of the gains (lower prices) to consumers using already existing sunk infrastructure being greater than the cost to future consumers from not being able to use new infrastructure (the investment which is deterred by the regulatory policy setting the rate of return below cost). Notwithstanding the hypothetical net benefit to existing consumers, such a policy would be inefficient because the benefit to existing consumers is offset by the loss to existing asset owners (this is a pure transfer). Consequently, the net economic cost is simply the lost economic value associated with future deterred investment.
15. If such a tension between economic efficiency and the long term interests of consumers of natural gas exists then I would not be expert to resolve these. I therefore prepare this report on the basis that the promotion of economic efficiency will promote the NGO.
16. Nonetheless, I set out below conditions under which no tension of the kind envisioned by Mr Balchin would exist – and in which a focus on economically efficient outcomes would be appropriate. However, I express no opinion on whether these are actually correct or legally permissible. One could:
 - conclude that such a hypothetical scenario could never occur in the future – thereby avoiding the need to consider any resolution to the hypothetical tension. This is a matter of economics. If this was correct then no tension would exist;
 - interpret the use of the phrase ‘long term’ in the NGO to give primacy to the interests of future consumers over current consumers. This would mean that, despite the policy providing greater benefits to current consumers than losses to future consumers, this would nonetheless not promote the ‘long term’ interests of consumers. This is a matter of legal interpretation. If this interpretation was correct then no tension would exist;
 - interpret the NGO as giving primacy to promoting efficient outcomes and the use of the phrase ‘for the long term interests of consumers’ as explaining the purpose of promoting efficient outcomes (rather than a competing objective to be weighed against promoting efficiency). This is a matter of legal interpretation. If this interpretation was correct then no tension would exist; and
 - interpret the NGO as giving primacy to the long term interests of consumers and the reference to promoting efficient outcomes as an important, but not exclusive, means of doing so. This is a matter of legal interpretation. If this



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interpretation was correct then a tension between competing objectives would exist.

3 Critique of ERA draft decision

17. Sections 3 and 4 of my previous report set out the definitions of the concepts of sunk costs, common costs, and marginal costs, and outlines their role in an analysis of efficient regulatory pricing and allocation of common costs. The elements of the ERA's draft decision that are relevant to my analysis are found in paragraphs 1484 to 1493 of the draft decision. In those paragraphs the ERA describes its assessment of how different cost allocation methodologies might promote economic efficiency.
18. The ERA states that its objective in developing a regulatory policy on cost allocation is to promote efficient outcomes:⁷

To ensure that the total revenue allocation to covered services facilitates a reference tariff determination that reflects the efficient cost of covered services – as required by the RPP, which then ensures consistency with the NGO – the Authority determines that the CAM that allocates joint costs to covered services must seek to minimise the allocative, productive and dynamic inefficiencies across all services provided by the GGP in its entirety. It follows then that the CAM should take into account any efficiency trade-offs between covered and uncovered services.

19. In attempting to develop a policy consistent with this objective the ERA accepts the proposition that I put in my report that allocating a share of already incurred sunk costs in developing the covered pipeline capacity to be recovered from the users of new investments in uncovered pipeline capacity may result in future investment projects that would be efficient (produce value in excess of incremental cost) not proceeding.⁸⁹ This is because in order to be profitable to fund that investment customers must be willing to pay not only the costs that their usage of new capacity will cause to be incurred but also a portion of already incurred sunk costs that are allocated to them.¹⁰

In making this determination, the Authority understands that GGT may be required to bear a share of the joint costs under AA3 that were previously borne by the reference tariff for covered services during AA2 and that this may lead to higher tariffs for uncovered services in the future. As a result,

⁷ Paragraph 1486.

⁸ Paragraph 1492.

⁹ At paragraph 1484 the ERA lists three possible sources of economic inefficiency (allocative, productive and dynamic inefficiency). While, I do not regard these as necessarily distinct (or clearly delineated) sources of inefficiency, a failure to invest in expansions that would be efficient is probably best characterised as a source of “dynamic” inefficiency.

¹⁰ Paragraph 1492

the Authority understands that there is a risk to the efficiency of investment in uncovered services. For example, if the share of joint costs allocated to uncovered services results in tariffs for those services that do not reflect their efficient costs, then there is a risk that GGT may not be able to expand uncovered capacity of the GGP sufficiently to ensure the full range of services that might otherwise be provided and, in particular, may have to abandon future investment projects that would only be worthwhile if financed at marginal cost.

20. However, notwithstanding the ERA sharing this concern with myself, the ERA does not reach the same conclusion that I reached. Namely, I concluded that economic efficiency will be promoted if the regulatory regime does not allocate common costs to newly created capacity and, thereby, encourages GGT to expand capacity where customers' willingness to pay for expansions exceeds the incremental cost of expansions. The ERA reaches a different conclusion because it has regard to a perceived risk that allocating the sunk costs already incurred in providing the pre-existing covered capacity to the users of that capacity has the potential to cause those users to cease using the existing pipeline and leave GGT unable to find replacement users of that capacity. The ERA appears to weigh the perceived inefficiencies associated with this risk against the inefficiencies associated with the risk of dampening investment in new capacity, and determines that the risks are sufficiently balanced that a usage based allocation of common pipeline costs is appropriate. Moreover the ERA argues that the risk of GGT's proposed cost allocation resulting in the use of covered services being dissuaded is real and material.¹¹

...there is a risk that the use of covered services could be dissuaded and that existing covered capacity could become, and remain, idle. This could be the case, if existing and potential users withdraw their demand for covered services by substituting towards services provided by the uncovered capacity of the GGP and other fuels, scaling back operations, or re-locating.

Further, if the use of covered services is dissuaded due to reference tariffs that are too high relative to their efficient cost, the Authority considers that the risk of inefficient investment outcomes under AA3 could be exacerbated in subsequent access arrangements in which even higher reference tariff determinations would be required to ensure that the total revenue could be recovered from covered services even when that capacity is underutilised. If this was the case, then there is the potential for perverse outcomes in which the reference tariff could be rising as demand for covered capacity falls.

¹¹ Paragraphs 1488 to 1491.

21. In summary the ERA decides to allocate part of the sunk costs of providing the covered capacity to users of new¹² uncovered capacity. The ERA does so on the grounds that the current (or potential future) users of the covered pipeline capacity may not value using it sufficiently highly to pay the regulated reference tariff if that tariff includes recovery of the stand-alone costs of providing the covered pipeline. Consequently, that capacity may not be fully utilised and, moreover, the lack of utilisation of that pipeline will itself result in higher reference tariffs which may further reduce utilisation possibly leading to a ‘death spiral’ with the end result being no utilisation of covered capacity.

3.1 Critique of ERA decision

22. If there is some risk that setting reference tariffs based on stand-alone costs for the covered pipeline capacity will lead to long term underutilisation of covered capacity, then I agree that this risk must be weighed against the risk of discouraging investment in new capacity. However, I consider that the assessment of these risks that the ERA has carried out fails to consider all the relevant facts and having regard to these will result in a conclusion that economic efficiency is promoted by requiring the users of the covered pipeline capacity paying the full stand-alone cost of providing that capacity.

3.1.1 ERA scenario implies no prospect of prudent discount

23. The scenario that the ERA envisages involves customers being unwilling to pay the stand alone costs of providing the covered capacity and that an allocation of the ‘common costs’ to users of uncovered capacity will lower reference tariffs for covered capacity sufficiently to avoid (or at least materially reduce) the prospect of this occurring.
24. For the purpose of this subsection I hypothetically allow for the prospect that this is actually a material risk (although as noted in section 3.1.2 I consider the ERA incorrectly reaches a conclusion that this risk is material). In which case there are two regulatory policies for dealing with this risk:
- allocate more costs to users of uncovered capacity and, in so doing, raise the risk that this will lead to an inefficient underinvestment in new capacity; or
 - allow GGT to provide a discount to users of the covered pipeline capacity in the event that this was required to maintain utilisation of the covered capacity.
25. In my view the latter policy is the clearly superior mechanism to deal with the risk identified by the ERA. This is because this policy maintains efficient usage of the

¹² In the sense of being constructed after the sunk pipeline asset.

existing covered capacity without compromising efficient investment in uncovered capacity in order to do so.

26. I note that the NGR specifically envisage the potential for such a discount (a ‘prudent discount’¹³) to be allowed if current or prospective users of existing capacity are unable to commercially pay the reference tariff and if there is no other potential user of the relevant capacity. That is, the NGR already allow for the optimal policy response to the kind of risk envisioned by the ERA. The prudent discount effectively gives GGT the ability to price discriminate in order to recover the stand alone costs of the covered pipeline capacity. It is well recognised in the economics literature that that this is an efficient response to cost recovery in the presence of high fixed costs and customers with variable valuation of their service.¹⁴ In particular, price discrimination is recognised as the optimal solution to a situation where a monopoly cannot recover its fixed cost by applying uniform prices to all customers and an outcome that would be observed in the theoretical perfectly contestable market (competition ‘for the market’).¹⁵ That is, cost recovery can, and most typically will, be most efficient if a monopolist can charge more to customers who value the capacity highly and less to customers who place a lower value on the capacity.
27. Given that a superior policy response already exists in the rules, the ERA’s proposed cost allocation methodology is not justified on economic efficiency grounds. This is true even if there is a real prospect that some existing customers might, at some stage, be unwilling to pay a reference tariff based on stand-alone cost for the covered capacity.
28. Moreover, I note that even without the ability to apply a prudent discount within the rules, GGT can always elect to offer some or all customers a price that is below the reference tariff.¹⁶ If customers as a whole were unwilling to pay the stand-alone costs of covered capacity then, even absent the prudent discount provisions in the rules, GGT would rationally offer a discount to some or all customers. In this circumstance, GGT would not recover its full sunk costs but capacity utilisation

¹³ National Gas Rules, rule 96.

¹⁴ For example, see Baumol and Bradford, Optimal departures from marginal cost pricing, *American Economic Review*, V. 60, I. 3, (June 1970).

¹⁵ For example, see Brennan, Entry and Welfare Loss in Regulated Industries, In: Crew (Ed), *Competition and the regulation of utilities*. Boston, Kluwer Academic Publishers, pg 141-153

¹⁶ I note that a prudent discount only need be applied to the customer(s) who are commercially unable to pay the full reference tariff. If a prudent discount is applied, the under-recovery from that customer will have the effect of raising the level of cost recovery from other customers – but by less than if that customer ceased using the service. That is, because the customer receiving the discount still makes a contribution to fixed costs, the customers not receiving the prudent discount are better off than if no prudent discount was applied and the customer ceased to use the pipeline and no replacement customer was found.

would be maintained at efficient levels. In short, given GGT's ability to offer lower prices, full usage of covered capacity can be expected to be maintained so long as customers are willing to pay at least the marginal cost of their usage. If customers are unwilling to pay this amount then full capacity utilisation will not be maintained – but this will be the efficient outcome because customers would not value capacity usage at its marginal cost.

29. For completeness I note that, in the context of expansions that have already occurred (and sunk costs incurred), the implication of a change in regulatory policy to increase the allocation of common costs to the new investment will not result in that particular investment being dissuaded because it has already been made. It might, therefore, be argued that there is no efficiency consequence in this regard. Moreover, it might be argued that so long as the ERA signals that it will prospectively not allocate common costs to future (not yet committed) capacity increases then the ERA can avoid discouraging inefficient investment in the future.
30. Such an argument would, in my view, be flawed. The precedent set in the treatment of recently incurred investments in new capacity would, in my view, 'speak louder' to potential investors in gas infrastructure than any promise of different treatment in the future. The potential investors whose assessment of regulatory risk would be affected would not just be GGT but all investors in gas infrastructure - including other gas infrastructure assets regulated under the gas rules (both by the ERA and the AER).

3.1.2 Materiality of risk that demand is less than covered capacity at stand-alone reference tariff

31. In the previous section I explain why, even if there was a material risk that charging a uniform reference tariff at stand-alone costs would lead to under-utilisation of that capacity, the ability of GGT to apply a discount to the reference tariff would eliminate this risk. In this section I provide my views on the evidence that the ERA relies on to conclude that there is a material risk of underutilisation. Specifically, the ERA states:¹⁷

The Authority considers that the potential for covered capacity to become, and remain, under-utilised is evidenced by the following statement submitted by GGT:

The forecast of demand for capacity used in preparing this access arrangement revision proposal ... recognises:

(a) the difficulty GGT has encountered in finding a user for capacity made available by the failure of gold miner Apex Minerals at Willuna; and

¹⁷ Paragraph 1490.

(b) the delay experienced in finding a new user for a substantial tranche of capacity which will become available through Newmont’s “decontracting” in accordance with the provisions of its gas transportation agreement.

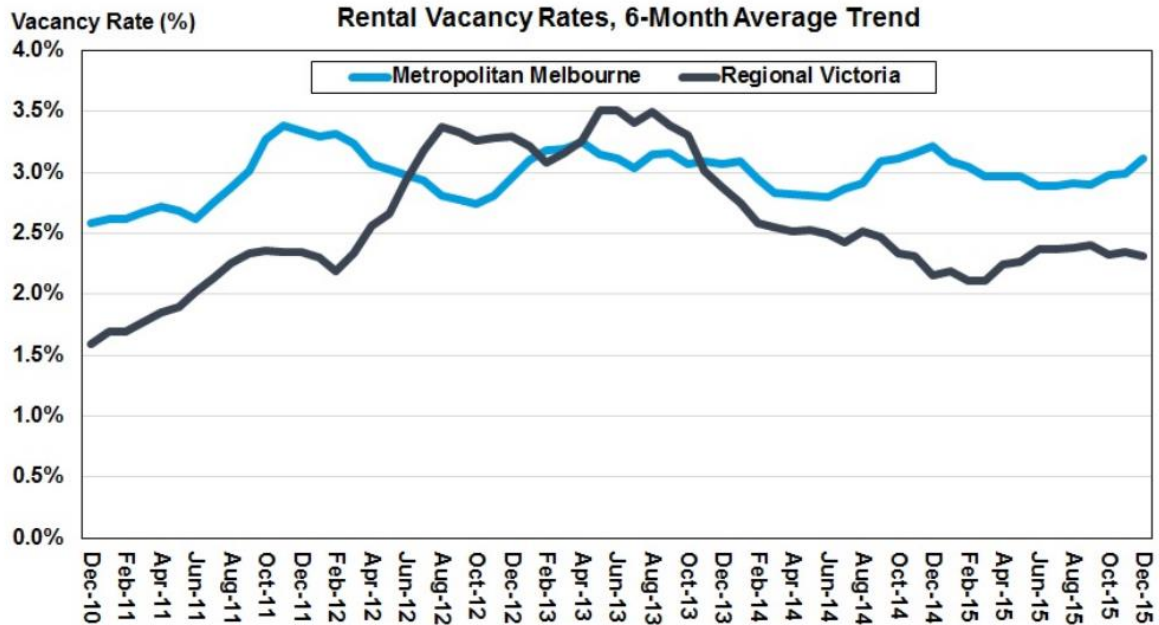
Given the risk of covered capacity becoming, and remaining, idle over the life of AA3, the Authority determines that only a share of the joint costs should be allocated to covered services in order to ensure that the reference tariff more closely reflects the efficient cost of those services, consistent with the RPP and achievement of the NGO.

32. In this passage the ERA conflates the difficulty that GGT faces in:

- ensuring new customers simultaneously take up covered capacity as existing customers relinquish covered capacity; and
- ensuring that there is sufficient long run demand for capacity.

33. An analogy can be drawn with rental of private of commercial property. A property may be placed in a highly desirable location with little or no risk that it would be unable to be tenanted in the long term. However, this does not imply that there will be no periods of vacancy between tenancies. Such periods of vacancy will typically reflect time taken for new tenants to arrange their affairs to be able to take advantage the vacant property and for the owners to market and negotiate with potential new tenants. Typical vacancy rates even in a buoyant property market are generally above 2.0%. By way of example, Figure 1 below is the Real Estate Institute of Victoria (REIV) time series of residential rental vacancy rates.

Figure 1: Residential vacancy rates (Victoria)



Source: REIV

34. It can be seen that the average vacancy rate for metropolitan properties is typically around 3% (with regional property vacancy rates being more volatile). The average vacancy rate is never zero. However, this does not imply that there is a material risk of Victorian rental property as a whole being unable to find customers willing to pay for the services provided.
35. The examples that the ERA refers to in the above quote appear analogous to vacancies between tenancies rather than evidence that the GGT is likely to be unable to find users for covered capacity in the medium to long run. The fact that a customer ceases to demand a service and another customer is not immediately available to take up the same capacity is not evidence that there is a risk of long run underutilisation of the covered capacity if customers are asked to pay the full stand-alone cost of the service. In this regard, I am instructed that the capacity referred to by the ERA has now been recontracted.
36. The evidence that would support the ERA’s proposition would be long run under-utilisation of the covered capacity that could not be explained by the normal and unavoidable ‘churn’ in customers. I would not expect to see such evidence, including because it would be in GGT’s interests to provide discounts (whether these be ‘prudent discounts’ under the rules of otherwise) to ensure full utilisation of the covered capacity (see discussion in section 3.1.1 above). Moreover, GGT has invested in new uncovered capacity in recent years to meet otherwise unmet demand. This suggests that the relevant recent evidence is of excess expected long run demand rather than the reverse.

4 Academic literature

37. The economic literature clearly recognises the negative economic consequences of allocating costs that are common to regulated and unregulated services, to the unregulated services.
38. As identified by Sappington (2000),¹⁸ the main reason for this view is that the regulatory allocation of common costs leads to perverse incentives for the regulated firm:

*For instance, the regulated firm will tend to supply too little of its unregulated services when expanded sales of unregulated services reduce the fraction of common costs allocated to regulated activities, and thereby reduce authorized revenues from regulated services. **In essence, the cost allocation procedure acts like a tax on unregulated activities, and so restricts their supply.** The allocation of common costs can also provide incentives for the regulated firm to adopt other than the least-cost technology... Similarly, if research and development costs are treated as common costs and allocated according to relative sales of regulated and unregulated services, the regulated firm can benefit financially from over-investing in projects designed to enhance profit in unregulated markets and under-investing in projects designed to improve operations in regulated markets. [Emphasis added]*

39. Similarly Crew and Crocker (1991) who assessed the merits of regulated utilities diversifying into competitive markets and noted that the cost allocation methodology was critical in this respect. They conclude:¹⁹

*While equity norms might suggest some type of cost sharing to be appropriate, we found, perhaps paradoxically, that the only percentage cost allocator guaranteeing beneficent efficiency effects from diversification **allocated all of the common costs to the regulated subsidiary.** Without further restrictions on production or the structure of demand, other percentage cost attribution formulae have ambiguous efficiency consequences. [Emphasis added]*

40. The logic underpinning both of these conclusions is the same as that underpinning my previous report that arrived at the same conclusion.

¹⁸ Sappington (2002), Price regulation and incentives, In: Cave, Majumdar and Vogelsange (Eds), *Handbook of Telecommunications Economics*, vol. I. North-Holland, Amsterdam.

¹⁹ Crew and Crocker (1991), Diversification and regulated monopoly, In: Crew (Ed), *Competition and the regulation of utilities*. Boston, Kluwer Academic Publishers, pg 43.

5 Workably competitive markets would not allocate sunk existing costs to new investments

5.1 Theoretical analysis

41. My previous report²⁰ explained why I would expect that, at the time of construction of the covered pipeline capacity, the customers of the pipeline would rationally contract so that there was allocation of sunk costs from the existing pipeline to new users of the pipeline (even though the costs are common to both).
42. This is relevant in the current context to the extent that the NGO is likely to be promoted if regulation mimics the outcomes in workably competitive markets. Note that at the time of construction of a pipeline the owner/builder has no market power over the customers of the pipeline – even if the pipeline once built will be a natural monopoly. This is because, prior to construction, customers can negotiate with multiple possible owner/builders of a pipeline.
43. In these industries, rivalry between potential owner/builders determines the contractual conditions that will govern the use of the asset in the long term. In this sense, a long term contract can be considered a competitively determined form of regulation; in contrast to government regulation imposed on suppliers after assets have been sunk/privatised.
44. There are many examples where competitively negotiated long-term contracts govern the supply of services provided by sunk infrastructure assets. Indeed, such competitively negotiated contracts are the norm in markets where large sunk investments are made and where the services provided are specific to serving one, or a small number of, customers who must rely on that service.
45. Long term contracts are necessary in such markets because both the infrastructure investor and the end users are at risk of ‘hold up’ without a long term contract.²¹ Rogerson (1992) states that:²²

²⁰ Paragraphs 41 to 44.

²¹ ‘Hold up’ is a term used in the economic literature to describe situations where two (or more) parties make investments that rely on the other party operating in a certain manner. If each party’s obligations are not well specified in a contract this can lead to both parties attempting to extract the value of the other party’s sunk investment by refusing to operate in an efficient manner unless the other party pays them some or all of the economic surplus that would be earned from that investment. For example, consider a railway being built to service a specific mine which is not yet in operation. In the absence of a pre-existing long term contract, the mine owner may refuse to pay the railway owner anything above

The hold-up problem as first described by Klein, Crawford and Alchain (1978) and Williamson (1975, 1977) has come to be accepted by economists as a fundamental determinant of contractual and organisational structure.

46. In this context one of the factors that foundation customers and a third party owner/builder²³ will negotiate over is who bears the risks and rewards of serving new customers with investments in increased capacity. There are two different allocations of risk and reward that could be negotiated:
- i. The owner takes on the risks and the expected rewards from serving new customers. The foundation customers receive a negotiated price (or price path) that does not depend on the success or otherwise of the owner in serving new customers with additional capacity; and
 - ii. The foundation customers take on the risks and rewards of the owner serving new customers. Specifically the foundation customers negotiate a price (or price path) that will be higher/lower if the owner is unable/able to market gas delivery to new customers via investment in expanded capacity.
47. The first of these allocations would be most efficient because it would allocate the risks and rewards of finding and serving new customers to the entity that is responsible for finding new customers and making the investments necessary to serve them. The second allocation would be inefficient because it would dampen the incentives that the pipeline owner has to pursue efficient expansions in capacity – because it would bear 100% of the cost but receive less than 100% of the benefits from doing so (due to the need to lower prices to existing customers when signing on new customers).
48. That does not imply that the foundation customers are worse off as a result of negotiating the first allocation of risk and reward. In fact, the opposite is likely true. By maximising the efficient investment in pipeline the total value of the pipeline is maximised and this reduces the risk that the owner-builder faces and likely

marginal running costs for using the railway. Similarly, the railway owner may refuse to carry the mine's commodity unless the railway owner is allowed to extract most of the mine's profit margin on the commodity. This bargaining dynamic is termed 'hold up' in the economics literature and is why the supply of such services tend to be governed by long term contracts entered into prior to the initial investment in sunk infrastructure.

²² Rogerson, W.P. (1992). Contractual Solutions to the Hold-Up Problem. *The Review of Economic Studies*, 4(59), 777-793.

²³ As I noted in footnote 19 of my previous report, foundation customers can also be the initial owners in a pipeline. However, the economic analysis I set out below can proceed without loss of generality by referring to distinct groups of "customers" and "owners" – even if some or all of the same entities sit in both categories. I note that overtime an owner-customer may well devolve its rights to ownership so that it becomes a pure customer. At that time, the same basic incentives for efficient contracting would be expected to devolve the risks and rewards of serving new customers to the newly created stand alone 'owner'.

increases the willingness to supply the service to the foundation customers. Thus, with the first allocation of risk and reward the pipeline is likely to be built earlier (providing benefits to foundation customers) and provided at a lower expected average price to foundation customers than the expected average price under the second allocation.

5.2 Actual practice on the GGP and other pipelines

49. The previous section is purely theoretical in that it describes why commercial negotiations can be expected to give rise to an allocation of commercial risks that do not require new customers to pay a share of common costs. However, whether this is actually the case for the GGP and other gas pipelines is ultimately a factual question. It is therefore relevant to consider whether there are existing customers (using either covered or uncovered capacity) who have negotiated specific clauses in their contracts with GGT that require their prices to be changed in some way if new customers connect at a future date.
50. If contracts for services on the GGP generally do not provide for prices to be changed in some way if new customers connect at future dates, this is evidence in support of a conclusion that the rational economically efficient allocation of risks and rewards does not involve existing customers prices falling if new customers are successfully marketed to.²⁴ I have been instructed that, with the exception of one contract pursuant to which tariffs payable are linked to the reference tariff, none of the contracts for service on the GGP have provisions which have the effect of altering the tariff payable in the event of new customers using the pipeline, including in the case of uncovered expansions.
51. Therefore, the predominance of the commercial arrangements that have been entered into for services on the GGP are consistent with what would be expected by economic theory outlined in section 5.1.

²⁴ It is important to note that unlike, say, electricity distribution and gas pipeline networks, the GGP currently supplies a relatively small number of large industrial customers. Those customers are well resourced and well placed to negotiate contractual measures that would see them share in the benefits of any future expansions. Their negotiated contracts with GGT will have included myriad terms and conditions and the tariffs set out in those agreements could easily have included terms that specified that if GGP expanded or extended the pipeline at some point in the future, that their tariff would fall to reflect the arrival of those new customers, e.g., by reducing the share of common costs payable.

6 ERA allocation is not based on efficiency criteria

6.1 No relative assessment of risks to economic efficiency

52. The ERA has nominated two potential sources of economic inefficiency from the allocation of common costs:
- One is underutilisation of existing capacity on the covered pipeline (which suggests allocating common costs away from the covered pipeline and towards uncovered services); and
 - One is underinvestment in new capacity (which suggests allocating common costs away from uncovered services and towards covered services).
53. One would therefore expect the ultimate allocation that the ERA arrives at to reflect an assessment of the relative magnitude of these two sources of potential inefficiency. However, this is not how the ERA ultimately determined the allocation. Rather, the ERA has simply applies a measure of how much each service ‘uses’ the existing pipeline asset (not the valuation different classes of users might place on usage).

6.2 ERA method treats common costs inconsistently

54. In applying a measure of how much each service uses the existing pipeline asset in undertaking its cost allocation, the ERA ignores the fact that the pipeline was built first to provide covered capacity and that subsequent expansions of uncovered capacity came subsequently. Rather, the ERA takes the view that, given all the users connected to the GGP as they currently stand, the existing pipeline is a common cost and common costs should be allocated in proportion to usage.
55. It is certainly correct that for all the users connected to the GGP the existing pipeline is a common cost. As a matter of physics and engineering the current pipeline is used to deliver gas to all customers – without the pipeline all customers could not receive gas. However, by the same logic, all compressors are also common costs. As a matter of physics and engineering there is no distinction between the role of compressors in delivering gas to users of the covered and uncovered services. Two collocated customers (one using covered capacity and one uncovered capacity) benefit equally from the compression in terms of ensuring that gas is delivered to their operations. If either customer was to reduce usage by xGJ the cost saving in terms of reduced compression costs would be the same.

56. However, when it comes to compression the ERA (appropriately) takes into account which service came first and which came second. The uncovered service came second and, therefore, caused the need for an investment in more expensive compression (noting that the costs of compression increase more than proportionally with gas flows). Therefore, the higher costs of the compression caused by the new uncovered services should be borne by the uncovered customers.
57. However, the ERA does not apply the same rationale to the pipeline asset. Were it to do so it would conclude that the covered capacity was created first and this caused the costs associated with the pipeline to be incurred. Acting consistently with its approach to common compression costs, the ERA should allocate 100% of the costs of the pipeline to covered capacity.
58. In short, the ERA's approach to common cost allocation is internally inconsistent. Either:
- the allocation of common costs ignores whether the cost was caused to be incurred for a particular service category and allocates both 100% of the pipeline and 100% of the compression costs in proportion to current usage (irrespective of what whether the costs was caused to be incurred for the purpose of providing covered or uncovered services). I consider this is the wrong approach but it is the approach that is consistent with the logic used to arrive at the ERA's allocation of pipeline costs; or
 - the allocation of common costs respects the fact that the costs were caused to be incurred by specific service categories and allocates common costs in accordance with that causation. I consider this is the correct approach and it is the approach that is consistent with the logic used by the ERA to allocate compression costs (but not pipeline costs).
59. If new users were required to contribute to the cost of the existing pipeline because they are deemed to be 'using' the asset then, by the same (in my view flawed) logic, the costs of *all* compressors (plus any looping that may occur in the future) should be treated as common costs.
60. Low compression costs are one of the benefits of being an initial user of the pipeline (other benefits include the benefits of associated with early use *per se*). The ERA's proposed cost allocation is to:
- allow users of covered capacity to retain 100% of the benefit of low compression costs on a pipeline as if there were no uncovered users (this is achieved by allocating 100% of the higher costs of subsequent compression used to serve uncovered capacity); while also
 - forcing uncovered capacity to bear a proportion of the costs of the pipeline.

6.3 Under the ERA method covered capacity captures more than 100% of any unit cost advantages from new capacity

61. Under the ERA's proposed methodology covered capacity captures more than 100% of the average cost reductions from uncovered capacity.
62. This can be illustrated via two simple examples. First, consider a scenario where the addition of new uncovered capacity leaves average costs unchanged. Assume that with zero uncovered capacity the cost of covered capacity was \$50 in pipeline costs plus \$50 in compression costs. Now let there be an investment in covered capacity that adds \$100 to compression costs and doubles pipeline capacity.
63. Under the ERA's cost allocation methodology the entirety of the \$100 increase in compression costs would be allocated to the uncovered service as would half of the pipeline cost ($0.5 * \$50 = \25). The costs borne by the uncovered capacity would be \$125 (i.e., 25% more than their incremental costs). The costs borne by the covered capacity would fall from \$100 to \$75. In this example, even though the average cost of supplying a customer on the pipeline does not fall as a result of the new capacity, the average costs allocated the covered capacity customers do fall by 25%.
64. Now consider a scenario where average costs across all users fall by 10% as result of new capacity. Specifically, retain all aspects of the above scenario but assume that the compression costs only rise by \$80 (to \$130) instead of by \$100. The total costs of the pipeline now rise by 80% but usage rises by 100% causing a 10% fall in unit costs.²⁵ However, the fall in costs for the covered capacity is 25% (from \$100 to \$75) which is more than double the fall in average unit costs across all customers. The users of newly created capacity must bear a cost of \$105 (\$80 compression costs plus \$25 allocated pipeline costs).

²⁵ Unit costs without new capacity is $100/C$; where C = covered capacity. Unit costs post expansion is $180/2C$. The fall in unit costs is $(100/C - 180/2C)/100/C$. This simplifies to $(200-180)/2C/(100/C) = 20/200 = 10\%$.

7 The Incenta report

7.1 Incenta makes the same error as the ERA

65. Mr Balchin provides a report for BHP Billiton that reaches the same conclusion as the ERA; that an allocation of common costs to uncovered capacity in accordance with ‘relative use’ is appropriate.
66. In reaching this conclusion Mr Balchin appears to rely, at least implicitly, on the same assumption as the ERA, namely, that there is a material risk of underutilisation of the covered capacity if stand-alone if reference tariffs are based on stand alone cost.²⁶ In sections 2.1.1 and 2.1.2 Mr Balchin explains the economic theory that he relies on and then applies this to the case of cost allocation for the GPP. In these sections Mr Balchin does not explicitly state that this is the potential efficiency benefit from setting lower than stand-alone prices for uncovered capacity. Rather, in section 2.1.1 of his report Mr Balchin establishes what he treats as a universal principle that lower prices for regulated services promote economically efficient use of regulated infrastructure. Mr Balchin states:²⁷

Indeed, the well accepted proposition that regulating the prices of monopoly infrastructure is likely to increase economic efficiency rests on the assumption that higher average prices are likely to cause inefficiency in consumption. This in turn means that if average prices can be reduced without having an adverse impact on service provision, efficiency will be improved.

67. Mr Balchin does not explain how these benefits are to accrue in the specific context of pricing covered capacity on the GGP. However, the implicit assumption is that lower prices will deliver efficiency benefits by promoting usage where that usage has higher value than the marginal cost of its provision.²⁸ While this may be true in a (more or less typical) context where the capacity of a regulated service is variable and can be expanded to meet new demand, it is not correct in the relevant current context where the regulated capacity is fully contracted and new capacity is being met via unregulated expansions in capacity.
68. Indeed, in the current relevant context the opposite conclusion applies to the one that Mr Balchin draws. With one caveat, there is no benefit from lower prices for covered capacity in the form of promoting additional efficient usage on the existing

²⁶ In paragraph 68 Mr Balchin, where Mr Balchin is responding to my report, Mr Balchin does explicitly raise “the potential for the covered services to be inefficiently underutilised”.

²⁷ Incenta, paragraph 26.

²⁸ See Incenta paragraph 25.

pipeline. This benefit is achieved by minimising the allocation of common costs to new uncovered capacity because this minimises the share of sunk (unavoidable) costs that new customers have to bear.

69. The one caveat mentioned above is that by setting reference tariffs at stand-alone costs must not lead to underutilisation of covered capacity. If there is insufficient demand for covered capacity at the regulated reference tariff then, absent any other commercial or regulatory tool, a lower reference tariff may be expected to increase utilisation back towards capacity and promote efficient usage. It is for this reason that I consider that Mr Balchin is relying on the same assumption as the ERA to reach the conclusion that reference tariffs for the covered pipeline should be set below stand-alone cost.
70. For the same reasons as set out in section 3, I do not regard that reliance on this assumption is reasonable.

7.2 Incenta on the risks to future investment

71. When considering my previous report Mr Balchin states:²⁹

I agree with Dr Hird that capacity for GGP to recover a share of the joint costs from the uncovered services is an important issue for deciding the extent of the shared cost that should be allocated to the uncovered services. To this end, I have argued that while the “relative use” of the shared infrastructure is an appropriate starting point for deciding upon the appropriate allocation of the joint costs to the uncovered services, this is subject to confirmation that the costs so allocated can be recovered.

However, where I disagree with Dr Hird is that I do not see any reason for assuming that users of uncovered services can only pay a tariff that reflects the incremental cost of the service. Rather, the question of how much of the joint cost can be recovered from the uncovered services is a factual matter that can be tested. If a price above incremental cost can be charged to users of the uncovered services, then applying part or all of this surplus to the recovery of the joint costs – and hence to reduce the reference tariff – will reduce the potential for the covered services to be inefficiently underutilised without impeding investment in uncovered services.

...

It would be appropriate for the Economic Regulatory Authority to establish to its satisfaction whether GGP has been able to earn a surplus over the

²⁹ Incenta, paragraphs 67 to 70.

incremental cost for the various tranches of expansions to date, as well as the likely position in relation to future expansions.

72. In the above passage Mr Balchin is essentially asking the ERA to play a role that it is not well placed to play, and one that the regulatory regime does not envisage for the regulator. In order for a solution of the type proposed by Mr Balchin to work then the ERA would need to be involved in commercial negotiations between GGT and potential users of new uncovered capacity. The ERA would then appraise the extent to which those potential new users could afford to pay a share of existing sunk and common costs. The ERA would then determine, in a bespoke manner, whether to require those customers to pay a share of common costs and what that share would be.
73. I note that Mr Balchin does not propose such a role for the ERA. Rather, Mr Balchin appears to be suggesting that the ERA make a ‘once only’ assessment of what is likely to be the case in the future and develop a policy on cost allocation to be applied in the future irrespective of actual circumstances. However, this runs the risk that the ERA’s assessment today turns out to be incorrect in the future – creating the potential discouraging future investment even if the ERA assesses this is not likely today. In order for this to be appropriate there must be some efficiency benefit in terms of doing so and this must relate to efficient utilisation of covered capacity. However, as already described in section 3 and section 7.1 both the ERA and Mr Balchin have made errors in concluding that such an efficiency benefit exists.

7.3 Regulatory precedent

74. Mr Balchin also reports regulatory precedent which he claims supports a conclusion that common costs should be allocated to uncovered capacity provided by the GGP. Having reviewed the material provided by Mr Balchin, I find that in each case the circumstances surrounding those decisions to be of limited relevance to the current circumstances. The legal context of the regulatory decision making in these contexts is typically different. However, putting this aside, the economic efficiency implications of cost allocation in these contexts is typically very different to the current context.

7.3.1.1 The National Electricity Market

75. Mr Balchin references a decision by the AEMC in support of a conclusion that an allocation of common costs to unregulated services was consistent with the national electricity objective (NEO); which Mr Balchin notes is specified in almost identical

terms to the NGO. The two quotes from the AEMC provided by Mr Balchin are reproduced below:³⁰

The Commission considers that consumers should receive some benefit when assets used to supply regulated services are shared with other services, as consumers are funding the assets and bearing the risk if they are under-utilised. Using electricity assets for additional purposes should reduce the (average) costs of providing electricity services since the fixed costs are spread over a larger number of consumers. This promotes efficient use of electricity services with respect to price. This could be seen as a form of innovation, which NSPs should be encouraged to achieve, where it does not have a negative effect on the service provided to electricity consumers. The regulatory framework needs to find the appropriate level of sharing of benefits so NSPs are rewarded for cost-cutting and consumers benefit through lower prices.

And

In a competitive market, a business would seek ways to provide its customers with the lowest possible price, in order to retain its existing customers and gain new ones. One way to do this could be to make more efficient use of the business' assets by employing them for new services. This would increase the number of customers having access to the asset, and allow the business to spread the fixed costs of the asset over this greater number of customers, therefore reducing costs for consumers of the services.

76. Mr Balchin states, in relation to the first quote, that:³¹

This reasoning is consistent with the reasoning that I presented in section 2.1.

77. I have already described why Mr Balchin's reasoning in section 2.1 is not relevant to the specific context of the GGP where covered capacity is fully contracted and, even if it became uncontracted in the future, GGT has the ability to apply discounts to achieve full utilisation (see sections 7.1 and 3 above). On this basis, even if the AEMC's reasoning was consistent with Mr Balchin's reasoning in his section 2.1 it would not support his conclusion in the relevant context. That is, the AEMC may be assuming that lower prices for regulated electricity services will promote more efficient (intensive) use of fixed assets. However, in the context where the regulated capacity of the GGP is fully contracted this source of efficiency benefit is not relevant.

³⁰ Incenta, paragraphs 73 to 74.

³¹ Incenta, paragraph 74.

78. I also note another potentially important difference in context. The AEMC decision relates to a situation where investments in the provision of regulated electricity services are used to support the provision of unregulated services outside the electricity sector. In particular, the use of electricity poles to hang telecommunications cables. This is a different context to the GGP where both the regulated and unregulated services are natural gas services. This is relevant to the extent that, in this context, the NEO places less weight on the efficient provision of telecommunications services than electricity services. In the context of the GGP such a distinction between regulated and unregulated businesses is not relevant.

7.3.1.2 Australian telecommunications fixed line services

79. Mr Balchin regards the decision of the ACCC to allocate common costs between regulated and unregulated services in its fixed line services model to be particularly relevant to the circumstances of the CGP.
80. I disagree. In that case the ACCC was dealing with the circumstance where Telstra is using the copper cable running into homes and businesses to provide (unregulated) retail services as well as regulated wholesale services (where another operator has the retail relationship with the final customer).³²
81. The ACCC's task was to determine a regulated wholesale price for the copper cable into each premise. In this case the regulated and unregulated services were not simply identical, but an individual service supplying a specific home may switch between being "regulated" and "unregulated" if the final customer chooses to switch retailers (i.e., to or from Telstra). The ACCC would not have considered any role for cost allocations in stimulating the demand for unregulated fixed line services as these very same services could become regulated services the following day.
82. In this case, an equal allocation between "regulated" and "unregulated" services might be considered one that provides for competitive neutrality between Telstra and its competitors at retail. Alternatively put, a lower allocation to unregulated services would provide Telstra with a competitive advantage in the form of lower input costs than its retail competitors who are using regulated wholesale services to compete for the same final customers.
83. These circumstances are very different to the circumstances of the GGP.

³² The model also includes the cost of switching equipment used to route calls made by customers. These costs are also allocated between the retail calling services Telstra provides and the regulated wholesale call services Telstra provides.

7.3.1.3 Airports

84. Mr Balchin refers to the ACCC's financial reporting arrangements for airports that require an allocation of costs between services, including both aeronautical and non-aeronautical services.
85. I note that the prices charged by airports for aeronautical services, whilst monitored, are not determined by the ACCC. The prices are set in negotiations between the airports and airport users (i.e., airlines) and therefore are not required to include the cost allocation guidance in the price monitoring reports. Moreover, I note that one of the benefits of the regulatory framework for airports that allows airlines and airports to directly negotiate is precisely the fact that it allows flexibility in the charging structures for aeronautical services and for the parties to negotiate on mutually beneficial expansions to the airport and how they may be best reflected in charges.
86. In addition, it should be noted that the joint provision of aeronautical (regulated) and non-aeronautical (unregulated) services is quite different to the circumstance of the GGP. In the case of the airports, introducing expanded regulated services (e.g., an expanded landing capacity) will provide direct increases in revenues from unregulated services (e.g., greater value of retail concessions in terminals). This issue is simply not relevant for the GGP.

7.3.1.4 New Zealand cost allocation

87. Mr Balchin provide a number of quotes from the New Zealand Commerce Commissions reasoning for its Input Methodology (IM) for determining cost allocations for electricity and gas distribution businesses. The implications of these quotes for Mr Balchin are that:³³
- The starting point for regulation of these business is the allocation of shared costs between regulated and unregulated services;
 - A lesser (no) allocation to unregulated services may be applied:
 - where investment in unregulated services would be “unduly deterred” if the allocations were not adjusted; or
 - where the shared costs are immaterial.
88. In my view, a balanced consideration of the implications of the New Zealand Input Methodologies would consider the following:
- The IM only requires any allocation of common costs to unregulated services when revenues from unregulated services exceed 20% of revenues from

³³ See paragraph 85

regulated services. 20% of the regulated revenues of the largest electricity distributor in New Zealand (Vector) is around \$100m. The presence of this threshold means that the ‘starting point’ for cost allocation under the IM is zero allocation to unregulated services unless unregulated services represent a high proportion of regulated services.

- Even where unregulated revenues exceed the 20% threshold, the IM expressly allows a reduction in the allocation of common costs to unregulated services (including down to zero) if investment in an unregulated service may otherwise be unduly deterred by the allocation of common costs to it;
- The decision to adopt an alternative cost allocation methodology on the basis that an unregulated service is ‘unduly deterred’ is devolved to the directors of the regulated business to determine (see 5.4.10(2) of the IM).

89. In my view, the New Zealand IM provides regulatory precedent that clearly supports the conclusion that deterring investment in unregulated services is a paramount concern.

8 Answers to questions

90. My terms of reference put the following questions to me
- 1 *Whether calculating total revenue for the purposes of determining reference tariffs as the stand-alone cost of providing pipeline services using the Covered Pipeline is inconsistent with the national gas objective.*
 - 2 *Whether calculating total revenue for the purposes of determining reference tariffs as the stand-alone cost of providing pipeline services using the Covered Pipeline best achieves the national gas objective.*
 - 3 *Any implications of the ERA's approach to calculating total revenue on efficiency, including any implications for investment incentives and use of natural gas services.*
 - 4 *Whether, generally and in respect of the GGP, there is a risk that if all costs associated with the Covered Pipeline are allocated to covered services, the use of covered services could be dissuaded and existing capacity could become idle? Is this a relevant consideration when considering the national gas objective?*
91. On the basis of the analysis set out in my first report the answer to the first question is 'no', and the answer to the second question is 'yes'. This is because the answer to the third question is that allocation of common costs to uncovered capacity risks deterring efficient investment in that capacity.
92. In this report I have further assessed the ERA (and Mr Balchin's) views on this matter and the basis on which they arrived at a different conclusion. For the reasons set out in this report I consider the ERA (and Mr Balchin's) conclusions are unsound and my original conclusion stands. In particular, I do not consider that setting reference tariffs for covered capacity based on standalone costs has any prospect, in theory or in practice, of causing the use of covered services to be dissuaded and existing capacity to become idle. My reasons for this are set out in section 3 of this report.



Curriculum Vitae

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Key Practice Areas

Tom Hird is a founding Director of CEG's Australian operations. In the eight years since its inception CEG has been recognised by Global Competition Review (GCR) as one of the top 20 worldwide economics consultancies with focus on competition law. Tom has a Ph.D. in Economics from Monash University. Tom is also named by GCR in its list of top individual competition economists.

Tom's clients include private businesses and government agencies.

In terms of geographical coverage, Tom's clients have included businesses and government agencies in Australia, Japan, Korea, the UK, France, Belgium, Poland, Germany, the Netherlands, New Zealand, Macau, Singapore and the Philippines. Selected assignments are set out below.

Selected Recent Projects

- Advice on the impact of information exchange on competition.
- Retained by Sainsbury's to advise on the present value of damages to be claimed from MasterCard in relation to excessive interchange fees.
- Adviser to the arbiter on a commercial arbitration in the iron ore sector.
- Advice on optimal hedging ratio for a number of regulated businesses.
- Advice to NSW, Victorian and ACT electricity and gas distribution businesses to estimate the cost of capital for these businesses.
- Expert report for the AEMC on market power and barriers to entry in the markets for electricity generation within the Australian National Electricity Market.
- Expert evidence for Chorus (the New Zealand incumbent fixed line telecommunications access supplier) on the design of the regulatory regime to be applied to its new fibre broadband investments.
- Advice to Vector in relation to an acquisition of another New Zealand electricity metering business.
- Advice to Vector in relation to a NZ Commerce Commission inquiry considering extending regulation to gas metering.
- Expert advice to the ACCC in relation to the competition implications of an acquisition of equity in Channel 10 by parties with an interest in Foxtel (a potential competitor of Channel 10).



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- Expert advice to the ACCC in relation to the merger of petrol station outlets in Adelaide.
 - Expert advice to the Australian Government Solicitor in relation to the economic impact of plain paper packaging regulations for cigarettes and other tobacco products.
 - Expert evidence on the cost of capital to the New Zealand Airports Association and the New Zealand Energy Networks Association.
 - Expert evidence to Everything Everywhere in relation to the cost of UK mobile operators - including oral testimony before the UK Commerce Commission.
 - Expert evidence to the Australian Energy Networks Association on a range of issues in relation to estimating the cost of capital for regulated energy infrastructure businesses.
 - Expert evidence to T-Mobile (Deutsche Telekom) on the cost of capital for mobile operators operating in Western Europe.
 - Advising Vivendi on the correct cost of capital to use in a discounted cash flow analysis in a damages case being brought by Deutsche Telekom.
 - Expert evidence to Vector on appeal of the New Zealand Commerce Commission decision on the cost of capital.
 - Expert evidence, prepared for Japanese steel mills, submitted to the numerous regulators (including the EC, JFTC and ACCC) on the competition impact of the then proposed iron ore joint venture between BHPB and Rio Tinto. CEG, along with other parties retained by the Japanese steel mills, received the GCR award for M&A Transaction of the Year -- Asia-Pacific, Middle East and Africa.
 - Expert evidence in relation to the cost of capital for Victorian gas transport businesses.
 - Expert evidence to the Australian Competition Tribunal on the cost of debt for Jemena Electricity Networks.
 - Advice to Integral Energy on optimal capital structure.
 - Expert evidence NSW, ACT and Tasmanian electricity transmission and distribution businesses on the cost of capital generally and how to estimate it in the light of the global financial crisis.
 - Expert evidence in relation to the appeal by the above businesses of the Australian Energy Regulator (AER) determination.
 - Expert testimony to the Federal Court of Australia on alleged errors made by the Australian Competition and Consumer Commission (ACCC) in estimating the cost of capital for Telstra.
 - Expert evidence the AER on the cost capital issues in relation to the RBP pipeline access arrangement.
 - Expert evidence to the ENA on the relative merits of CBASpectrum and Bloomberg's methodology for estimating the debt margin for long dated low rated corporate bonds.
 - Expert evidence the Australian Competition and Consumer Commission, Australia on the correct discount rate to use when valuing future expenditure streams on gas pipelines.