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Review of the ERA's draft decision on depreciation

A report for Gilbert + Tobin

29 January 2015

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1. Introduction

I have been asked by Gilbert + Tobin (G+T) to prepare this report on behalf of Goldfields Gas Transmission Pty Ltd (GGT). Its subject is certain aspects of the December 2015 draft decision (the draft decision) of the Economic Regulation Authority of Western Australia (the ERA or the Authority) on the Access Arrangement for the Goldfields Gas Pipeline (GGP), as proposed by GGT. GGT's proposed revised access arrangement is currently intended to apply for the period 1 July 2016 to 31 December 2019 (AA3), and is to be evaluated under the relevant provisions of the National Gas Law (NGL) and National Gas Rules (NGR or the rules).

1.1 Scope of report

The particular aspect of the draft decision on which G+T has asked me to comment is the analysis underpinning the Authority's decision to index the capital base for the effect of consumer price inflation (CPI) and so to determine the depreciation schedule for the GGP using an indexed straight line depreciation approach, otherwise referred to as current cost accounting (CCA). G+T's instructions to me are attached as annexure A.

In preparing this report I have been provided with a copy of the Federal Court practice note CM7, entitled Expert Witnesses in Proceedings in the Federal Court of Australia (the Guidelines). I have read the Guidelines and agree to be bound by them. My declaration in compliance with the Guidelines is set out in section 5.

1.2 Qualifications

I am a founding Partner of the economic consulting firm, HoustonKemp. Over a period of more than twenty five years I have accumulated substantial experience in the economic analysis of markets and the provision of expert advice and testimony in litigation, business strategy and policy contexts. I have developed that expertise in the course of advising corporations, regulators and governments in Australia and the Asia-Pacific region on a wide range of regulatory, competition and financial economics matters.

My industry sector experience spans aviation, beverages, building products, cement, e-commerce, electricity and gas, forest products, grains, medical waste, mining, payments networks, office products, petroleum, ports, rail transport, retailing, scrap metal, securities markets, steel, telecommunications, thoroughbred racing, waste processing and water. I have testified on these matters on numerous occasions before arbitrators, appeal panels, regulators, the Federal Court of Australia, the Australian Competition Tribunal and other judicial or adjudicatory bodies.

I hold a BSc (Hons) in Economics, a University of Canterbury post-graduate degree, which I was awarded with first class honours in 1983.

Of some relevance to matters the subject of this report, in 2004 I was one of three members of an expert panel retained by the Standing Committee of Officials of the then Ministerial Council on Energy to advise on the specification of a proposed national electricity objective, which was to be included in the then proposed national electricity law. The present form of the NGL – the central reference point for the particular questions that I have been asked to address by G+T – has its origins in the findings and recommendations of that expert panel.

Separately, in December 2005 I was appointed to an expert panel convened by the Minister for Industry and Resources, the Hon Ian Macfarlane, to prepare a report for the then Ministerial Council on Energy on the harmonisation of the price determination elements of the access regimes for electricity network and gas pipeline services. The expert panel provided its report in April 2006, and many of its recommendations form the basis for the current framework of national gas and electricity laws and rules.

I attach a copy of my curriculum vitae as annexure B.

I have been assisted in the preparation of this report by my Sydney-based colleague, Dale Yeats. Notwithstanding this assistance, the opinions in this report are my own, and I take full responsibility for them.

1.3 Structure of report

The remainder of my report is structured as follows, ie:

- in section 2, I describe the GGP, the rules relevant to the determination of a depreciation schedule, alternate approaches to calculating the depreciation schedule and the ERA's draft decision;
- in section 3, I provide my opinion on the depreciation approach that best complies with the requirements of rule 89(1)(a), and explain shortcomings in the ERA's assessment of compliance with rule 89(1)(a);
- in section 4, I set out my assessment of the analysis underpinning the ERA's draft decision that straight line depreciation does not comply with the NGO, and that indexed straight line depreciation complies with the NGO; and
- section 5 contains my declaration, in accordance with the Guidelines.

2. Background and context

In this section I describe relevant aspects of the GGP, the rules relevant to the determination of a depreciation schedule, alternative approaches to deriving the depreciation schedule and the ERA's draft decision.

2.1 Goldfields gas pipeline

The GGP is a 1,380 kilometre gas transmission pipeline that provides gas transportation services to a range of locations between Yaraloola and Kalgoorlie.

A portion of the GGP's capacity is 'covered' under the relevant provisions¹ of the NGL and, consequently, GGP is required to submit an access arrangement for approval by the ERA. I refer throughout my report to the covered portion of the GGP as 'the covered pipeline'.

2.1.1 Covered pipeline

The market for reference services provided by the covered pipeline is characterised by a relatively small number of large customers primarily involved in the mining of natural resources.

I understand from GGT that the capacity on the covered pipeline is 102.5TJ/day² and that there have been no expansions to the covered pipeline for approximately 12 years.

For completeness, I note that there have been recent capacity expansions on the uncovered pipeline. These have generally taken the form of discrete, lumpy investments designed to meet the needs of one or more particular customers, whom in turn are willing to underwrite the necessary capital investment with long term gas transportation agreements.

2.1.2 No expansion of the covered pipeline expected

Of some significance to the matter at hand is the absence of any current or expected unmet demand that would necessitate an expansion to the covered pipeline. This is consistent with empirical evidence to the effect that:

- the GGP has operated at or near to capacity for the last decade; and
- no material growth is forecast in demand for reference services, and reference tariffs have been determined so as to be consistent with that expectation.

2.1.3 Limited scope for a material contraction in utilisation of the covered pipeline

I understand from GGT that there is limited scope for a material contraction in the market for reference services in AA3, AA4 and much of AA5, since the foundation or major contracts that underpin the current, near full utilisation of the covered pipeline:

- generally involve a commitment to take or pay for the relevant capacity; and
- do not expire until 2029, at the earliest.

¹ NGL, section 15 (Pipeline coverage criteria).

² I note that the ERA contends that the capacity of the covered pipeline is 109TJ/day. See: ERA, *Draft Decision on Proposed Revisions to the Access Arrangement for the Goldfields Gas Pipeline Submitted by Goldfield Gas Transmission Pty Ltd*, 17 December 2015, para 174

Further, I understand from GGT that it has secured customers for capacity on the covered pipeline that recently became available.

2.2 National gas rules

The national gas objective or NGO is the foundational reference point for decisions made by regulators under the NGL and its accompanying rules. In other words, the law requires the ERA to perform its functions and to exercise its power in a manner that will, or is likely to, contribute to the achievement of the NGO to the greatest degree. The NGO states that:³

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

The criteria for determining the depreciation schedule to be applied in an access arrangement are set out in rule 89 of the NGR, which states that:⁴

- (1) The depreciation schedule should be designed:
 - (a) so that reference tariffs will vary, over time, in a way that promotes efficient growth in the market for reference services; and
 - (b) so that each asset or group of assets is depreciated over the economic life of that asset or group of assets; and
 - (c) so as to allow, as far as reasonably practicable, for adjustment reflecting changes in the expected economic life of a particular asset, or a particular group of assets; and
 - (d) so that (subject to the rules about capital redundancy), an asset is depreciated only once (ie that the amount by which the asset is depreciated over its economic life does not exceed the value of the asset at the time of its inclusion in the capital base (adjusted, if the accounting method approved by the AER permits, for inflation)); and
 - (e) so as to allow for the service provider's reasonable needs for cash flow to meet financing, non-capital and other costs.
- (2) Compliance with subrule (1)(a) may involve deferral of a substantial proportion of the depreciation, particularly where:
 - (f) the present market for pipeline services is relatively immature; and
 - (g) the reference tariffs have been calculated on the assumption of significant market growth; and
 - (h) the pipeline has been designed and constructed so as to accommodate future growth in demand.
- (3) The AER's discretion under this rule is limited.

It is important to emphasise that the criterion set out in rule 89(1)(a) implies an evaluation of different potential depreciation schedules not in relation to growth in the market for reference services over the forthcoming regulatory period in particular but, rather, over the entire economic life of the relevant assets. This following from the fact that, by definition, the comparison of one depreciation schedule with another involves a comparison of the time profile of the recovery (through reference tariffs) of the capital cost of the pipeline over a period that extends to the point at which the value of the capital base of the pipeline falls to zero.

³ The law, part 7.

⁴ NGR, rule 89.

2.3 Depreciation approaches

The depreciation schedule adopted by the ERA in its draft decision is derived on a materially different basis from that proposed by GGT in its revised access arrangement. As a matter of principle, the difference between the two approaches arises from the threshold question as to whether or not the projected capital base should be indexed for the effects of inflation, as measured by the consumer price index (CPI). The effect of such indexation is to adjust the capital base in each year for the effect of inflation on the purchasing power of money, so that the value of the capital base (before adjustment for new capital expenditure or depreciation) is constant in inflation adjusted terms.

The rules neither require, prevent nor explicitly recognise that indexation may be applied to the capital base, although rule 89(1)(d) acknowledges that such a decision may be made.

Although neutral in net present value terms over the life of each asset, the decision as to whether or not to index the capital base has implications for the method used to determine the depreciation schedule in each year. In particular, a decision to index the capital base necessitates an adjustment to the depreciation allowance in each year of the total revenue calculation, because rule 87(4) requires the rate of return to be determined and applied on a nominal basis.

A nominal rate of return is determined by evidence drawn directly from capital markets, and without any netting off of the implied component that compensates investors for anticipated consumer price inflation. Applying a nominal rate of return to a projected capital base that has been indexed for inflation causes the effect of inflation to be double-counted and, in the absence of an adjustment to the allowance for depreciation, would cause a service provider to be overcompensated, and the net present value condition at rule 92(2) not be met.

The ERA's draft decision to index the projected capital base for changes in the CPI therefore requires a corresponding amount to be deducted from the nominal depreciation allowance in each year so as to avoid the consequent 'inflationary gain'. In contrast, GGT proposed the continued application of straight line depreciation in AA3.

Since the ERA's depreciation method is applied in conjunction with an indexed capital base, I refer to these methods, respectively, as 'indexed straight line depreciation' and 'straight line depreciation'. It is helpful to note that both methods are equivalent in present value terms, but result in different time profiles of total revenue, because of their varying effects on the 'return on projected capital base' and 'depreciation' building blocks identified at rule 76.

2.3.1 Straight line depreciation

Straight line depreciation sets the allowance for depreciation over the economic life of an asset so as to be equal in current price or dollars of the day terms in each year of an asset's, or asset group's, projected economic life. Importantly, straight line depreciation is not applied in conjunction with any annual indexation adjustment to the capital base to account for the effect of changes in the CPI.

The ERA approved the application of straight line depreciation to GGT's asset base in each of its first two access arrangements. However, for AA3 the ERA's draft decision is to reject GGT's proposal for the continued application of straight line depreciation.

2.3.2 Indexed straight line depreciation

Indexed straight line depreciation is applied to avoid a double count for the effects of inflation when:

- a decision is made to index the capital base for the effect of changes in the CPI; and
- a nominal rate of return (being that which includes an allowance for the effects of inflation) is applied to the capital base.

In contrast to straight line depreciation, indexed straight line depreciation sets a different nominal allowance for depreciation in each year so that the amount is equal in constant price or inflation adjusted terms, before then being subjected to a deduction for the corresponding inflationary gain. In other words, indexed straight line depreciation calculates the allowance for depreciation in a particular year so as to be equal to:

1. the opening value of the capital base divided by its remaining asset life; less
2. the amount by which the opening capital base is indexed for inflation in that year.

The removal of the amount by which the capital base is adjusted for inflation is required to avoid the double counting for the effect of inflation that occurs when a nominal (ie, inflation inclusive) rate of return is applied to an indexed (ie, inflation inclusive) capital base.

Although the rules neither require, prevent nor explicitly recognise that indexation may be applied to the capital base, thereby necessitating the application of indexed straight line depreciation, rule 89(2) contemplates a scenario in which a deferral of depreciation – as arises from a decision to index the asset base and so apply indexed straight line depreciation – may be appropriate, ie, where:

- the present market for pipeline services is relatively immature; and
- the reference tariffs have been calculated on the assumption of significant market growth; and
- the pipeline has been designed and constructed so as to accommodate future growth in demand.

2.3.3 Distinctions and similarities in terms of compliance with the rules

The key distinction between these two approaches to determining the depreciation schedule relates to the time-profile of capital-related revenues that arises from their application. In particular, the application of indexed straight line depreciation results in:

- relatively lower capital-related costs, and so revenues and prices, in the early years of an asset's life, as compared with straight line depreciation; and
- relatively higher capital-related costs, and so revenues and prices, in the later years of an asset's life, as compared with straight line depreciation.

This distinction in the resultant time-profile of capital-related revenues forms the basis on which straight line depreciation and indexed straight line depreciation can differ in their degree of compliance with the requirements of rule 89(1)(a).

For the avoidance of doubt, I agree with the ERA that the choice between straight line and indexed straight line depreciation schedules is neutral in terms of the net present value of allowed revenue over the life of the relevant asset, and that both schedules meet the requirements of rule 89(1)(b) to rule 89(1)(e). In particular, the ERA highlights that both approaches:⁵

- enable assets to be depreciated over their economic lives (NGR 89(1)(b));
- allow for adjustments reflecting changes in the expected economic lives of particular assets (NGR 89(1)(c));
- allow for assets to be depreciated only once (NGR 89(1)(d)); and
- allow for the service provider's reasonable needs for cash flow to meet financing, non-capital and other costs (NGR 89(1)(e)).

⁵ ERA, *Draft Decision on Proposed Revisions to the Access Arrangement for the Goldfields Gas Pipeline Submitted by Goldfield Gas Transmission Pty Ltd*, 17 December 2015, para 1211.

2.4 The ERA's draft decision

In its draft decision, the ERA rejects GGT's proposal to continue the application of straight line depreciation in AA3. Rather, the ERA's draft decision is to begin indexing the asset base for the effects of CPI in AA3, thereby necessitating the application of indexed straight line depreciation.

2.4.1 Compliance with rule 89(1)(a)

The basis on which the ERA forms its draft decision on depreciation is its contention that:⁶

- straight line depreciation, as proposed by GGT, does not comply with the requirements of rule 89(1)(a); whereas
- indexed straight line depreciation does comply with the requirements of rule 89(1)(a).

Rule 89(1)(a) requires that:⁷

The depreciation schedule should be designed so that reference tariffs will vary, over time, in a way that promotes efficient growth in the market for reference services.

In its assessment of compliance with rule 89(1)(a), the ERA contends that there is scope for expansion in the market for reference services,⁸ citing two examples of recent expansions on the GGP, ie:⁹

- iron ore operations have added significant new loads in the past few years and, since miners in the Pilbara are at the lowest end of the cost curve, further expansions cannot be ruled out; and
- AngloGold Ashanti Independence Group added a significant load from January 2016.

Further, the ERA highlights that growth should not only be considered in a positive sense, ie, in terms of an expansion in the market for reference services, but also in a negative sense, ie, in terms of avoiding a contraction. The ERA therefore concludes that the objective of 'promoting efficient growth', as referred to in rule 89(1)(a), encompasses the avoidance of inefficient negative growth, ie, the avoidance of a contraction in the utilisation of the covered pipeline.¹⁰ In this regard, the ERA highlights that GGT had experienced 'some difficulty' in securing new customers following the failure of a particular gold miner.¹¹

The ERA does not explain the economic conditions under which it considers any expansion or contraction in the market for reference services to be either efficient, or inefficient. Rather, the economic analysis underpinning the ERA's draft decision that indexed straight line depreciation better complies with rule 89(1)(a), as compared with straight line depreciation, appears limited to its statement that:¹²

...a depreciation schedule which more evenly allocates the pipeline capital costs (both the return on and of capital) between current and future users will encourage efficient growth in the market for reference services, as it will result in more even tariffs, all other things equal. Importantly, such a depreciation schedule will also help to avoid contraction of demand on the pipeline in the first half of the pipeline's life. HCA, in contrast, drags forward revenue to the first half of the pipeline's

⁶ ERA, *Draft Decision on Proposed Revisions to the Access Arrangement for the Goldfields Gas Pipeline Submitted by Goldfield Gas Transmission Pty Ltd*, 17 December 2015, paras 1198 and 1201.

⁷ NGR, rule 89(1)(a).

⁸ HoustonKemp, *Depreciation methodology for the Goldfields Gas Pipeline*, August 2015, p.11.

⁹ ERA, *Draft Decision on Proposed Revisions to the Access Arrangement for the Goldfields Gas Pipeline Submitted by Goldfield Gas Transmission Pty Ltd*, 17 December 2015, para 1216.

¹⁰ ERA, *Draft Decision on Proposed Revisions to the Access Arrangement for the Goldfields Gas Pipeline Submitted by Goldfield Gas Transmission Pty Ltd*, 17 December 2015, para 1217.

¹¹ ERA, *Draft Decision on Proposed Revisions to the Access Arrangement for the Goldfields Gas Pipeline Submitted by Goldfield Gas Transmission Pty Ltd*, 17 December 2015, para 1218.

¹² ERA, *Draft Decision on Proposed Revisions to the Access Arrangement for the Goldfields Gas Pipeline Submitted by Goldfield Gas Transmission Pty Ltd*, 17 December 2015, para 1219.

life, thereby resulting in higher reference tariffs, all other things equal. Those higher tariffs may unnecessarily discourage demand for reference services in the early years of the pipeline's life.

I take this statement to mean that the ERA holds the view a 'more even' allocation of capital costs, in constant price terms, would:

- promote efficient growth in the market for reference services; and
- avoid inefficient contraction in the market for reference services, at least in the first half of the GGP's economic life.

It is relevant to note that, in coming to its draft decision to reject straight line depreciation and to apply indexed straight line depreciation, the ERA states that:¹³

...NGR 89(2) does not bear on the choice of HCA or CCA depreciation method.

2.4.2 Consistency with the national gas objective

In addition to its contentions as to the conditions that would promote the efficient expansion and the avoidance of inefficient contraction of the market for reference services, the ERA ascribes a number of additional benefits to a more even allocation of capital costs through time when considering compliance with the NGO. These include that a more even allocation of capital costs:¹⁴

- avoids subsidies between current and future consumers, thereby ensuring outcomes that are in the long term interests of consumers with respect to price;
- allows for efficient use of the pipeline by upstream and downstream consumers both now and in the future, thereby contributing to the efficient growth in the market of reference services;
- signals efficient production and investment decisions by the service provider and consumers of natural gas, thereby contributing to the efficient growth in the market of reference services; and
- avoids price shocks for consumers, both for the forthcoming access arrangement period, and also at the end of the economic lives of major assets.

On this basis, and since the ERA infers that indexed straight line depreciation promotes efficient asset utilisation,¹⁵ the ERA concludes that indexed straight line depreciation is consistent with the NGO.

In contrast, the ERA concludes that straight line depreciation is not consistent with the NGO because:¹⁶

- HCA accelerates depreciation markedly – with typical rates of return, HCA recovers around 80 per cent of the present value of the asset within 15 years, whereas CCA only recovers 65 per cent over the same timeframe;
- HCA therefore leads to highly significant real depreciation subsidies from current consumers to future consumers, which is not in the long term interests of (all) consumers.
- HCA may result in unnecessarily high prices in the short to medium term – these could discourage gas usage and upstream and downstream investment.
- HCA depreciation schedules provide for price paths that encourage inefficient utilisation of assets, that is, under or over utilisation of the asset at different times in its life cycle.

¹³ ERA, *Draft Decision on Proposed Revisions to the Access Arrangement for the Goldfields Gas Pipeline Submitted by Goldfield Gas Transmission Pty Ltd*, 17 December 2015, para 1225.

¹⁴ ERA, *Draft Decision on Proposed Revisions to the Access Arrangement for the Goldfields Gas Pipeline Submitted by Goldfield Gas Transmission Pty Ltd*, 17 December 2015, para 1247.

¹⁵ ERA, *Draft Decision on Proposed Revisions to the Access Arrangement for the Goldfields Gas Pipeline Submitted by Goldfield Gas Transmission Pty Ltd*, 17 December 2015, para 1247.

¹⁶ ERA, *Draft Decision on Proposed Revisions to the Access Arrangement for the Goldfields Gas Pipeline Submitted by Goldfield Gas Transmission Pty Ltd*, 17 December 2015, para 1245.

3. Compliance with rule 89(1)(a)

The ERA's draft decision to reject GGT's proposal to continue the application of straight line depreciation in AA3 and, instead, to apply indexed straight line depreciation appears to be a direct result of its contentions that:

- the application of straight line depreciation, as proposed by GGT, does not comply with the requirements of rule 89(1)(a); whereas
- the application of indexed straight line depreciation does comply with the requirements of rule 89(1)(a).

Rule 89(1)(a) requires that:¹⁷

The depreciation schedule should be designed so that reference tariffs will vary, over time, in a way that promotes efficient growth in the market for reference services.

I note that the reference in rule 89(1)(a) to reference tariffs varying 'over time' reflects the fact that gas pipeline assets typically have economic lives that extend over many decades, and so compliance with rule 89(1)(a) needs be assessed over a commensurate time frame.

In my opinion, the circumstances particular to the GGP have important implications for the application of rule 89(1)(a); namely, the absence of any current or expected unmet demand that would necessitate an expansion to the covered pipeline and the limited scope for any material contraction in the utilisation of the covered pipeline prior to AA5.

The absence of any current or expected unmet demand that would necessitate an expansion to the covered pipeline means that, on the basis of current expectations, a wide range of depreciation schedules are likely to have no material implications for the efficient (or inefficient) expansion in the market for reference services. It follows that the evaluation of different potential depreciation methods for the GGP is likely to be assisted by looking beyond the ability of one method to promote efficient expansion in the market for reference services, as compared with another.

There is limited scope for any material contraction in the market for reference services prior to AA5 since the covered pipeline is contracted to be near to full capacity until 2029, being the year in which the first of the existing major user contracts expires. By consequence of these circumstances, it is helpful to consider the implications of alternate depreciation approaches on GGT's ability to avoid an inefficient contraction in the market for reference services from AA5 onwards.

I set out below my assessment of the depreciation schedule that best complies with the requirements of rule 89(1)(a), along with an explanation of the errors in the ERA's assessment of compliance with rule 89(1)(a).

3.1 No expansion in the market for reference services expected

At the outset, it is helpful to note that the circumstances of the GGP are distinct from those that would typically be faced by a covered pipeline in the form of a gas distribution network serving residential and commercial customers in one or more large population centres. For such a typical gas distribution network, there would generally be reasonable scope to develop and grow the market for the reference services provided.¹⁸ Rather, the market for reference services provided by the covered pipeline is characterised by a relatively small number of large customers primarily involved in the mining of natural resources.

¹⁷ NGR, rule 89(1)(a).

¹⁸ HoustonKemp, *Depreciation methodology for the Goldfields Gas Pipeline*, August 2015, p.11.

Consistent with my previous report,¹⁹ I explain in section 2.1 that there is no current or expected unmet demand that would necessitate an expansion to the covered pipeline and that:

- the GGP has operated at or near to capacity for the last decade; and
- no material growth is forecast in demand for reference services, and reference tariffs have been determined so as to be consistent with that expectation.

Notwithstanding this empirical evidence, the ERA contends that it would be 'remiss' to assume there is limited scope for future growth in the market for reference services.²⁰ The ERA appears to infer that there is some forthcoming expansion in the market for reference services because new loads have been added to the GGP in recent years, ie:²¹

- iron ore operations have added significant new loads in the past few years and, since miners in the Pilbara are at the lowest end of the cost curve, further expansions cannot be ruled out; and
- AngloGold Ashanti Independence Group (AngloGold) added a significant load from January 2016.

However, the new loads added by iron ore operations correspond to expansions of the uncovered pipeline, and so did not result in any growth in the market for reference services. Similarly, the load added by AngloGold did not involve an expansion of the covered pipeline but, rather, utilised existing capacity on the covered pipeline that recently became available.

Further, I understand from GGT that the covered pipeline is contracted to operate at or near to capacity throughout AA3 and that no major contract underpinning the existing utilisation of the covered pipeline is due to expire until 2029, ie, AA5.

In my opinion, it is incorrect to form a decision on depreciation having significant regard to the implications for expansion in the market for reference services where:

- there is no current or expected unmet demand that would necessitate an expansion to the covered pipeline;
- the capacity corresponding to GGT's covered pipeline is at or near fully contracted; and
- in the event there was sufficient demand to warrant an investment in yet further capacity on the GGP, it is possible that this would be provided by means of the uncovered pipeline.

It follows from this factual context that, on the basis of current expectations, a wide range of depreciation schedules are likely to have no material implications for the efficient (or inefficient) expansion in the market for reference services. In my opinion, the evaluation of potential depreciation methods for the GGP is therefore likely to be assisted by looking beyond the ability of one method or another to result in efficient expansion of the market for reference services.

3.2 Avoiding inefficient contraction in the market for reference services

In its discussion of the interpretation of rule 89(1)(a), the ERA states that:²²

...'growth' should not be interpreted simply in a positive sense, as encouraging new capacity, but also in terms of the need to maintain existing capacity, by avoiding inefficient contraction (or 'negative growth') in the utilisation of existing capacity in the market for reference services.

¹⁹ HoustonKemp, *Depreciation methodology for the Goldfields Gas Pipeline*, August 2015, p.11.

²⁰ ERA, *Draft Decision on Proposed Revisions to the Access Arrangement for the Goldfields Gas Pipeline Submitted by Goldfield Gas Transmission Pty Ltd*, 17 December 2015, para 1215.

²¹ ERA, *Draft Decision on Proposed Revisions to the Access Arrangement for the Goldfields Gas Pipeline Submitted by Goldfield Gas Transmission Pty Ltd*, 17 December 2015, para 1216.

²² ERA, para 1217

In the context of promoting efficient growth in the market for reference services provided by the GGP, in my opinion a contraction in the market for reference services will be inefficient where both the capacity of the covered pipeline is not fully contracted by existing users, and where there are some prospective users for whom the benefit of using that available capacity exceeds the cost of its provision.

However, I understand from GGT that the prospects for underutilisation of the covered pipeline in AA3 and AA4 are limited since:

- the covered pipeline is contracted to be at, or close to, full utilisation of its available capacity in AA3 and AA4; and
- none of the existing major contracts governing the making available of capacity on the covered pipeline are due to expire until 2029, after which the next major user contracts expire in 2037.

Notwithstanding the limited scope for any material contraction in the market for reference services for many years beyond the term of AA3, it is relevant to consider the prospects for different potential depreciation schedules to assist GGT in avoiding the risk of any future, inefficient contraction in demand, ie, from 2029 onward.

3.2.1 How best to avoid inefficient contraction in the market for reference services

In economics, the price elasticity of demand is a measure of the responsiveness of consumers' demand to changes in price. A negative price elasticity of demand – as applies for almost all goods and services – signifies an inverse relationship between price and quantity demanded. In other words, customers can generally be expected to respond to a reduction in price by increasing the quantity of the respective good or service demanded.

It follows that one way of assisting a business to avoid any future contraction in demand is to increase its ability to set lower prices in the future (while still ensuring that its expected total costs are recovered over time), since lower prices would be expected to elicit a higher quantity demanded.

I explain in section 2.1.3 that the contracts underpinning existing demand on the covered pipeline generally involve a commitment to take or pay for the relevant capacity, at a price that is also agreed over the relevant period (and which may or may not be the same as the reference tariff). Put another way, the terms of such contracts mean that neither the service provider nor existing users of the covered pipeline have any ability or incentive to change the either price or non-price terms, or the quantities that are to be bought and sold, throughout the period over which they have contracted to use capacity on the covered pipeline.

Notwithstanding, there is inevitably a degree of uncertainty today as to the nature of market conditions that will apply when the existing contracts underpinning the near full utilisation of the covered pipeline expire. Should it eventuate that GGT experiences some difficulty in securing customers for any capacity anticipated to become available in the future, GGT's ability to avoid a contraction in the market for reference services will be enhanced to the extent that reference tariffs at that time are lower than would otherwise be the case.

Relevantly, the application of straight line depreciation in AA3 (ie, a period when the covered pipeline is fully contracted), will give rise to relatively lower reference tariffs in later years, as compared with the application of indexed straight line depreciation in AA3. This in turn will reduce the likelihood that GGT experiences any difficulty in securing customers for any capacity that is anticipated to become available from AA5.

By contrast, since indexed straight line depreciation backloads the recovery of capital costs, it will result in:

- relatively higher reference tariffs in later years, as compared with straight line depreciation, and thereby increase the likelihood that GGT experiences a future contraction in demand for reference services; and
- relatively higher residual capital costs over the life of the GGP, as compared with straight line depreciation, and thereby limit GGT's ability to reduce reference tariffs in response to any future contraction in demand for reference services, while still ensuring that its expected total costs are recovered over the life of the pipeline.

Moreover, the existence of relatively higher residual capital costs over the life of the GGP that arise from the application of indexed straight line depreciation, as compared with straight line depreciation, may potentially exacerbate any future contraction in the market for reference services. A future contraction in demand may give rise to even higher future prices, since there would be fewer customers from which to recover the residual capital costs. The existence of relatively higher residual capital costs at such a time may necessitate yet higher prices, and so further contractions in demand for reference services.

This is analogous to the circumstances currently faced by providers of regulated infrastructure services in other industries, as discussed in Box 1 below.

Box 1 – Case studies: electricity network services and Telstra's declared fixed line services

Technological advancements in solar energy and battery storage have contributed to declining demand for the quantity of energy conveyed by electricity network service providers in eastern Australia. However, since there is a material level of network costs yet to be recovered, declines in demand for energy delivered contribute to higher unit prices, ie, relatively less energy delivered over which to distribute the cost of the existing network is likely to give rise to yet further price increases and declines in demand.

Similar circumstances have arisen in relation to the migration of customers using Telstra's declared fixed line services, provided by means of Telstra's copper network, to services provided by the national broadband network. In this context the Australian Competition and Consumer Commission (ACCC) noted that, in the absence of any adjustment:²³

...given the significant amount of excess capacity that will accumulate in Telstra's fixed line assets throughout the regulatory period.... access seekers would be required to bear the associated costs which they have neither caused nor are able to put to future use.

The ACCC highlighted that this would otherwise:²⁴

...lead to a distortion of access seekers' incentives to efficiently acquire and use Telstra's declared fixed line services, and to efficiently invest in the complementary infrastructure necessary to effectively compete in the downstream fixed line market.

It is possible that these circumstances have contributed to the review of recent AER determinations for electricity network services by the Australian Competition Tribunal²⁵ and Telstra's application for judicial review of the ACCC's fixed line services final access determination decision.²⁶

In my opinion, the application of straight line depreciation in AA3 will give rise to reference tariffs that vary, over time, in a manner that assists GGT in avoiding and responding to any future inefficient contraction in the market for reference services.

Further, and for the same reasons, the application of straight line depreciation in AA3 represents a form of prudent management of the future risk that GGT may not be able to recover its efficient costs, consistent with the revenue and pricing principles.

Conversely, the application of indexed straight line depreciation in AA3 will not assist GGT in avoiding and responding to any future contraction in the market for reference services. Rather, it is more likely to

²³ ACCC, *Public inquiry into final access determinations for fixed line services – Final Decision*, October 2015, p.10.

²⁴ ACCC, *Public inquiry into final access determinations for fixed line services – Final Decision*, October 2015, p.10.

²⁵ Australian Competition Tribunal Website, available at: <http://www.competitiontribunal.gov.au/current-matters/tribunal-documents>.

²⁶ ACCC website, available at: <https://www.accc.gov.au/regulated-infrastructure/communications/fixed-line-services/fixed-line-services-fad-inquiry-2013/judicial-review>.

exacerbate the implications of any potential future contraction in demand, thereby putting at risk the ability of GGT to recover its efficient costs.

3.3 The ERA's analysis of compliance with rule 89(1)(a)

Consistent with my previous report, I explain in sections 2.1 and 3.1 that there is no current or expected unmet demand that would necessitate an expansion to the covered pipeline

Notwithstanding the empirical evidence, the ERA rejects this conclusion on the basis of its contention that efficient growth, both positive and negative, will be promoted by a depreciation approach that more evenly allocates capital costs through time, in constant price terms.²⁷

I am not aware of any economic principle that supports the contention that, generally, a 'more even' allocation of capital costs is more likely to promote efficient growth, over time. Such a conclusion may be able to be drawn on the basis of a number of quite restrictive, empirical assumptions; however, neither the potential sequence of economic reasoning nor the relevant assumptions that would be required are disclosed by the ERA.

The absence of an economic basis for this important conclusion is reflected in the ERA's assessment of compliance with rule 89(1)(a) in paragraphs 1212 to 1222 in the draft decision.²⁸ Indeed, the majority of this discussion is directed at refuting the empirical evidence as to the absence of any expected expansion in the market for reference services. Then, the ERA concludes that:²⁹

... 'all other things equal', the requirements of NGR 89(1)(a) supports allocating costs in a way which does not distort either current or future demand for pipeline services, by apportioning the capital cost equally across all users, current and future, in real terms. In that case, tariffs based on CCA depreciation will reflect the real share of capital costs through time, promoting efficient growth in the market for reference services over time.

Beyond this brief contention, the ERA provides no robust economic reasoning for its conclusion that a more even allocation of capital costs, in constant price terms, would promote efficient growth in the market for reference services.

Finally, I note that, even assuming constant utilisation through time, indexed straight line depreciation does not apportion capital costs equally across all users in real or constant price terms, as contended by the ERA in the above statement. Indeed, Figure 28 in the draft decision shows a varying allocation of capital related costs, over time, under both indexed straight line depreciation and straight line depreciation.³⁰

3.4 Conclusion

On the analysis that I set out above, and the errors in the analysis underpinning the ERA's draft decision, I conclude that straight line depreciation best complies with the requirements of rule 89(1)(a), as compared with indexed straight line depreciation.

In my opinion, it follows that it is incorrect to reject GGT's proposal to apply straight line depreciation to its capital base in AA3.

²⁷ ERA, *Draft Decision on Proposed Revisions to the Access Arrangement for the Goldfields Gas Pipeline Submitted by Goldfield Gas Transmission Pty Ltd*, 17 December 2015, paras 1198, 1219 and 1222.

²⁸ ERA, *Draft Decision on Proposed Revisions to the Access Arrangement for the Goldfields Gas Pipeline Submitted by Goldfield Gas Transmission Pty Ltd*, 17 December 2015, paras 1212 to 1222.

²⁹ ERA, *Draft Decision on Proposed Revisions to the Access Arrangement for the Goldfields Gas Pipeline Submitted by Goldfield Gas Transmission Pty Ltd*, 17 December 2015, para 1222.

³⁰ ERA, *Draft Decision on Proposed Revisions to the Access Arrangement for the Goldfields Gas Pipeline Submitted by Goldfield Gas Transmission Pty Ltd*, 17 December 2015, Figure 28, p.268.

4. Shortcomings in the ERA's other contentions

The rules stipulate that the ERA's discretion under rule 89 is limited,³¹ and so the ERA can only reject GGT's proposed depreciation schedule if it does not comply with the requirements of the applicable rule, ie, rule 89. It follows that, on the basis of the analysis I present in section 3, it is incorrect to reject GGT's proposed depreciation schedule.

Nevertheless, in its assessment of GGT's depreciation schedule the ERA set out contentions against criteria other than that established by rule 89 – namely in relation to compliance with the NGO and the RPPs – on which G+T has asked that I comment. In particular, in the remainder of this section I comment on whether:

- straight line depreciation gives rise to unjustified subsidies from future to current users;³²
- straight line depreciation unfairly discriminates against current customers, to the benefit of future users;³³
- straight line depreciation discourages gas usage, and upstream and downstream investment;³⁴
- an assumption that the GGP will be able to provide services to the end of its useful life supports the adoption of indexed straight line depreciation in AA3;³⁵
- the ERA has sufficient regard to its conclusion that 89(2) does not bear on its depreciation decision;³⁶ and
- indexed straight line depreciation better allows for adjustments reflecting changes in the expected economic life of the GGP.

4.1 Unjustified subsidies from current to future users

The ERA contends that a more even allocation of capital costs, over time, not only promotes efficient growth in the market for reference services, but also avoids 'unjustified subsidies' from future to current users that would otherwise arise under straight line depreciation.³⁷

The ERA provides no economic support for this contention and, on the information at hand, I cannot discern economic basis for it. In economics, a subsidy can only be said to occur where one customer, or group of customers: ³⁸

- pays a price that is less than the incremental cost of providing the relevant services; and
- another customer or group of customers is charged more than the stand-alone costs of providing the relevant services.

³¹ The rules, 89(3).

³² ERA, *Draft Decision on Proposed Revisions to the Access Arrangement for the Goldfields Gas Pipeline Submitted by Goldfield Gas Transmission Pty Ltd*, 17 December 2015, para 1239.

³³ ERA, *Draft Decision on Proposed Revisions to the Access Arrangement for the Goldfields Gas Pipeline Submitted by Goldfield Gas Transmission Pty Ltd*, 17 December 2015, para 1245.

³⁴ ERA, *Draft Decision on Proposed Revisions to the Access Arrangement for the Goldfields Gas Pipeline Submitted by Goldfield Gas Transmission Pty Ltd*, 17 December 2015, para 1245.

³⁵ ERA, *Draft Decision on Proposed Revisions to the Access Arrangement for the Goldfields Gas Pipeline Submitted by Goldfield Gas Transmission Pty Ltd*, 17 December 2015, para 1242.

³⁶ ERA, *Draft Decision on Proposed Revisions to the Access Arrangement for the Goldfields Gas Pipeline Submitted by Goldfield Gas Transmission Pty Ltd*, 17 December 2015, para 1225.

³⁷ ERA, *Draft Decision on Proposed Revisions to the Access Arrangement for the Goldfields Gas Pipeline Submitted by Goldfield Gas Transmission Pty Ltd*, 17 December 2015, para 1239.

³⁸ In economics, the incremental cost of a particular service is the additional cost incurred by providing that service, given all other circumstances (including the provision of other services). In contrast, the stand alone cost of a particular service is the cost of providing that service only.

The ERA appear to have no regard to these widely accepted³⁹ economic principles for assessing the existence of subsidies and provide no evidence that the abovementioned economic conditions have been breached, as would be required to demonstrate that a subsidy exists.

On this basis, in my opinion the ERA is incorrect to conclude that a more even allocation of capital costs, over time (as would arise under its preferred approach to depreciation) would, in and of itself, avoid unjustified subsidies from future to current users that would otherwise arise under straight line depreciation.

4.2 Discrimination

In assessing compliance with the NGO, the ERA contends that:⁴⁰

... HCA [straight line depreciation] unfairly discriminates against current consumers of natural gas on the GGP, to the benefit of future consumers.

Again, the ERA neither explains the economic conditions under which it considers discrimination, or unfair discrimination, to occur, nor why any such circumstances arise if a straight line depreciation schedule was to be adopted.

In the context of recovering the capital costs of providing regulated infrastructure services, I am not aware of the term discrimination having any economic meaning, other than that analogous to the existence of a subsidy which, as I explain above, the rules explicitly prohibit.

In my opinion, it is incorrect for the ERA to conclude that straight line depreciation somehow has the effect of unfairly discriminating against current consumers, to the benefit of future consumers.

4.3 Upstream and downstream investment

In reaching its conclusion that straight line depreciation is inconsistent with the NGO, the ERA cites its contention that straight line depreciation:⁴¹

...may result in unnecessarily high prices in the short to medium term – these could discourage gas usage and upstream and downstream investment.

In my opinion, this statement is incorrect.

I explain in 3.1 that there is no current or expected unmet demand that would necessitate an expansion to the covered pipeline. Further, I explain that the medium term prospects for the continued operation of the covered pipeline at near full capacity will best be promoted by adopting a depreciation method that most effectively avoids the risk of any future inefficient contraction in demand.

I also explain in section 3.2 that straight line depreciation gives rise to reference tariffs that best assist GGT in avoiding any future inefficient contraction in the market for reference services, as compared with indexed straight line depreciation. On this basis, in my opinion the utilisation of the covered pipeline will be maximised under straight line depreciation.

I note also that it is unlikely reference tariffs have the potential to affect the usage of the covered pipeline in any material way in AA3 or AA4, because it is contracted to be at or near capacity until 2029.

Further, the ERA's contention that the continued application of straight line depreciation will give rise to prices in the short term that are 'unnecessarily high' has no apparent economic foundation, even though it

³⁹ Incenta, Cost allocation between covered and uncovered services, November 2014, para 29.

⁴⁰ ERA, *Draft Decision on Proposed Revisions to the Access Arrangement for the Goldfields Gas Pipeline Submitted by Goldfield Gas Transmission Pty Ltd*, 17 December 2015, para 1245.

⁴¹ ERA, *Draft Decision on Proposed Revisions to the Access Arrangement for the Goldfields Gas Pipeline Submitted by Goldfield Gas Transmission Pty Ltd*, 17 December 2015, para 1245.

appears to presuppose that lower prices are always more efficient. Further, the ERA's draft decision to apply indexed straight line depreciation necessarily results in higher prices in later years, as compared with straight line depreciation. This suggests that the ERA places the balance of emphasis on the short to medium term, whereas the NGO requires the promotion of the interest of consumers over the long term.

Reference tariffs may have some effect on the investment decisions of upstream and downstream users, as noted by the ERA. However, the ERA has presented no economic evidence in support of its contention that indexed straight line depreciation gives rise to prices that send more efficient investment signals to upstream and downstream users. Indeed, it is possible that the reduction in prices in the short term, followed by an increase in prices in later years, as would occur under the draft decision, may lead upstream and downstream investors to make investments in the short term that prove uneconomic once reference tariffs rise in later years. In contrast, since indexed straight line depreciation recovers less capital costs in later years, as compared with earlier years, this potential risk is avoided.

4.4 Useful life

G+T has asked that I comment on the relevance of the ERA's assumption that:⁴²

...the GGP should be able physically to deliver gas transportation services to the end of its useful life... thereby allowing full utilisation of the capacity to the end of its scheduled life.

The ERA goes on to state that this:⁴³

...suggests a depreciation schedule which leads to revenue through time that is reasonably flat will meet the requirements of the NGO, as it will treat current and future consumers equally.

I understand the essential elements of the ERA's logic to be that:⁴⁴

- the volume of gas delivered by the covered pipeline will be constant throughout its useful life, ie, since the ERA assumes it will be fully utilised;
- indexed straight line depreciation gives rise to a 'reasonably flat' allocation of capital costs, and so revenue, over the useful life of the covered pipeline;
- this will give rise to a 'reasonably flat' time profile of revenue per gigajoule throughout the useful life of the covered pipeline, ie, since gas volume and revenue are constant; and
- a reasonably flat time profile of revenue per gigajoule throughout the useful life of the covered pipeline will treat current and future customers equally, and so meet the requirements of the NGO.

Absent from the ERA's sequence of reasoning is any economic foundation for its conclusion that equal treatment of current and future users promotes economic efficiency for the long term interests of consumers, as required by the NGO.

By contrast, I explain in section 3 that straight line depreciation complies with the efficiency-based criterion established by rule 89(1)(a), which, by its nature, addresses the long term interests of consumers. Further, I also explain in section 3 that the ERA's draft decision to apply indexed straight line depreciation in AA3 does not comply with rule 89(1)(a).

⁴² ERA, *Draft Decision on Proposed Revisions to the Access Arrangement for the Goldfields Gas Pipeline Submitted by Goldfield Gas Transmission Pty Ltd*, 17 December 2015, para 1242.

⁴³ ERA, *Draft Decision on Proposed Revisions to the Access Arrangement for the Goldfields Gas Pipeline Submitted by Goldfield Gas Transmission Pty Ltd*, 17 December 2015, para 1242

⁴⁴ ERA, *Draft Decision on Proposed Revisions to the Access Arrangement for the Goldfields Gas Pipeline Submitted by Goldfield Gas Transmission Pty Ltd*, 17 December 2015, para 1242.

4.5 Changes in economic life

I have been asked by G+T to set out my opinion on the depreciation approach that best allows for adjustment to reflect changes in the expected economic life of the GGP.

In this context, it is helpful to note that I agree with the ERA⁴⁵ that both straight line depreciation and indexed straight line depreciation:

- enable assets to be depreciated over their economic lives, consistent with the requirement of 89(1)(b); and
- allow for adjustments reflecting changes in the expected economic lives of particular assets, consistent with the requirement of 89(1)(c).

Nevertheless, in the event of a change to the expected economic life of the covered pipeline, the adjustments to reference tariffs arising from the application of straight line depreciation and indexed straight line depreciation may have different implications on the promotion of efficient growth in the market for reference services, and on the ability of GGT to recover its efficient costs.

In assessing this contention, I focus on a reduction in the expected economic life of the GGP since, in my opinion, it is in these circumstances that the principal risks arise. All else equal, the existence of higher residual capital costs necessitates higher prices in the future, if the efficient costs of the pipeline are to be recovered over its economic life. Such higher prices will be exacerbated by any shortening of the expected life of the assets to which these costs relate, since there are fewer years over which to recover these higher costs.

The exacerbation of these already, relatively higher prices would:

- increase further the risk of contraction in demand for the relevant services; and
- further compromise the ability of a service provider to recover its efficient costs over the economic life of an asset.

I note that the application of indexed straight line depreciation backloads the recovery of capital-related costs and so results in relatively higher residual capital costs throughout an asset's useful life, as compared with straight line depreciation. It follows that, should the expected economic life of the GGP be shortened, the adjustments to reference tariffs necessitated by the application of indexed straight line depreciation, as compared with straight line depreciation, are likely:

- to increase further the risk of a contraction in demand for reference services; and
- to compromise further the ability of GGT to recover its efficient costs over the economic life of the GGP.

In my opinion, the risks arising from adjustments necessitated by changes to the expected economic life of the GGP are likely to be minimised under straight line depreciation, as compared with indexed straight line depreciation.

4.6 Relevance of rule 89(2)

In forming its draft decision to apply indexed straight line depreciation to GGT's capital base in AA3, the ERA concludes that:⁴⁶

...NGR 89(2) does not bear on the choice of HCA or CCA depreciation method.

⁴⁵ ERA, *Draft Decision on Proposed Revisions to the Access Arrangement for the Goldfields Gas Pipeline Submitted by Goldfield Gas Transmission Pty Ltd*, 17 December 2015, para 1211.

⁴⁶ ERA, *Draft Decision on Proposed Revisions to the Access Arrangement for the Goldfields Gas Pipeline Submitted by Goldfield Gas Transmission Pty Ltd*, 17 December 2015, para 1225.

Rule 89(2) refers to a scenario under which a substantial deferment in depreciation may be contemplated by reference to rule 89(1), ie, where:

- (a) the present market for pipeline services is relatively immature; and
- (b) the reference tariffs have been calculated on the assumption of significant market growth; and
- (c) the pipeline has been designed and constructed so as to accommodate future growth in demand.

This scenario contemplates a circumstance where a gas pipeline has significant spare capacity that is expected to be utilised in the future. In the ordinary course of applying the building block approach to determine total revenues for each regulatory year and then allocating this amount to derive reference tariffs, as spare pipeline capacity is utilised the revenue per unit (or reference tariff) will fall over time.

To mitigate such a fall in the revenue per unit that is to be recovered, rule 89(1) allows for the depreciation to be deferred or 'back-end loaded', so that total revenue rises as the market for the reference services provided by that pipeline also grows.

I agree with the ERA that the scenario contemplated in rule 89(2) does not reflect the circumstances of the covered pipeline. However, this conclusion is of particular relevance to the ERA's draft decision to index the capital base for GGP, thereby necessitating the application of index straight line depreciation, ie:

- the rules neither require, prevent nor explicitly recognise that indexation may be applied to the capital base, thereby necessitating the application of indexed straight line depreciation; and
- the scenario in which the rules contemplate the resulting deferral of depreciation as being appropriate is materially dissimilar to the circumstances of the covered pipeline.

In my opinion, these considerations could be said to increase the onus on the ERA to provide robust economic evidence in support of its decision to reject straight line depreciation and, instead, to apply indexed straight line depreciation. Nevertheless, I explain in section 3 and 4 that there are a number of errors in the analysis underpinning the ERA's draft decision on depreciation.

5. Declaration

In accordance with the CM7 Guidelines, I confirm that I have made all inquiries that I believe are desirable and appropriate, and that no matters of significance that I regard as relevant have, to my knowledge, been withheld from the Court.



Gregory J Houston
29 January 2016

Annexure A – Letter of instruction

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L A W Y E R S

12 January 2016

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Confidential and privileged

Dear Mr Houston

Goldfields Gas Pipeline Access Arrangement Review - ERA Draft Decision re Cost Allocation

We act for Goldfields Gas Transmission Pty Ltd (**GGT**), the operator of the Goldfields Gas Pipeline (**GGP**). We are currently advising GGT in relation to the access arrangement review for the GGP being conducted by the Economic Regulation Authority (**ERA**).

Background

In August 2014, GGT submitted its access arrangement revision proposal for the GGP to the ERA. This access arrangement revision proposal covers the period 1 January 2015 to 31 December 2019.

On 17 December 2015, the ERA released its draft decision not to approve GGT's access arrangement proposal for the 2015-2019 period (**Draft Decision**). The Draft Decision requires GGT to submit a revised access arrangement revision proposal to the ERA by 29 January 2016.

One of the elements of GGT's access arrangement revision proposal which was not approved in the Draft Decision is the proposed regulatory depreciation allowance (the regulatory depreciation allowance being an input into the determination of reference tariffs for the forthcoming access arrangement period). Although the ERA accepted GGT's proposed use of a straight-line method to calculate regulatory depreciation, it did not accept the proposed method of calculating the return of capital over the access arrangement period.

As part of its access arrangement proposal, GGT proposed to calculate the regulatory depreciation allowance by reference to unindexed asset values. This is consistent with how the regulatory depreciation allowance had been calculated in prior access arrangement periods for the GGP. GGT's proposal was supported by an expert report from HoustonKemp.

In the Draft Decision, the ERA did not accept GGT's proposed method for calculating the regulatory depreciation allowance, on the basis that the proposed approach did not satisfy the relevant requirements of the National Gas Rules (**NGR**). The ERA considers that GGT's proposed forecast depreciation approach does not meet the requirement in rule 89(1)(a) of the NGR, which is that the depreciation schedule should be designed so that reference tariffs will vary, over time, in a way that promotes efficient growth in the market for reference services. The ERA considers that GGT's proposed approach, by "dragging forward depreciation", distorts tariffs through time, thereby introducing the clear risk of inefficient growth in the market for reference services (Draft Decision, paragraph 1222).

Scope of work

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

- 1 Whether the ERA's approach to depreciation will result in reference tariffs for reference services provided by GGT, that vary, over time, in a way that promotes efficient growth in the market for reference services.
- 2 Comment on the relevance, if any, of the following matters to your response to the above:
 - (a) tariffs for reference services that have applied since 2005;
 - (b) tariffs for reference services that GGP proposes would apply from the commencement of the next access arrangement period;
 - (c) demand for reference services since 2005 and information on the elasticity of demand.
- 3 Whether GGT's proposed approach or the ERA's approach better allows for adjustment reflecting changes in the expected economic life of the GGP, including in light of paragraph 1202 of the Draft Decision.
- 4 Whether you agree that HCA leads to "unjustified subsidies from future to current consumers" (paragraph 1239 of the Draft Decision).
- 5 Comment on the relevance of the ERA's assumption that the GGP should be able to deliver services to the end of its useful life "thereby allowing full utilisation of the capacity to the end of its scheduled life" (paragraph 1242 of the Draft Decision).
- 6 Whether you agree that HCA "unfairly discriminates against current consumers of natural gas on the GGP, to the benefit of future consumers" (paragraph 1245 of the Draft Decision), and the relevance of this consideration to efficient growth in reference services, and promotion of the national gas objective.
- 7 Whether you consider that GGP's proposed approach to depreciation could "discourage gas usage and upstream and downstream investment" (paragraph 1245 of the Draft Decision).
- 8 Is GGT's proposed method for designing the depreciation schedule (as described in its access arrangement proposal) consistent with criterion (a) in rule 89(1)—that is, does GGT's proposed method result in a depreciation schedule that is designed so that reference tariffs will vary, over time, in a way that promotes efficient growth in the market for reference services on the GGP?
- 9 Although not relevant under rule 89 of the NGR, which is a limited discretion rule, which of GGT's and the ERA's proposed methods for designing the depreciation schedule is more likely to provide for variation in reference tariffs over time in a way that promotes efficient growth in the market for reference services on the GGP?
- 10 Comment on the ERA's conclusion in the Draft Decision that rule 89(2) of the NGR does not bear on the choice of depreciation method in this case.

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 (referred to below).

Information to be provided by us

Copies of the GGT access arrangement proposal and the NGR are publicly available. However if you would like us to provide copies of these documents, please let us know.

We will provide you with a confidential version of the Draft Decision. To the extent that you require further information from us or GGT, please contact us and we will endeavour to provide this.

Guidelines for preparing advice

The Guidelines for Expert Witness in the Federal Court of Australia are attached to this letter. GGT is seeking a rigorously prepared independent view which may be used in the context of regulatory decision making and in any subsequent review of the ERA's final decision. Therefore you are requested to follow the Guidelines to the extent reasonably possible.

In particular, as part of any report please:

- (a) identify your relevant area of expertise and provide a curriculum vitae setting out the details of that expertise;
- (b) only address matters that are within your expertise;
- (c) where you have used factual or data inputs please identify those inputs and the sources;
- (d) if you make assumptions, please identify them as such and confirm that they are in your opinion reasonable assumptions to make;
- (e) if you undertake empirical work, please identify and explain the methods used by you in a manner that is accessible to a person not expert in your field;
- (f) confirm that you have made all the inquiries that you believe are desirable and appropriate and that no matters of significance that you regard as relevant have, to your knowledge, been withheld from your report; and
- (g) please do not provide legal advocacy or argument and please do not use an argumentative tone.

Timing

We require a draft report by 21 January 2016 and a final report by 29 January 2016.

If you have any questions, please do not hesitate to contact us.

Yours sincerely

Gilbert + Tobin

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Attachment: Federal Court guidelines for expert witnesses

Practice Note CM 7: Expert witnesses in proceedings in the Federal Court of Australia

Guidelines

1. General Duty to the Court¹

1.1 An expert witness has an overriding duty to assist the Court on matters relevant to the expert's area of expertise.

1.2 An expert witness is not an advocate for a party even when giving testimony that is necessarily evaluative rather than inferential.

1.3 An expert witness's paramount duty is to the Court and not to the person retaining the expert.

2. The Form of the Expert's Report²

2.1 An expert's written report must comply with Rule 23.13 and therefore must

- (a) be signed by the expert who prepared the report; and
- (b) contain an acknowledgement at the beginning of the report that the expert has read, understood and complied with the Practice Note; and
- (c) contain particulars of the training, study or experience by which the expert has acquired specialised knowledge; and
- (d) identify the questions that the expert was asked to address; and
- (e) set out separately each of the factual findings or assumptions on which the expert's opinion is based; and
- (f) set out separately from the factual findings or assumptions each of the expert's opinions; and
- (g) set out the reasons for each of the expert's opinions; and
- (ga) contain an acknowledgment that the expert's opinions are based wholly or substantially on the specialised knowledge mentioned in paragraph (c) above³; and
- (h) comply with the Practice Note.

2.2 At the end of the report the expert should declare that "[the expert] has made all the inquiries that [the expert] believes are desirable and appropriate and that no matters of significance that [the expert] regards as relevant have, to [the expert's] knowledge, been withheld from the Court."

2.3 There should be included in or attached to the report the documents and other materials that the expert has been instructed to consider.

¹The *"Ikarian Reefer"* (1993) 20 FSR 563 at 565-566.

²Rule 23.13.

³See also *Dasreef Pty Limited v Nawaf Hawchar* [2011] HCA 21.

2.4 If, after exchange of reports or at any other stage, an expert witness changes the expert's opinion, having read another expert's report or for any other reason, the change should be communicated as soon as practicable (through the party's lawyers) to each party to whom the expert witness's report has been provided and, when appropriate, to the Court⁴.

2.5 If an expert's opinion is not fully researched because the expert considers that insufficient data are available, or for any other reason, this must be stated with an indication that the opinion is no more than a provisional one. Where an expert witness who has prepared a report believes that it may be incomplete or inaccurate without some qualification, that qualification must be stated in the report.

2.6 The expert should make it clear if a particular question or issue falls outside the relevant field of expertise.

2.7 Where an expert's report refers to photographs, plans, calculations, analyses, measurements, survey reports or other extrinsic matter, these must be provided to the opposite party at the same time as the exchange of reports⁵.

3. Experts' Conference

3.1 If experts retained by the parties meet at the direction of the Court, it would be improper for an expert to be given, or to accept, instructions not to reach agreement. If, at a meeting directed by the Court, the experts cannot reach agreement about matters of expert opinion, they should specify their reasons for being unable to do so.

J L B ALLSOP
Chief Justice
4 June 2013

⁴ The *"Ikarian Reefer"* [1993] 20 FSR 563 at 565

⁵ The *"Ikarian Reefer"* [1993] 20 FSR 563 at 565-566. See also Ormrod *"Scientific Evidence in Court"* [1968] Crim LR 240

Annexure B – Curriculum vitae

Greg Houston

Partner

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Sydney NSW 2000
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Web: HoustonKemp.com



Overview

Greg Houston is a founding partner of the firm of expert economists, HoustonKemp. He has twenty five years' experience in the economic analysis of markets and the provision of expert advice in litigation, business strategy, and policy contexts. His career as a consulting economist was preceded by periods working in a financial institution and for government.

Greg has directed a wide range of financial, competition and regulatory economics assignments during this consulting career. His work in the Asia Pacific region principally revolves around the activities of the enforcement and regulatory agencies responsible for these areas, many of whom also number amongst his clients. On competition and antitrust matters he has advised clients on merger clearance processes, competition proceedings involving allegations of anticompetitive conduct ranging from predatory pricing, anti-competitive agreements, anti-competitive bundling and price fixing. Greg also has deep experience of infrastructure access regulation matters, and intellectual property and damages valuation. In his securities and finance work Greg has advised clients on a large number of securities class actions, as well as market manipulation and insider trading proceedings, and on cost of capital estimation.

Greg's industry experience spans the aviation, beverages, building products, cement, e-commerce, electricity and gas, forest products, grains, medical waste, mining, payments networks, office products, petroleum, ports, rail transport, retailing, scrap metal, securities markets, steel, telecommunications, thoroughbred racing, waste processing and water sectors.

Greg has acted as expert witness in valuation, antitrust and regulatory proceedings before the courts, in various arbitration and mediation processes, and before regulatory and judicial bodies in Australia, Fiji, New Zealand, the Philippines, Singapore, the United Kingdom and the United States.

Greg was until April 2014 a Director of the global firm of consulting economists, NERA Economic Consulting, where for twelve years he served on its United States' Board of Directors, for five years on its global Management Committee and for sixteen years as head of its Australian operations.

Greg also serves on the Competition and Consumer Committee of the Law Council of Australia.

Qualifications

1982 **University Of Canterbury, New Zealand**
B.Sc. (First Class Honours) in Economics

Prizes and Scholarships

1980 University Junior Scholarship, New Zealand

Career Details

2014-	HoustonKemp Economists Partner, Sydney, Australia
1989-2014	NERA Economic Consulting Director (1998-2014) London, United Kingdom (1989-1997) Sydney, Australia (1998-2014)
1987-89	Hambros Bank, Treasury and capital markets Financial Economist, London, United Kingdom
1983-86	The Treasury, Finance sector policy Investigating Officer, Wellington, New Zealand

Project Experience¹

Competition and Mergers

2015	King & Wood Mallesons/Confidential Client Competition analysis Analysis and advice in the context of the ACCC's inquiry into Eastern and Southern Australia wholesale gas prices.
2015	Corrs/Confidential Client Merger clearance Analysis, advice and expert report submitted to the ACCC in the context of a proposed acquisition in the office products sector.
2014-15	Australian Government Solicitor/Commonwealth of Australia Competition and trade analysis Expert report on competition and trade in tobacco products, prepared in the context of the World Trade Organisation dispute settlement proceedings concerning Australia's tobacco plain packaging legislation.
2014-15	King & Wood Mallesons/Confidential Client Competitive effects of agreement Analysis and advice prepared in context of an ACCC investigation of agreements between a supplier and its major customers that are alleged to harm competition.
2014-15	Ashurst/Confidential Client Competitive effects of agreement Analysis and advice prepared in context of an ACCC investigation of agreements between a supplier and its major customers that are alleged to harm competition.
2013-14	Corrs/Australian Competition and Consumer Commission Effect of cartel conduct Expert report on the price effects of an alleged market sharing arrangement in relation to the supply of forklift gas, prepared in the context of Federal Court proceedings brought against Renegade Gas (Supagas).

¹ Past ten years only.

- 2013-14** **Australian Competition and Consumer Commission**
Merger clearance
Expert report and testimony before the Competition Tribunal in the context of the ACCC's decision to oppose the acquisition of Macquarie Generation by AGL Energy.
- 2013-14** **Ashurst/BlueScope**
Merger clearance
Expert reports submitted to the ACCC in the context of the clearance of three approved transactions in the domestic steel industry.
- 2013-14** **Australian Government Solicitor/ACCC**
Merger clearance
Analysis and advice prepared in the context of the ACCC's review of the proposed acquisition by of petrol retailing sites in South Australia.
- 2012-13** **Minter Ellison/Confidential Client**
Merger clearance
Expert reports submitted to the ACCC in the context of a confidential application for clearance of a proposed acquisition in the industrial gases industry.
- 2011-12** **Gilbert + Tobin/Pact Group**
Merger clearance
Expert reports submitted to the ACCC on the competitive implications of the proposed acquisition of plastic packaging manufacturer Viscount Plastics by Pact Group.
- 2010-12** **Mallesons/APA**
Merger clearance
Expert reports submitted to the ACCC on the competitive implications of the proposed acquisition of the gas pipeline assets of Hastings Diversified Utilities Fund by APA Group.
- 2010-11** **Johnson Winter & Slattery/ATC and ARB**
Competitive effects of agreement
Expert reports and testimony in Federal Court proceedings concerning the competitive effects of restrictions on the use of artificial breeding techniques in the breeding of thoroughbred horses for racing.
- 2010-11** **Victorian Government Solicitor/State of Victoria**
Competitive effects of agreement
Expert report prepared for the State of Victoria on the effects of certain restrictions applying to the trading of water rights on inter-state trade in the context of a constitutional challenge brought against the state of Victoria by the state of South Australia.
- 2009-11** **Arnold + Porter/Visa Inc, Mastercard Inc and others**
Payment card markets
Expert reports and deposition testimony on behalf of defendants in the United States Re Payment Card Interchange Fee and Merchant Discount Antitrust Litigation, on the effects of regulatory interventions in the Australian payment cards sector.

- 2010** **Australian Competition and Consumer Commission**
NBN Points of Interconnection
Report and advice on the competition implications in the markets for both telecommunications backhaul and retail broadband services of different choices as to the number of 'points of interconnection' in the proposed architecture of the national broadband network.
- 2010** **JWS, Gilbert & Tobin/Jetset Travelworld, Stella Travel Services**
Merger clearance
Advice on the competitive implications of the merger between Jetset Travelworld and Stella Travel Services.
- 2009-10** **Australian Government Solicitor/ACCC**
Misuse of market power
Expert report and testimony in the context of Federal Court proceedings brought by the ACCC against Cement Australia in relation to conduct alleged to have breached sections 45, 46 and 47 of the Trade Practices Act.
- 2008-10** **Gilbert & Tobin/Confidential**
Merger assessment
Advice on the competitive implications of the then proposed merger and then subsequently the proposed iron ore production joint venture between BHP Billiton and Rio Tinto.
- 2008-10** **Allens Arthur Robinson/Amcor**
Cartel damages assessment
Advice and preparation of an expert report on the approach to and quantification of economic loss in the context of two separate actions seeking damages arising from alleged cartel conduct.
- 2009** **State Solicitor's Office/Forest Products Commission**
Alleged breach of s46
Expert advice in the context of Federal Court proceedings alleging breaches of section 46 of the Trade Practices Act.
- 2009** **Clayton Utz/Confidential Client**
Joint venture arrangement
Reviewed the competitive implications under s50 of the Trade Practices Act of a proposed joint venture transaction in the rail industry.
- 2009** **Blake Dawson Waldron/Airservices**
Effect of potential industrial action by Air Traffic Controllers
Prepared an expert report in the context of a potential application to the Australian Industrial Relations Commission for termination or suspension of a bargaining period addressing the economic effect that certain forms of industrial action by Air Traffic Controllers would be likely to have on passengers, businesses, and the Australian economy.
- 2005-06, 08-09** **Phillips Fox/Fortescue Metals Group**
Access to bottleneck facilities
Expert report and testimony in the Federal Court proceedings concerning whether or not access to the BHP Billiton and Rio Tinto rail lines, serving iron ore export markets in the Pilbara, amounted to use of a production process. Subsequently, prepared expert reports on matters arising in interpreting the criteria for declaration under Part IIIA, and testified before the Competition Tribunal in late 2009.

- 2009** **Clayton Utz/Confidential Client**
Competitive implications of agreement
 Advice on the competitive effects of a joint venture arrangement in the port terminal sector, in the context of Federal Court proceedings brought by the ACCC under section 45 of the Trade Practices Act.
- 2009** **Australian Competition and Consumer Commission**
Competitive effects of buy-sell agreements
 Advice to the ACCC on the extent to which buy-sell arrangements between the four major refiner-marketers of petroleum products in Australia may be inhibiting competition in a relevant market.
- 2008-09** **Watson Mangioni/ICS Global**
Alleged misuse of market power
 Expert report prepared in the context of Federal Court proceedings alleging breaches of section 46 of the Trade Practices Act.
- 2008-09** **Australian Competition and Consumer Commission**
Competitive effects of various agreements
 Expert advice on potential theories of competitive harm arising from agreements between competitors in the oil and gas, and petroleum retailing industry sectors.
- 2008** **Johnson Winter & Slattery/Pepsico**
Merger analysis
 Advice on the competitive implications certain potential transactions in the soft drinks sector.
- 2008** **Australian Competition and Consumer Commission**
Exemption from access undertaking
 'Peer review' report of the ACCC's draft decision on applications by Telstra for exemption from its standard access obligations (SAOs) for the supply by resale of the local carriage service (LCS) and wholesale line rental (WLR) in 387 exchange service areas in metropolitan Australia.
- 2008** **Deacons/eBay**
Exclusive dealing notification
 Expert report submitted to the ACCC analysing the competitive effects of eBay's proposal that users of its online marketplace be required to settle transactions using eBay's associated entity, PayPal
- 2007-08** **Australian Energy Market Commission**
Wholesale market implications for retail competition
 Retained to provide an overview of the operation and structure of the wholesale gas and electricity markets within the National Electricity Market (NEM) jurisdictions and to identify the issues that the AEMC should consider when assessing the influence of the wholesale markets on competition within the retail gas market in each jurisdiction.
- 2006-07** **Essential Services Commission of South Australia**
Competition assessment
 Directed the preparation of a comprehensive report analysing the effectiveness of competition in retail electricity and gas markets in South Australia.
- 2006-07** **Allens Arthur Robinson/Confidential Client**
Merger clearance
 Retained to provide advice on competition issues arising in the context of s50 clearance of a proposed merger in the board packaging industry.

- 2006-07 Johnson Winter & Slattery/Confidential Client**
Damages assessment
Advice on the quantification of damages arising from alleged cartel conduct in the electricity transformer sector.
- 2006 Minter Ellison/Confidential Client**
Misuse of market power
Expert economic advice in relation to market definition, market power and taking advantage in the context of an alleged price squeeze between wholesale and retail prices for fixed line telecommunications services, for proceedings brought under section 46 of the Trade Practices Act. The proceedings were withdrawn following regulatory amendments by the ACCC.
- 2006 DLA Phillips Fox/Donhad**
Merger clearance
Preparation of an expert report on competition issues arising in the context of s50 clearance for the proposed Smorgon/One Steel merger.
- 2006 Johnson Winter & Slattery/Qantas Airways**
Competition effects of proposed price fixing agreement
Assessed the competition effects of the proposed trans-Tasman networks agreement between Air New Zealand and Qantas Airways.
- 2006 Phillips Fox/ACCC**
Vertical foreclosure
Advice in the context of proceedings before the Federal Court concerning the acquisition of Patrick Corporation by Toll Holdings. The proceedings were subsequently withdrawn following a S87B undertaking made by Toll.
- 2006 Gilbert + Tobin/AWB**
Arbitration, access to bottleneck facilities
Expert report and testimony in an arbitration concerning the imposition of throughput fees for grain received at port and so bypassing the grain storage, handling and rail transport network in South Australia.
- 2006 Qantas Airways, Australia/Singapore**
Assessment of single economic entity
Advice in the context of Qantas' Application for Decision to the Competition Commission of Singapore that the agreement between it and Orangestar did not fall within the ambit of the price-fixing and market sharing provisions of the Singapore Competition Act.
- 2005-06 Qantas Airways, Australia/Singapore**
Competition effects of price fixing agreement
Expert report submitted to the Competition Commission of Singapore evaluating the net economic benefits of a price fixing/market sharing agreement, in relation to an application for exemption from the section 34 prohibition in the Competition Act of Singapore.
- 2005-06 Australian Competition Consumer Commission**
Electricity generation market competition
Advice on the competition effects under S50 of the Trade Practices Act of three separate proposed transactions involving the merger of generation plant operating in the national electricity market.

- 2005** **Gilbert + Tobin/Hong Kong Government, Hong Kong**
Petrol market competition
 Directed a NERA team working with Gilbert + Tobin that investigated the effectiveness of competition in the auto-fuel retailing market in Hong Kong.
- 2005** **Phillips Fox/National Competition Council**
Access and competition in gas production and retail markets
 Retained as expert witness in the appeal before the WA Gas Review Board of the decision to revoke coverage under the gas code of the Goldfields pipeline. Proceedings brought by the pipeline operator were subsequently withdrawn.
- 2004-05** **Gilbert + Tobin/APCA**
Competition and access to Eftpos system
 Economic advisor to the Australian Payments Clearing Association in connection with the development of an access regime for the debit card/Eftpos system, so as to address a range of competition concerns expressed by the Reserve Bank of Australia and the ACCC. This work included an expert report examining barriers to entry to Eftpos and the extent to which these could be overcome by an access regime.
- 2003-05** **Phillips Fox/Austrac**
Misuse of market power
 Retained to assist with all economic aspects of a potential Federal Court action under s46 of the Trade Practices Act alleging misuse of market power in the rail freight market.

Regulatory Analysis

- 2015** **Government of New South Wales**
Economic regulation for privatisation
 Advisor to government of New South Wales on all economic regulatory aspects of the proposed partial lease the electricity transmission and distribution entities, TransGrid, AusGrid and Endeavour Energy.
- 2015** **ActewAGL**
Regulatory price review
 Expert report on the economic interpretation of provisions in the national electricity law and rules in relation to the application of the national electricity objective to the entire price determination of the Australian Energy Regulator.
- 2014-15** **Atco Gas**
Access price review
 Expert reports on the economic interpretation of provisions in the national gas law and rules in relation to depreciation and the application of the national gas objective to the entire draft decision, submitted to the Economic Regulation Authority of WA.
- 2014-15** **Government of Victoria**
Economic regulation for privatisation
 Advisor to government of Victoria on the economic regulation of the Port of Melbourne Corporation in the context of the proposed privatization of the port by way of long term lease.

- 2013** **Actew Corporation**
Interpretation of economic terms
Advice on economic aspects of the draft and final decisions of the Independent Competition and Regulatory Commission in relation to the price controls applying to Actew.
- 2012-13** **Gilbert + Tobin/Rio Tinto Coal Australia**
Price review arbitration
Analysis and expert reports prepared in the context of an arbitration concerning the price to be charged for use of the coal loading facilities at Abbott Point Coal Terminal.
- 2012-13** **Ashurst/Brisbane Airport Corporation**
Draft access undertaking
Advice, analysis and expert reports in the context of the preparation of a draft access undertaking specifying the basis for determining a ten year price path for landing charges necessary to finance a new parallel runway at Brisbane airport.
- 2012** **King & Wood Mallesons/Origin Energy**
Interpretation of economic terms
Expert reports and testimony in the context of judicial review proceedings before the Supreme Court of Queensland on the electricity retail price determination of the Queensland Competition Authority.
- 2012** **Contact Energy, New Zealand**
Transmission pricing methodology
Advice on reforms to the Transmission Pricing Methodology proposed by Electricity Authority.
- 2011-12** **Energy Networks Association**
Network pricing rules
Advice and expert reports submitted to the Australian Energy Market Commission on wide-ranging reforms to the network pricing rules applying to electricity and gas transmission and distribution businesses, as proposed by the Australian Energy Regulator.
- 2010-12** **QR National**
Regulatory and competition matters
Advisor on the competition and regulatory matters, including: a range of potential structural options arising in the context of the privatisation of QR National's coal and freight haulage businesses, particularly those arising in the context of a 'club ownership model' proposed by a group of major coal mine owners; and an assessment of competitive implications of proposed reforms to access charges for use of the electrified network.
- 2002-12** **Orion New Zealand Ltd, New Zealand**
Electricity lines regulation
Advisor on regulatory and economic aspects of the implementation by the Commerce Commission of the evolving regimes for the regulation of New Zealand electricity lines businesses. This role has included assistance with the drafting submissions, the provision of expert reports, and the giving of expert evidence before the Commerce Commission.

- 2011** **Meridian Energy, New Zealand**
Undesirable trading situation
Advice to Meridian Energy on the economic interpretation and implications of the New Zealand electricity rule provisions that define an 'undesirable trading situation' in the wholesale electricity market.
- 2011** **Ausgrid**
Demand side management
Prepared a report on incentives, constraints and options for reform of the regulatory arrangements governing the role of demand side management in electricity markets.
- 2010-11** **Transnet Corporation, South Africa**
Regulatory and competition policy
Retained to advise on the preparation of a white paper on future policy and institutional reforms to the competitive and regulatory environment applying to the ports, rail and oil and gas pipeline sectors of South Africa.
- 2010-11** **Minter Ellison/UNELCO, Vanuatu**
Arbital review of decision by the Vanuatu regulator
Expert report and evidence before arbitrators on a range of matters arising from the Vanuatu regulator's decision on the base price to apply under four electricity concession contracts entered into by UNELCO and the Vanuatu government. These included the estimation of the allowed rate of return including its country risk component, and the decision retrospectively to bring to account events from the prior regulatory period.
- 2007-11** **Powerco/CitiPower**
Regulatory advice
Wide ranging advice on matters arising under the national electricity law and rules, such as the framework for reviewing electricity distribution price caps, the treatment of related party outsourcing arrangements, an expert report on application of the AER's efficiency benefit sharing scheme, the potential application of total factor productivity measures in CPI-X regulation, and arrangements for the state-wide roll out of advanced metering infrastructure.
- 1999-2004,**
2010-11 **Sydney Airports Corporation**
Aeronautical pricing notification
Wide ranging advice on regulatory matters. This includes advice and expert reports in relation to SACL's notification to the ACCC of substantial reforms to aeronautical charges at Sydney Airport in 2001. This involved the analysis and presentation of pricing principles and their detailed application, through to discussion of such matters at SACL's board, with the ACCC, and in public consultation forums. Subsequent advice on two Productivity Commission reviews of airport charging, and notifications to the ACCC on revised charges for regional airlines.
- 2010** **Industry Funds Management/Queensland Investment Corporation**
Due diligence, Port of Brisbane
Retained to advise on regulatory and competition matters likely to affect the future financial and business performance of the Port of Brisbane, in the context of its sale by the Queensland government.
- 2009-10** **New Zealand Electricity Industry Working Group, New Zealand**
Transmission pricing project
Advice to a working group comprising representatives from lines companies, generators, major users and Transpower on potential improvements to the efficiency of New Zealand's electricity transmission pricing arrangements.

- 2007-09** **GDSE, Macau**
Electricity tariff reform
 Advice to the regulator of electricity tariffs in Macau on a series of potential reforms to the structure of electricity supply tariffs.
- 2001-09** **Auckland International Airport Limited, New Zealand**
Aeronautical price regulation
 Advice and various expert reports in relation to: the review by the Commerce Commission of the case for introducing price control at Auckland airport; a fundamental review of airport charges implemented in 2007; and the modified provisions of Part IV of the Commerce Act concerning the economic regulation of airports and other infrastructure service providers.
- 2008** **Western Power**
Optimal treatment and application of capital contributions
 Advice on the optimal regulatory treatment of capital contributions, taking into account the effect of alternative approaches on tariffs, regulatory asset values, and network connection by new customers.
- 2000-08** **TransGrid**
National electricity market and revenue cap reset
 Regulatory advisor to TransGrid on a range of issues arising in the context of the national electricity market (NEM), including: the economics of transmission pricing and investment and its integration with the wholesale energy market, regulatory asset valuation, the cost of capital and TransGrid's 2004 revenue cap reset by the ACCC.
- 2007** **Johnson Winter & Slattery/Multinet**
Review of outsourced asset management contracts
 Expert report developing a framework for assessing the prudence of outsourcing contracts in the context of the Gas Code, and evaluating the arrangements between Multinet and Alinta Asset Management by reference to that framework.
- 2007** **Ministerial Council on Energy**
Review of Chapter 5 of the National Electricity Rules
 Advice on the development of a national framework for connection applications and capital contributions in the context of the National Electricity Rules.
- 2006-07** **Ministerial Council on Energy**
Demand side response and distributed generation incentives
 Conducted a review of the MCE's proposed initial national electricity distribution network revenue and pricing rules to identify the implications for the efficient use of demand side response and distributed generation by electricity network owners and customers.
- 2006** **Ministerial Council on Energy**
Electricity network pricing rules
 Advice on the framework for the development of the initial national electricity distribution network pricing rules, in the context of the transition to a single, national economic regulator.
- 2005-06** **Minister for Industry**
Expert Panel
 Appointment by Hon Ian Macfarlane, Minister for Industry, Tourism and Resources, to an Expert Panel to advise the Ministerial Council on Energy on achieving harmonisation of the approach to regulation of electricity and gas transmission and distribution infrastructure.

- 2005-06** **Australian Energy Markets Commission**
Transmission pricing regime
Advice to the AEMC on its review of the transmission revenue and pricing rules as required by the new National Electricity Law.
- 1998-2006** **Essential Services Commission of Victoria**
Price cap reviews
Wide ranging advice to the Essential Services Commission (formerly the Office of the Regulator-General), on regulatory, financial and strategic issues arising in the context of five separate reviews of price controls/access arrangements applying in the electricity, gas distribution, ports, rail and water sectors in Victoria. This work encompassed advice on the development of the Commission's work program and public consultation strategy for each review, direct assistance with the drafting of papers for public consultation, the provision of internal papers and analysis on specific aspects of the review, drafting of decision documents, and acting as expert witness in hearings before the Appeal Panel and Victorian Supreme Court.
- 2004-05** **Ministerial Council of Energy**
Reform of the National Electricity Law
Retained in two separate advisory roles in relation to the reform of the institutions and legal framework underpinning the national energy markets. These roles include the appropriate specification of the objectives and rule making test for the national electricity market, and the development of a harmonised framework for distribution and retail regulation.
- 2004-05** **Johnson Winter Slattery, ETSA Utilities**
Price determination
Advice on a wide range of economic and financial issues in the context of ETSA Utilities' application for review of ESCOSA's determination of a five year electricity distribution price cap.

Securities and Finance

- 2015** **O'Donnell Legal/Representative proceeding**
Misleading and deceptive conduct
Expert report submitted to the Federal Court assessing the effect of alleged misstatements in relation to the annual accounts and associated going concern assumption in relation to Tamaya Resources Ltd (in liquidation).
- 2013-15** **Sydney Water Corporation**
Cost of capital estimation
Preparation of three expert reports for submission to the Independent Pricing and Regulatory Tribunal (IPART) on the framework for determining the weighted average cost of capital for infrastructure service providers, and on estimation of an appropriate equity beta.
- 2012-15** **HWL Ebsworth/Confidential client**
Insider trading
Expert advice and analysis in the context of criminal proceedings alleging insider trading in certain ASX-listed securities (2012-13). Subsequent expert report filed in Supreme Court of Tasmania estimating price effects of inside information in context of subsequent 'proceeds of crime' proceedings.

- 2014** **Wotton Kearney/Genesys Wealth Advisors**
Misleading and deceptive conduct
Expert report submitted to the Supreme Court of Victoria assessing the accuracy of product disclosure statements and other information in relation to two fixed interest investment funds offered by Basis Capital.
- 2014** **TransGrid**
Cost of capital estimation
Preparation of an expert report for submission to the Australian Energy Regulator (AER) estimating the weighted average cost of capital for electricity network service providers.
- 2011-13** **Slater & Gordon/Modtech**
Shareholder damages assessment
Expert reports and testimony in representative proceedings before the Federal Court alleging misstatement and/or breach of the continuous disclosure obligations of the ASX-listed entity, GPT.
- 2011-12** **Freehills/National Australia Bank**
Shareholder damages assessment
Expert advice in connection with representative proceedings before the Federal Court alleging misstatement and/or breach of the continuous disclosure obligations of an ASX-listed entity.
- 2012** **Johnson Winter & Slattery/Victorian gas distributors**
Cost of equity estimation
Expert report submitted to the AER on the appropriate methodology for estimating the cost of equity under the Capital Asset Pricing Model.
- 2009-13** **Minter Ellison/Confidential client**
Misleading and deceptive conduct
Expert report and related advice in light of investor claims and pending litigation following the freezing of withdrawals from a fixed interest investment trust that primarily held US-denominated collateralised debt obligations (CDOs), as offered by a major Australian financial institution. Analysis undertaken includes the extent to which the investment risks were adequately described in the fund documents, and the quantum of any potential damages arising.
- 2011** **Barringer Leather/Confidential client**
Market manipulation
Expert report prepared in the context of criminal proceedings brought in the Supreme Court of NSW alleging market manipulation in the trading of certain ASX-listed securities.
- 2010-11** **Wotton Kearney/Confidential client**
Misleading and deceptive conduct
Expert report and analysis in light of investor claims and pending litigation following the freezing of withdrawals from two fixed interest investment trusts that primarily held US-denominated collateralised debt obligations (CDOs).
- 2010-11** **Maurice Blackburn/Confidential client**
Shareholder damages assessment
Analysis prepare for use in connection with representative proceedings before the Federal Court alleging misstatement and/or breach of the continuous disclosure obligations of an ASX-listed entity.

- 2010-11** **Mallesons/ActewAGL**
Judicial review of rate of return determination
Expert report and testimony in Federal Court proceedings seeking judicial review of a decision by the Australian Energy Regulator of its determination of the risk free rate of interest in its price setting determination for electricity distribution services.
- 2009-11** **William Roberts/Clime Capital**
Shareholder damages assessment
Preparation of two expert reports in representative proceedings before the Federal Court alleging misstatement and/or breach of the continuous disclosure obligations of ASX-listed entity, Credit Corp.
- 2009** **Jemena Limited**
Cost of equity estimation
Co-authored an expert report on the application of a domestic Fama-French three-factor model to estimate the cost of equity for regulated gas distribution businesses.
- 2008-09** **Clayton Utz/Fortescue Metals Group**
Materiality of share price response
Preparation of expert report and testimony before the Federal Court addressing alleged breaches of the ASX continuous disclosure obligations and the associated effect on the price of FMG securities arising from statements made by it in 2004.
- 2008-09** **Energy Trade Associations – APIA, ENA and Grid Australia**
Value of tax imputation credits
Preparation of expert report on the value to investors in Australian equities of tax imputation credits, for submission to the Australian Energy Regulator.
- 2008-09** **Freehills/Centro Properties**
Shareholder damages assessment
Assistance in the estimation of potential damages arising in representative proceedings concerning accounting misstatements and/or breach of the continuous disclosure obligations of an ASX-listed entity.
- 2008** **Slater & Gordon/Boyd**
Shareholder damages assessment
Preparation of an expert report for submission to a mediation on the damages arising in representative proceedings before the Federal Court alleging accounting misstatements and/or breach of the continuous disclosure obligations of EDI Downer.
- 2007-08** **Maurice Blackburn/Watson**
Shareholder damages assessment
Preparation of advice estimating the damages arising in representative proceedings before the Federal Court alleging accounting misstatements and/or breach of the continuous disclosure obligation by the ASX-listed entity, AWB Limited.
- 2007** **Freehills/Telstra Corporation**
Shareholder damages assessment
Advice and assistance in the preparation of the expert report of Dr Fred Dunbar submitted to the Federal Court in the context of proceedings alleging breaches of the continuous disclosure obligations by Telstra. The principal subject of this work was the assessment of the extent to which of material alleged not to have been disclosed was already known and incorporated in Telstra's stock price.

2006-07

**Maurice Blackburn/Dorajay
Shareholder damages assessment**

Advice and assistance in the preparation of the expert report of Dr Fred Dunbar submitted to the Federal Court in the context of proceedings between Dorajay and Aristocrat Leisure. The principal subject of this work was the assessment of the extent and duration of share price inflation arising from various accounting misstatements and alleged breaches of the continuous disclosure obligations.

Valuation and Contract Analysis

2014-15

**Minter Ellison/Foxtel Management Pty Ltd
Assessment of reasonable licence fee**

Expert reports prepared in the context of proceedings before the Copyright Tribunal concerning the appropriate valuation of the rights to be paid by Foxtel for the broadcast and communication of commercial recordings licensed by the Phonographic Performance Company of Australia.

2014-15

**Rahmat Lim & Partners/Port Dickson Power Berhad
Power purchase agreement arbitration**

Expert reports submitted in the context of an international arbitration held in Kuala Lumpur concerning the interpretation of the price indexation provisions in a power purchase contract between Port Dickson Power Berhad and Tenaga Nasional Berhad.

2013

**Johnson Winter & Slattery/Origin
Gas supply agreement price review**

Analysis and advice on the implications of certain contract terms for the price of gas, to be determined in a potential arbitration concerning the terms of a substantial long term gas supply agreement.

2013

**Herbert Smith Freehills/Santos
Gas supply agreement price review**

Analysis and advice on factors influencing the market price of gas in eastern Australia, to be determined in a potential arbitration concerning the terms of a substantial long term gas supply agreement.

2012-13

**Herbert Smith Freehills/North West Shelf Gas
Gas supply agreement arbitration**

Expert reports on the implications of certain contract terms for the price of gas under a substantial long term gas supply agreement.

2012-13

**Allens/BHP Billiton-Esso
Gas supply agreement arbitration**

Analysis, advice and expert report on the implications of certain contract terms for the price of gas under a substantial long term gas supply agreement.

2012

**King & Wood Mallesons/Ausgrid
Power purchase agreement arbitration**

Expert report prepared and filed in an arbitration on the in relation to the effect of the government's newly introduced carbon pricing mechanism on the price to be paid under a long term power purchase and hedge agreement between an electricity generator and retailer.

- 2011** **Kelly & Co/Cooper Basin Producers**
Wharfage dues agreement arbitration
Expert report and testimony in arbitration proceedings to determine the 'normal wharfage dues' to be paid for use of a facility that assists the transfer of petroleum products to tanker ships from a processing terminal in South Australia.
- 2010** **Barclays Capital/Confidential Client**
Due diligence, Alinta Energy
Retained to advise on the key industry related risks and issues facing Alinta Energy's gas and electricity assets during the due diligence process associated with its recapitalisation and sale.
- 2009** **Freehills/Santos**
Gas supply agreement price review
Analysis and advice on factors influencing the market price of gas in eastern Australia, to be determined in a potential arbitration concerning the terms of a substantial long term gas supply agreement.
- 2008-09** **Clayton Utz/Origin Energy**
Gas supply agreement arbitration
Expert reports and testimony in an arbitration concerning the market price of gas, which was determined and applied in a substantial long term gas supply agreement.
- 2008-09** **Minter Ellison/Confidential client**
Treatment of past capital contributions
Expert report and evidence given in arbitration proceedings on the extent to which a discount should apply under a long term water supply contract, in recognition of a capital contribution made at the outset of the agreement.
- 2008** **Freehills/Tenix Toll**
Logistics contract arbitration
Advice on the appropriate methodology for adjusting prices under a long term logistics contract in light of changing fuel costs.
- 2008** **BG plc**
Market analysis
Advise on economic aspects of the operation of the east Australian wholesale gas market in the context of the potential development of coal seam gas for use in LNG production and export.
- 2008** **Gilbert + Tobin/Waste Services NSW**
Damages estimation
Damages assessment in the context of a Federal Court finding of misleading and deceptive conduct in relation to the extent of environmental compliance in the provision of waste services.
- 2007** **Meerkin & Apel/SteriCorp**
Damages assessment
Expert report and testimony in the context of an international arbitration on commercial damages arising from alleged non-performance of a medical waste processing plant.

- 2006-07** **Middletons/Confidential Client**
Damages assessment
Retained to provide an expert report on the methodological framework for assessing alleged damages arising from contractual non-performance and associated forecast for demand and supply conditions and prices for natural gas and ethane prices and over a ten year period.
- 2006** **Confidential Client/Australia**
Valuation of digital copyright
Advice in relation to the negotiation for a licence for digital copyright. This included the discussion of the matters that should be considered in determining fees for a digital copyright licence, including the extent to which digital material should be valued differently from print material and whether the charging mechanism for print is appropriate for digital copyright.
- 2006** **Minter Ellison/Australian Hotels Association**
Valuation of copyright material
Expert report in the context of proceedings before the Copyright Tribunal concerning the appropriate valuation of the rights to play recorded music in nightclubs and other late night venues.
- 2005-06** **Minter Ellison and Freehills/Santos**
Gas supply agreement arbitrations
Principal economic expert in two separate arbitrations of the price to apply following review of two substantial gas supply agreements between the South West Queensland gas producers and, respectively, a large industrial customer and major gas retailer.

Institutional and Regulatory Reform

- 2008-11** **Department of Sustainability and Environment**
Management of bulk water supply
Various advice on the concept and merits of establishing market based arrangements to guide both the day-to-day operation of the bulk water supply system in metropolitan Melbourne, as well as the trading of rights to water between the metropolitan water supply system and those throughout the state of Victoria.
- 2008** **Department of Treasury and Finance**
Access regime for water networks
Prepared a report on the principles that should be applied in developing a state-wide third party access regime for water supply networks.
- 2007** **Economic Regulatory Authority**
Options for competitive supply bulk water
Prepared a report on institutional and structural reforms necessary to encourage the development of options for the procurement of alternative water supplies from third parties.
- 2006** **Bulk Entitlement Management Committee**
Development of urban water market
Prepared a report for the four Melbourne water businesses on options for devolution of the management of water entitlements from collective to individual responsibility, including the development of associated arrangements for oversight and co-ordination of the decentralised management and trading of water rights.

2003-05**Goldman Sachs/Airport Authority, Hong Kong
Framework for economic regulation**

Lead a team advising on the options and detailed design of the economic regulatory arrangements needed to support the forthcoming privatisation of Hong Kong Airport.

Sworn Testimony, Transcribed Evidence²

- 2015** **Expert evidence before an arbitral tribunal on behalf of Port Dickson Power Berhad (PDP), in the matter of PDP v Tenaga Nasional Berhad (TNB)**
Expert reports, sworn evidence, Kuala Lumpur, 28 January 2015
- 2014** **Expert evidence before a UNCITRAL arbitral tribunal on behalf of Maynilad Water Corporation Inc (MWCI), in the matter of MWCI v Metropolitan Waterworks and Sewerage System (MWSS)**
Expert reports, sworn evidence, Sydney (by videolink to Manila), 31 August 2014
- Expert evidence before the Australian Competition Tribunal on behalf of the ACCC, in the matter of AGL Energy v ACCC**
Expert reports, sworn evidence, Sydney, 10-11 June 2014
- 2013** **Expert evidence before the Supreme Court of Victoria on behalf of Maddingley Brown Coal in the matter of Maddingley Brown Coal v Environment Protection Agency of Victoria**
Expert reports, sworn evidence, Melbourne, 12 August 2013
- Expert evidence before the Federal Court on behalf of Modtech v GPT Management and Others**
Expert reports, sworn evidence, Melbourne, 27 March 2013
- 2012** **Expert evidence before the Supreme Court of Queensland on behalf of Origin Energy Electricity Ltd and Others v Queensland Competition Authority and Others**
Expert reports, sworn evidence, Brisbane, 3 December 2012
- 2011** **Expert evidence before the Federal Court on behalf of the Australian Turf Club and Australian Racing Board in the matter of Bruce McHugh v ATC and Others**
Expert report, transcribed evidence, Sydney, 12 and 14 October 2011
- Expert evidence in arbitration proceedings before J von Doussa, QC, on behalf of Santos in the matter of Santos and Others v Government of South Australia**
Expert report, transcribed evidence, Adelaide, 13-15 September 2011
- Expert evidence before a panel of arbitrators on behalf of UNELCO in the matter of UNELCO v Government of Vanuatu**
Expert report, transcribed evidence, Melbourne, 23 March and 21 April 2011
- Expert evidence before the Federal Court on behalf of ActewAGL in the matter of ActewAGL v Australian Energy Regulator**
Expert report, sworn evidence, Sydney, 17 March 2011
- Deposition Testimony in Re Payment Care Interchange and Merchant Discount Litigation, in the United States District Court for the Eastern District of New York**
Deposition testimony, District of Colombia, 18 January 2011

² Past ten years only.

- 2010**
- Expert evidence before the Federal Court in behalf of the Australia Competition and Consumer Commission in the matter of ACCC v Cement Australia and others**
Expert report, sworn evidence, Brisbane, 19-21 October 2010
- Expert evidence on behalf of Orion NZ, at the Commerce Commission's Conference on its Input Methodologies Emerging View Paper**
Transcribed evidence, public hearings, Wellington, 24 February 2010
- Deposition Testimony in *Re Payment Card Interchange and Merchant Discount Antitrust Litigation*, in the United States District Court for the Eastern District of New York**
Deposition Testimony, District of Columbia, 18 February 2010
- 2009**
- Expert evidence before the Australian Competition Tribunal on behalf of Fortescue Metals Group Ltd, in the matter of Application for Review of Decision in Relation to Declaration of Services Provided by the Robe, Hamersley, Mt Newman and Goldsworthy Railways**
Expert report, sworn evidence, Melbourne, 12-13 October and 5-6 November 2009
- Expert evidence on behalf of Orion NZ, at the Commerce Commission's Conference on its Input Methodologies Discussion Paper**
Transcribed evidence, public hearings, Wellington, 16 September 2009
- Expert evidence before the Federal Court on behalf of Fortescue Metals Group Ltd, in the matter of ASIC v Fortescue Metals Group and Andrew Forrest**
Expert report, sworn evidence, Perth, 29 April–1 May 2009
- Expert report and evidence in arbitration proceedings before Hon Michael McHugh, AC QC, and Roger Gyles, QC, between Origin Energy and AGL**
Expert report, sworn evidence, Sydney, 19-24 March 2009
- 2008**
- Expert evidence on behalf of Orion NZ, at the Commerce Commission's Conference on its Draft Decision on Authorisation for the Control of Natural Gas Pipeline Services**
Transcribed evidence, public hearings, Wellington, 21 February 2008
- 2007**
- Expert report and evidence in arbitration proceedings before Sir Daryl Dawson between SteriCorp and Stericycle Inc.**
Expert report, sworn evidence, 11 July 2007
- 2006**
- Expert report and evidence in arbitration proceedings before Sir Daryl Dawson and David Jackson, QC, between Santos and others, and AGL**
Expert report, sworn evidence, November 2006
- Expert report and evidence before the Federal Court on behalf of Fortescue Metals Group in the matter of BHP Billiton v National Competition Council and Others**
Expert report, sworn evidence, November 2006
- Expert report and evidence in arbitration proceedings before Sir Daryl Dawson and David Jackson, QC, between Santos and Others, and Xstrata Queensland**
Expert report, sworn evidence, September 2006

Expert report and evidence before the Copyright Tribunal on behalf of the Australian Hotels Association and others in the matter of PPCA v AHA and Others

Expert report, sworn evidence, May 2006

Expert report and evidence in arbitration proceedings before Hon Michael McHugh, AC QC, on the matter of AWB Limited v ABB Grain Limited

Expert report, sworn evidence, 24 May 2006

Expert report and evidence to Victorian Appeal Panel, in the matter of the appeal by United Energy Distribution of the Electricity Price Determination of the Essential Services Commission

Expert report, sworn evidence, 10 February 2006

2005

Expert evidence on behalf of Orion NZ, at the Commerce Commission's Conference on its Notice of Intention to Declare Control of Unison Networks

Transcribed evidence, public hearings, Wellington, 17 November 2005

Expert evidence on behalf of Orion NZ, at the Commerce Commission's Conference on Asset Valuation choice and the electricity industry disclosure regime

Transcribed evidence, public hearings, Wellington, 11 April 2005

2004

Expert report and evidence to the Australian Competition Tribunal, in the matter of Virgin Blue Airlines v Sydney Airport Corporation

Expert reports, sworn evidence, 19-20 October 2004

Expert evidence on behalf of Orion NZ, at the Commerce Commission's Conference on the ODV Handbook for electricity lines businesses

Transcribed evidence, public hearings, Wellington, 26 April 2004

Speeches and Publications³

2015

Electricity Networks Association Regulation Seminar, Brisbane

Participant in Expert Plenary Panel

Speech, Brisbane, 5 August 2015

NZ Commerce Commission Input Methodologies Review, Wellington

'Allocation of Risk' and 'New Technologies'

Panel Discussant, Wellington, 29 July 2015

Competition Matters Conference, Wellington

Disruptive Technologies

Chair, Discussion Panel, Sydney, 24 July 2015

Singapore Aviation Academy, Singapore

Private Financing of Airport Infrastructure Expansions

Speech, Singapore, 5 March 2015

GCR 4th Annual Law Leaders Forum Asia-Pacific

Differences in using economics in EU and Asia Pacific

Speech, Singapore, 5 March 2015

AEMC Public Forum

East Coast Gas Market Review

Speech, Sydney, 25 February 2015

³ Past seven years

- 2014**
- Competition and Consumer Workshop, Law Council of Australia**
An Economist's Take on Taking Advantage
Paper and Speech, Brisbane, 14 September 2014
- Energy Networks 2014**
Innovation and Economic Regulation
Speech, Melbourne, 1 May 2014
- The Network Industries Quarterly, *Consumer Advocacy in Australian Regulatory Decision Making – 'Hard Choices Await'*, Vol. 16, No 1, 2014**
Ecole Polytechnique Federale de Lausanne, 31 March 2014
- GCR 3rd Annual Law Leaders Asia Pacific**
Role of Economists in Competition Law Enforcement in Asia-Pacific
Speech, Singapore, 6 March 2014
- 2013**
- University of South Australia – Competition and Consumer Workshop**
Empirical test and collusive behaviour
Speech and participation game, Adelaide, 16 November 2013
- Energy in WA Conference**
Capacity Payments in the WEM – Time to Switch?
Panel Discussion, Perth, 21 August 2013
- ACCC/AER Regulatory Conference**
Designing Customer Engagement
Speech, Brisbane, 25 July 2013
- Victorian Reinsurance Discussion Group**
Australian Mining – When Opportunities and Risk Collide
Speech, Melbourne, 1 March 2013
- NZ Downstream Conference**
Investment and Regulation
Panel Discussion, Auckland, 25 July 2013
- 2012**
- Rising Stars Competition Law Workshop**
Expert Evidence in Competition Cases
Speech, Sydney, 24 November 2012
- KPPU – Workshop on the Economics of Merger Analysis**
Theories and Methods for Measuring the Competitive Effects of Mergers
Speech, Bali, 19-21 November 2012
- University of South Australia – Competition and Consumer Workshop**
Reflections on Part IIIA of the Competition Act
Speech, Adelaide, 12 October 2012
- NZ Downstream Conference**
Lines company consolidation – what are the benefits and risks?
Panel discussion, Auckland, 6-7 March 2012
- 2011**
- Law Council of Australia - Competition Workshop**
Coordinated effects in merger assessments
Speech, Gold Coast, 27 August 2011

- ACCC Regulatory Conference**
Adapting Energy Markets to a Low Carbon Future
Speech, Brisbane, 28 July 2011
- 2010** **IPART Efficiency and Competition in Infrastructure**
Improving Performance Incentives for GTE's
Speech, Sydney, 7 May 2010
- Law and Economics Association of New Zealand**
Shareholder Class Actions – A Rising Trend in Australia
Speeches, Auckland and Wellington, 15-16 November 2010
- 2009** **ACCC Regulatory Conference**
Substitutes and Complements for Traditional Regulation
Speech, Gold Coast, 30 July 2009
- Minter Ellison Shareholder Class Action Seminar**
Investor Class Actions – Economic Evidence
Speech, Sydney, 18 March 2009
- Competition Law and Regulation Conference**
Commerce Amendment Act: Impact on Electricity Lines Businesses
Speech, Wellington, 27 February 2009
- 2008** **Non-Executive Directors**
Shareholder Class Actions in Australia
Speech, Sydney, 28 July 2008
- Mergers & Acquisitions: Strategies 2008**
Competition Law Implications for Mergers & Acquisitions
Speech, Sydney, 27 May 2008
- Institute for Study of Competition and Regulation**
Role of Merits Review under Part 4 and Part 4A of the Commerce Act
Speech, Wellington, 20 February 2008
- 2007** **Law Council of Australia - Trade Practices Workshop**
Hypothetical breach of s46
Economic expert in mock trial, 20 October 2007
- Assessing the Merits of Early Termination Fees, *Economics of Antitrust: Complex Issues in a Dynamic Economy*, Wu, Lawrence (Ed)**
NERA Economic Consulting 2007
- Assessing the Impact of Competition Policy Reforms on Infrastructure Performance**
ACCC Regulation Conference
Speech, Gold Coast, 27 July 2007



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