APPENDIX 2.1

AER Preliminary for Energex – Contribution to NEO and NEO preferable decision - Houston Kemp

HOUSTONKEMP
Economists

AER Preliminary Decision for Energex – Contribution to NEO and NEO Preferable Decision

A report for Allens

3 July 2015

Report Author

Greg Houston

Contact Us

Level 40, 161 Castlereagh Street
Sydney NSW 2000

Phone: +61 2 8880 4800

Disclaimer

Contents

Figures

1. Introduction

I have been asked by Allens to prepare this report on behalf of Energex Limited (Energex).

Allens has asked that I undertake an economic review of certain elements of the AER's preliminary decision in relation to Energex's distribution determination for the 2015-2020 regulatory control period (the preliminary decision) – those elements being its approach to the allowed rate of return and gamma.

I have been asked to undertake my review on the basis that the AER's approach in the preliminary decision indicates its likely approach to determining the rate of return, gamma and corporate income tax elements of its final decision for Energex's distribution determination for the 2015-2020 regulatory control period (the Final Decision). Allens has asked for my opinion on the extent to which such a decision would be likely to contribute to the achievement of the national electricity objective (NEO) and to represent a materially preferable NEO decision.

1.1 Scope of report

The essential focus of the review I have been asked to undertake is the economic reasoning that underpins the AER's preliminary decision in respect of the constituent components relating to the rate of return and gamma, assessed by reference to the NEO. It is not the purpose of my review to address in a detailed manner the individual elements of the preliminary decision. Indeed, Energex has separately commissioned a number of experts to review various matters arising in constituent components of the preliminary decision, and the reports prepared by those experts have been made available to me in order to prepare this report.[1]

Rather, my report assesses the extent to which various components of the preliminary decision satisfy the requirement that, where there are two or more possible decisions, the AER must make the one that will or is likely to contribute to the achievement of the NEO to the greatest possible degree. I have also been asked whether the errors identified by the various experts from which Energex has sought opinions, if corrected, would or would be likely to result in a materially preferable decision in terms of achievement of the NEO. Finally, in making this assessment I have also been asked to identify and evaluate the manner in which any constituent components of the decision that each expert has been asked to consider relate to each other and to the matters that each expert has raised as errors.

Allens' instructions to me are attached as Annexure A to my report.

1.2 Qualifications

I am a founding Partner of the economic consulting firm, HoustonKemp. Over a period of 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 Competition Tribunal and other judicial or adjudicatory bodies.

[1] A table of these expert reports can be found in Allens' instructions to me attached as Annexure A.

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.

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 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.

A copy of my curriculum vitae is attached as Annexure B.

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 CM7 Guidelines). I have read the CM7 Guidelines and agree to be bound by them. My declaration in compliance with the CM7 Guidelines is set out in section 6.

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

1.3 Structure of report

I have structured the remainder of my report as follows:

- in section 2, I summarise the essential requirements governing decision making under the National Electricity Law and the National Electricity Rules, and the questions that Allens has asked me to address in relation to the AER's preliminary decision;
- in section 3, I discuss the economic role of the NEO, the principles that should be adopted in a regulatory regime that promotes the NEO, and the role of the building blocks approach in meeting those principles and the NEO;
- in section 4, I present my assessment of the AER's preliminary decision and provide my opinion as to whether, having regard to a number of expert reports that I have reviewed, the AER's approach to determining the allowed rate of return and gamma contained therein is likely to meet the contribution to the NEO requirement;
- in section 5, I present my opinion as to whether the AER's approach in the preliminary decision is likely to meet the preferable designated reviewable regulatory decision requirement and, separately, should the AER's final decision contain the same constituent decisions as the preliminary decision, whether Energex's revised regulatory proposal would be likely to result in a materially preferable designated NEO decision; and
- finally, section 6, contains my declaration, in accordance with the CM7 Guidelines.

2. Context and Scope of Report

Before expanding on the scope and purpose of my report, it is helpful to summarise the context for the AER's preliminary decision, the requirements that govern decision making under the National Electricity Law (the law) and the National Electricity Rules (the rules) along with the particular questions that I have been asked to address in assessing the preliminary decision.

Necessarily, the summary I set out below is a condensation of that provided in Allens' instructions to me.[2] To the extent that there may be differences between my summary of the arrangements that govern the AER's distribution determination and that set out in the instructions to me, I confirm that I have taken Allens' instructions as providing definitive guidance.

2.1 National Electricity Objective

The national electricity objective or NEO forms a foundational reference point for decisions made by regulators under the NEL and its accompanying rules. The NEO states that: [3]

> The objective of this Law is to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to—
>
> (a) price, quality, safety, reliability and security of supply of electricity; and
>
> (b) the reliability, safety and security of the national electricity system.

I explain my understanding of the NEO in section 3. For the purpose of this context-setting part of my report, it is important to note that the final decision that the AER is to make in relation to Energex's revised regulatory proposal is a 'designated reviewable regulatory decision'.[4] Further, by nature of the rules that govern the AER's review of the revised regulatory proposal, such a decision includes a number of constituent components.

2.2 NEO reference point for AER decision making

The significance of the designated nature of the AER's decision and the fact of its constituent components is that, in making its final decision, certain requirements fall to be met by the AER. These are that the AER must:

- perform or exercise that function or power in a manner that will or is likely to contribute to the achievement of the NEO;
- specify the manner in which the constituent components of the decision relate to each other; and
- the manner in which that relationship has been taken into account in the making of the decision.

Further, in making a designated reviewable regulatory decision, when there are two or more possible decisions that could be made, the AER is required:

- to make the one that the AER is satisfied will contribute to the achievement of the NEO to the greatest possible degree; and
- to specify the reasons for the basis of that satisfaction.

Finally, in any merits review of the AER's final decision, the Australian Competition Tribunal (the Tribunal) is only entitled to vary or set aside the designated reviewable regulatory decision if it is satisfied that to do so

[2] Allens, *Letter to Greg Houston*, 2 July 2015.

[3] The law, part 7.

[4] Allens, *Letter to Greg Houston*, 2 July 2015.

will, or is likely to, result in a decision that is materially preferable to the AER's designated reviewable regulatory decision in terms of contributing to the achievement of the NEO.

2.3 Scope of report

I have been asked by Allens to review the AER's preliminary decision, and a number of expert reports on various aspects of the approach in preliminary decision, with a particular attention to errors identified by each expert. I have been asked to assume that the AER's final decision will contain the same constituent decisions as the preliminary decision. On the basis of this review, I have been asked to explain and/or provide my opinion on a variety of general and specific matters arising in relation to the NEO and elements of the rules that govern the assessment of Energex's distribution determination.

I characterise the questions I have been asked by Allens in to three substantive questions, which I summarise below.

2.3.1 Question 1

The general questions on which I have been asked – as an economist – to provide my opinion relate to:

- my understanding of the NEO requirement;
- the principles that should be adopted in a regime that promotes the NEO requirement, including the relevance of the Revenue and Pricing Principles set out in the law in this regard;
- the role of the building block approach in the rules and whether it is concordant with those principles and therefore the NEO requirement; and
- how, in my view, a failure to comply with those principles and/or rules as they relate to the building blocks approach is, or is likely, to result in a failure to meet the NEO requirement.

I address these questions in section 3 of my report.

In addition, I have also been asked to explain and provide my opinion on a number of questions arising directly from the AER's preliminary decision. In particular, I have been asked:

- to summarise any matters adopted by, and errors made by, the AER as identified in the expert reports that suggest the principles, building blocks or other rules have been offended;
- to summarise each material constituent component of the AER's decisions on the rate of return and gamma, and the overall impact on the business of Energex over the current regulatory control period; and
- to opine on whether, having regard to all of the material that I refer to above, the AER has met the NEO requirement.

I address this set of questions in section 4 of my report.

2.3.2 Questions 2 and 3

Drawing on this framework of considerations and analysis, Allens has also asked me to assess and report on two further substantive questions. These are whether, having regard to the reports prepared by the experts, whether:

- if the final decision contains the same constituent decisions as the preliminary decision, the AER will have met the requirement that, if two or more regulatory decisions could be made, it must make the one that contributes to the NEO to the greatest possible degree; and
- whether the errors identified in each of the reports, if corrected, would, or would be likely to, result in a materially preferable designated NEO decision overall.

In making the last of these assessments, I have been asked to include:

- if my assessment is affirmative, the basis upon which I make that assessment;
- a consideration of how the constituent components of the decision considered by the experts interrelate with each other and with the matters raised by the experts as errors;
- how the Revenue and Pricing Principles set out in the law have been taken into account; and
- in assessing the extent that corrections of the errors identified by the experts will contribute to the NEO, my consideration of the decision as a whole in respect of the topics reviewed by the experts.

I address these questions in section 5 of my report.

3. The NEO and Principles for its Promotion

In this section I set out my response to the general issues arising in the first set of questions put to me by Allens and summarised in section 2.3.1, ie, those corresponding to:

- the economic role of the NEO:
- the principles that should be adopted in a regulatory regime that promotes the NEO, including the Revenue and Pricing Principles; and
- the role of the building blocks under the rules in meeting those principles and the NEO.

3.1 National Electricity Objective

The national electricity objective or NEO is the foundational reference point for decisions made by regulators under the national electricity law and its accompanying rules. In other words, the law requires the AER to perform its functions and to exercise its power in a manner that will, or is likely to, contribute to the achievement of the NEO to the greatest degree ('the NEO requirement'). The NEO states that:[5]

> The objective of this Law is to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to—
>
> (a) price, quality, safety, reliability and security of supply of electricity; and
>
> (b) the reliability, safety and security of the national electricity system.

In my opinion, the fundamental architecture of the NEO has an economic foundation. I draw this conclusion because:

- the NEO explicitly identifies the promotion of efficiency (of 'investment in', 'operation' and 'use of' electricity services) as its foundational objective;
- the concept of efficiency has a similar foundational role in both economic theory and practice and so is well understood by economists; and
- none of the following items referenced as being the focus of the NEO act to compromise its efficiency objective.

Indeed, the then Minister for Energy noted in 2005 that the National Electricity Objective, which was then the national electricity market objective:[6]

> … is an economic concept and should be interpret as such.

Rather than acting to compromise the efficiency objective in the NEO, the reference to efficiency being 'for the long term interests of consumers…' and then 'with respect to…' a number of specified elements of electricity services serves to clarify:

- the ultimate beneficiary of such efficiency, ie, consumers;
- the relevant timeframe over which the efficiency objective should be interpreted, ie, the long term;
- the particular dimensions of electricity services to which the efficiency objective should be directed, ie, quality, safety, reliability and security of supply.

[5] The law, part 7.

[6] Hansard, South Australia House of Assembly, Feb 2005.

Again, when explaining the objective of the National Electricity Law in 2005, the then Minister for Energy explained that:[7]

> If the national electricity market is efficient in an economic sense the long term economic interests of consumers in respect of price quality, reliability, safety and security of electricity services will be maximised.

In the following sub-sections I explain in more detail the concept of economic efficiency and the guidance that is given by the clarifying phrases embedded in the NEO, each of which gives emphasis to particular dimensions of this foundational economic concept.

3.1.1 Dimensions of efficiency

'Efficiency' is a term of art in economics and is widely accepted by economists as having three distinct dimensions, being:[8]

- **productive efficiency**, which is concerned with the means by which goods and services are produced, and is attained when production takes place with the least-cost combination of inputs;
- **allocative efficiency**, which is concerned with what is produced and for whom, and is attained when the optimal set of goods and services is produced and allocated so as to provide the maximum benefit to society; and
- **dynamic efficiency**, which is concerned with society's capacity to achieve the efficient production and allocation of goods and services through time, in the face of changing productivity and/or technology (which reduces the cost of production and alters the optimal mix of inputs), the changing preferences of consumers (which alters the good and services that are desired the most by consumers), and the competing demands of consumers and producers in different time periods.

Each of these dimensions of efficiency is reflected in the architecture of the NEO. By way of explanation:

- the reference to efficient 'investment in' and 'operation of' electricity services refers to the productive dimension of efficiency, ie, the NEO will be promoted if decisions made under the law promote the supply of electricity services using the least cost combination of both capital and operating inputs;
- the reference to efficient 'use of' electricity services refers to the allocative dimension of efficiency, ie, the NEO will be promoted if decisions are made that give rise to a level and structure of prices that both recover the cost of making electricity services available and maximise the extent to which electricity services are allocated to those consumers that derive the greatest benefit from them, so as to maximise the benefit to society; and
- the reference to efficient 'investment in' electricity services and for the 'long term' interests of consumers refers to efficiency's dynamic dimension, ie, the NEO will be promoted if decisions are made that balance the pursuit of productive and allocative efficiencies for current consumers with the requirement to invest for productive and allocative efficiency gains in the long term.

The specific reference to the interest of consumers in the 'long term' and the reduced emphasis it implies for short term considerations recognises that in the application of frameworks for economic regulation there is a need to make trade-offs between competing objectives.

By way of example, the potential for short and long term efficiency objectives to be in tension with each other arises when a decision that may have the effect of increasing short term allocative efficiency (such as forcing a substantial reduction in prices paid by consumers may do), is not consistent with the achievement of long term productive or allocative efficiency – because it threatens the reliability of a service provider's operations or its plans for efficient investment in future reliability.

[7] Hansard, South Australia House of Assembly, Feb 2005.

[8] For further discussion of the dimensions of efficiency and their relation to public policy see Productivity Commission, *On efficiency and effectiveness – some definitions*, May 2013.

To summarise, the NEO is structured so as to encapsulate all three dimensions of efficiency that are familiar to economists, ie, productive, allocative and dynamic efficiency. As a matter of principle, efficiency can be assessed in both static (at a particular point in time) and dynamic (over a period of time) terms. However, by its reference to the 'long term' interests of consumers, the NEO is structured so as to clarify that the balance of emphasis is to be given to the long term, dynamic dimension of efficiency.

Indeed, this view is consistent with that of the expert panel appointed to review the limited merits review regime, which, by way of reference to the various dimensions of efficiency, stated that:[9]

> There are trade-offs among these various dimensions that need to be resolved by reference to some balancing or weighting of the different elements, and this balancing/weighting usually depends upon a value system beyond the notion of economic efficiency itself. It is the Panel's view that this is precisely what the reference to 'for the long-term interests of consumers' in the legislation provides.

3.1.2 Long term interests of consumers

The NEO specifies that the promotion of efficiency is 'for the long term interest of consumers of electricity'. I explain above that the specific reference in the NEO to the 'long term' serves to clarify that primary regard is to be had to the dynamic or long term dimension of efficiency. However, the particular reference to the 'interests of consumers' also warrants explanation.

In economics, the pursuit of efficiency generally goes to the benefit of society as a whole, measured as the sum of the economic surplus or benefit derived by producers and consumers. It follows that promoting economic efficiency does not necessarily promote the interests of consumers in particular. Indeed, the expert panel appointed to review the limited merits review regime noted that it is a manifest economic error to assume that promoting economic efficiency necessarily promotes long term consumer interests.[10]

One such example arises in circumstances where the benefits of enhancements to the productive efficiency of a business are captured wholly by the business itself, ie, in the form of higher profits for its owners, rather than lower prices for consumers. In this circumstance, the promotion of a productively efficient outcome would be 'for the interests of producers' and the allocative efficiency outcome may remain unchanged.

The structure of the NEO makes clear that the promotion of efficiency is 'for the interests of consumers', as distinct from any other particular societal interest group. While this specific reference to the interests of consumers is a helpful reinforcement, the reference earlier in the structure of the NEO to efficiency in the 'use of' electricity also serves to ensure that the promotion of efficiency is to be consistent with the interests of consumers.

However, I note that the 'interests of consumers' does not automatically equate with reductions in the profits earned by the business, since the ability of a business to earn additional profits in the short term provides an incentive for it to seek improvements in productive efficiency. This is in the long term interests of consumers, provided that such efficiency gains are ultimately reflected in the price, quality safety, reliability or security of supply. Similarly, a reduction in profits can also have adverse implications for investment in the electricity network.

3.1.3 Price, quality, safety, reliability and security of supply of electricity.

The NEO specifies that the relevant interests of consumers are those that encompass 'price, quality, safety, reliability and security of supply of electricity'.

Taken together, these considerations comprise the typical attributes of an electricity service. To the extent that they reflect informed preferences of consumers, these attributes might be interpreted as reinforcing the earlier reference in the NEO to the 'use of' electricity services, and so the allocative dimension of efficiency.

[9] Expert Panel, *Review of the Limited Merits Review Regime – Stage 2 Report*, Sep 2012, page 38.

[10] Expert Panel, *Review of the Limited Merits Review Regime – Stage 2 Report*, Sep 2012, page 4.

However, I interpret the explicit reference to these attributes of an electricity service to confirm that the NEO is not concerned with the promotion of matters that fall outside these attributes of an electricity service. By way of an example to the contrary, the NEO does not permit its efficiency focus to be extended so as to encompass external costs and benefits of the use of electricity services, such as its effect on the environment.

Indeed, this interpretation is consistent with a statement made in 2007 by the then Minister of Energy in relation to the electricity sector, ie:[11]

> It is important that the National Electricity Objective does not extend to broader social and environmental objectives.

3.1.4 Reliability, safety and security of the national electricity system.

The NEO also specifies that the relevant interests of consumers extend to the 'reliability, safety and security of supply of the national electricity system'.

While some aspects of this element of the NEO are similar to that which I explain in the previous section, ie, both elements refer to 'reliability, safety and security', it is distinct in that it relates to the national electricity system, rather than the supply of electricity itself.

In light of such a distinction, I interpret this element of the NEO to confirm and reinforce the importance of the national electricity system to the interests of consumers, and so reinforce the earlier reference in the NEO to efficient 'investment in' and 'operation of' electricity services.

3.1.5 Conclusion

Drawing together the various elements of the NEO that I explain above, I observe that its fundamental architecture is of an economic nature. Further, the NEO is structured so as to clarify that it is concerned with promoting all three dimensions of economic efficiency and that the primary regard is to be had to the longer term, dynamic efficiency considerations.

3.2 Principles necessary for promotion of the NEO

The administrative determination of the maximum level of revenue that may be collected (or prices that may be charged) by a provider of an infrastructure-based service with a substantial degree of market power – such as the services provided by a regulated electricity network – involves balancing two forms of potential inefficiency.

Put simply, the maximum level of revenue must be set so as to pass cost improvements on to consumers, thereby improving allocative efficiency, but not so much that it removes incentives to invest in future cost improvements, which enhance future productive and allocative efficiency. This trade-off is a consequence of the tension between long term productive efficiency and short term allocative efficiency. In other words, in the absence of competitive discipline on both allocative and productive efficiency, setting the maximum level of revenue that may be collected, and so prices charged, by a service provider involves choices between:

- attaining greater productive efficiency, the pursuit of which is compromised by the poor incentives created when regulation seeks substantially to eliminate opportunities for a service provider to benefit (in the form of temporarily higher profits) from gains in the efficiency of production; and
- attaining greater short term allocative efficiency, by seeking to ensure that prices reflect as closely as possible the efficient cost of supply and the willingness of buyers to purchase the product or service.

By way of example, if a regulatory regime requires the benefits of a productivity improvement to be captured entirely by consumers (in the form of lower prices), then short term allocative efficiency will be promoted at

[11] Hansard, South Australia House of Assembly, Sep 2007.

the expense of incentives for investment in longer term productive and allocative efficiency. By contrast, in a workably competitive market, the threat of competition balances these incentives so as to achieve the optimal combination of investment that will secure longer term productivity and lower prices for the benefit of consumers.

By reason of this essential trade-off, a regulatory framework that has the objective of promoting the NEO must encompass three core principles, namely:

- the service provider must have reasonable assurance that costs efficiently incurred – including a return on its capital costs – will be recovered over the life of the investment;
- consumers must be protected from the ability and incentive of the service provider to raise prices above the cost of supply in a substantial or sustained manner; and
- incentive mechanisms must be put in place that promote investment by the service provider to achieve productive efficiency gains.

The Revenue and Pricing Principles set out in section 7A of the law collectively reflect each of these well understood economic principles. The principle that a service provider must have a reasonable assurance that its efficient costs will be recovered is reflected more or less directly in section 7A(2), which states that:

> A regulated network service provider should be provided with a reasonable opportunity to recover at least the efficient costs the operator incurs in—
>
> (a) providing direct control network services; and
>
> (b) complying with a regulatory obligation or requirement or making a regulatory payment.

This principle is supplemented by those set out in sections 7A(5) and (4), which, respectively, recognise the need for an appropriate return on capital, and for past values of that capital to be recognised in future price setting processes, thereby offering assurance that costs will be recovered over future time.

The protection of consumers is recognised through the existence of processes in the rules for establishing regulated tariffs, which establish the maximum price that is to be paid for electricity network services.

The reference above to the recovery of *at least* the efficient level of costs is consistent with the inclusion in the regulatory framework of incentive mechanisms that promote investment to improve productive efficiency by allowing the service provider to retain some of the benefits of achieving productive efficiency gains. The requirement for incentive mechanisms is also explicitly recognised in the Revenue and Pricing Principles, in section 7A(3), which states that:

> A service provider should be provided with effective incentives in order to promote economic efficiency with respect to direct control network services the operator provides. The economic efficiency that should be promoted includes—
>
> (a) efficient investment in a distribution system or transmission system with which the operator provides direct control network services; and
>
> (b) the efficient provision of electricity network services; and
>
> (c) the efficient use of the distribution system or transmission system with which the operator provides direct control network services.

The two remaining revenue and pricing principles (being those set out at section 7A(6) and 7A(7)) reflect the existence of the trade-off between productive and allocative efficiency that I identify above and, in effect, allow consideration of the wider costs and risks of under/over investment and under/over utilisation of electricity network services when making that assessment.

In addition to the trade-off between productive and short-term allocative efficiency, I note that the regulatory task is made more challenging by the fact that the efficient outcome is itself constantly changing, and cannot

be objectively determined. Consumer preferences and technologies change over time, thereby altering the most efficient mix of goods and services. Production technology also changes over time, reducing production costs and expanding the potential means by which a given mix of goods and services may be produced. In consequence, what constitutes an efficient outcome is constantly evolving.

In practical terms, efficiency is an objective that businesses may be constantly working towards, without necessarily ever achieving, since the efficiency frontier itself is always moving, and there are constraints on the rate at which businesses can alter their mix of goods, services and production processes.

By contrast, the economics textbook definition of efficiency is underpinned by the concept of perfect competition. A perfectly competitive market ensures that businesses are always producing at least cost, and are constantly entering and exiting to ensure that those that remain are producing the optimal mix of goods and services at least cost over time.

However, beyond the textbook, companies' abilities to enter and exit markets, and to transform inputs into outputs efficiently will be constrained by their particular operating environments, and will vary over time. This is particularly true for businesses operating in industries that are capital intensive and where assets are long-lived, such as infrastructure businesses.

In addition, the attainment of perfect, frontier efficiency is not directly observable, and so the determination of what constitutes efficient expenditure is a matter of judgement. Under the construct of a perfectly competitive market, whether or not a business is operating on the efficiency frontier can be deduced from observing whether or not it continues to operate. Businesses that are not perfectly efficient will be undercut by businesses that are, so that inefficient businesses will no longer be able to sell their output. However, in practice businesses operate in markets that are less than perfectly competitive, and so this external gauge of whether a business is achieving frontier efficiency is not available.

In circumstances of less than perfect competition, the assessment of efficiency typically becomes a relative concept. A particular business' efficiency is measured by assessing its costs relative to those of other businesses. However, in practice, it is difficult to gauge the precise extent to which a business is performing efficiently.

Given these challenges, the role of effective incentive mechanisms within the regulatory framework is of particular importance in promoting the threefold efficiency objective at the foundation of the NEO. Consistent with this observation of principle, I noted above that the Revenue and Pricing Principles explicitly reference the need for the service provider to be provided with effective incentives in order to promote economic efficiency.

3.3 Building block approach reflects these principles

The rules require the application of a building blocks approach to determine the total revenue to be collected by a network service provider in each regulatory year of a regulatory control period. The building blocks are:[12]

1. indexation of the capital base;
2. a return on the projected capital base for the year;
3. depreciation on the projected capital base for the year;
4. the estimated cost of corporate income tax for the year;
5. increments or decrements for the year resulting from the operation of an incentive mechanism to encourage gains in efficiency;

[12] The rules, rule 6.4.3.

6. increments or decrements for the year arising from the application of a control mechanism in a previous regulatory control period or the arising from the use of assets that provide standard control services to provide certain other services; and
7. a forecast of operating expenditure for the year.

Taking the total revenue amount determined for each regulatory year, rule 6.18.5(g)(2) requires the revenue expected to be received from all tariffs to permit a network service provider to recover the expected revenue in the regulatory determination.

I highlight below the principal means by which the building block approach, applied in accordance with the rules, is consistent with the principles required to further the achievement of the NEO.[13]

3.3.1 The projected capital base

The building blocks approach involves determining a projected capital base, to which a rate of return is applied so as to calculate the return on the capital base, as well as depreciation. The projected capital base comprises two essential elements, being:

- the incorporation of capital expenditure incurred in the previous regulatory control period (subject to limited exceptions)[14] – thereby establishing the opening capital base; and
- a forecast of future prudent and efficient capital expenditure, which itself is derived by reference to – among other considerations – a forecast of the future demand for electricity services.

The rules calculate the opening capital base in a manner that guarantees the recovery of capital expenditure previously incorporated into the capital base notwithstanding that, in hindsight, that capital expenditure may or may not have turned out to be fully efficient.[15] This promotes economic efficiency in two ways, ie:

- it provides certainty to investors, and so encourages investment, which promotes dynamic and allocative efficiency; and
- it reduces the expected risk associated with investment, which reduces capital costs and promotes productive efficiency.

The rules also require that the projected capital base only include forecast capital expenditure that 'reasonably reflects' that which would be incurred by a prudent service provider acting efficiently to achieve the lowest sustainable cost of providing services.[16] The use of the term 'reasonably reflects' recognises that an assessment is required (ie, involving a degree of subjectivity), rather than the expenditure criteria reflecting an objective standard. This is consistent with the observation I make in section 3.2 above, that whether or not a business is operating efficiently cannot be directly observed.

It follows that the projected capital base component of the building blocks approach:

- promotes productive efficiency by ensuring services are produced at the lowest sustainable cost;
- promotes productive and allocative efficiency by ensuring capital expenditure forecasts are subject to regulatory review by reference to the criteria of prudence and efficiency, thereby avoiding the cost of over-investment; and
- promotes allocative efficiency by ensuring prices in a given regulatory year reflect only efficient capital expenditure in that year.

[13] I have not explicitly addressed the building block that relates to indexation of the asset base, since indexation is required by schedule 6.2.3(c)(4) of the rules.

[14] The rules, schedule 6.2.2A

[15] The rules, schedule 6.2.

[16] The rules, rule 6.5.7, including the capital expenditure objective in 6.5.7(a) and the capital expenditure criteria in 6.5.7(c).

3.3.2 The return on capital

The building block approach requires that the return on capital for each regulatory year be determined by multiplying the allowed rate of return by the projected capital base in the respective year. Further, the rules require that the allowed rate of return be determined such that it achieves the allowed rate of return objective, namely: [17]

> …the rate of return for a distribution network service provider is to be commensurate with the efficient financing costs of a benchmark efficient entity with a similar degree of risk as that which applies to the distribution network service provider in respect of the provision of standard control services.

It follows that in calculating the return on capital in accordance with the rules, application of this component of the building block approach will:

- provide assurance to investors that they will derive a return on investment commensurate with the degree of risk they bear, which encourages ongoing investment in electricity network infrastructure and services and so promotes productive and dynamic efficiency; and
- prevent investors from deriving excessive rates of return, which promotes allocative and dynamic efficiency.

3.3.3 Depreciation

The depreciation building block is calculated in each regulatory year by reference to the projected capital base for that year, and acts to return capital to investors. The rules governing the determination of the depreciation building block require that:

- the depreciation to be recovered over an asset's life not exceed the initial value of that asset, which promotes allocative and productive efficiency;[18] and
- the recovery of capital expenditure be spread over the economic life of the asset to which that expenditure relates, thereby promoting allocative and dynamic efficiency.[19]

3.3.4 The estimated cost of corporate income tax

The building blocks approach includes an explicit allowance for the recovery of the cost of corporate income tax,[20] which promotes efficiency by:

- providing assurance to investors that they will be able to recover the cost of income tax, which promotes productive efficiency;
- reducing the estimated cost of income tax by the value of imputation credits, which ensures investors are not overcompensated and so promotes allocative and dynamic efficiency; and
- calculating the corporate tax allowance by reference to the tax that would be payable by a benchmark efficient entity, which encourages efficient tax management and so promotes allocative and dynamic efficiency.

[17] The rules, rule 6.5.2(c).

[18] The rules, rule 6.5.5(b).

[19] The rules, rule 6.5.5(b).

[20] The rules, rule 6.5.3.

3.3.5 Operating expenditure

The rules relating to the building block calculation for operating expenditure require the determination of an allowance for operating expenditure equal to that which 'reasonably reflects' the operating expenditure criteria, ie:[21]

> (1) the efficient costs of achieving the operating expenditure objectives; and
>
> (2) the costs that a prudent operator would require to achieve the operating expenditure objectives; and
>
> (3) a realistic expectation of the demand forecast and cost inputs required to achieve the operating expenditure objectives.

The operating expenditure objectives are set out in the rules, and are to meet or manage the expected demand for standard control services over that period and to comply with all applicable regulatory obligations or requirements associated with the provision of standard control services.

Again, the reference to 'reasonably reflects' acknowledges that judgement is required in determining efficient costs, rather than this being an objective standard that can be directly observed.

The means by which the rules relating to the operating expenditure building block promote the NEO are:

- by providing reasonable assurance that operating costs – efficiently incurred – will be able to be recovered, thereby promoting allocative and productive efficiency; and
- by encouraging service providers only to incur operating expenditure that is efficient, thereby providing services at the lowest sustainable cost, which promotes productive efficiency.

3.3.6 Incentive mechanism to encourage efficiency improvements

The existence of a separate building block for 'one or more incentive mechanisms to encourage efficiency in the provision of services by the service provider' explicitly recognises the importance of providing incentives for efficiency in the application of economic regulation.[22]

This building block enables a regulator to offer service providers financial incentives that take the place of those that would otherwise be provided by competition, in order to promote all three dimensions of economic efficiency. These incentives also provide for a service provider to be financially penalised for inefficiency.

I described above that the provision of incentives is important in addressing the constant evolution as to what constitutes efficient outcomes, due to changes in technology and consumer preferences, the competing demands of market participants across time, and the inability to observe directly whether businesses are operating efficiently.

The inclusion of a separate building block for increments or decrements resulting from an incentive mechanism therefore promotes the NEO by providing incentives for businesses to improve longer term productive efficiency, provided that these efficiency gains are eventually reflected in price, quality, safety, reliability and security outcomes for consumers.

3.3.7 Other increments and/or decrements

The building block approach includes an allowance for revenue increments or decrements arising from the application of a control mechanism in the previous regulatory control period, which:

[21] The rules, rule 6.5.6(c).

[22] The rules, rule 6.4.3(a)(5).

- provides assurance to investors that their ability to recover their efficiently incurred costs and derive a rate of return on investment commensurate with those of a similar degree of risk will not be inhibited by the annual application of a control mechanism, which encourages ongoing investment in network infrastructure and so promotes dynamic efficiency; and
- prevents investors from deriving excessive rates of return due to the annual application of a control mechanism, which promotes allocative and productive efficiency.

Similarly, the building block approach provides for decrements to be made in respect of those assets that are used to provide both controlled and certain other services, the effect of which is to allow consumers of electricity services to derive a benefit in those circumstances. This allows the price of regulated services to reflect the particular cost of their provision, and so promotes allocative efficiency.

3.3.8 Summary

To summarise, the essential architecture of the building block approach promotes efficiency by means of two key elements, namely:

- deriving forecast total revenue as the sum of a service provider's expected costs; and
- ensuring that each cost building block draws reference – whether directly or through other, constituent elements of the rules – to the need for such costs to be those of a service provider acting efficiently and prudently, including through the operation of incentive arrangements designed to achieve such outcomes.

The former provides a reasonable assurance as to the ability of a service provider to recover its efficiently incurred expected costs, thereby promoting ongoing investment and dynamic efficiency. The latter serves to ensure that the framework of the rules operates for the long term benefit of consumers, consistent with productive, allocative and dynamic efficiency.

3.4 Building blocks and pricing principles necessary to promote the NEO

I described in section 3.3 above that each constituent component of the building blocks approach provides incentives and/or mechanisms that promote the threefold dimensions of efficiency, which represent the foundation of the NEO. In addition, the NEO requires that these components of the building blocks approach be applied such that, when there is tension between two elements of efficiency, the dynamic element is given preference so as 'to promote the long term interests of consumers'.

By way of an example to the contrary, consider the return on capital building block. The rate of return objective provides for a service provider to earn a rate of return that is commensurate with the efficient financing costs of a benchmark efficient entity with a similar degree of risk.[23] If this component was not complied with, say through the determination of a rate of return that was below efficient financing costs, then the incentives for investment would be weakened, since investors could not be expected to derive a return on investment commensurate with the degree of risk they bear. Weakened incentives for investment would give rise to the underfunding of expenditure necessary to ensure the safety and reliability of supply of electricity services, thereby risking:

- productive inefficiency, since safety and security would have to be provided over the long term through inefficient, second-best options, perhaps involving a disproportionate emphasis on operating expenditure;
- allocative inefficiency, since the insufficient rate of return would translate to lower prices, and so unsustainably greater demand for electricity services (compounding reliability issues), even though most customers may be willing and able to pay for greater reliability of supply; and

[23] The rules, rule 6.5.2(c).

- dynamic inefficiency, since the interests of consumers today have not been balanced with the interests of future consumers, say through compromising reliability of supply issues for future consumers that all consumers, future and present, would have been willing to pay to avoid.

It follows that a decision that fails to comply with any constituent component of the building blocks approach will also fail to promote the NEO because it does not provide effective incentives and/or mechanisms for the promotion of efficiency. Therefore, if the AER were to make such a decision, it would not meet the requirement to contribute to the achievement of the NEO.

4. Assessment of the AER's approach

In this section I present my assessment of certain aspects of the AER's approach to the allowed rate of return and corporate income tax in the preliminary decision, and in particular:

- summarise those matters adopted by, and errors made by, the AER in the preliminary decision, as identified by the expert reports that suggest the principles, building blocks or other rules have been offended;
- summarise each material constituent component of the preliminary decision on the rate of return and gamma, and the overall impact on the business of Energex over the forthcoming regulatory control period; and
- provide my opinion on whether, taking into account the whole of the matters raised by the experts, the AER is likely to have met the NEO requirement.

4.1 Allowed rate of return

The allowed rate of return building block is designed to ensure that an electricity network service provider receives a sufficient return on capital to meet the interest cost on its loans and to provide a return on equity to investors. The rate of return is multiplied by the value of the regulatory asset base to calculate the return on capital building block. The AER's approach to determining the allowed rate of return in the preliminary decision is:

- to estimate the expected **return on equity** using a foundation model approach based upon the Sharpe-Lintner CAPM, populated with separately estimated and assessed input parameters, and assessed in turn by reference to an alternative specification of the Sharpe-Lintner CAPM, independent equity risk premium estimates and the prevailing cost of debt;[24]
- to estimate the **return on debt** through a trailing average approach (currently transitioning from an on-the-day approach), estimated by reference to a simple average of data series published by the Reserve Bank of Australia and Bloomberg, adjusted to reflect a 10 year estimate along other adjustments, with a benchmark credit rating of BBB+ over a term of 10 years and averaged each year over a period set by the service provider;[25] and
- lastly, to determine the weight given to the return on equity and return on debt in the rate of return through a **gearing ratio**, which is assessed by reference to a group of companies comparable to a benchmark efficient network service provider. The AER has consistently adopted a gearing ratio of 60 per cent debt.[26]

I have been provided a number of expert reports that identify shortcomings and errors in the AER's approach to estimating the return on capital.[27] I summarise these reports below.

4.1.1 The return on equity

The AER's approach to the return on equity is to estimate both a point and range using the Sharpe-Lintner CAPM as a foundation model, populated with three, separately estimated input parameters, ie:[28]

[24] AER, *Preliminary Decision Energex Determination 2015-16 to 2019-20*, Attachment 3 – Rate of Return, April 2015, page 3-30 to 3-38.

[25] AER, *Preliminary Decision Energex Determination 2015-16 to 2019-20*, Attachment 3 – Rate of Return, April 2015, page 3-128.

[26] AER, *Preliminary Decision Energex Determination 2015-16 to 2019-20*, Attachment 3 – Rate of Return, April 2015, page 3-24.

[27] A list of these expert reports can be found in the Letter of Instruction attached as Annexure A1 to this report.

[28] AER, *Preliminary Decision Energex Determination 2015-16 to 2019-20*, Attachment 3 – Rate of Return, April 2015, page 3-31 and 3-32.

- a **risk free rate**, estimated using the yields on Commonwealth Government Securities (CGS) as reported by the Reserve Bank of Australia (RBA);
- an **equity beta**, for which a range is estimated using a set of Australian energy utilities and then a point selected using additional information, including empirical estimates from overseas energy networks and the theoretical principles of the Black CAPM; and
- a **market risk premium**, for which a range is estimated using a dividend growth model and historical excess returns and then a point selected using the AER's regulatory judgement.

Lastly, the AER assesses whether the foundation model point estimate achieves the rate of return objective by reference to other relevant information, including an alternative specification of the Sharpe-Lintner CAPM, equity risk premiums calculated by other market participants and the prevailing cost of debt.[29]

In accordance with this approach, the AER's preliminary decision is to apply an allowed rate of return on equity of 7.1 per cent for the forthcoming regulatory control period.[30]

I have been provided with expert reports prepared by SFG, NERA, Frontier, Incenta and United States (US) regulatory expert Professor Malko, which address two principal shortcomings in the design and application of this approach by the AER. In particular, these expert reports address:

- a shortcoming associated with the AER's design and application of a foundation model approach that relies upon the Sharpe-Lintner CAPM to the exclusion of other available, relevant information; and
- a second, related but distinct shortcoming in the AER's empirical application of the Sharp-Lintner CAPM.

I summarise the findings of the expert reports in relation to these two shortcomings below.

The foundation model approach

I noted above that the AER's approach to estimating the rate of return on equity adopts as its foundation model a specification of the Sharpe-Lintner CAPM. In SFG's expert opinion, the AER errs by adopting a foundation model to the exclusion of other potential models:[31]

> The AER persists with its exclusive reliance on the Sharpe-Lintner CAPM as the only model for estimating the required return on equity for the benchmark efficient entity by concluding that no other relevant financial model is sufficiently reliable to even warrant estimation. The AER concludes that the Black CAPM, Fama-French model and dividend discount models are all relevant models for estimating the required return on equity for the benchmark efficient firm, but that none of them should even be estimated.

In 2012, the AEMC made changes to the rules to alter the then prevailing regulatory practice of relying exclusively on the Sharpe-Lintner CAPM when estimating the required return on equity,[32] since it had concluded that this approach did not contribute fully to the achievement of the NEO. Under the rules applying previously, the Tribunal concluded that using a single, well-accepted model effectively guaranteed a reasonable estimate, to which the AEMC responded:[33]

> The Commission considered that this conclusion presupposes the ability of a single model, by itself, to achieve all that is required by the objective. The Commission is of the view that any

[29] AER, *Preliminary Decision Energex Determination 2015-16 to 2019-20*, Attachment 3 – Rate of Return, April 2015, page 3-37.

[30] AER, *Preliminary Decision Energex Determination 2015-16 to 2019-20*, Attachment 3 – Rate of Return, April 2015, page 3-9.

[31] SFG, *The required return on equity for the benchmark efficient entity*, Feb 2015, pages 8 to 9.

[32] SFG, *The required return on equity for the benchmark efficient entity*, Feb 2015, page 5.

[33] AEMC, *Rule determination – National Electricity Amendment (Economic regulation of network service providers) Rule 2012*, National *Gas Amendment (Price and Revenue Regulation of Gas Services),* Nov 2012, page 48, cited in SFG, *The required return on equity for the benchmark efficient entity*, Feb 2015, page 5.

> relevant evidence on estimation methods, including that from a range of financial models, should be considered to determine whether the overall rate of return objective is satisfied.

The rules now require the AER to have regard to relevant estimation methods, financial models, market data and other evidence.[34] However, the rules do not specify the weight the AER has to place on each piece of evidence. SFG highlights that the AER exploits this specification to maintain the approach it adopted under the previous rules, and in doing so disregards the requirement to have regard to relevant information, by 'inventing' the notion of primary and secondary evidence such that:[35]

> The evidence that the AER now adopts as its "primary evidence" is the same evidence that the AER used under the previous Rules.
>
> …the AER "has regard to" the secondary evidence in such a way that it has no material effect on the primary parameter estimates.

This practice has the result that:[36]

> The way the AER has regard to the secondary evidence effectively guarantees that it will have no effect. That is, the estimation process neuters all but the AER's favoured subset of "primary" evidence – effectively producing the same outcome that would have been obtained under the previous Rules.

Frontier further explains that this result is achieved by an approach that deliberately widens the range of estimates supported by the secondary evidence, which Frontier denotes 'other' evidence, with the effect that:[37]

> …the "other" evidence is considered to support such a wide range of estimates that it is effectively uninformative and can never overturn the initial estimate from the "primary" subset of the relevant evidence.

Frontier explains that the Sharpe-Lintner CAPM, the foundation model in the preliminary decision, has been shown to have limitations in its ability to explain patterns in realised equity returns, ie, Frontier states that:[38]

> In the words of the AER, the model has "limitations" and "empirical shortcomings". Indeed, it is the failings of the Sharpe-Lintner CAPM that have led to the development of other financial models that address the main limitations and empirical shortcomings. That is, because the Sharpe-Lintner CAPM does not work very well in practice, researchers have sought to produce new models that work better.

Frontier explains that these shortcomings and empirical limitations include:[39]

> **Low beta bias.** The Sharpe-Lintner CAPM systematically underestimates the required return for stocks with beta estimates less than one. This issue can be specifically addressed by using the Black CAPM…
>
> **High book to market bias.** The returns on stocks with high book to market ratios are systematically higher than predicted by the Sharpe-Lintner CAPM. This can be addressed by using the Fama-French model…

[34] The rules, rule 87(5)(a).

[35] SFG, *The required return on equity for the benchmark efficient entity*, Feb 2015, page 2.

[36] SFG, *The required return on equity for the benchmark efficient entity*, Feb 2015, page 2.

[37] Frontier, *Key issues in estimating the return on equity for the benchmark efficient entity*, June 2015, page 10.

[38] Frontier, *Key issues in estimating the return on equity for the benchmark efficient entity*, June 2015, page 14.

[39] Frontier, *Key issues in estimating the return on equity for the benchmark efficient entity*, June 2015, page 21.

An empirical assessment by NERA of the performance of the AER's Sharpe-Lintner CAPM demonstrates that these limitations are present in that empirical specification of the model:[40]

> …the models tend to underestimate the returns required on low-beta equity portfolios and overestimate the returns required on high-beta equity portfolios

NERA highlights that this finding is not a novel result:[41]

> It has been known for well over 40 years that there is empirical evidence against the SL CAPM.

If these limitations remain unaccounted for,[42] it is Frontier's expert opinion that:[43]

> In our view, the AER's decisions on these cost of equity issues mean that the AER's allowed return is less than the prevailing cost of funds for a benchmark energy network and does not reflect the best estimate.

SFG sets out how the empirical limitations of the Sharpe-Lintner CAPM-based foundation model approach can be addressed through a multi-model approach, combining estimates from financial models the AER notes as relevant but does not estimate. In particular, SFG explains that:[44]

> All of the relevant estimates can then be compared and weighted according to the relative strengths and weaknesses of each. This approach is clear, reasoned and transparent. In our view, this approach should be used to produce the best estimate of the required return on equity for the benchmark efficient entity…

Such an approach is also recommended by US regulatory expert Professor Malko, who explains that it is widely adopted in energy utility regulatory decisions across the US, ie:[45]

> In my opinion, to ensure the most appropriate decision, it is important to consider the results of several models. In my opinion, using several models helps compensate for the drawbacks in any single model and increases the probability that the appropriate, and reasonable range is identified.
>
> I have observed that in the United States, regulators and expert financial witnesses generally use multiple methods, at least two, when determining a reasonable point estimate for the cost of common equity for a regulated energy utility.

SFG and Frontier identify an array of inconsistencies and errors in the AER's reasoning for not using estimates of the Black CAPM, Fama-French model and dividend discount model in its estimate of the required return on equity. By way of example:

> …the AER's approach is to estimate only the Sharpe-Lintner model, but to adjust the beta parameter in order to have regard to the "theoretical principles underpinning" the Black CAPM. In our view, this involves an implementation that is not true to either model. Our view is that each model should be estimated as it was intended to be estimated.[46]
>
> The AER states that the estimates from the Fama-French model can vary across different estimation periods and techniques. In response, we note that this applies to all models that require the estimation of parameters…the fact that some estimates of the Fama-French model might produce inconsistent results is not a basis for dismissing all estimates.[47]

[40] NERA, *Empirical performance of Sharpe-Lintner and Black CAPMs*, Feb 2015, page v.

[41] NERA, *Empirical performance of Sharpe-Lintner and Black CAPMs*, Feb 2015, page i.

[42] SFG, *The required return on equity for the benchmark efficient entity*, Feb 2015, page 1.

[43] Frontier, *Key issues in estimating the return on equity for the benchmark efficient entity*, June 2015, page 7.

[44] SFG, *The required return on equity for the benchmark efficient entity*, Feb 2015, page 16.

[45] Malko Energy Consulting, *Statement of Dr J. Robert Malko*, June 2015, page 10.

[46] SFG, *Beta and the Black Capital Asset Pricing Model*, Feb 2015, page 4.

[47] SFG, *Using the Fama-French model to estimate the required return on equity*, Feb 2015, page 2.

> The AER cites certain empirical studies to support its rejection of other models. However, the only reasonable interpretation is that the body of available evidence supports the empirical performance of other models over the Sharpe-Lintner CAPM. In some cases, papers that the AER cites as supporting the Sharpe-Lintner CAPM actually do the opposite. [48]

In the experts' opinions, the AER's reservations in relation to these financial models does not justify removing them from consideration altogether, and that doing so constitutes a failure to take into account relevant information as required by the rules.[49]

The Sharpe-Lintner CAPM specification

Notwithstanding the shortcomings of the AER's foundation model approach, the expert reports provided to me identify a number of errors in the AER's empirical specification of the Sharpe-Lintner CAPM, which amount to shortcomings in the AER's application of its chosen foundation model.

SFG highlights that the process by which the AER arrives at an estimate of beta, a parameter input to the Sharpe-Lintner CAPM, fails to have proper regard to information the AER identifies as relevant, ie:[50]

> …the AER's beta point estimate of 0.7 relies entirely on the AER's conclusion that its initial range of 0.4 to 0.7 acts as a binding constraint on its other considerations, namely the Black CAPM, international listed firms, and predictability.

I understand from both SFG and Frontier that neither Black CAPM estimates of beta nor those arising from international evidence would necessarily fall within the 0.7 upper bound provided by the AER's small sample of Australian evidence. Indeed, analysis conducted by SFG causes it to conclude:[51]

> …we [SFG] consider that both of these sources of evidence support equity beta estimates above 0.7. However, at no stage of its estimation process does the AER ever estimate what estimate of beta would be supported by either of these pieces of relevant evidence.

Further, SFG and Frontier highlight that this process gives undue weight to domestic evidence, which does not produce a robust and reliable estimate. In particular, the AER errs by using a set of comparator firms containing only four domestic companies and five companies that no longer exist, and that therefore cannot reflect prevailing conditions in financial markets, despite the existence of relevant international evidence.[52]

Frontier highlights further errors in the AER's approach to estimating beta, including that it did not take account of systematic risk introduced by the benchmark efficient entities' high leverage ratio, which results partly from the AER misunderstanding an earlier report by Frontier,[53] and by the growth of disruptive technologies in the energy industry.[54]

SFG also highlights that the AER errs with respect to its estimate of the market risk premium (MRP), a second input parameter to the Sharpe-Lintner CAPM, ie, SFG states that:[55]

---

[48] Frontier, *Key issues in estimating the return on equity for the benchmark efficient entity*, June 2015, page 7.

[49] SFG, *The required return on equity for the benchmark efficient entity*, Feb 2015, pages 1 to 3; NERA, *Empirical performance of Sharpe-Lintner and Black CAPMs*, Feb 2015, pages v to vi, and Frontier, *Key issues in estimating the return on equity for the benchmark efficient entity*, June 2015, pages 6 to 10.

[50] SFG, *Beta and the Black Capital Asset Pricing Model*, Feb 2015, page 6.

[51] SFG, *The required return on equity for the benchmark efficient entity*, Feb 2015, page 10.

[52] SFG, *Beta and the Black Capital Asset Pricing Model*, Feb 2015, pages 10 to 12; and Frontier, *Key issues in estimating the return on equity for the benchmark efficient entity*, June 2015, page 9.

[53] Frontier, *Assessing risk when determining the appropriate rate of return for regulated energy networks in Australia*, July 2013.

[54] Frontier, *Review of the AER's conceptual analysis for equity beta*, June 2015, pages 2 and 3.

[55] SFG, *The required return on equity for the benchmark efficient entity*, Feb 2015, page 10.

> The AER places high reliance on the historical difference between market returns and government bond yields (that is, historical excess returns) which leads to the cost of equity being under-stated at present, with government bond yields being at historic lows.

In relation to the practical implications of these errors, SFG observes that such an approach cannot produce reasonable estimates in non-normal market conditions, such as during a financial crisis or when risk-free rates are at unprecedented lows, ie, the prevailing market conditions at the time of the last and current rounds of regulatory determinations, respectively.[56]

A literature review by Incenta of 53 independent expert reports on the cost of equity also highlights that the AER's 'mechanistic Sharpe-Lintner CAPM approach' does not produce a reasonable estimate in prevailing market conditions. Its analysis finds that the average market-wide return over the previous two years, being a period with historically low interest rates, calculated by these reports is:[57]

> …46 basis points higher than the average over the period that is implied by the AER's current methodology (the 'spot' risk free rate plus a 6.5 per cent market risk premium) before accounting for dividend imputation (meaning the true difference is larger). During this period – which also experienced material fluctuations in the risk free rate – the difference was larger than the average during the times when the risk free rate was lower than the average.

Analysis by NERA highlights that the AER also errs by using an estimate of the MRP that uses a geometric mean of a sample of annual excess returns to the market portfolio in any one year, which will produce a downwardly biased estimate of the revenue the market requires in any one year. Specifically, NERA explains that:[58]

> An estimate of the MRP that relies solely on estimates that use arithmetic means will provide a materially better estimate than an estimate that relies either fully or in part on geometric means.

I understand from the opinions of these experts that the AER's empirical specification of the Sharpe-Lintner CAPM produces an estimate of the required return on equity that will not be commensurate with the efficient financing costs faced by a benchmark efficient entity over the current regulatory period.[59]

Conclusion

SFG, NERA, Frontier, Incenta and Professor Malko all conclude that the foundation model approach used by the AER does not have proper or sufficient regard to relevant information, including financial models and market data, as is required by the rules.

For financial models other than the Sharpe-Lintner CAPM, in these experts' opinions, the AER's reservations regarding other financial models does not justify removing them from consideration altogether, and that its erroneous approach originates from a view that the Sharpe-Lintner CAPM should be relied upon unless the AER can be persuaded to depart from this position. Put another way, the approach stems from a mistaken view that financial models to be used for estimating the return on equity are mutually exclusive and that the Sharpe-Lintner CAPM is the superior model.

The expert reports provided to me highlight that the result of this mistaken thinking is that:

[56] SFG, *The required return on equity for the benchmark efficient entity*, Feb 2015, page 9.

[57] Incenta, *Further update on the required return on equity from Independent expert reports*, Feb 2015, page 1.

[58] NERA, *Historical estimates of the market risk premium*, Feb 2015, page ii; a more recent report by NERA, which responds to criticisms raised by the AER in its recent decisions, maintains this position and highlights that it is consistent with the advice of consultants to the AER, see NERA, *Further Assessment of the Historical MRP: Response to the AER's Final Decisions for the NSW and ACT Electricity Distributors*, June 2015, pages iv to vi.

[59] See SFG, *The required return on equity for the benchmark efficient entity*, Feb 2015, page 10; NERA, *Historical estimates of the market risk premium*, Feb 2015, page i; and Incenta, *Further update on the required return on equity from Independent expert reports*, Feb 2015, page 2.

- the AER's approach does not have regard to prevailing market conditions, and does not produce a reasonable estimate of the required return on equity in non-normal market conditions; and
- therefore, the estimate produced by the AER does not represent the efficient financing costs of the benchmark efficient entity and will not represent efficient financing costs in non-normal market conditions, which includes current prevailing market conditions.

The various expert reports also conclude that the process by which the AER incorporates information that it regards as secondary ensures that it will have no material effect on the estimate produced by the AER's foundation model.[60] The result is that the AER's approach will consistently provide an estimate of the required return on equity that is less than the efficient financing costs of the benchmark efficient entity.

The various experts' evidence shows that the required return on equity calculated under the approach taken by the AER in its preliminary decision will undercompensate investors, given the perceived level of risk. It follows that this results in:

- an allowed rate of return that does not meet the allowed rate of return objective;
- compromise to the promotion of ongoing investment in the network, and so to dynamic or long term productive efficiency; and
- compromise to the promotion of the long term interests of consumers.

The result of the two essential shortcomings highlighted by the expert reports is that the approach to the required return on equity in the preliminary decision does not meet the NEO requirement.

Further, I understand from SFG, Frontier and Professor Malko that a multi-model approach combining estimates from the Sharpe-Lintner CAPM with estimates from the Black CAPM, Fama-French model and dividend discount model analysis would overcome the empirical limitations of the Sharpe-Lintner CAPM-based foundation model approach, ie:[61]

> In our [Frontier's] view, models other than the SL CAPM are also relevant and should be estimated with those estimates used to inform the allowed return on equity. Our preferred multi-model approach simply estimates each of the relevant models and assigns each weight based on their relative strengths and weaknesses.

Application of this approach by Frontier, which in November 2014 merged with SFG, calculates a required rate of return on equity of 10.04 per cent for the current regulatory control period.[62] This is a materially different result from the AER's estimate of 7.1 per cent,[63] calculated over the same time period.

In my opinion, it follows that there exists a decision to be made as to whether adopting an alternative approach to the one taken by the AER in the preliminary decision would make a greater contribution to the NEO.

4.1.2 The return on debt

The AER's preliminary decision is to transition, over a ten year period, from the previous 'on the day' approach to determining the return on debt to a trailing average portfolio approach. Under the 'on the day' approach that was previously applied to Energex, the return on debt is determined by reference to prevailing yields at the time of the regulatory decision. In contrast, the trailing average approach involves estimating the return on debt equal to the average return on debt over a historical period of ten years prior to the

[60] See SFG, *The required return on equity for the benchmark efficient entity*, Feb 2015, page 2.

[61] Frontier, *An updated estimate of the required return on equity*, June 2015, page 3, footnote 1.

[62] Frontier, *An updated estimate of the required return on equity*, June 2015, page 3; Frontier calculates this estimate using a risk free rate based on a 20 day averaging period ending 22 May 2015.

[63] AER, *Rate of return fact sheet*, Apr 2015, page 2.

commencement of a regulatory year. The AER's preliminary decision is to adopt a transition, whereby, over a ten year period: [64]

- the trailing average approach is adopted progressively; and
- the on-the-day approach is progressively phased out.

For each regulatory year, the AER proposes to estimate the prevailing rate of return on debt as the simple average of observed yields on debt with a BBB+ credit rating and maturity of 10 years, over a period proposed by Energex, which is to be at least 10 days and no greater than 12 months. The prevailing rate of return on debt is to be estimated from data published by the Reserve Bank of Australia and the Bloomberg data service.

I have been provided with two expert reports by Queensland Treasury Corporation (QTC) and an expert report by Frontier that identify fundamental shortcomings in the design and application of this approach by the AER. In particular, the expert reports assess the AER's motivation for implementing a transitional approach and its choice of trailing average approach for estimating the return on debt. I summarise the findings of these expert reports below.

The transitional approach

The AER considers that, under the 'on the day' approach previous applied to Energex, a benchmark efficient entity would have adopted a hybrid strategy to debt financing, which involves:

- issuing floating rate debt (or fixed rate debt converted to floating rate debt using interest rate swaps) on a staggered maturity cycle; and
- using interest rate swaps to fix the risk free rate at the beginning of each regulatory period.[65]

Frontier agrees with the AER that, under the hybrid approach:[66]

> …the risk free rate component of the benchmark efficient entity's actual return on debt matching the on-the-day rate, while the debt risk premium component each year would reflect the historical average of the debt risk premiums over the previous 10 years.

Consistent with this statement, Frontier highlights the AER's conclusion that the benchmark efficient entity will enter the forthcoming regulatory period with a debt risk premium (DRP) that reflects the ten year trailing average and, under the new rules, it will continue to have a DRP that reflects a ten year trailing average.[67]

Frontier then explains that, if the preliminary decision was therefore to set the DRP component of the return on debt equal to a ten year trailing average with no transition, there would be no windfall gain or loss in future regulatory periods. [68] Notwithstanding, the AER imposes a transition to the trailing average approach where:[69]

> …the primary purpose of the proposed transition is to deliberately impose a windfall loss on the regulated business to claw back (or "balance out") what the AER considers to have been a windfall gain in the prior regulatory period.

[64] AER, *Preliminary Decision Energex distribution determination 2015-16 to 2019-20 – Attachment 3 (Rate of return)*, April 2015, page 3-133 to 3-136.

[65] Frontier, *Cost of Debt Transition*, June 2015, paragraph 20.

[66] Frontier, *Cost of Debt Transition*, June 2015, paragraph 27.

[67] Frontier, *Cost of Debt Transition*, June 2015, paragraph 32.

[68] Frontier, *Cost of Debt Transition*, June 2015, paragraph 47 to 49.

[69] Frontier, *Cost of Debt Transition*, June 2015, paragraph 99.

Similarly, QTC explains that:[70]

> The primary purpose of AER's debt risk premium (DRP) transition is to intentionally produce an allowed return on debt that is lower than the efficient cost of debt under the hybrid strategy to offset the windfall gains that are alleged to have accrued to service providers under the on-the-day approach.

QTC calculates that Energex would have made a net windfall loss through application of the hybrid approach over the period that the 'on the day' approach applied to Energex. Further, QTC calculates that:[71]

> Based on the 1.65 per cent DRP implicit in the allowed return on debt in the Preliminary Decisions, the AER's proposed transition will impose additional losses on Energex and Ergon Energy equal to 3.9 per cent and 3.8 per cent of the opening PTRM debt balance for 2015–16 in present value terms respectively. The present value of the combined expected future losses is $495 million.

Frontier highlights that to impose a windfall loss on Energex to offset perceived gains in a prior regulatory period is inconsistent with the rules. Specifically, Frontier explains that:[72]

> The Rules do not refer to the deliberate maintenance of a difference between the allowed return on debt and the return on debt of a benchmark efficient entity in order to rectify the regulator's perception of windfall gains or losses from prior regulatory periods. By contrast, they specifically refer to the desirability of matching the allowed return on debt to the cost of debt borne by the benchmark efficient entity.

Similarly, QTC highlights that, regardless of whether or not the AER is legally permitted to consider past outcomes:[73]

> The allowed rate of return objective still requires the AER to determine a return on debt that is commensurate with the efficient debt financing costs of a benchmark efficient entity.

Notwithstanding, Frontier highlights that:[74]

> …even if it was appropriate for the AER to impose a windfall loss in the forthcoming regulatory period to square up a perceived windfall gain in the previous period:
>
> a) The AER has performed no calculations to ensure that the imposed windfall loss and the perceived windfall gain will, in fact, offset; and
>
> b) The AER has not considered whether there may be windfall gains or losses from previous regulatory periods that should also be considered in any squaring up calculations.

Frontier concludes that:[75]

> …it is erroneous for the AER to claim that its proposed transition "minimises the potential mismatch between the allowed and actual return on debt of the benchmark efficient entity." Rather, the proposed transition deliberately embeds a mismatch in relation to the DRP, where that mismatch will persist for the duration of the 10-year transition period.

On the basis of the expert opinions provided by Frontier and QTC, I understand that the preliminary decision to impose a transition to the trailing average approach is likely to give rise to a return on debt that is less than

[70] QTC, *Return on debt transition analysis*, June 2015, page 1.

[71] QTC, *Return on debt transition analysis*, June 2015, page 2.

[72] Frontier, Cost of Debt Transition, June 2015, paragraph 66.

[73] QTC, *Return on debt transition analysis*, June 2015, page 1.

[74] Frontier, *Cost of Debt Transition*, June 2015, paragraph 102.

[75] Frontier, *Cost of Debt Transition*, June 2015, paragraph 102.

the debt financing costs of a benchmark efficient entity with a similar degree of risk as that which applies to Energex.

A simple or weighted trailing average

Notwithstanding QTC's conclusion that a transitional approach is unlikely to achieve efficient financing costs, QTC also provides analysis showing that the trailing average approach proposed by the AER:[76]

> …will not promote the allowed rate of return objective because any meaningful estimate of efficient debt financing costs must reflect the costs that can be realistically achieved in the market.

QTC explains that the costs estimated by the AER's 'simple' trailing average approach cannot be realistically achieved because:[77]

> A borrower can only issue debt at the prevailing cost of debt. As a simple trailing average assumes that a borrower can issue debt at historical interest rates, this approach will not provide correct compensation for increases in the benchmark debt balance.

Further, QTC explains that by applying an approach that does not reflect debt financing costs that can realistically be achieved, the AER is unlikely to promote efficient investment in electricity network services for the long-term interest of consumers, ie, QTC states that:[78]

> If the prevailing cost of debt is higher than the average cost of debt over the last 10 years, a simple trailing average will under-compensate a service provider for funding capex at the prevailing cost of debt

However, if the prevailing cost of debt is lower than the 10 year average:[79]

> …a simple trailing average will over-compensate a service provider for increases in the debt balance at the expense of consumers.

QTC concludes that a trailing average approach with weights based on the annual percentage changes in the debt balance in the AER's forecast post-tax revenue model, such as that proposed by Energex:[80]

> …will produce a better estimate of the return on debt and provide better capex incentives in the most likely scenario (ie, actual capex equals forecast capex) and in the greatest number of plausible alternative scenarios (ie, actual capex is consistently greater than 50 per cent of forecast capex) compared to a simple trailing average.

Conclusion

I understand from Frontier and QTC that the transitional approach adopted by the AER in the preliminary decision is not necessary for the rate of return on debt to be commensurate with the efficient financing costs of the benchmark efficient entity. Notwithstanding, if a transitional approach was to be adopted, the transitional debt management strategy that the benchmark efficient entity would adopt in relation to the current regulatory control period is materially different from that defined by the AER.

In Frontier and QTC's opinion, the AER is misguided in adopting its transitional approach, which is justified substantively on the basis that it may correct past regulatory errors, because it is impermissible under the rules and does not promote efficient use of and investment in electricity network services. The result of this misguided attempt to correct past regulatory errors is that the AER:

[76] QTC, *PTRM-weighted trailing average approach*, June 2015, page 1.
[77] QTC, *PTRM-weighted trailing average approach*, June 2015, page 3.
[78] QTC, *PTRM-weighted trailing average approach*, June 2015, page 2.
[79] QTC, *PTRM-weighted trailing average approach*, June 2015, page 2.
[80] QTC, *PTRM-weighted trailing average approach*, June 2015, page 2.

- adopts a transitional approach that will undercompensate Energex for the cost of debt financing, regardless of the efficient debt management strategy adopted by Energex under the previous 'on the day' approach;
- produces an estimate that will not represent the efficient financing costs of the benchmark efficient entity and so will not meet the allowed rate of return objective;
- adopts a transitional approach that compromises the promotion of ongoing investment in the network, and so too dynamic or long term productive efficiency; and
- compromises the promotion of the long term interests of consumers.

It follows that the principal shortcoming highlighted by the expert reports is that the approach to the required return on debt in the preliminary decision does not meet the NEO requirement.

On the basis that the AER considers that a benchmark efficient entity would adopt a hybrid strategy to raising debt, it follows that no transition is necessary in relation to the DRP component of the return on debt.

Further, I understand from QTC that an approach that compensates increases in the post-tax revenue model debt balance at the prevailing cost of debt, rather than at the average cost of debt over the last 10 years as proposed by the AER's 'simple' trailing average approach, would provide an allowed rate of return on debt that is realistically achievable by and commensurate with the efficient financing costs of the benchmark efficient entity.

Application of this approach by Energex in its revised regulatory proposal gives rise to a required rate of return on debt of 5.7 per cent on an annualised basis for 2015-16 of the current regulatory control period.[81] This is a higher than the AER's estimate in the preliminary decision of 5.01 per cent.[82]

In my opinion, it follows that there exists a decision to be made as to whether adopting an alternative approach to the one taken by the AER in its preliminary decision would make a greater contribution to the NEO.

4.2 Corporate income tax

The corporate income tax building block is designed to ensure that am electricity service provider receives a revenue allowance for the cost of corporate income tax. The AER's approach to determining the cost of corporate income tax is set out in the rules by reference to an estimate of the taxable income that would be earned by a benchmark efficient entity, the expected statutory income tax rate and the value of tax imputation credits.[83]

4.2.1 Gamma

Dividends paid to equity holders from Australian post-tax profits may have tax imputation credits attached to them, which capture the corporate income tax already paid on the company's profits. A proportion of these imputation credits will be redeemed against the personal tax obligations of domestic equity holders.[84] The return that domestic equity holders require will therefore be a combination of the return provided in the form of dividends and capital gains as well as the value they gain in imputation credits, which is denoted by gamma (γ).[85]

[81] Energex, *Revised Regulatory Proposal*, July 2015, page 11.

[82] AER, *Preliminary Decision Energex distribution determination 2015-16 to 2019-20 – Attachment 3 (Rate of return)*, April 2015, page 3-9.

[83] The rules, rule 6.5.3.

[84] SFG, *Estimating gamma for regulatory purposes*, Feb 2015, page 5.

[85] SFG, *Estimating gamma for regulatory purposes*, Feb 2015, page 6.

It follows that the rate of return on equity and gamma are interrelated, since they collectively determine the return that equity investors require for investing, and the revenue that the service provider needs to collect from customers in order to deliver this expected return. The AER calculates gamma equal to:[86]

$$\gamma = F \times \theta$$

Where:

- F represents the distribution rate, ie, the proportion of credits that are distributed to investors; and
- θ (theta) represents the value of distributed imputation credits.

In the preliminary decision the AER interprets the value of imputation credits, ie, gamma, to be the rate of utilisation by equity holders, which results in a value of gamma equal to 0.4.

I have been provided with reports by SFG and Frontier that identify two principal shortcomings in the AER's approach to estimating gamma. I summarise these reports below.

The value of imputation credits

The expert reports provided to me highlight a shortcoming in the AER's interpretation of theta, which gives rise to a biased estimate of gamma and an inconsistency between the corporate income tax and allowed rate of return building blocks.

The rules require that gamma 'is the value of imputation credits'.[87] As SFG explains, until the AER published its Guideline in 2013 it was uniformly accepted across Australian regulatory bodies that gamma represents the value, as in 'worth', of imputation credits to investors.[88]

However, in its preliminary decision the AER interprets theta to be the proportion of credits that are likely to be redeemed,[89] rather than the value of distributed imputation credits. SFG notes that the approach to estimating theta will depend on the particular conceptual definition of theta adopted and that the two alternate definitions above:[90]

> …are inconsistent with each other and each would be estimated by different methods.

Frontier explains that these two definitions of theta determine the appropriate choice of estimation method, ie:[91]

> If the value interpretation is adopted, we should use estimation methods that measure the value of credits (such as dividend drop-off analysis), and if the redemption interpretation is adopted we should use estimation methods that measure the proportion of credits that are redeemed (such as equity ownership and tax statistics).

In SFG's opinion, the appropriate definition of theta considers the degree to which the two above definitions are consistent with the building block approach prescribed in the rules and, in particular, the rate of return building block. SFG explains that:[92]

> Under the building block approach, the regulator makes an estimate of gamma and then reduces the return that is available to investors from dividends and capital gains from the firm accordingly. In my view, it is clear that this is consistent with a *value* interpretation. If the *value* of foregone

[86] SFG, *Estimating gamma for regulatory purposes*, Feb 2015, page 5.

[87] The rules, rule 6.5.3.

[88] SFG, *Estimating gamma for regulatory purposes*, Feb 2015, pages 5 and 6.

[89] Frontier, An appropriate regulatory estimate of gamma, June 2015, paragraph 45 and 48.

[90] SFG, *Estimating gamma for regulatory purposes,* Feb 2015, page 12.

[91] Frontier, *An appropriate regulatory estimate of gamma*, June 2015, page 8.

[92] SFG, *Estimating gamma for regulatory purposes,* Feb 2015, page 2 (emphasis original).

> dividends and capital gains is greater than the *value* of received imputation credits, the investors will be left undercompensated, and vice versa.

Frontier highlights that gamma, and therefore theta, should be interpreted in a manner consistent with the cost of equity due to the interrelationship between imputation credits and the return on equity. Specifically, Frontier states that:[93]

> … it is abundantly clear that there are three components to the return on equity – dividends, capital gains, and imputation credits – and that a greater assumed value of imputation credits will result in a reduction in the regulatory allowance that generates dividends and capital gains. This is precisely what occurs in Row 35 of the PTRM [the AER's post-tax revenue model] – the return that could otherwise be provided to equity holders is reduced by the regulator's assessment of the value of imputation credits.

Therefore, the expert reports provided to me highlight the error made by the AER in calculating theta as the redemption rate of imputation credits. In particular Frontier highlights that:

> The redemption rate (whether estimated using tax statistics or equity ownership proportions) does not provide an estimate of the relevant value of distributed credits, theta. It can only be used as an upper bound for theta. [94]

> …the Tribunal agreed with my [Frontier's] view that the redemption rate cannot be used to estimate theta, but can only be used as an upper bound for theta. [95]

Frontier also notes that the AER introduces the concept of 'utilisation value' in the preliminary decision, but that:[96]

> …the term "utilisation value" is precisely equivalent to the term "redemption rate" or the "proportion of credits that is redeemed."

To summarise, I understand from Frontier and SFG that, by interpreting theta to be the redemption rate of imputation credits, rather than the value of distributed credits, the AER's preliminary decision will give rise to a biased estimate of the value of imputation credits, ie, gamma. In particular, SFG concludes that:[97]

> The only way to ensure that investors are not under- or over-compensated is for the regulator to make an adjustment in relation to imputation credits that reflects the value (as in "worth") of those credits to investors.

Estimating the distribution rate

The expert reports provided to me also address a second shortcoming in that the AER's estimate of the distribution rate of imputation credits is unlikely to represent the distribution rate of the benchmark efficient entity.

As SFG explains, in its recent decisions (including the its preliminary decision) the AER departs from the widely accepted estimate of the distribution rate of 0.7 in its Guideline by dividing the estimate into one relating to all equity (or firms) and one relating to only listed equity.[98] The estimate relating to all equity remains 0.7 but, based upon a unique data set of listed firms, the estimate for only listed equity increases to 0.8. SFG highlights that use of this data set introduces error into the estimate, ie, SFG explains that:[99]

[93] Frontier, *An appropriate regulatory estimate of gamma*, June 2015, page 9.

[94] Frontier, *An appropriate regulatory estimate of gamma*, June 2015, page 6.

[95] Frontier, *An appropriate regulatory estimate of gamma*, June 2015, page 10.

[96] Frontier, *An appropriate regulatory estimate of gamma*, June 2015, page 10.

[97] SFG, *Estimating gamma for regulatory purposes,* Feb 2015, page 13.

[98] SFG, *Estimating gamma for regulatory purposes,* Feb 2015, pages 41 and 42.

[99] SFG, *Estimating gamma for regulatory purposes,* Feb 2015, page 4.

> The 80% estimate that the AER adopts for listed firms implicitly assumes that the benchmark efficient entity would be able to use foreign-sourced profits to enable it to distribute a higher proportion of foreign-sourced profits, when no such foreign-sourced profits would be available to it.

This point is also made by Frontier in outlining its analysis of the distribution rate calculated from listed Australian firms, ie, Frontier highlights that:[100]

> …the top 20 firms are very large multinationals that are able to distribute imputation credits via profits earned offshore and the benchmark entity operates only within Australia.

SFG goes on to conclude that the 0.7 estimate, which is widely accepted by the AER in its Guideline, by its consultants, by the Tribunal and by the network businesses, is in SFG's expert opinion:[101]

> …a conservative estimate of the distribution rate for the benchmark efficient entity and, for the reasons set out in the preceding paragraph, there is no reasonable basis to increase it to 0.8 even if the data is restricted to listed firms only.

In addition, SFG's report identifies a more fundamental error in the AER's approach to estimating the distribution rate. As SFG explains, the distribution rate is a firm-specific parameter:[102]

> …it is quite possible that different firms might distribute different proportions of the credits that they create by paying corporate tax in Australia. Since credits can only be distributed by attaching them to dividends, and because different firms have different dividend policies, the imputation credit distribution rate will differ across firms.

However, the AER computes the distribution rate on a market-wide basis. Frontier highlights that this error is compounded by the AER's mistaken view that an interrelationship exists between the data for estimating the distribution rate and theta:[103]

> The distribution rate is a firm specific parameter because it depends upon dividend payout policies that vary across firms. Theta is a market wide parameter because the value of a credit in the hands of an investor is independent of its source. Consequently, there is no reason to impose a constraint that the same data source must be used to estimate both parameters.

These findings lead Frontier to conclude that:[104]

> …the AER's approach of using different subsets of the available evidence to establish a range of ranges for each parameter and consequently for gamma is neither transparent nor necessary nor correct.

Conclusion

I take the evidence provided by SFG and Frontier as indicating that the AER has erred in its approach to estimating both theta and the distribution rate parameter, and therefore to estimating gamma. By means of this flawed approach, in the experts' opinions the AER adopts an estimate of gamma that is materially higher than even a conservative estimate of gamma that reflected the efficient financing costs of the benchmark efficient entity. In other words, in its preliminary decision, the AER's approach overestimates both the distribution and benefit to investors of imputation credits and so undercompensates investors for the cost of corporate income tax.

[100] Frontier, *An appropriate regulatory estimate of gamma*, June 2015, page 6.

[101] SFG, *Estimating gamma for regulatory purposes,* Feb 2015, page 4.

[102] SFG, *Estimating gamma for regulatory purposes,* Feb 2015, page 43.

[103] Frontier, *An appropriate regulatory estimate of gamma*, June 2015, page 7.

[104] Frontier, *An appropriate regulatory estimate of gamma*, June 2015, page 7.

By underproviding for the cost of corporate income tax, the AER's approach does not promote ongoing investment in the network and so does not promote dynamic and allocative efficiency. I explain in section 3 that offering a reasonable assurance as to the recovery of efficiently incurred costs is a core principle of a framework for economic regulation that has the objective of achieving the NEO. Moreover, this principle is explicitly reflected in the revenue and pricing principles.

In my opinion, the result of these two shortcomings is that the approach to the value of gamma taken by the AER in the preliminary decision does not meet the NEO requirement.

I further understand from Frontier that analysis conducted by it has produced a conservative estimate of theta equal to 0.35 and corresponding estimate of gamma equal to 0.25.[105] These estimates equate with those produced by a market study that SFG conducted in 2011, which was accepted by the Tribunal as an appropriate approach to estimating theta.[106] This estimate is materially different from the AER's estimate of gamma in the preliminary decision of 0.4.

In my opinion, it follows that there exists a decision to be made as to whether adopting an alternative approach to the one taken by the AER in the preliminary decision would make a greater contribution to the NEO.

4.3 The NEO requirement

I have reviewed 18 reports by experts that have been provided to me, each addressing one or more aspects of the AER's approach in the preliminary decision to determining the rate of return and gamma for the forthcoming regulatory control period. A common thread running through all of these reports is the inability of the AER's approach to incorporate relevant information into estimates of the return required by investors and, as a result of this shortcoming, the under-estimation of efficient financing costs of a benchmark efficient entity.

One means of gaining some perspective on the extent of this underestimation is to compare the return on capital estimate that has been provided by the AER's approach in its preliminary decision and the return on capital estimate that would be implied by the alternative approaches in the expert reports. The aggregate of these alternative approaches takes account of the errors they identify, and has been used by Energex it its revised proposal.

These errors contribute to the AER determining an allowed rate of return of 5.85 per cent and I have been instructed that correcting these errors would give rise to an allowed rate of return of 7.42 per cent.[107] Similarly, the AER's preliminary decision is that the value of gamma is 0.4, whereas correcting the errors in the AER's approach to determining gamma would result in value of gamma equal to 0.25.

Further, I have been instructed that the errors in the AER's preliminary decision as to the allowed rate of return and gamma give rise to a revenue requirement over the forthcoming regulatory control period that is, respectively, $1,115 million and $78 million (in unsmoothed dollars of the day) less than that in Energex's revised regulatory proposal. On this basis, the identified errors in the preliminary decision, taken together, reduce Energex's total revenue requirement over the forthcoming regulatory control period by 15.2 per cent.[108]

[105] This estimate utilises an estimate of the distribution rate parameter equal to the widely accepted rate of 0.7; see Frontier, *An appropriate regulatory estimate of gamma*, June 2015, pages 6 to 7.

[106] SFG, *Estimating gamma for regulatory purposes,* Feb 2015, pages 3 and 4.

[107] Allens, *Letter to Greg Houston*, 2 July 2015.

[108] Calculated equal to the sum of $1,115 million and $78 million divided by $7,874 million (annual expected revenue for the forthcoming regulatory control period. See: Allens, *Letter to Greg Houston*, 2 July 2015; and Energex, Revised Regulatory Proposal, July 2015, page 129.

The quantum of this difference suggests that allowance for the return on capital and corporate income tax over the forthcoming regulatory control period will be insufficient for Energex to meet its requirements under the NEO to invest in and operate efficient electricity services.

Indeed, my review of each expert report identifies strong evidence that, in relation to constituent components of the AER's preliminary decision for the rate of return and gamma, the NEO requirement has not been met.[109] The collective implications for achievement of the NEO are substantial.

In particular, my review of each expert report identifies:

- a shortcoming in the AER's foundation model approach that causes it not to have proper regard to relevant information, resulting in an underestimate of the efficient financing costs of the benchmark efficient entity – this gives rise to a lower price for customers in the current regulatory control period but at the expense of investment directed to future productive and dynamic efficiency;
- several errors in the AER's empirical specification of its Sharpe-Lintner CAPM, resulting in a biased estimate of the required return on equity in non-normal market conditions – given prevailing market conditions, this gives rise to a lower price for customers in the current regulatory control period but at the expense of investment directed to future productive and dynamic efficiency;
- a shortcoming in the AER's transitional approach that, in attempting to correct past regulatory errors, results in a rate of return on debt that creates risk and uncertainty for investors and does not promote investment incentives – this will give rise to lower prices for customers in the current regulatory control period but at the expense of investment directed to future productive and dynamic efficiency;
- a shortcoming in the AER's (simple) trailing average approach that under (over) compensates a service provider for debt financed investment when the prevailing cost of debt is above (below) the 10 year average – this creates risk and damages incentives for investment directed to future productive and dynamic efficiency.
- an error in the AER's interpretation of the value of imputation credits that overestimates gamma, with the result that investors are under-compensated for the cost of corporate income tax – this also gives rise to a lower price for customers in the current regulatory period, but at the expense of investment directed to future productive and dynamic efficiency; and
- a shortcoming in the AER's estimation of the distribution rate of imputation credits that overestimates gamma, with the result that investors are under-compensated for the cost of corporate income tax – this also gives rise to a lower price for customers but at the expense of investment directed to future productive and dynamic efficiency.

I explain in section 3 that the AER's task is to strike a balance between the various dimensions of efficiency, and so the attributes of a decision valued by consumers, such that it promotes their long term interests. Further, the reference in the NEO to 'the long term interests of consumers' amounts to the achievement of dynamic efficiency, which requires a balancing of the interests of current consumers with those of future consumers.

However, in weighing this trade-off, virtually every element of the AER's preliminary decision on the application of its approach to the rate of return and gamma is characterised by a short term perspective that generally does not extend beyond the current regulatory control period.

By contrast, and consistent with the imperative that long-lived assets be managed by reference to a long term perspective on the services to be provided, the AER is required by the NEO to have regard to and, indeed, give primacy to, the long term interests of consumers. Put another way, implicit in the AER's preliminary decision is a balance of emphasis on the short term interests of consumers that unnecessarily puts at risk the long term interests of consumers. It follows that the AER's preliminary decision cannot be said to meet the NEO requirement.

[109] I explain in section3.1 that section 16 of the law requires the AER to perform its functions and to exercise its power in a manner that will, or is likely to, contribute to the achievement of the NEO to the greatest degree, which I refer to as 'the NEO requirement'.

I note also that, by misinterpreting the definition of gamma in the rules as the value of imputation credits, the AER does not take account of the interrelationship between the value of tax imputation credits to investors and the rate of return required by investors. The result of this oversight is that the AER has provided for financing costs that are less than the efficient financing costs of the benchmark efficient entity, and so has not provided sufficient incentives for investment in long term productive and dynamic efficiency, for the long term interest of consumers.

For these reasons I conclude that the AER cannot meet the NEO requirement through the application of the approach used in its preliminary decision, and so will not meet the NEO requirement if it applies this approach in regard to Energex's revised regulatory proposal.

5. Materially Preferable Decision

In this section I address the final two substantive questions put to me. These are whether, in my opinion:

- if the AER's decision in relation to Energex's revised regulatory proposal contains the errors identified in the expert reports, the AER will have met the requirement that, where two or more possible designated reviewable regulatory decisions can be made, it must make the one that contributes to the NEO to the greatest degree; and
- if the errors were corrected, and assuming that correcting these errors gives rise to the rates and values in Energex's revised regulatory proposal, this would, or would be likely to, result in a materially preferable designated NEO decision overall.

5.1 Context

By way of context, it is helpful to explain the relevance of my conclusion in section 4 to these two questions. Clause 16 of the law requires that:[110]

> The AER must, in performing or exercising an AER economic regulatory function or power… perform or exercise that function or power in a manner that will or is likely to contribute to the achievement of the national electricity objective.

I refer to this requirement as the 'NEO requirement'. I conclude in section 4 that the AER's preliminary decision is not likely to have met the NEO requirement. Clause 16 of the law also requires that:[111]

> …if the AER is making a reviewable regulatory decision and there are 2 or more possible reviewable regulatory decisions that will or are likely to contribute to the achievement of the national electricity objective… [the AER must] make the decision that the AER is satisfied will or is likely to contribute to the achievement of the national electricity objective to the greatest degree;

I refer to a designated reviewable regulatory decision that will or is likely to contribute to the achievement of the NEO to the greatest degree as a 'preferable decision'. Relevantly, the first of the final substantive questions that I have been asked requires me to draw a conclusion as to whether the AER's decision in relation to Energex's revised regulatory proposal, assuming it contains the same constituent decisions as the preliminary decision, is a preferable decision, and so meets the above requirement in clause 16 of the law.

The second of the final substantive questions that I have been asked by Allens is distinct from the others in that it does not relate to a requirement on the AER, but rather an obligation falling to the Tribunal in circumstances where there is an application for a merits review of a designated reviewable regulatory decision. If there was to be such an application, clause 71P of the law requires that:[112]

> … the Tribunal may only make a determination… if… the Tribunal is satisfied that to do so will, or is likely to, result in a decision that is materially preferable to the reviewable regulatory decision in making a contribution to the achievement of the national electricity objective (a materially preferable NEO decision) (and if the Tribunal is not so satisfied the Tribunal must affirm the decision).

I refer to such a determination to be made by the Tribunal as a 'materially preferable decision'. It follows that clause 71P of the law requires the Tribunal to undertake an additional task, as compared with the AER, in that it is required not only to assess whether a decision is preferable, but also whether it is a *materially* preferable decision.

[110] The law, clause 16(1)(a).

[111] The law, clause 16(1)(d)(i)

[112] The law, clause 71P(2a)

In the remainder of this section, I adopt an economic perspective to form my opinion as to whether:

- if the final determination contains the same constituent decisions as the preliminary decision, the AER will have met the NEO requirement; and
- if any errors in the preliminary decision were corrected, and having regard to all other relevant considerations, this would be likely to result in a materially preferable decision.

In addressing these questions, it is helpful first to set out the economic framework I have adopted in assessing whether the AER's decision meets the preferable decision requirement, and whether an alternative decision may be judged to be a materially preferable NEO decision. I contrast this with the framework that appears to have been adopted by the AER in its preliminary decision in concluding that its decision meets the preferable decision requirement.

5.2 Economic Framework

In this section I set out the economic framework I have applied for assessing whether a particular decision:

- is a preferable decision; and
- is a materially preferable decision

5.2.1 The long-term interests of consumers is paramount

The expert panel appointed to review the limited merits review regime (the LMR expert panel) considered how to assess whether one decision is preferable to another with reference to the criteria, ie, the NEO and revenue and pricing principles, and recommended that:[113]

> … the ultimate end, and therefore the ultimate test, is the long-term interests of consumers (there should be no displacement of ends (consumer interests) by means to those ends such as economic efficiency, not least because not all efficient outcomes are in consumers' interests).

Similarly, in the second reading of the limited merits review bill, the Minster for Energy explained that there may be several possible economically efficient decisions with different implications for the long term interests of consumers, and went on to state that:[114]

> The long term interests of consumers must be the Australian Competition Tribunal's paramount consideration in determining that a materially preferable decision exists.

5.2.2 Determining the preferable decision

Consistent with the law and statements by both the LMR expert panel and the Minister of Energy, I have taken the preferable decision to be that which promotes the long term interests of consumers of electricity to the greatest degree.

I conclude in section 3.4 that failure to give effect to each and every building block, and to comply with each of the main revenue and pricing principles would compromise the achievement of the NEO requirement. It follows that a designated reviewable regulatory decision that offends the revenue and pricing principles and the building block requirements set out in the rules will not meet the NEO requirement. Such a decision would not be a preferable decision. An alternative decision that was consistent with the revenue and pricing principles and the building block requirements in the rules would clearly be preferable, since this would promote the long term interests of consumers of electricity to the greatest degree.

A more difficult task is identifying the preferable decision where there are two or more possible decisions that will, or are likely to, contribute to the NEO requirement. Although the promotion of the long term interests of

[113] Expert Panel, *Review of the Limited Merits Review Regime – Stage 2 Report*, Sep 2012, page 4.

[114] Hansard, *South Australia House of Assembly*, Feb 2005.

consumers remains the fundamental test, in this case it is necessary to identify the precise attributes of a decision that promotes the long term interests of consumers of electricity to the greatest degree, so that the preferred alternative decision can identified.

I explained in section 3.1.2 that economic efficiency is the means by which the long term interests of consumers is promoted, but that promoting economic efficiency, in and of itself, does not necessarily promote the long term interests of consumers.

Consistent with this reasoning, the promotion of the long term interests of consumers is likely to be identified by first isolating the dimension or dimensions of efficiency that best promote the long term interests of consumers. Regulatory decisions can then be assessed and compared by reference to the extent to which one or other promotes this dimension or these dimensions of economic efficiency without unduly compromising others. Conversely, a preferable decision should not compromise the dimension or dimensions of economic efficiency that promote consumers' long term interests in favour of promoting other dimensions of efficiency.

The extent to which a decision promotes dimensions of efficiency that are favourable to consumers' long term interests at the expense of those that are not is a matter of judgement to be exercised with reference to the economic framework I set out below. However, the need to strike such a balance when promoting the long term interests of consumers is an intrinsic requirement of well-functioning economic regulation, and was recognised by the Minister of Energy, who stated that:[115]

> The long term interests of consumers are not delivered by any one of its [the NEO's] factors in isolation, but rather require a balancing of the range of factors.

Similarly, the LMR expert panel stated that:[116]

> There are trade-offs among these various dimensions [of efficiency] that need to be resolved by reference to some balancing or weighting of the different elements, and this balancing/weighting usually depends upon a value system beyond the notion of economic efficiency itself.

The LMR expert panel went on to state that the reference in the NEO to the 'long term interests of consumers' provided this value system.

In my opinion, the long term interests of consumers will best be served by promoting dynamic efficiency, which is the dimension of efficiency that requires a balance be struck between the interests of current and future consumers.[117] This is consistent with the interpretation of the NEO that I set out in section 3.1.1, ie, by way of the NEO's reference to the 'long term' interests of consumers:[118]

> …the NEO is structured so as to clarify that the balance of emphasis is to be given to the long term, dynamic dimension of efficiency.

Promoting dynamic efficiency can be described as promoting productive and allocative efficiency through time, ie, in successive time periods. It follows that the trade-off, or balancing, to which I refer above relates to the extent that a decision promotes efficient production and consumption in the current period without unduly compromising the potential for efficient production and consumption in the future. Correspondingly, a designated reviewable regulatory decision should not promote short term productive and/or allocative efficiency at the expense of dynamic efficiency.

At a high level, this trade-off can be characterised as one between the interests of consumers in the short term, as promoted by short term allocative and productive efficiency, and the interests of consumers in the

[115] Hansard, *South Australia House of Assembly*, Feb 2005.

[116] Expert Panel, *Review of the Limited Merits Review Regime – Stage 2 Report*, Sep 2012, page 38.

[117] See section 3.1.1.

[118] See section 3.1.1.

long term, as promoted by dynamic efficiency. Indeed, this fundamental trade-off was recognised by the LMR expert panel, which noted that:[119]

> To the extent that the AER is required to engage in 'balancing' judgments, the chief balancing required is between the interests of consumers at different points in time.

For the avoidance of doubt, the primacy I give to the long term interests of consumers through the dynamic dimension of efficiency should not be interpreted as disregarding the interests of consumers in the short term. I explain above that a designated reviewable regulatory decision should promote the dimension of efficiency that goes to the long term interests of consumers without unduly compromising other dimensions of efficiency. This is consistent with the opinion of the LMR expert panel, which stated that:

> It is the long-term interests of consumers that are relevant. This cannot reasonably be interpreted as meaning that the interests of consumers today are irrelevant, and that the only thing that matters is the welfare of energy consumers at some distant point in time.

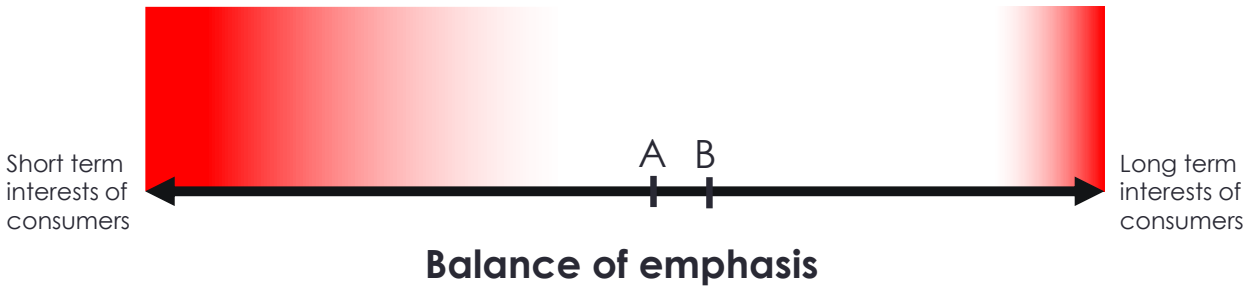
To summarise, in my opinion the preferable decision is that which promotes the long term interests of consumers of electricity to the greatest degree. Further, in my opinion the long term interests of consumers will be best served by promoting long term dynamic efficiency to the greatest extent, without unduly compromising short term productive and allocative efficiency.

By way of an example to the contrary, a regulatory decision that is not preferable would be of a form that promotes the short term interests of consumers in such a manner that the benefit to consumers in the short term is outweighed by the much greater cost to consumers in the long term. In these circumstances, a preferable decision is one that rebalances the benefit derived by consumers such that, notwithstanding the existence of some cost to consumers in the short term, a disproportionately larger benefit (or the avoidance of disproportionally large costs) is realised in the long term.

5.2.3 Identifying a preferable decision

It follows from the above discussion that an assessment as to whether a decision is preferable should be made by reference to the balance struck between the long-term and short-term interests of consumers. I illustrate this balance in Figure 1, below.

Figure 5.1 – A preferable decision



This assessment is an inherently difficult task because:

- it requires assessment of a designated reviewable regulatory decision and, in particular, the likely effect of the decision on incentives for dynamic efficiency; and
- it must be informed by the particular circumstances and context of a decision.

This difficulty notwithstanding, the requirement for a preferable decision to promote the long term interests of consumers without unduly compromising their short term interests means that decisions that place excessive

[119] Expert Panel, *Review of the Limited Merits Review Regime – Stage 1 Report*, June 2012, page 37.

weight on either short term or long term outcomes are unlikely to be preferable. Such decisions would sit at either 'extreme' of the trade-off, ie, the shaded areas in Figure 1. They are likely not to meet the NEO requirement because they will offend one or more of the principles set out in the building block framework or the revenue and pricing principles. Further, the emphasis in the NEO on long-term interests suggests that decisions that place substantial weight on short term outcomes are more likely to offend the NEO requirement than those that place substantial weight on long term outcomes.

The more difficult task is to identify where potential decisions sit within these 'extremes'. In Figure 1, decision B is preferable to decision A, because it places greater weight on the long term interests of consumers without unduly compromising short term interests. However, in order to draw this comparison, the relative balance of interests under each of the decisions needs to be assessed.

Applying an economic framework, in my opinion the identification of where two decisions may sit relative to each other can usefully be informed by consideration of:

- the differing potential short and long term effects of the different decisions, in relation to both cost and service outcomes, and the extent of trade-off or mutual exclusivity between these effects; and
- the extent to which the differences between the decisions relate to fundamental elements of the overall framework, and therefore may be expected to have significant long term consequences for future outcomes.

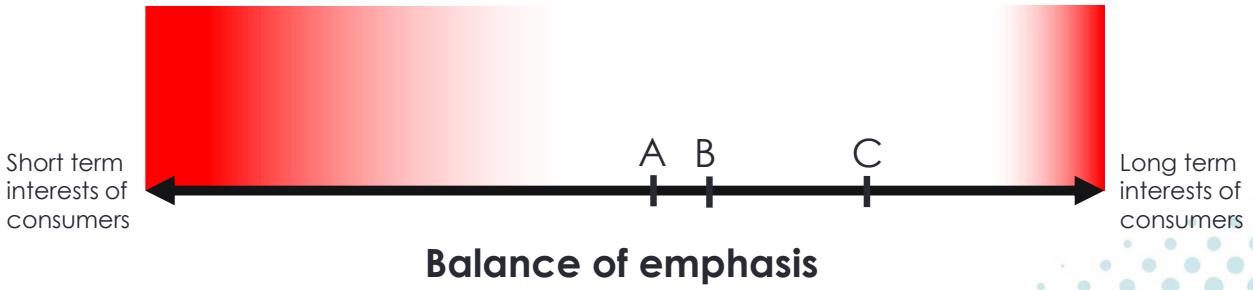
5.2.4 Identifying a materially preferable decision

For the Tribunal to make a determination to vary or set aside a designated reviewable regulatory decision, it must be satisfied that to do so will, or is likely to, result in a decision that is 'materially preferable' to the designated reviewable regulatory decision in making a contribution to the achievement of the NEO.[120] Further, in assessing whether a particular decision is a materially preferable NEO decision, the Tribunal is required to take account of the considerations set out in section 71P(2b) of the law.

The economic framework I present above focuses on identifying – from the perspective of economic reasoning – when a decision is likely to be a preferable decision. The additional consideration required of the Tribunal is to determine that an alternative decision is *materially* preferable. In other words it is necessary for the Tribunal to determine that the outcomes are sufficiently different under the two decisions to be material in terms of the balance between the short and long term interests of consumers.

In order for a decision to be considered materially preferable in economic terms, it needs to reflect a significantly greater long term benefit to customers than an alternative decision. In Figure 2, decision B is preferable to decision A, but not materially preferable. In contrast, decision C would be materially preferable.

Figure 5.2 – A materially preferable decision



Applying an economic framework, in my opinion the assessment of the materiality of the difference between outcomes should again focus on the extent to which an alternative decision would further dynamic efficiency,

[120] The law, clause 71(p)(2a).

without compromising short term efficiency. In addition to the considerations set out in section 71P(2a) of the law, the economic elements of a decision that are likely to be relevant for drawing this conclusion include those I list above, namely:

- the differing short and long term potential effects of the different decisions, in relation to both cost and service outcomes, and the extent of trade-off or mutual exclusivity between these effects; and
- the extent that the differences between the decisions relate to fundamental elements of the overall framework, and may therefore be expected to have significant long term consequences for future outcomes.

In addition, the extent of the difference between the revenue allowances implied under the alternative decisions is also likely to be relevant, with greater differences more likely to lead to materially different outcomes.

5.3 AER's framework for identifying a preferable decision

The law does not prescribe how the AER is to assess the degree to which a particular decision contributes to the achievement of the NEO. However, it does require that the AER provide reasons as to the basis on which it is satisfied that its decision is the preferable decision.[121]

5.3.1 Summary of the AER's approach

The AER provides only very limited guidance as to the framework it applied in determining whether the preliminary decision made was the preferable decision. At a high level, the AER appears to recognise that whether or not a decision it makes is in the long term interests of consumers requires a balance to be struck between the different (efficiency) factors captured within the NEO, ie:[122]

> The long term interests of consumers are not delivered by any one of its [the NEO's] factors in isolation, but rather by balancing them in reaching a regulatory decision.

The AER explicitly recognises that:[123]

> ….there are a number of plausible outcomes that may contribute to the achievement of the NEO. The nature of decisions under the NER is such that there may be a range of economically efficient decisions, with different implications for the long term interests of consumers.

The AER also recognises that, in deciding between such different 'plausible outcomes', giving too much emphasis to one or other of the dimensions of efficiency is unlikely to contribute to the achievement of the NEO:[124]

> At the same time, however, there are a range of outcomes that are unlikely to advance the NEO to a satisfactory extent. For example, we do not consider that the NEO would be advanced if allowed revenues encourage overinvestment and result in prices so high that consumers are unwilling or unable to efficiently use the network. This could have significant longer term pricing implications for those consumers who continue to use network services. Equally, we do not consider the NEO would be advanced if allowed revenues result in prices so low that investors are unwilling to invest as required to adequately maintain the appropriate quality and level of service, and where customers are making more use of the network than is sustainable.

In addition to these 'in principle' examples of outcomes that would not advance the NEO, the AER acknowledges the possibility of:[125]

[121] The law, clause 16(1)(d)(ii).

[122] AER, *Preliminary Decision Energex Determination 2015-16 to 2019-20*, Overview, April 2015, page 40.

[123] AER, *Preliminary Decision Energex Determination 2015-16 to 2019-20*, Overview, April 2015, page 40.

[124] AER, *Preliminary Decision Energex Determination 2015-16 to 2019-20*, Overview, April 2015, page 40 and 41.

[125] AER, *Preliminary Decision Energex Determination 2015-16 to 2019-20*, Overview, April 2015, page 41 and 42.

> …two or more decisions that will or are likely to contribute to the achievement of the NEO…[and the requirement that]…in those cases, we must make the decision we are satisfied will or is likely to contribute to the NEO to the greatest degree. The NER requires that we provide reasons for our decisions.

The AER goes on to explain that:[126]

> The NEL does not prescribe how we are to apply these overarching requirements and so, in applying them, we have exercised our regulatory judgement.

The AER then states that:[127]

> In the following sections, we explain our approach to evaluating these interrelationships [between constituent components of its decision] and then set out how we assessed what will contribute to the achievement of the NEO to the greatest possible degree.

In the sections of the preliminary decision that follow this statement, the AER explicitly describes the nature of the interrelationships between the different constituent components. However, it offers no such explanation or explanatory material as to how it has assessed what will contribute to the NEO to the greatest possible degree.

Rather, the AER's description as to how it made the preliminary decision by reference to the intrinsic need for balancing the factors that comprise the NEO and distinguish the short and long term interests of consumers is limited to the statement – appearing at an earlier point in its discussion of the framework it has applied – that:[128]

> In general, we consider that we will achieve this balance and, therefore, contribute to the achievement of the NEO, where consumers are provided a reasonable level of safe and reliable service that they value, at least cost in the long run.

Put another way, the AER explicitly recognises both the potential for there to be more than one decision that promotes the NEO, and that many elements of its preliminary decision depart from material put before it that is held also to promote the NEO. However, the AER does not anywhere explain how it has determined which of two possible decisions that will contribute to the achievement of the NEO will do so to the greatest possible degree. Rather, the AER simply discusses each constituent component of its decision by reference to the applicable rules and its direct assessment of the proposal of the relevant service provider.

5.3.2 Evaluation of the AER's framework

I agree with the principle identified by the AER that the extent to which a particular designated reviewable regulatory decision contributes to the achievement of the NEO will be determined by the degree to which it achieves a favourable balance between the factors that comprise the NEO.

However, the AER's framework for determining whether or not the balance between the factors that comprise the NEO is favourable, and then assessing alternative decisions by reference to this, is neither clear nor focused on achieving the long term interests of consumers. The AER's guiding criteria of 'a reasonable level of safe and reliable service that they [consumers] value, at least cost in the long run'[129] does not explicitly contemplate either the existence of a trade-off between the short and long term interests of consumers, or shed any light on the means by which it has identified and evaluated those trade-offs.

Consistent with this, in the preliminary decision the AER emphasises the degree of compliance with its own assessment made under the rules, rather than providing any assessment of the balance of considerations

[126] AER, *Preliminary Decision Energex Determination 2015-16 to 2019-20,* Overview, April 2015, page 42.

[127] AER, *Preliminary Decision Energex Determination 2015-16 to 2019-20*, Overview, April 2015, page 42.

[128] AER, *Preliminary Decision Energex Determination 2015-16 to 2019-20*, Overview, April 2015, page 40.

[129] AER, *Preliminary Decision Energex Determination 2015-16 to 2019-20*, Overview, April 2015, page 40.

between the factors that underpin the NEO. In my opinion, this is not an adequate framework and is not geared towards identifying the decision that best meets the long term interests of consumers.

By way of example, it is unclear how the degree of compliance with the rules has any bearing on achieving a favourable balance between the allocative and dynamic dimensions of efficiency, even though this is a fundamental requirement of the NEO. Indeed, there may be multiple decisions that comply with the rules, but which have different implications as to economic efficiency, and therefore the long term interests of consumers.

In contrast, the economic framework I describe in section 5.2 seeks to balance the factors that comprise the NEO by reference to the long term interests of consumers, and provides guidance on how to identify the precise attributes of a decision that promotes the long term interests of consumers. It allows alternative decisions to be assessed relative to each other. Such an approach is also consistent with statements by the LMR expert panel and the Minister of Energy. In recognition of the inevitable trade-offs inherent in economic regulation and the need to balance the factors that comprise the NEO, the LMR Expert Panel states that:[130]

> … this balancing/weighting usually depends upon a value system beyond the notion of economic efficiency itself. It is the Panel's view that this is precisely what the reference to 'for the long-term interests of consumers' in the legislation provides.

Similarly, the Minister of Energy stated that:[131]

> The long term interests of consumers must be the Australian Competition Tribunal's paramount consideration in determining that a materially preferable decision exists.

And, further:[132]

> The Australian Competition Tribunal likewise will consider the contribution of the regulatory decision to achieving the objective by considering and balancing the combination of factors in the objective, and arriving at the decision that best serves the long-term interests of consumers.

It is unclear whether and, if so, how, the application of the AER's framework gives primacy to the long term interests of consumers in determining the appropriate balance between the factors that comprise the NEO, and so the preferable decision. Further, the emphasis given by the Minister of Energy and the LMR expert panel to balancing the factors that comprise the NEO when determining the preferable decision give weight to the proposition that compliance with the rules is not sufficient to conclude that the decision promotes the long term interests of consumers to the greatest degree, and to subsequently conclude that it is a preferable decision.

I conclude that the AER has not applied any explicit framework for determining how, where 'there are two or more possible designated reviewable regulatory decisions' that could be made, it has made the decision that would allow it to be satisfied will contribute to the NEO to the greatest degree.

5.4 Does the AER's preliminary decision represent a preferable decision?

I concluded in section 3.4 that failure to give effect to each and every building block, and to comply with each of the main revenue and pricing principles, would compromise the achievement of the NEO requirement. In section 4.3 I also concluded that, having had regard to the errors in the AER's preliminary decision identified by the expert reports that have been provided to me, the AER has offended the building block requirements in the rules and the revenue and pricing principles. In particular, I identified that, although it does not explicit weigh the trade-off between the short and long term interests of consumers, the AER's preliminary decision

[130] Expert Panel, *Review of the Limited Merits Review Regime – Stage 2 Report*, Sep 2012, page 38.

[131] Hansard, South Australia House of Assembly, Feb 2005.

[132] Hansard, South Australia House of Assembly, Feb 2005.

is strongly characterised by a short term perspective that does not extend beyond the current regulatory control period.

In terms of the economic framework I set out in section 5.2, in the absence of any explicit assessment and so weighting given to the long term interests of consumers, it is infeasible for the AER's preliminary decision to reflect the long term interests of consumers and so contribute to the NEO, regardless of the level of short term benefit the decision may provide. It follows that such a decision would fall outside of the range of those that are consistent with the NEO, as illustrated by decision D in Figure 5.3.

Figure 5.3 – The NEO requirement

In my opinion, as an economist, such a decision cannot therefore be a preferable decision. An alternative decision that does not offend the building block requirements and the revenue and pricing principles would clearly be a preferable designated reviewable regulatory decision, because this would promote the long term interests of consumers to the greatest degree, without unduly compromising the short term interests of consumers.

Notwithstanding this conclusion, I have also considered whether a final decision that contains the same constituent decisions as the preliminary decision could be a preferable decision, putting aside the (important) question of whether or not it has offended the building block provisions in the rules and the revenue and pricing principles.

I discuss in section 5.2.2 above that the preferable decision is that which promotes the long term interests of consumers of electricity to the greatest degree. Further, I set out my opinion that the long term interests of consumers will best be served by promoting long term dynamic efficiency to the greatest extent, without unduly compromising short term productive and allocative efficiency.

As such, the economic framework I describe in section 5.2 requires an assessment of the AER's decision by reference to the extent to which it promotes dynamic efficiency. I have also had regard to:

- the differing potential short and long term effects of the different decisions, in relation to both cost and service outcomes, and the extent of trade-off or mutual exclusivity between those effects; and
- the extent to which the differences between the decisions relate to significant elements of the overall framework, and so may be expected to have wider reaching consequences for future outcomes.

I note in section 4 that I have been provided with a number of expert reports, each of which provides evidence that the preliminary decision does not reflect the efficient financing costs of the benchmark efficient entity. This is a consequence of both a range of errors and shortcomings in the AER's approach, as well as the primacy given to selective relevant information.

I understand in particular from these expert reports that the efficient financing costs of the benchmark efficient entity will not be reflected in any decision made using the AER's approach when prevailing market conditions are substantially different from the historical norm, as is presently the case.

My opinion is substantiated by the expert evidence provided by SFG and Incenta, which explains that when risk free rates are at historic lows (as they currently are), the AER's foundation model and approach to incorporating other relevant information will underestimate the return required by the market for a business with the characteristics of the benchmark efficient entity. By not altering its approach to take account of this underestimation, the AER provides for an allowed rate of return and associated maximum allowed revenue that results in lower prices for Energex's customers and lower returns for Energex's investors.

Such lower prices for electricity network services would expected to give rise to some increase in allocative efficiency, since there is likely to be some increase in the quantity of electricity that is supplied. However, lower returns to investors will reduce the capital Energex is able to raise for investment in future electricity network services. In consequence, Energex will be at risk of not achieving future productivity gains that are likely to be available, and future customers will pay higher prices for a deteriorating service. The potential for future productive and allocative efficiency is therefore compromised. This represents a loss in dynamic efficiency; a welfare gain of current customers is being traded for a greater loss in welfare of future customers.

Therefore, the expert reports provided to me demonstrate that the approach adopted by the AER in the preliminary decision places undue weight on short term allocative efficiency, at the expense of longer-term considerations of dynamic efficiency. I understand from these reports that this shortcoming could be addressed by estimating the allowed rate of return using an approach that incorporates relevant methods and information to overcome identified weaknesses in the foundation model, and thereby provides for Energex to raise sufficient funds for investment purposes at prevailing and expected market conditions.

I conclude that the AER's constituent decision on the allowed rate of return has not given sufficient weight to dynamic efficiency, and therefore the long term interests of consumers.

I explained in section 5.2 that identification of a preferable decision requires consideration of the differing short and long term effects associated with different decisions. Differences of the magnitude that exist between the AER's decision regarding the allowed rate of return and alternatives proposed by the expert reports will inevitably lead to different outcomes. Further, the AER's preliminary decision to substitute efficiency in financing costs for a short term gain in the allocative efficiency of prices involves a trade-off between significant potential effects on price and quality outcomes over the short and long term.

The AER appears to recognise the potential implications of this trade-off:[133]

> …[the AER] do not consider that the NEO would be advanced if allowed revenues encourage overinvestment and result in prices so high that consumers are unwilling or unable to efficiently use the network. This could have significant longer term pricing implications for those consumers who continue to use network services. Equally, we do not consider the NEO would be advanced if allowed revenues result in prices so low that investors are unwilling to invest as required to adequately maintain the appropriate quality and level of service, and where customers are making more use of the network than is sustainable. This could create longer term problems in the network and could have adverse consequences for safety, security and reliability of the network.

However, in attempting to strike a balance between differing short and long term effects, I conclude from the evidence provided in the expert reports that the AER has – albeit implicitly – placed too great an emphasis on the short term effects of its decision.

The final relevant consideration in the assessment of whether a decision is preferable is the extent to which differences between possible decisions relate to significant elements of the overall framework, and so may be expected to have wide reaching consequences for future outcomes. The AER's decision to give primacy in its foundation model approach to information and methods used under a previous version of the rules for determining the allowed rate of return amounts to the substantial disregard of relevant information to which the current framework and rules require it to have regard. This has implications for the expected rate of

[133] AER, *Preliminary Decision Energex Determination 2015-16 to 2019-20*, Overview, April 2015, page 40 and 41.

return Energex is allowed to earn and can therefore be expected to have wide reaching consequences for the future actions of Energex and future outcomes.

The AER appears to be of the opinion that the rules *permit* it to take account of relevant evidence when determining the allowed rate of return:[134]

> The Australian Energy Market Commission (AEMC) in its final rule determination considered that the estimation of the required rate of return could be improved by permitting us to take account of a broad range of information.
>
> The rate of return framework provides for us to take into account a wide range of relevant estimation methods, financial models, market data and other evidence as well as considering inter-relationships between parameter values.

This is incorrect; when determining the allowed rate of return, regard *must be had* to this information.[135] Although the rules do not stipulate the weight to be placed on each piece of relevant information, this does not absolve the AER of the requirement to have regard to all relevant information when estimating an allowed rate of return that is commensurate with the efficient financing costs of the benchmark efficient entity,[136] or the requirement to produce the best estimate possible in the circumstances.[137] However, I understand from the expert reports provided to me that the AER has chosen an approach to determining the allowed rate of return that cannot have regard to all relevant information and models.

The difference between this approach of the AER and the alternative approaches proposed by the expert reports relate to a significant element of the overall framework, on which the AER sought change in order to improve the outcome of the regulatory process. A decision that fails to have regard to a fundamental change to the regulatory framework, while at the same time being subject to substantial criticism in relation to the adequacy of the approach underpinning the decision, is unlikely to represent a preferable decision.

My assessment of the preliminary decision and the expert reports provided to me against the economic framework I set out in section 5.2 leads me to conclude that the AER has not met the preferable decision requirement. The AER's final decision, should it contain the same constituent decisions as the preliminary decision, will not provide sufficient weight to dynamic efficiency, being that element of efficiency directed to the long term interests of consumers. Rather, the preliminary decision appears to be predicated on a view that near term allocative efficiency is the most important dimension of efficiency in determining revenue allowances. The preliminary decision is not consistent with the emphasis given in the NEO to the long-term interests of consumers. It is also inconsistent with the guidance provided by the law, the LMR expert panel and the Minister for Energy, that the preferable decision should be determined by reference to the long-term interests of consumers.

5.5 Is the AER's decision a materially preferable decision?

I explain in section 5.2.4 that, adopting an economic perspective, in order for a decision to be materially preferable, it must be expected to provide a significantly greater long term benefit to consumers than a specified alternative without unduly compromising short term interests.

The expert reports I review and summarise in section 4 identify a number of errors and shortcomings in the constituent components of the AER's preliminary decision. By consequence of these errors, the approach adopted by the AER in the final decision, if it contains the same constituent decisions as the preliminary

[134] AER, *Preliminary Decision Energex Determination 2015-16 to 2019-20*, Attachment 3 – Rate of Return, April 2015, page 3-14 and 3-15.

[135] The rules, rule 87(5).

[136] The rules, rule 87(2).

[137] The rules, rule 74(2)(b).

decision, will involve a disproportionate emphasis on the short term interests of consumers to the detriment of their long term interests.

The extent of this misdirected emphasis is reinforced by the substantively different return on capital and corporate income tax building block in the AER's preliminary decision, as compared with that calculated using the approach recommended by the expert reports. I have been instructed that the errors in the AER's preliminary decision as to the allowed rate of return and gamma give rise to a revenue requirement over the forthcoming regulatory control period that is, respectively, $1,115 million and $78 million (in unsmoothed dollars of the day) less than that in Energex's revised regulatory proposal.[138] On this basis, the identified errors in the preliminary decision, taken together, reduce Energex's total revenue requirement over the forthcoming regulatory control period by approximately 15.2 per cent.[139]

Further, the significance of these errors in the context of the preliminary decision as a whole is reinforced by the fundamental elements of the regulatory framework to which they relate, and so their significant long term consequences for future outcomes. In particular, I explain in section 3.4 that the requirement to provide investors with a return that is commensurate with the efficient financing costs of a benchmark efficient entity with a similar degree of risk has fundamental, material implications for long term economic efficiency and the long term interests of consumers.

The emphasis on the short term interests of consumers in the AER's preliminary decision, if replicated in the final decision, can be expected to cause prices to be lower for the current regulatory control period. However, the scale of cuts to service providers' allowed rate of return determined in the preliminary decision, as identified in the expert reports provided to me, is highly likely to have adverse implications on the price, quality, safety, reliability and security of electricity supply over an extended time horizon. These effects can be expected to begin to be felt even within the current regulatory period. Such outcomes alone would serve to mitigate any benefit to consumers that may arise in the form of lower prices for electricity services in the short term.

I have outlined above that the scale of the reductions in allowed revenues will have substantive, adverse implications for:

- Energex's ability to continue to attract finance and the cost of such finance;
- the future costs that Energex will need to incur to maintain and improve electricity network service quality; and
- the price, quality, safety, reliability and security of electricity network services provided to customers.

Each of these factors amounts to evidence that the decision will not promote the long term interests of consumers.

By contrast, an alternative decision by the Tribunal that corrects the errors and shortcomings I discuss in section 4 would re-align the balance of emphasis so that primacy is given to the long term interests of consumers. In particular:

- The expert reports provided to me adopt an alternative approach to estimating the required rate of return on equity that uses a combination of estimates from several financial models, weighted according to the relative strengths and weaknesses of each model, rather than relying on the estimate from a single financial model as is the AER's current approach.
  - An estimate calculated using this approach is more likely to reflect efficient financing costs in all market conditions and, in particular, will not underestimate efficient financing costs in currently

[138] Allens, *Letter to Greg Houston*, 2 July 2015.

[139] Calculated equal to the sum of $1,115 million and $78 million divided by $7,874 million (annual expected revenue for the forthcoming regulatory control period. See: Allens, *Letter to Greg Houston*, 2 July 2015; and Energex, *Revised Regulatory Proposal*, July 2015, page 129.

prevailing market conditions, and so is more consistent with achieving dynamic and long term productive efficiency and therefore the long term interests of consumers.

- The expert reports provided to me adopt an alternative approach to estimating the Sharpe-Lintner CAPM that allows parameter inputs to have full regard to relevant information, rather than the AER's approach that has regard to relevant information only after boundaries for the range estimate have been set.
  - An estimate calculated using this approach is more likely to reflect efficient financing costs of the benchmark efficient entity, and so is more consistent with achieving dynamic and long term productive efficiency and therefore the long term interests of consumers.
- The expert reports provided to me adopt an alternative approach to transitioning from the AER's previous approach of the required rate of return on debt that discontinues inclusion of the inefficient and practically unachievable 'on the day' portfolio estimate, rather than the AER's transitional approach that maintains this inefficiency.
  - An estimate calculated using this approach will provide certainty to investors and is more likely to reflect efficient financing costs of the benchmark efficient entity, unlike an estimate calculated through the AER's proposed approach, and so is more consistent with achieving dynamic and long term productive efficiency and therefore the long term interests of consumers.
- The expert reports provided to me adopt an alternative approach to accounting for the value of imputation credits that takes account of interrelationships between the corporate income tax and allowed rate of return building blocks, rather than the AER's approach that disregards this interrelationship.
  - An estimate of gamma calculated using this approach will not systematically overvalue imputation credits, which would underestimate efficient financing costs, and so is more consistent with achieving dynamic and allocative efficiency and therefore the long term interests of consumers.
- The expert reports provided to me adopt an alternative approach to estimating gamma that uses a value of the distribution rate of imputation credits previously accepted by the Tribunal as reflecting the distribution rate of the benchmark efficient entity, rather than the approach taken by the AER in the preliminary decision that chooses to depart from using this value.
  - An estimate of gamma using this approach is more likely to reflect efficient financing costs of the benchmark efficient entity, and so is more consistent with achieving dynamic and allocative efficiency and therefore the long term interests of consumers.

My assessment of the expert reports indicates that such an alternative decision, which is more likely to result in outcomes that enable the business to recover its efficient costs and to provide appropriate incentives for Energex to achieve efficiencies going forward, is achievable by either the AER or, if necessary, the Tribunal. Such an alternative decision would, as a consequence, promote dynamic efficiency to a greater degree. Compliance with the building block requirements in the rules (such as the requirement for an allowed rate of return to be commensurate with the efficient financing costs of a benchmark efficient entity) ensures that the proposal does not unduly compromise short term productive and allocative efficiency. The expert reports I have been provided with suggest that future service quality would not be compromised by a decision that adopts the alternative approaches they suggest, in contrast to likely future outcomes under the AER's approach and preliminary decision.

In my opinion, a decision that corrects the errors identified in each of the expert reports would result in a materially preferable designated NEO decision, because it is more likely to promote the long term interests of consumers to a materially greater degree without compromising the short term interests of consumers, as compared with the AER's preliminary decision.

6. 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
1 July 2015

Annexure A1 – Letter of Instruction

Allens
Riverside Centre
123 Eagle Street
Brisbane QLD 4000 Australia

T +61 7 3334 3000
F +61 7 3334 3444
www.allens.com.au

GPO Box 7082
Riverside Centre
Brisbane QLD 4001 Australia
DX 210 Brisbane

ABN 47 702 595 758

Allens › ‹ Linklaters

2 July 2015

Mr Greg Houston
Houston Kemp
Level 40
161 Castlereagh Street
Sydney NSW 2000

By Email greg.houston@houstonkemp.com
Copy to Dale.Yeats@houstonkemp.com

Dear Mr Houston

AER's Distribution Determination for Energex – Contribution to NEO and Preferable NEO Decision Requirements

We act for Energex Limited (***Energex***). We confirm that our client wishes to retain you as an expert economist to provide an expert report in relation to the revocation and substitution of the Australian Energy Regulator's (***AER's***) distribution determination for Energex for the next regulatory control period 1 July 2015 – 30 June 2020 which determination was published by the AER on 30 April 2015 (***Preliminary Decision***). This letter sets out a brief background, the terms of your retainer with our client and the scope of your obligations under it. We have adopted the same terminology in this letter as is used in Energex's Revised Proposal.

Background

1 Energex operates and owns electricity distribution network in South East Queensland. The AER is responsible for the economic regulation of electricity distribution services in Queensland under the National Electricity Law (***NEL***). The AER is required to make a distribution determination for Energex, a distribution network service provider (***DNSP***) under the National Electricity Rules (***NER***).1

2 A distribution determination is predicated on constituent decisions by the AER which include a decision on the annual revenue allowance for the DNSP for each regulatory year of the regulatory control period to which the determination relates.2 The annual revenue allowance for the DNSP for each regulatory year of the regulatory control period must be determined using a building block approach.3

3 In 2012 significant amendments were made to the NER governing the economic regulation of DNSPs through the Australian Energy Market Commission's (***AEMC's***) Rule Determination, National

---

1 Where we refer in these instructions to provisions in Chapter 6 of the NER we are referring to the provisions in Chapter 6 contained in version 58 of the NER. (See rule 11.60.1 and 11.65.2).

2 Clause 6.12.1(2) of the NER.

3 Clause 6.4.3 of the NER.

Electricity Amendment (Economic Regulation of Network Service Providers) Rule 2012 (2012 Rule Determination).

4 As part of the transitional arrangements under the NER,[4] on 30 April 2015 the AER published its Preliminary Decision. The AER must revoke the Preliminary Decision and make a new distribution determination in substitution for it by 31 October 2015 (***Final Decision***) which new determination will take effect as at the date it is made and also applies in respect of the regulatory control period 1 July 2015 to 30 June 2020[5]. The adjustments to take account of the annual revenue requirement that was approved for the first regulatory year of the next regulatory control period is provided for in rule 11.60.4 NER.

5 Energex submitted its regulatory proposal for the next regulatory control period (1 July 2015-30 June 2020) to the AER in October 2014 (***Original Proposal***).

6 Energex is to make submissions in relation to the revocation and substitution of the Preliminary Decision by 3 July 2015. It is permitted to make submissions in the form of revisions to its Original Proposal (***Revised Proposal***). The AER expects to publish its Final Decision by 31 October 2015 in respect of the next regulatory control period (1 July 2015 to 30 June 2020).

NEL requirements in respect of the NEO and preferable reviewable regulatory decisions

7 The National Electricity Objective (***NEO***) is defined[6] in section 7 of the NEL as:

> *The objective of this Law is to promote efficient investment in, and efficient operation and use of, electricity services for the long term interest of consumers of electricity with respect to:*
>
> (a) *the price, quality, safety, reliability and security of supply of electricity; and*
>
> (b) *the reliability, safety and security of the national electricity system.*

8 The NEL provides the manner in which the AER must perform the "AER economic regulatory functions or powers[7]" in section 16 NEL:

> *(1) The AER must, in performing or exercising an AER economic regulatory function or power-*
>
> *(a) perform or exercise that function or power in a manner that will or is likely to contribute to the achievement of the national electricity objective; and ...*
>
> *(d) if the AER is making a reviewable regulatory decision[8] and there are 2 or more possible reviewable regulatory decisions that will or are likely to contribute to the achievement of the national electricity objective-*
>
> *(i) make the decision that the AER is satisfied will or is likely to contribute to the achievement of the national electricity objective to the greatest degree (the **preferable reviewable regulatory decision**) and*
>
> *(ii) specify reasons as to the basis on which the AER is satisfied that the decision is the preferable reviewable regulatory decision.*

---

4 Division 5 of Part ZW of Chapter 11 of the NER.

5 Rule 11.60.4 (c) NER.

6 "national electricity objective" is defined in section 2 NEL as the objective set out in section 7.

7 7 "AER economic regulatory function or power" is defined in section 2 NEL as a function or power performed or exercised by the AER under the NEL or the NER that relates to ... the making of a distribution determination.

8 "reviewable regulatory decision" is defined as having the meaning in section 71A, relevantly a network revenue or pricing determination that sets a regulatory period.

> (2) *In addition, the AER-*
>
> (a) *must take into account the revenue and pricing principles-*
>
> (i) *when exercising a discretion in making those parts of a distribution determination ... relating to direct control network services*[9] *...*
>
> (b) *may take into account the revenue and pricing principles when performing or exercising any other AER economic regulatory function or power, if the AER considers it appropriate to do so.*

9 The relevant revenue and pricing principles (***revenue and pricing principles***) are set out in section 7A NEL as:

> (2) *A regulated network service provider should be provided with a reasonable opportunity to recover at least the efficient costs the operator incurs in—*
>
> (a) *providing direct control network services; and*
>
> (b) *complying with a regulatory obligation or requirement or making a regulatory payment.*
>
> (3) *A regulated network service provider should be provided with effective incentives in order to promote economic efficiency with respect to direct control network services the operator provides. The economic efficiency that should be promoted includes—*
>
> (a) *efficient investment in a distribution system or transmission system with which the operator provides direct control network services; and*
>
> (b) *the efficient provision of electricity network services; and*
>
> (c) *the efficient use of the distribution system or transmission system with which the operator provides direct control network services.*
>
> (4) *Regard should be had to the regulatory asset base with respect to a distribution system or transmission system adopted—*
>
> (a) *in any previous—*
>
> (i) *as the case requires, distribution determination or transmission determination; or*
>
> (ii) *determination or decision under the National Electricity Code or jurisdictional electricity legislation regulating the revenue earned, or prices charged, by a person providing services by means of that distribution system or transmission system; or*
>
> (b) *in the Rules.*
>
> (5) *A price or charge for the provision of a direct control network service should allow for a return commensurate with the regulatory and commercial risks involved in providing the direct control network service to which that price or charge relates.*
>
> (6) *Regard should be had to the economic costs and risks of the potential for under and over investment by a regulated network service provider in, as the case requires, a distribution system or transmission system with which the operator provides direct control network services.*
>
> (7) *Regard should be had to the economic costs and risks of the potential for under and over utilisation of a distribution system or transmission system with which a regulated network service provider provides direct control network services.*

10 The AER's substituted distribution determination for Energex is a reviewable regulatory decision under the NEL. The above provisions of the NEL apply to the AER in making the Final Decision for Energex.

---

[9] "direct control network services" is defined in s2B NEL as a service the price for which, or the revenue to be earned from which, must be regulated under a distribution determination.

11 On any merits review before the Australian Competition Tribunal (***Tribunal***) by Energex of the Final Decision, under section 71P(2a) of the NEL the Tribunal is only entitled to vary or set aside the Final Decision if:

> *(2a)(c) the Tribunal is satisfied that to do so will, or is likely to, result in a decision that is materially preferable to the reviewable regulatory decision in making a contribution to the achievement of the national electricity objective (a **materially preferable NEO decision**)...*
>
> *(2b) In connection with the operation of subsection (2a) (and without limiting any other matter that may be relevant under this Law):*
>
> *(a) the Tribunal must consider how the constituent components of the reviewable regulatory decision interrelate with each other and with the matters raised as a ground for review;*
>
> *(b) without limiting (a) the Tribunal must take into account the revenue and pricing principles set out in section 7A of the NEL (in the same manner in which the AER is required to take into account these principles under section 16); and*
>
> *(c) the Tribunal must in assessing the extent of contribution to the achievement of the NEO, consider the reviewable regulatory decision as a whole; and*
>
> *(d) the following matters must not, in themselves, determine the question about whether a materially preferable NEO decision exists:*
>
> *(i) the establishment of a ground for review under section 71C(1) of the NEL;*
>
> *(ii) consequences for, or impacts on, the average annual regulated revenue of a regulated network service provider; and*
>
> *(iii) that the amount that is specified in or derived from the reviewable regulatory decision exceeds the amount specified in section 71F(2) of the NEL.*

AER's Preliminary Decision

12 The AER describes the manner in which it has made its Preliminary Decision in section 1 of the Overview to the decision. The AER describes the constituent components of its decision in section 2 of the Overview and the interrelationships between those components in section 4 of the Overview and why it considers its decision, as a whole, will contribute to the achievement of the NEO to the greatest degree in section 1 of the Overview.

Scope of Work

13 We request that you:

(a) review and consider the material we have provided with this letter, including Energex's Submissions and Revised Regulatory Proposal and the expert reports and related material (the ***Energex Material***) (which is listed in Annexure A to this letter);

(b) prepare an expert report responding to the questions set out below which are relevant to the Final Decision to be made by the AER upon revocation of the Preliminary Decision.

The questions below are necessarily premised upon the assumption that the new determination will contain the same constituent decisions as the Preliminary Decision .

14 Your expert report should address the following matters (in each case making that assumption).

NEO, Pricing and revenue principles and materially preferable NEO decision

(a) Set out your understanding, as an expert economist, of the NEO.

(b) Set out the principles which should be adopted in a regulatory regime to achieve the NEO.

(c) Explain the role of:

(i) the building blocks approach under the NER and how it relates to the NEO;

(ii) the pricing and revenue principles and how they relate to the building blocks approach and the NEO.

(d) In your view, is the application of the building blocks framework likely or not to contribute to the achievement of the NEO and if so, how?

(e) If there is a material error in the application of the building blocks framework (that is, an error in the estimation of a component of the building blocks):

(i) is the outcome likely or not to contribute to the achievement of the NEO?

(ii) what is the nature or type of consequence that may arise in such circumstances?

(iii) are these consequences or the risks associated with such consequences likely to be different depending on the nature, magnitude and number of error/s?

In responding to (i) to (iii) above please include in your response discussion of the consequence if the material error is in estimating:

(A) the return on capital building block; and/or

(B) the estimated cost of corporate income tax building block.

(f) Summarise:

(i) any errors made by the AER as identified in the expert reports, which suggest that the principles (including the revenue and pricing principles), the building blocks and any other rules you have identified above have been offended;

(ii) each material constituent component of the preliminary decision on the rate of return and gamma and, in turn, the overall likely impact of the decisions, in terms of the NEO, on the business of Energex over the regulatory review period.

(g) If any material error in the application of the building blocks framework is corrected:

(i) would the outcome be likely to contribute to the achievement of the NEO to a greater degree?

(ii) how is the extent of the contribution to the achievement of the NEO to be assessed?

(iii) identify what consequences would need to result and the extent of the contribution to the achievement of the NEO in order for such outcome to be a "materially preferable" outcome and why?

In responding to (i) to (iii) please bear in mind s71P(2a)(d)(ii) NEL.

(h) In its Preliminary Decision, in respect of:

(i) the allowed rate of return for the first regulatory year of the next regulatory period the AER's decision was not to accept Energex's proposed rate of 7.75%. The AER's decision was to allow a rate of 5.85%[10]; and

[10] The rate of 5.85% is to be updated annually due to a trailing average portfolio approach to estimating debt which incorporates annual updating of the allowed return on debt.

(ii) the value of imputation credits when estimating the cost of corporate income tax the AER's decision was not to accept Energex's proposed value of 0.25. The AER's decision was to adopt a value of 0.4.

Assuming that the AER's decision is based upon material error, as is submitted in the Energex Material, and assuming that correction of those errors results in the rates and values proposed by Energex in its revised proposal (namely a rate of return of 7.42% for the first regulatory year and gamma of 0.25), would a decision based upon the rates and values proposed by Energex result in, or be likely to result in, a decision which is materially preferable to the Preliminary Decision in making a contribution to the achievement of the NEO. In arriving at your opinion in answer to this question you are to consider:

(i) how the constituent components of the AER's decision interrelate with each other and with the grounds of error raised by Energex; and

(ii) the revenue and pricing principles to be taken into account under s16 NEL (in the same manner in which the ER is to take these principles into account); and

(iii) in assessing the extent of contribution to the achievement of the NEO, consider the AER's decision as a whole; and

(iv) the following matters must not, in themselves, determine the question about whether a decision based upon the rates and values proposed by Energex would be a materially preferable NEO decision:

(A) the establishment of an error by the AER (under section 71C(1) of the NEL);

(B) consequences for, or impacts on, the average annual regulated revenue of Energex; and

(C) that the amount that is specified in or derived from the reviewable regulatory decision exceeds the threshold amount for obtaining leave for aa review of the decision (the amount specified in section 71F(2) of the NEL.)

For the purpose of responding to (h) you should assume that Energex estimates that (assuming all else remains unchanged from the AER's Preliminary Decision) the revenue impact i.e. shortfall,

- of the difference between AER's preliminary decision on the rate of return of 5.85% and Energex's rate of return of 7.42% over a 5 year period to be approximately **$1,115million** with the respective impacts of the returns to equity and debt being $863million and $252million respectively;
- of the difference between the AER's preliminary decision estimate of gamma (0.4) and Energex's proposed estimate (0.25) to be approximately $78 million (nominal, unsmoothed) over the 2015-20 regulatory control period.

Your obligations

15 Your report may be used in evidence in court proceedings. As an expert witness you have an overriding duty to assist the Court on matters relevant to your area of expertise. This is an obligation that the Courts are careful to enforce.

16 At no stage should you act in a manner which is unethical, improper or unprofessional. Among other things, this means that although you are retained by our client in this matter, you should act independently, without bias and free of any conflict of interest. This is particularly important in terms of your obligation to provide an independent opinion to the Court.

17 Sanctions for unethical or improper conduct are significant and wide ranging, including possible orders of contempt and perjury, the making of adverse costs orders against you personally, loss of credibility and, where relevant, disciplinary action before your own regulatory body.

Your obligations to our client

18 We will rely on you to let us know if any aspect of this matter is outside your area of expertise and experience and if so, to let us have your recommendations as to an expert who may be able to assist in that area.

19 You will inform us of any matters which might be said to affect your independence. You will not take any action which will compromise your independence in any way.

20 You will also inform us if you have any conflicting interests or if you have given any advice which may be argued to be inconsistent with your opinion in this matter.

21 You agree that you will not without the written consent of Energex accept any instructions from anyone whose interests conflict with those of our client and will not provide any opinion or information to any of those persons.

Your report

22 You are required to form an opinion on the basis of the facts and assumptions put before you. If you are of the view that further factors or assumptions are necessary to enable an opinion to be given, you will draw our attention to those matters.

23 The report you prepare will be used by you only in connection with this retainer and, except to the extent that it is published or read out in Court, will be kept confidential.

Obligations during your retainer

24 If at any time you a receive a subpoena, notice or request concerning production of any documents connected with the retainer or to give evidence which may include your opinions in this matter, you will inform us or our client immediately.

Your fees

25 Once you have had an opportunity to consider these instructions could you please confirm your estimate of fees and disbursements you anticipate will be incurred in preparing a report.

Expert Witness Code of Conduct

26 We ***enclose*** a copy of Practice NoteCM7 – Expert witnesses in proceedings in the Federal Court of Australia. Please ensure your report complies with the requirements of Practice Note CM7 and also certify in your report that you have complied with Practice Note CM7.

We look forward to working with you.

Yours sincerely

Alf Pappalardo
Partner
Allens

Robyn Morrison
Special Counsel
Allens
Robyn.Morrison@allens.com.au
Tel 61 7 3334 3276

Annexure A – Energex Material	
1	AER – Preliminary decision Energex distribution determination Overview – April 2015 http://www.aer.gov.au/sites/default/files/AER%20-%20Preliminary%20decision%20Energex%20distribution%20determination%20-%20Overview%20-%20April%202015.pdf
2	Energex – Regulatory Proposal Summary – October 2014 http://www.aer.gov.au/sites/default/files/Energex%20-%20Regulatory%20Proposal%20Summary%20-%20October%202014.pdf
3	Energex – Regulatory Proposal Overview 18.01 (low res) – October 2014 http://www.aer.gov.au/sites/default/files/Energex%20-%20Regulatory%20Proposal%20Overview%2018.0%20%28low%20res%29%20-%20October%202014.pdf
4	Energex – 39, Estimating the required return on equity – SFG Consulting (28 August 2014) – October 2014 http://www.aer.gov.au/sites/default/files/Energex%20-%2039.%20Estimating%20the%20required%20return%20on%20equity%20-%20SFG%20Consulting%20-%20October%202014.pdf
5	Energex – 45, Value of imputation credits (gamma) – October 2014 http://www.aer.gov.au/sites/default/files/Energex%20-%2045.%20Value%20of%20imputation%20credits%20%28gamma%29%20-%20October%202014.pdf
6	Energex – 46, An appropriate regulatory estimate of gamma – SFG (May 2014)– October 2014 http://www.aer.gov.au/sites/default/files/Energex%20-%2046.%20An%20appropriate%20regulatory%20estimate%20of%20gamma%20-%20SFG%20-%20October%202014.pdf
7	Energex – Submission on Energex's regulatory proposal 2015 – 20 Response to AER issues paper – 30 January 2015 http://www.aer.gov.au/sites/default/files/Energex%20-%20Submission%20on%20Energex%27s%20regulatory%20proposal%202015-20%20and%20AER%20issues%20paper%20-%2030%20January%202015.pdf
8	Energex – Submission on Energex's regulatory proposal 2015 – 20 SFG, The required return on equity Initial review of the AER draft decisions– attachment 1 – 30 January 2015 http://www.aer.gov.au/sites/default/files/Energex%20-%20Submission%20on%20Energex%27s%20regulatory%20proposal%202015-20%20and%20AER%20issues%20paper%20-%20attachment%201%20-%2030%20January%202015.pdf
9	Energex – Submission on Energex's regulatory proposal 2015 – 20 Response to AER issues paper – Gamma attachment 2 – 30 January 2015 http://www.aer.gov.au/sites/default/files/Energex%20-%20Submission%20on%20Energex%27s%20regulatory%20proposal%202015-20%20and%20AER%20issues%20paper%20-%20attachment%202%20-%2030%20January%202015.pdf
10	Energex – response to Issues paper – Supplementary response re return on equity and gamma – 18 February 2015 http://www.aer.gov.au/sites/default/files/Energex%20-%20response%20to%20Issues%20Paper%20-%20Supplementary%20response%20-%2018%20February%202015.pdf
11	[No item 11]
12	Energex – Attachment 1 to supp response SFG The required return on equity for the benchmark efficient entity – 13 February 2015 http://www.aer.gov.au/sites/default/files/Energex%20-%20Attachment%201%20to%20supp%20response%20SFG%20%2813%20Feb%2015%29%20Overall%20cost%20of%20equity%20-%2018%20February%202015.pdf
13	Energex – Attachment 2 to supp response SFG Beta and the Black Capital Asset Pricing Model – 13 February 2015 http://www.aer.gov.au/sites/default/files/Energex%20-%20Attachment%202%20to%20supp%20response%20SFG%20%2813%20Feb%2015%29%20Sharpe-Lintner%20CAPM%20and%20Black%20CAPM%20-%2018%20February%202015.pdf
14	Energex – Attachment 3 to supp response SFG Share prices, the dividend discount model and the cost of equity for the market and a benchmark energy network – 13 February 2015 http://www.aer.gov.au/sites/default/files/Energex%20-%20Attachment%203%20to%20supp%20response%20SFG%20%2813%20Feb%2015%29%20Dividend%20discount%20model%20-%2018%20February%202015.pdf

15	Energex – Attachment 4 to supp response SFG Using the Fama-French mode lto estimate the required return on equity – 13 February 2015 http://www.aer.gov.au/sites/default/files/Energex%20-%20Attachment%204%20to%20supp%20response%20SFG%20%2813%20Feb%2015%29%20Fama-French%20three%20factor%20model%20-%2018%20February%202015.pdf
16	Energex – Attachment 5 to supp response NERA Historical estimates of the market risk premium – February 2015 http://www.aer.gov.au/sites/default/files/Energex%20-%20Attachment%205%20to%20supp%20response%20NERA%20%2813%20Feb%2015%29%20Historical%20MRP%20-%2018%20February%202015.pdf
17	Energex – Attachment 6 to supp response NERA Empirical performance of the Sharpe-Lintner and Black CAPM – February 2015 http://www.aer.gov.au/sites/default/files/Energex%20-%20Attachment%206%20to%20supp%20response%20NERA%20%2813%20Feb%2015%29%20Empirical%20performance%20of%20the%20Sharpe-Lintner%20and%20Black%20CAPMs%20-%2018%20February%202015.pdf
18	Energex – Attachment 7 to supp response Incenta Further update on the required return on equity from independent expert reports – February 2015 http://www.aer.gov.au/sites/default/files/Energex%20-%20Attachment%207%20to%20supp%20response%20%20Incenta%20%2813%20Feb%2015%29%20Independent%20expert%20reports%20-%2018%20February%202015.pdf
19	Energex – Attachment 8 to supp response SFG Estimating Gamma for regulatory purposes – 6 February 2015 http://www.aer.gov.au/sites/default/files/Energex%20-%20Attachment%208%20to%20supp%20response%20SFG%20Gamma%20report%20%20Feb%202015%20-%2018%20February%202015.pdf
20	AER – Preliminary decision Energex distribution determination – Attachment 3 – Rate of Return – April 2015 http://www.aer.gov.au/sites/default/files/AER%20-%20Preliminary%20decision%20Energex%20distribution%20determination%20-%20Attachment%203%20-%20Rate%20of%20Return%20-%20April%202015.pdf
21	AER – Preliminary decision Energex distribution determination – Attachment 4 – Value of Imputation credits – April 2015 http://www.aer.gov.au/sites/default/files/AER%20-%20Preliminary%20decision%20Energex%20distribution%20determination%20-%20Attachment%204%20-%20Value%20of%20imputation%20credits%20-%20April%202015.pdf
22	Energex's Revised Regulatory Proposal July 2015
23	Frontier Economics, Key Issues in Estimating the Return on Equity for the Benchmark Efficient Entity, June 2015 (Appendix 7.1).
24	Statement of Dr Robert J. Malko, Malko Energy Consulting 16 June 2015 (Appendix 7.2).
25	NERA, Further Assessment of the Historical MRP: Response to the AER's Final Decisions for the NSW and ACT Electricity Distributors, June 2015 (Appendix 7.3).
26	Frontier Economics, An Updated Estimate of the Required Return on Equity, June 2015 (Appendix 7.4)
27	Frontier Economics, Review of the AER's Conceptual Analysis for Equity Beta, May 2015 (Appendix 7.5).
28	Frontier Economics, Cost of Debt Transition, June 2015 (Appendix 7.6).
29	Queensland Treasury Corporation, Return on Debt Transition Analysis, June 2015 (Appendix 7.7).
30	Queensland Treasury Corporation, PTRM-Weighted Trailing Average Approach, June 2015 (Appendix 7.8).
31	Frontier – An Appropriate Regulatory Estimate of Gamma – June 2015 (Appendix 8.1).

Category B	
30	National Electricity (South Australia) Act 1996 http://www.legislation.sa.gov.au/LZ/C/A/NATIONAL%20ELECTRICITY%20(SOUTH%20AUSTRALIA)%20ACT%201996/CURRENT/1996.44.UN.PDF
31	Chapter 6 in version 58 NER http://www.aemc.gov.au/getattachment/32ccc9a9-e114-4e23-9a1f-902f2027c023/National-Electricity-Rule-Version-58.aspx
32	Chapter 11 in version 71 NER http://www.aemc.gov.au/getattachment/e20899b9-3eea-4fd7-b2c3-afbacc2b9127/National-Electricity-Rules-Version-71.aspx

Annexure A2 – Curriculum Vitae

Greg Houston

Partner

HoustonKemp
Level 40, 161 Castlereagh St
Sydney NSW 2000
Tel: +61 2 8880 4810
Mobile: +61 417 237 563
E-mail: Greg.Houston@houstonkemp.com
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 Experience[1]

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** **Arbitral 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 Dorojay 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	**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 Evidence[2]

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 Publications[3]

2015

Competition Law Conference, Sydney
The Public Interest in Private Enforcement
Paper and Speech, Sydney, 30 May 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

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

[3] Past seven years

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

HOUSTONKEMP
Economists

Level 40, 161 Castlereagh Street
Sydney NSW 2000

Phone: +61 2 8880 4800