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AER Determination for ActewAGL Distribution - Contribution to NEO and Preferable NEO Decision

A report for ActewAGL Distribution

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Contents

1.	Introduction	1
1.1	Scope of report	1
1.2	Qualifications	1
1.3	Structure of report	2
2.	Context and Purpose of Report	3
2.1	National Electricity Objective	3
2.2	NEO reference point for AER decision making	3
2.3	Scope and purpose of report	4
3.	The NEO and Principles for its Promotion	6
3.1	National Electricity Objective	6
3.2	Principles necessary for promotion of the NEO	9
3.3	Building block approach reflects these principles	11
3.4	The role of benchmarking within the regulatory framework	15
3.5	Building blocks and pricing principles necessary to promote the NEO	16
4.	Assessment of the AER's draft decision	17
4.1	Operating expenditure	17
4.2	Incentive mechanisms	26
4.3	Capital expenditure	27
4.4	Implications for service, safety and performance	33
4.5	The allowed rate of return	35
4.6	Demand and consumption forecasting	43
4.7	Interrelationships	45
4.8	Conclusion	47
5.	A Materially Preferable Decision	49
5.1	Framework	50
5.2	AER's framework for identifying a preferable decision	54

5.3 Does the AER's decision represent a preferable decision?	56
5.4 Is ActewAGL's revised proposal a materially preferable decision?	60
6. Declaration	62
Annexure A – Letter of Instruction	
Annexure A – Curriculum Vitae	

Figures

Figure 1	A preferable decision	52
Figure 2	A materially preferable decision	53
Figure 3	The NEO requirement	57

Tables

Table 1	Summary of matters relevant to forecast operating expenditure	22
Table 2	Summary of matters relevant to forecast capital expenditure	31
Table 3	Summary of matters relevant to the allowed rate of return	42



1. Introduction

I have been asked by ActewAGL Distribution (ActewAGL) to prepare this report in accordance with the instructions.

Specifically, the instructions from ActewAGL ask that I undertake an economic review of the 27 November 2014 draft decision (the draft decision) of the Australian Energy Regulator (AER) in relation to ActewAGL's distribution determination for the 2015–19 regulatory control period. I have been asked to assume that the AER's final decision reflects its draft decision, and to express an opinion on the extent to which such a final 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 draft decision, both as a whole and in relation to its various constituent components, assessed by reference to the national electricity objective (NEO). It is not the purpose of my review to address in a detailed manner the individual elements of the draft decision. Indeed, ActewAGL has separately commissioned a number of experts to review various matters arising in constituent components of the draft decision, and the reports prepared by those experts have been made available to me in order to prepare this report.

Rather, my report assesses the extent to which various components of the draft 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. In making this assessment I have also been asked to identify and evaluate the manner in which any constituent components of the draft decision relate to each other and the extent to which that relationship has been taken into account by the AER. Finally, I have also been asked whether the errors identified by the various experts from which ActewAGL has sought opinions, if corrected, would or would be likely to result in a materially preferable decision in terms of achievement of the NEO.

ActewAGL's 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 on a wide range of regulatory, competition and financial economics assignments.

My industry sector experience spans aviation, beverages, building products, e-commerce, electricity and grains, insurance, medical waste, mining, payments networks, 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.

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 and gas network services. The expert panel provided its report in April 2006, and many of its recommendations form the basis for the current framework of national gas and electricity laws and rules.

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

In preparing this report I have been provided with a copy of the Federal Court practice note CM7, entitled *Expert Witnesses in Proceedings in the Federal Court of Australia* (the Guidelines). I have read the Guidelines and agree to be bound by them. My declaration in compliance with the Guidelines is set out in section 6.

I have been assisted in the preparation of this report by my Sydney-based colleagues, Ann Whitfield, 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 ActewAGL has asked me to address in relation to the AER's draft 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 objectives;
- in section 4 I present my assessment of the AER's draft decision and provide my opinion as to whether, having regard to a number of expert reports that I have reviewed, the AER has met the contribution to the NEO requirement;
- in section 5 I present my opinion as to whether the AER's draft decision meets the NEO preferable decision requirement and, separately, whether ActewAGL's revised regulatory proposal would result in a materially preferable regulatory decision; and
- finally, section 6 contains my declaration, in accordance with the Guidelines.

2. Context and Purpose of Report

Before expanding on the scope and purpose of my report, it is helpful to summarise the context for the AER's distribution determination, 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 draft decision.

Necessarily, the summary I set out below is a condensation of that provided in ActewAGL's instructions to me.¹ To the extent that there exist 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 ActewAGL's 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:²

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 ActewAGL's revised regulatory proposal is a 'designated reviewable regulatory decision'.³ 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; and
- 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, where there are two or more possible designated 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.

¹ ActewAGL, Letter to Greg Houston, 12 February 2015.

² The law, part 7.

³ ActewAGL, Letter to Greg Houston, 12 February 2015.

Finally, on any merits review of the AER's final decision, the Australian Competition Tribunal is only entitled to vary or set that final decision aside if it is satisfied that to do so will, or is likely to, result in a (modified) decision that is 'materially preferable' in terms of contributing to the NEO.

2.3 Scope and purpose of report

I have been asked by ActewAGL to review the AER's draft decision, ActewAGL's revised regulatory proposal and a number of expert reports on various aspects of the draft decision, with particular attention to errors in the draft decision identified by each expert. I have also been asked to assume that the position adopted by the AER, including the errors identified by each expert, are repeated by the AER in its final 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 ActewAGL's revised regulatory proposal.

2.3.1 Question 1

The general questions on which I have been asked to provide my opinion relate to:

- my understanding of the NEO requirement and the revenue and pricing principles set out in the national electricity law;
- the principles that should be adopted in a regime that promotes the NEO requirement, including the way in which the revenue and pricing principles may be relevant and the importance of incentives;
- the role of the building block approach in the rules and whether it is concordant with the NEO and the revenue and pricing principles;
- the role of benchmarking within the regulatory framework set out in the rules, and its relation to the promotion of the NEO; and
- the basis on which a distribution determination that is not in accordance with either the revenue and pricing principles or the rules 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 draft decision. Specifically, I have been asked:

- to summarise any aspects of the final decision, on the assumption that it replicates the draft decision, that suggest that one or more of the requirements in the rules or law have been offended;
- to summarise each material constituent component of the final decision, on the assumption that it replicates the draft decision, and its overall impact on the business of ActewAGL over the 2014 to 2019 regulatory control period;
- to indicate the extent to which the AER has adequately specified the manner in which the constituent components of the draft decision relate to each other and the manner in which that interrelationship has been taken into account in the draft decision; and
- to opine on whether, having regard to all of the material to which I refer above, the AER has met the NEO requirement.

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

2.3.2 Question 2 and 3

Drawing on this framework of considerations and analysis, ActewAGL has also asked me to assess and report on two further substantive questions. These are to assess whether, in my opinion:

- if the draft decision is replicated in its final 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
- if the errors were corrected, and having regard to all other relevant considerations, this would be likely to result in a materially preferable NEO decision overall.

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 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; and
- the role of the building blocks under the rules in meeting those objectives.

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:⁴

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 been developed on 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 NEO, then the national electricity market objective:⁵

... 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 an electricity service serve 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.

⁴ The law, part 7.

⁵ Hansard, South Australia House of Assembly, 9 February 2005.

Similarly, when explaining the objective of the law in 2005, the then Minister for Energy explained that:⁶

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:

- 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 over time, in the face of changing productivity and/or technology (which reduces the cost of production and alters the optimal mix of inputs), and the changing preferences of consumers, which alters the good and services that are desired the most by consumers.

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 consumers are able to purchase them at prices no greater than the utility they derive from using electricity services; and
- the reference to efficiency in ‘investment in’ and for the ‘long term’ interests of consumers refers to its dynamic dimension, ie, the NEO will be promoted if decisions are made that give greater weight to long term productive and allocative efficiency considerations, as distinct from immediate or near term efficiency outcomes.

The specific reference to the interest of consumers in the ‘long term’ and the reduced emphasis it implies for short term considerations recognises that implicit in the application of frameworks for economic regulation is the 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 by forcing a substantial reduction in consumer prices), is not consistent with the achievement of long term productive or allocative efficiency – because it threatens the sustainability of a service provider’s operations or its efficient future investment plans.

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 terms (over a period of time). However, by

⁶ Hansard, South Australia House of Assembly, 9 February 2005.

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:⁷

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 explained above that the specific reference in the NEO to the 'long term' serves to clarify that the balance of emphasis is to be given to the dynamic, ie, 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. However, it follows that promoting economic efficiency does not necessarily promote the interests of consumers. 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 the long term consumer interests.⁸

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. In this circumstance, the promotion of a productively efficiency outcome would be 'for the... interests of producers'.

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 services 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, which is in the long term interests of consumers, provided that such efficiency gains are ultimately reflected in lower prices. Similarly, a reduction in profits can also have adverse implications for investment in the network, as I discuss in section 4.5.

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 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. 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 narrowly defined attributes of an electricity service. By way of an example to the contrary, the NEO does not permit its efficiency focus to be

⁷ Expert Panel, *Review of the Limited Merits Review Regime*, Stage 2 Report, 30 September 2012, page 38.

⁸ Expert Panel, *Review of the Limited Merits Review Regime*, Stage 2 Report, 30 September 2012, page 4.

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, ie:⁹

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 this 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 balance of emphasis is to be given to longer term, dynamic efficiency considerations.

3.2 Principles necessary for promotion of the NEO

Administratively determining the maximum level of revenue that may be derived 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.

This trade-off is a consequence of the tension between productive efficiency and short term allocative efficiency that arises from the ability of price changes to have contrasting effects on the pursuit of these two dimensions of efficiency. In other words, setting the maximum level of revenue that may be derived, 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 to eliminate each and every opportunity for a service provider to benefit (in the form of temporarily higher profits) from improved cost efficiency; and
- attaining greater short term allocative efficiency, by seeking to ensure that prices reflect as closely as possible the efficient cost of supply.

By way of example, if a regulatory regime permits the benefit of an efficiency improvement to be captured by consumers in its entirety, ie, in the form of lower prices than would otherwise be the case, then short term allocative efficiency will be promoted at the expense of longer term productive efficiency.

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

- 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;

⁹ Hansard, South Australia House of Assembly, 27 September 2007.

- 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 allow the service provider to retain some of the benefit of any improvements in efficiency that it achieves.

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 the principles 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 direct control services.

The reference to ‘at least’ efficient costs in the principle set out above is consistent with the inclusion in the regulatory framework of incentive mechanisms that allow 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 network services when making that assessment.

In addition to the trade-off between productive and short-term allocative efficiency, I also note that the regulatory task is made more challenging by the fact that what constitutes an efficient outcome is constantly changing, and cannot be objectively determined.

Consumer preferences and technologies change over time, altering the most efficient mix of goods and services. Technology also changes over time, changing production costs and potential alternatives for producing a given mix of goods and services. As a consequence, what constitutes an efficient outcome is constantly changing.

In practical terms, efficiency is therefore something that businesses may be constantly working towards, without ever actually achieving, as the efficiency frontier itself is always moving, and there are constraints on businesses constantly altering their mix of goods and services and production processes. 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 evolving to ensure that they continue to produce the optimal mix of goods and services at least cost over time. In the real world companies' abilities to transform inputs into outputs efficiently will be constrained by their specific operating environments, and will vary over time. This is particularly true for businesses operating in industries that are capital intensive and where there are long-lived assets, 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 remains in business. 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 the real world businesses operate in markets that are less than perfectly competitive and so this external gauge of whether or not a business is achieving frontier efficiency is no longer available.

In real-world circumstances of less than perfect competition, the assessment of efficiency typically becomes a relative concept. A particular business' efficiency is measured by considering its costs relative to the costs of other businesses. However, it is again difficult to measure when a business is behaving efficiently, once you move away from the perfectly competitive market paradigm.

In a perfectly competitive market, businesses produce homogenous outputs. The efficiency of one business can therefore be directly compared to the efficiency of another, since the outputs produced are the same. However, as soon as the assumption of homogeneity is relaxed, it becomes difficult to measure the efficiency of one business against another, since the outputs they are producing are different. In making a comparison it is therefore necessary to control for all of the relevant differences in the circumstances between the businesses and the differences in the outputs produced. Often, this may leave little that can be said about the relative efficiency of the two businesses.

Given these challenges, the provision of effective incentive mechanisms within the regulatory framework is of particular importance in promoting the NEO, as a means of addressing the problem of not being able to objectively determine the 'efficient' level of expenditure, and to accommodate the constant movement in the efficiency frontier. As already discussed, 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 block approach to determine the total revenue to be derived by a network service provider in each year of a regulatory control period, where the building blocks are:¹⁰

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;
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.

¹⁰ The rules, rule 6.4.3.

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.¹¹

3.3.1 The projected capital base

The building block 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)¹² – 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 whether, in hindsight, that capital expenditure may have turned out to be efficient.¹³ 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 the projected capital base to include only 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.¹⁴ The use of the term ‘reasonably reflects’ recognises that an assessment is required (ie, it is subjective), rather than the expenditure criteria reflecting objective standards. This is consistent with the view that whether or not a business is operating efficiently cannot be directly observed, as I discussed above.

It follows that the projected capital base component of the building block 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.

¹¹ 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.

¹² The rules, schedule 6.2.2A

¹³ The rules, schedule 6.2.

¹⁴ 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 the determination of the return on capital in each regulatory year by multiplying the allowed rate of return by the projected capital base in the respective year. Further, the rules require the allowed rate of return:¹⁵

... 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 by deriving the return on capital in accordance with the rules, application of this element of the building block approach:

- provides assurance to investors that they will derive a return on investment commensurate with those of a similar degree of risk, which encourages ongoing investment in network infrastructure and so promotes dynamic efficiency; and
- contains measures to prevent investors from deriving excessive rates of return, which promotes allocative and productive 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 depreciation be recovered over an asset's life not to exceed the initial value of that asset, which promotes allocative and productive efficiency;¹⁶ and
- that 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.¹⁷

3.3.4 The estimated cost of corporate income tax

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

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

¹⁵ The rules, rule 6.5.2(c).

¹⁶ The rules, rule 6.5.5(b).

¹⁷ The rules, rule 6.5.5(b).

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:¹⁸

- (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 ‘increments or decrements resulting from an incentive mechanism to encourage gains in efficiency’ explicitly recognises the importance of providing incentives for efficiency in the application of economic regulation.

This building block enables a regulator to offer service providers financial incentives to improve all three dimensions of economic efficiency and, indeed, for a service provider to be financially penalised for inefficiency.

As I outlined earlier, the provision of incentives is important in addressing the constant change in what constitutes efficient outcomes, due to changes in technology and consumer preferences, and the inability to directly observe 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 efficiency, provided that these efficiency improvements are eventually reflected in lower prices and/or improved service 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:

- 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

¹⁸ The rules, rule 6.5.6(c).

the 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 application of a control mechanism, which promotes allocative and productive efficiency.

Similarly, the building block approach provides an allowance for decrements arising from the use of assets that provide both controlled services and certain other services, which allows consumers of electricity services to derive a benefit in these circumstances. This allows the price of regulated services to better reflect the 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 features, ie:

- 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 expected costs, thereby providing for 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 The role of benchmarking within the regulatory framework

Benchmarking is a technique that can be adopted to inform the determination of the efficient and prudent costs that would be incurred by the service provider in relation to the operating and capital expenditure building blocks.

I explained earlier that, given the absence of any objective measure of efficient outcomes, the assessment of efficiency typically becomes a relative concept, with a given business' efficiency measured by considering its costs relative to the costs of other businesses. The general term used for such a comparison process is 'benchmarking'. Such comparisons need to be undertaken with care, given the myriad differences between businesses that can affect both the outputs they produce and the necessary quantity of inputs.

Benchmarking is one technique that can be used to inform the regulator's view as to the level of prudent and efficient costs. However benchmarking cannot by itself result in an objective measure of the efficiency of a service provider. Differences in the outcomes of a benchmarking comparison between one service provider and another cannot be directly translated as reflecting differences in efficiency. Rather, the results of an benchmarking analysis also reflect differences in the circumstances of each business that are not fully captured by the particular benchmarking technique or parameters applied, as well as differences due to inconsistencies in the data used and the modelling techniques adopted. Benchmarking is likely to be most useful in highlighting areas in which further investigation is warranted.

The rules reflect the intrinsic role and limitations of benchmarking as being but one tool available to the regulator to assist in informing its decisions. I described in the previous section that the AER is required to make constituent decisions in relation to a number of building block components, including forecast operating expenditure and capital expenditure. The regulator's decision in relation to both operating and capital expenditure is required to reflect the expenditure it considers would be required by the network service provider to meet the expenditure objectives, acting prudently and efficiently.

In reaching this decision, the AER is to have regard to the 'expenditure factors' set out in the rules, of which

there are eleven. One of the expenditure factors explicitly relates to benchmarking:¹⁹

the most recent annual benchmarking report that has been published under rule 6.27 and the benchmark operating [capital] expenditure that would be incurred by an efficient Distribution Network Service Provider over the relevant regulatory control period.

However, the other expenditure factors reflect matters that are also highly relevant considerations in reaching a determination in relation to the prudent and efficient level of expenditure. In particular, the following two factors relate directly to the service provider's ability to recover its costs efficiently incurred, and consistency with the incentive mechanisms incorporated in the regulatory framework:²⁰

the actual and expected operating expenditure of the Distribution Network Service Provider during any preceding regulatory control periods

whether the operating expenditure forecast is consistent with any incentive scheme or schemes that apply to the Distribution Network Service Provider

Ultimately, whilst the expenditure factors (including the reference to benchmark expenditure) provide relevant guidance to the AER as to the matters it may find helpful to consider, the AER's decision must also comply with the requirements in the rules in relation to the determination of operating and capital expenditure forecasts (ie, the expenditure objectives and expenditure criteria set out in the rules), and be consistent with the NEO requirement. Benchmarking simply represents one of the tools available to the AER to inform this decision.

The adoption of benchmarking does not, in itself, promote the NEO. Rather, it is the extent to which the resulting expenditure forecasts reflect the costs that would be incurred by a prudent and efficient operator that are relevant to furthering the achievement of the NEO.

3.5 Building blocks and pricing principles necessary to promote the NEO

Taken together, the building block approach and the revenue and pricing principles amount to the essential elements of a framework of economic regulation that is capable of achieving the NEO. By contrast, the expenditure factors listed in the rules (including the reference to benchmark expenditure) amount to a series of tools and considerations that may be adopted to assist the regulator, but do not amount to objectives in themselves.

In economic terms, the building block requirements and pricing principles represent fundamental requirements for the achievement of the NEO. Failure to give effect to each and every building block, and to comply with each of the main revenue and pricing principles, will inevitably compromise the achievement of the NEO requirement.

¹⁹ The rules, rule 6.5.6(e)(4) and 6.5.7(e)(4).

²⁰ The rules, rule 6.5.6(e)(5) and 6.5.6(e)(8).

4. Assessment of the AER's draft decision

In this section I present my assessment of certain aspects of the AER's draft decision and, in particular:

- summarise each material constituent component of the draft decision and its economic impact on the business of ActewAGL over the regulatory period;
- summarise those elements of the AER's draft decision that, as identified in ActewAGL's revised regulatory proposal and the expert reports I have reviewed, suggest that one or more the principles I discuss above have been offended;
- indicate the extent to which the AER has adequately specified the manner in which the constituent components of the decision relate to each other and, as applicable, the manner in which that interrelationship has been taken into account; and
- provide my opinion on whether, having regard to all of the material to which I refer above, the AER is likely to have met the NEO requirement.

4.1 Operating expenditure

ActewAGL's revised regulatory proposal contains a \$371 million allowance for operating expenditure for the 2014 to 2019 regulatory control period, whereas the draft decision provides an allowance for operating expenditure of \$220 million, which is 40.7 per cent lower than that in ActewAGL's revised regulatory proposal.²¹ In other words, the draft decision provides an allowance for forecast operating expenditure for the 2014 to 2019 regulatory control period that is approximately \$150 million less than that in ActewAGL's revised regulatory proposal.

Approximately \$106 million²² of this difference results from:

- ActewAGL's use of revealed cost to forecast operating expenditure in the base year; and
- the AER's use of benchmarking studies to forecast operating expenditure in the base year.

Further, approximately \$43 million²³ of the \$150 million difference in the total operating expenditure allowance in the draft decision and that in ActewAGL's revised regulatory proposal relates to the AER's decision to disallow step-changes that ActewAGL considers to be compliant with clause 6.5.6(c) of the rules. This rule requires the AER to accept a proposed step-change if it is necessary for forecast operating expenditure to reasonably reflect the operating expenditure criteria.

The extent of the AER's reliance on benchmarking studies in setting the allowance for operating expenditure is reflected in a number of statements made by it, eg:

... the major changes to the NER made in November 2012 [...] placed significant new emphasis on the use of benchmarking in our expenditure analysis.²⁴

Benchmarking is central to our task of assessing expenditure forecasts.²⁵

²¹ ActewAGL, *Revised Regulatory Proposal 2015-19*, January 2015, page xi.

²² ActewAGL, *Revised Regulatory Proposal 2015-19*, January 2015, page 84.

²³ ActewAGL, *Revised Regulatory Proposal 2015-19*, January 2015, page 218.

²⁴ AER, *Draft Decision ActewAGL distribution determination 2015-16 to 2018-19*, Attachment 7: Operating expenditure, November 2014, page 13.

²⁵ AER, *Draft Decision ActewAGL distribution determination 2015-16 to 2018-19*, Attachment 7: Operating expenditure, November 2014, page 41.

Benchmarking techniques enable us to objectively examine the prudence and efficiency of total forecast opex as required by clause 6.5.6 of the NER.²⁶

However, I have been provided four expert reports assessing various aspects of the AER's benchmarking analyses, and so its approach to forecasting operating expenditure. These reports identify material shortcomings and errors in the AER's approach. I summarise the findings presented in these expert reports below.

4.1.1 Advisian

I have been provided with an expert report prepared by Advisian, which reviews the cost drivers for ActewAGL's network with reference to the requirements of the rules and the findings of the AER's benchmarking report.

Advisian expresses concern that the AER has conducted a benchmarking analysis designed to provide a measure of productivity and then infers that the productivity score assessed under this analysis is an appropriate basis on which to determine the efficient level of operating expenditure for Australian network businesses. Consequently, Advisian concludes that:²⁷

The clear flaw in this approach is that it measures one parameter (productivity) and arbitrarily applies it to determine another variable (efficient opex), without appropriate consideration of the pitfalls in doing so.

Advisian identifies a number of problems with the AER's benchmarking approaches and states that its principal concern with the AER's benchmarking is that:²⁸

- it does not fully account for the technical or reporting differences between ActewAGL and the frontier businesses, including, but not limited to, differing spatial density and capitalisation practices; and that
- limited effort has been placed on ensuring that the cohort of distribution network businesses used for benchmarking purposes are comparable, even though they represent a wide array of DNSPs in network size and density from Australia, New Zealand and Ontario, Canada.

In addition, Advisian finds that the AER's benchmark approaches do not adequately take account of:²⁹

- the differences in cost categorisation between distribution network businesses;
- the actual productivity achieved by the frontier business in the base year; and
- the circumstances that are unique to ActewAGL's distribution network.

With reference to these errors, Advisian considers that the draft decision results in a substantial level of regulatory risk due to the AER incorrectly attributing productivity differences to inefficiency in operating expenditure and that, if not corrected in the final decision, this will lead to:³⁰

- material under-expenditure on operating and maintaining the 'non-frontier' networks in a safe and reliable manner which is not in the long term interest of ActewAGL's customers;
- inefficient investment or operations in the national electricity market (NEM) or ActewAGL's network; and
- failure of ActewAGL to recover the efficient cost of achieving the operating expenditure objectives for its networks.

²⁶ AER, *Draft Decision ActewAGL distribution determination 2015-16 to 2018-19*, Attachment 7: Operating expenditure, November 2014, page 41.

²⁷ Advisian, *Opex cost drivers – ActewAGL Distribution Electricity (ACT)*, January 2015, page 1.

²⁸ Advisian, *Opex cost drivers – ActewAGL Distribution Electricity (ACT)*, January 2015, page 1.

²⁹ Advisian, *Opex cost drivers – ActewAGL Distribution Electricity (ACT)*, January 2015, page 6.

³⁰ Advisian, *Opex cost drivers – ActewAGL Distribution Electricity (ACT)*, January 2015, page 2.

Further, Advisian considers that the proposed reductions in ActewAGL's forecast operating expenditure do not satisfy the operating expenditure criteria in the rules insofar as it does not comply with criterion 2 or 3 in rule 6.5.6(c), ie, it does not represent:³¹

- the costs that a prudent operator would require to achieve the operating expenditure objectives; or
- a realistic expectation of the demand forecast and cost inputs required to achieve the operating expenditure objectives.

With reference to the problems identified with the AER's benchmarking, Advisian makes adjustments to the AER's benchmarking analysis. Although Advisian considers that the results are still likely to underestimate ActewAGL's relative productivity, the adjustments made by Advisian to the AER's benchmarking analysis:³²

- result in a substantial reduction in the index point 'productivity gap' identified as the basis for the draft decision, ie, from 0.46 to 0.22; and
- indicate that ActewAGL achieves a productivity level that is within the range of the 'frontier' network businesses when assessed on a more comparable basis.

4.1.2 CEPA

I have been provided an expert report prepared by Cambridge Economic Policy Associates (CEPA) that assesses the AER's approach to benchmarking, with particular attention to:

- the adequacy of the AER's adjustments for different operating environments;
- the AER's method of calculating the efficiency frontier; and
- the manner in which the AER has applied the benchmarking results.

CEPA reviews both the AER and Economic Insights' analysis and conclude that:

- insufficient consideration has been given within the benchmarking to the DNSPs' different operating environments, as differences in DNSPs from three countries have been controlled for with a single environmental variable (ie, proportion of underground cable);³³
- the inclusion of a 'dummy variable' does not adequately control for different international operating environments;³⁴ and
- the Regulatory Information Notice (RIN) data in the form collected and used by the AER does not provide operating expenditure on a like-for-like basis across the DNSPs due to insufficient normalisation of differences in cost reporting methods.³⁵

Consequently CEPA concludes that:³⁶

Given these issues, the AER's reliance on the econometric analysis may not be in the long-term interests of consumers, and therefore not promoting the NEO, as the expenditure levels may be set below those required for the safe, secure, and reliable operation of the network.

In CEPA's expert opinion, the AER's approach to setting the efficiency frontier is very model specific and does not work as intended under alternate model specifications.³⁷ Further, CEPA uses OLS and RE (GLS) regression models and finds that the results are much tighter, ie, the efficiency gap is much smaller, across

³¹ Advisian, *Opex cost drivers – ActewAGL Distribution Electricity (ACT)*, January 2015, page 5 and 6.

³² Advisian, *Opex cost drivers – ActewAGL Distribution Electricity (ACT)*, January 2015, page 9.

³³ CEPA, *Benchmarking and setting efficiency targets for the Australian DNSPs*, January 2015, page 51.

³⁴ CEPA, *Benchmarking and setting efficiency targets for the Australian DNSPs*, January 2015, pages 14 to 18.

³⁵ CEPA, *Benchmarking and setting efficiency targets for the Australian DNSPs*, January 2015, page 54.

³⁶ CEPA, *Benchmarking and setting efficiency targets for the Australian DNSPs*, January 2015, page 34.

³⁷ CEPA, *Benchmarking and setting efficiency targets for the Australian DNSPs*, January 2015, page 34.

all DNSPs, as compared with the results that underpin the AER's draft decision.³⁸ With reference to the lack of explanatory variables in the modelling and the wide range of efficiency scores, CEPA would have expected the AER to adopt a much more cautious approach to determining the efficiency target, consistent with international best practice.³⁹

In CEPA's expert opinion, a less cautious approach to determining the efficiency frontier may result in an unrealistic or unachievable efficiency target, which would be to the detriment of the interests of consumers and the ongoing financeability of ActewAGL, and so not promote the achievement of the NEO.⁴⁰

CEPA also notes that the need to have regard to financeability is implicit in the NEO and highlights that a decision that has an adverse effect on financeability would increase a network business' costs and so not promote the NEO.⁴¹

To summarise, CEPA concludes that:⁴²

The AER has not sufficiently recognised the limitations of opex modelling, particularly when using data that may not be comparable, in setting the efficiency targets for AAD and the NSW Networks. This may result in the expenditure level being set too low for the ongoing financeability, safety, reliability and/or security of a network to be achieved.

4.1.3 Huegin

An expert report prepared by Huegin assesses the AER's benchmarking approach and considers the reasonableness of using the results to set a regulatory allowance for operating expenditure.

In Huegin's expert opinion, the analysis relied upon by the AER in making adjustments to ActewAGL's expenditure forecasts, ie, its benchmarking analysis, is too limited to facilitate meaningful conclusions, namely because:⁴³

- there has been insufficient consideration of alternative methods and model specifications, as the four models used are in fact variants of a single model, despite sensitivity testing showing the variation in results possible through small changes in assumptions;
- there is too much emphasis on a single, top-down benchmarking model;
- the efficiency frontier has been applied incorrectly, given a lack of consideration of the possibility of multiple frontiers as is common and the reliance on an average frontier over the 2009-2013 data period rather than the most recent position of the frontier in 2013;
- the chosen model, its variables and the coefficients reflect a model that has poor explanatory power for the real operating costs of an electricity network, as they fail to capture the actual drivers of expenditure or variation in the majority of network costs; and
- there is a very real potential for statistical noise, measurement error and the influence of omitted variables to be interpreted as inefficiency.

In light of these errors and shortcomings in the AER's approach to benchmarking, Huegin considers that the AER has placed undue reliance on benchmarking results and that this has led the AER to underestimate the efficient level of operating expenditure for ActewAGL.⁴⁴ Further, with reference to the 'very real probability'

³⁸ CEPA, *Benchmarking and setting efficiency targets for the Australian DNSPs*, January 2015, page 32.

³⁹ CEPA, *Benchmarking and setting efficiency targets for the Australian DNSPs*, January 2015, page vi and vii.

⁴⁰ CEPA, *Benchmarking and setting efficiency targets for the Australian DNSPs*, January 2015, page viii.

⁴¹ CEPA, *Benchmarking and setting efficiency targets for the Australian DNSPs*, January 2015, page x.

⁴² CEPA, *Benchmarking and setting efficiency targets for the Australian DNSPs*, January 2015, page ix.

⁴³ Huegin Consulting, *Technical response to the application of benchmarking by the AER*, January 2015, page 34.

⁴⁴ Huegin Consulting, *Technical response to the application of benchmarking by the AER*, January 2015, page 64.

that the benchmarking results have led the AER to underestimate the efficiency of ActewAGL, Huegin highlights that:⁴⁵

... the decisions the businesses must make to achieve the allowable forecast of opex cannot be in the long term interest of consumers.

Huegin concludes that:⁴⁶

The AER's apparent reliance on the benchmarking results to inform the efficient level of opex for the NSW and ACT networks, combined with the aforementioned failure to incorporate appropriate mitigation techniques to account for the inherent lack of stability of economic benchmarking models, renders the decision on the appropriate level of opex erroneous in our opinion.

4.1.4 PWC

An expert report prepared by PWC reviews the appropriateness of the regulatory information notice (RIN) data used by the AER for benchmarking. PWC identifies seven data quality issues that, in its expert opinion, directly impact the AER's benchmarking results:⁴⁷

- the AER has not taken into account the differences in approach used to allocate the Regulatory Asset Base for the economic benchmarking RIN;⁴⁸
- assumptions were made by DNSPs in deriving estimates of weather adjusted system demand such that the results could be misleading or unreliable;⁴⁹
- due to the lack of consistency and accuracy of the data provided on terrain factors, vegetation management practices and environmental conditions, the data does not enable comparability of efficiency levels in vegetation management;⁵⁰
- the data inputs of route line length and circuit line length may not be internally consistent, and therefore may cause inaccurate benchmarking results;⁵¹
- failure to take into account the related party arrangements and the allocation of costs could result in inaccurate benchmarking analysis;⁵²
- The differences in the allocation of indirect costs and the allocation between operating expenditure/capital expenditure should be taken into account when benchmarking the efficiency of the businesses;⁵³ and
- there are differences in accounting methodologies and the application of accounting standards, ie, inconsistent treatment of CPI and changes to the reporting of historic financial information.⁵⁴

4.1.5 Conclusion

In this section I summarise the key shortcomings and errors in the AER's approach to forecasting operating expenditure on the basis of the expert opinions provided in the expert reports I have been provided as well as my opinion as to whether the AER's decision is likely to offend the principles discussed in section 3.

⁴⁵ Huegin Consulting, *Technical response to the application of benchmarking by the AER*, January 2015, page 64.

⁴⁶ Huegin Consulting, *Technical response to the application of benchmarking by the AER*, January 2015, page 65.

⁴⁷ PwC, *Appropriateness of RIN data for benchmarking*, January 2015, page 21.

⁴⁸ PwC, *Appropriateness of RIN data for benchmarking*, January 2015, page 25.

⁴⁹ PwC, *Appropriateness of RIN data for benchmarking*, January 2015, page 26.

⁵⁰ PwC, *Appropriateness of RIN data for benchmarking*, January 2015, page 30.

⁵¹ PwC, *Appropriateness of RIN data for benchmarking*, January 2015, page 32.

⁵² PwC, *Appropriateness of RIN data for benchmarking*, January 2015, page 35.

⁵³ PwC, *Appropriateness of RIN data for benchmarking*, January 2015, page 37.

⁵⁴ PwC, *Appropriateness of RIN data for benchmarking*, January 2015, page 38.

Table 1 summarises the level of forecast operating expenditure in ActewAGL's revised proposal, the draft decision and the shortcomings and errors in the AER's approach as identified in the expert reports I have reviewed.

Table 1 Summary of matters relevant to forecast operating expenditure

Forecast operating expenditure	
ActewAGL's revised proposal	<ul style="list-style-type: none"> • Total forecast operating expenditure of \$371 million for the 2014 to 2019 period, ie:⁵⁵ <ul style="list-style-type: none"> > \$316 million for base and zero based operating expenditure based on revealed costs; > \$9.8 million for rate of change; and > \$44.1 million for step-changes;
AER's Draft Decision	<ul style="list-style-type: none"> • Total forecast operating expenditure of \$220 million for the 2014 to 2019 period, ie:⁵⁶ <ul style="list-style-type: none"> > \$210 million for base and zero based operating expenditure based on benchmarking studies;⁵⁷ > \$8.9 million for rate of change; and > \$1.4 million for step-changes.
Expert Opinion	<ul style="list-style-type: none"> • The application of the benchmarking results by the AER is not consistent with the limitations of the benchmarking approaches. • The networks used to benchmark ActewAGL's productivity are not comparable. • The AER has not adequately adjusted for differences between networks, namely between the Australian and international networks. • The AER has given insufficient consideration to alternate methods and model specifications. • The AER's definition of the 'efficiency frontier' is flawed and not consistent with international precedent. • Consequently, the draft decision: <ul style="list-style-type: none"> > will lead to material under-expenditure in and inefficient operation of, the network; > does not comply with the operating expenditure criteria; > is not in the long term interests of consumers and does not promote the NEO.

The draft decision provides an allowance for forecast operating expenditure during the 2014 to 2019 regulatory control period that is approximately \$150 million less than that in ActewAGL's revised regulatory proposal. Approximately \$106 million of this variance results from:

- ActewAGL's use of revealed cost to forecast operating expenditure in the base year; and
- the AER's use of benchmarking studies to forecast operating expenditure in the base year.

I have been provided with four expert reports assessing various aspects of the AER's benchmarking analyses, and so its approach to forecasting operating expenditure, which identify material shortcomings and errors in the AER's approach.

⁵⁵ ActewAGL, Revised Regulatory Proposal 2015-19, January 2015, page 84.

⁵⁶ ActewAGL, Revised Regulatory Proposal 2015-19, January 2015, page 84.

⁵⁷ See: AER, *Draft Decision ActewAGL distribution determination 2015-16 to 2018-19*, Attachment 7: Operating expenditure, November 2014, pages 7-19 and 7-13; and ActewAGL, Revised Regulatory Proposal 2015-19, page 84.

A common thread through the expert reports I reviewed is the identification of a number of comparability problems in the AER's benchmarking analysis, many of which arise from the inclusion of international data in the benchmarking analysis as well as flaws in the Australian RIN data itself, as noted by PWC.⁵⁸

CEPA finds that there is a different relationship between operating expenditure and cost drivers across countries and that the AER's benchmarking analysis has not adequately controlled for these differences, eg, the use of a dummy variable is insufficient.⁵⁹ Consequently, CEPA states that:⁶⁰

Given the lack of scrutiny and difficulties in using international data, it is my opinion that Economic Insights' use of Ontario and NZ data is inappropriate as a supplement to the AER's RIN database.

While the AER states that environmental variables have been considered through adjustments and sensitivity tests, Huegin notes that insufficient data is available to undertake such tests, particularly for the international networks.⁶¹ Huegin also notes that the AER's failure to adequately account for cost drivers will mean that their effect on operating expenditure is aggregated and labelled as inefficiency.⁶²

To demonstrate the effects of the AER not adequately accounting for differences between networks:

- CEPA incorporates a greater range of operating environment variables and find that the benchmarking results are 'very sensitive to the inclusion of alternative operating environment variables';⁶³ and
- Advisian makes adjustments to the AER's benchmarking to improve comparability and find that ActewAGL achieves a level of productivity within the range of 'frontier businesses'.⁶⁴

To summarise, there is a consensus amongst the experts that the AER has not adequately accounted for differences between ActewAGL and the companies used to benchmark its productivity.⁶⁵ By way of example, the experts state that:

Advisian's main concern in relation to the AER's benchmarking approach is that it does not fully account for the technical and reporting differences between AAD and the frontier businesses, and limited effort has been placed into ensuring that the cohort DNSPs used for benchmarking purposes are truly comparable.⁶⁶

... insufficient consideration has been given to the DNSPs' different operating environments within the benchmarking.⁶⁷

I note that a direct comparison of business' costs without accounting for the implications of their relevant individual circumstances would render such comparison meaningless for assessing efficiency. It follows that, notwithstanding the removal from the rules of the phrase 'in the circumstances of the relevant Distribution Network Service Provider', the AER should be expected to continue to take due account of the circumstances that could account for differences in the efficient costs of one DNSP relative to another.

⁵⁸ PwC, *Appropriateness of RIN data for benchmarking*, January 2015, page 25 to 38.

⁵⁹ CEPA, *Benchmarking and setting efficiency targets for the Australian DNSPs*, January 2015, page 17.

⁶⁰ CEPA, *Benchmarking and setting efficiency targets for the Australian DNSPs*, January 2015, page 33.

⁶¹ Huegin Consulting, *Technical response to the application of benchmarking by the AER*, January 2015, page 51.

⁶² Huegin Consulting, *Technical response to the application of benchmarking by the AER*, January 2015, page 42.

⁶³ CEPA, *Benchmarking and setting efficiency targets for the Australian DNSPs*, January 2015, page v.

⁶⁴ Advisian, *Opex cost drivers – ActewAGL Distribution Electricity (ACT)*, January 2015, page 9.

⁶⁵ See: Huegin Consulting, *Technical response to the application of benchmarking by the AER*, January 2015, pages 51 to 53; CEPA, *Benchmarking and setting efficiency targets for the Australian DNSPs*, January 2015 pages 32 to 34; and Advisian, *Opex cost drivers – ActewAGL Distribution Electricity (ACT)*, January 2015, pages 28 to 66.

⁶⁶ Advisian, *Opex cost drivers – ActewAGL Distribution Electricity (ACT)*, January 2015, page 1.

⁶⁷ CEPA, *Benchmarking and setting efficiency targets for the Australian DNSPs*, January 2015, page 32 and 35.

This was recognised by the AEMC in its final rule determination, ie, the AEMC stated that:⁶⁸

The Commission considers that the removal of the "individual circumstances" phrase will clarify the ability of the AER to undertake benchmarking. It assists the AER to determine if a NSP's proposal reflects the prudent and efficient costs of meeting the objectives. That necessarily requires a consideration of the NSP's circumstances as detailed in its regulatory proposal... to the extent different businesses have higher standards, different topographies or climates, for example, these provisions lead the AER to consider a NSP's individual circumstances in making a decision on its efficient costs.

Similarly, it was also recognised by the AER in its guidelines, ie, the AER stated that it:⁶⁹

... is also important to recognise that NSPs do not operate under exactly the same operating environment conditions. That is, operating environment conditions can have a significant impact on measured efficiency through their impact on network costs. It is desirable to adjust for the most important operating environmental differences to ensure that when comparisons are made across NSPs, we are comparing like with like to the greatest extent possible.

A number of experts also note that the AER has given insufficient consideration to alternate methods and model specifications, ie, Huegin states that:⁷⁰

The four models stated by the AER in the determination are each variations of a single model specification.

The experts also identified problems with the definition of the 'efficiency frontier' adopted by the AER, ie:

Given the lack of explanatory variables in the modelling and the wide range of efficiency scores I would have expected the AER to have adopted a much more cautious approach to setting the efficiency target in line with international precedent.⁷¹

... the analysis that the AER relied upon is based on a 'false frontier'.⁷²

CEPA also notes that international precedent is for regulators to use glide-paths, rather than full P0 adjustments, to transition regulated businesses to efficient levels of expenditure and that:⁷³

... the speed at which the AER has set the companies to reduce the inefficiency gap, given the AER estimates, is not prudent and would put at risk the achievement of the NEO.

The emphasis the AER has placed on the results of its benchmarking analysis, and the lack of caution it has applied in basing its decision directly on the results of those model, is consistent with statements that it considers that benchmarking enables it to 'objectively examine'⁷⁴ the prudence and efficiency of total forecast operating expenditure.

I explain in section 3 that the efficient level of expenditure is not something that can be directly observed. Whether or not a business is considered to be operating efficiently requires a degree of interpretation, in the light of all of the available information. I concur with the concern expressed by Advisian that the AER has conducted a benchmarking analysis designed to provide a measure of productivity and then infers that the

⁶⁸ AEMC, *Final Rule Determination National Amendment (Economic Regulation of Network Service Providers) Rule 2012*, 29 November 2012, page 107.

⁶⁹ AER, *Expenditure Forecast Assessment Guidelines*, November 2013, page 133.

⁷⁰ Huegin Consulting, *Technical response to the application of benchmarking by the AER*, January 2015, page 35.

⁷¹ CEPA, *Benchmarking and setting efficiency targets for the Australian DNSPs*, January 2015, page 35.

⁷² Huegin Consulting, *Technical response to the application of benchmarking by the AER*, January 2015, page 53.

⁷³ CEPA, *Benchmarking and setting efficiency targets for the Australian DNSPs*, January 2015, page 39.

⁷⁴ AER, *Draft Decision ActewAGL distribution determination 2015-16 to 2018-19*, Attachment 7: Operating expenditure, November 2014, page 41.

productivity score derived from that analysis is an appropriate basis on which to determine the efficient level of operating expenditure for ActewAGL

The experts highlight that the abovementioned deficiencies in the AER's benchmarking analysis give rise to a risk that the draft decision underestimates the level of efficient operating expenditure for ActewAGL.⁷⁵ Indeed, on this basis, the AER has underestimated the level of efficient operating expenditure for the 2014 to 2019 regulatory control period in the order of \$106 million.⁷⁶

Consequently, the various experts concludes that:

...the AER's reliance on the econometric analysis may not be in the long-term interests of consumers, and therefore not promoting the NEO, as the expenditure levels may be set below those required for the safe, secure, reliable operation of the network.⁷⁷

... the Economic Insights models, the AER's ex-post adjustments for operating environment factors and the averaging and roll forward methodologies each lack the robustness and credibility necessary to support recommendations of the magnitude contained in the ACT and NSW Draft Decisions.⁷⁸

Advisian recommends against the use of the AER's benchmarking analysis results as the basis for alternative Opex forecast... Advisian considers that any alternative forecast based on the Opex benchmarking approach should be reconciled to the AAD revealed base year.⁷⁹

The AER's apparent reliance on the benchmarking results to inform the efficient level of opex for the NSW and ACT networks, combined with the aforementioned failure to incorporate appropriate mitigation techniques to account for the inherent lack of stability of economic benchmarking models, renders the decision on the appropriate level of opex erroneous in our opinion.⁸⁰

To summarise, I take the expert opinions of Advisian, CEPA, Huegin and PwC to support the proposition that the shortcomings and errors in the AER's approach to forecasting operating expenditure result in an allowance for operating expenditure that is in the order of \$106 million⁸¹ less than that which would be incurred by a prudent and efficient operator.

It follows that, in my opinion the allowance for operating expenditure in the draft decision:

- does not meet the operating expenditure criteria and so the requirements of rule 6.5.6(c); and
- does not promote dynamic and allocative efficiency for the long term interests of consumers.

For these reasons, in my opinion the allowance for operating expenditure in the draft decision does not meet the NEO requirement. The significance of this conclusion in the context of the electricity services provided by ActewAGL is magnified by the quantum of expenditure to which it relates.

Further, this conclusion is reinforced to the extent that ActewAGL's other contentions with the AER's allowance for operating expenditure hold, eg, that the draft decision erroneously disallows approximately \$43 million of efficient operating expenditure for step changes, as compared to ActewAGL's revised regulatory proposal.⁸²

⁷⁵ See: Advisian, *Opex cost drivers – ActewAGL Distribution Electricity (ACT)*, January 2015, page 5 and 6; CEPA, *Benchmarking and setting efficiency targets for the Australian DNSPs*, January 2015, page 34; and Huegin Consulting, *Technical response to the application of benchmarking by the AER*, January 2015, page 64.

⁷⁶ ActewAGL, *Revised Regulatory Proposal 2015-19*, January 2015, page 84.

⁷⁷ CEPA, *Benchmarking and setting efficiency targets for the Australian DNSPs*, January 2015, page 34.

⁷⁸ Advisian, *Opex cost drivers – ActewAGL Distribution Electricity (ACT)*, January 2015, page 109.

⁷⁹ Advisian, *Opex cost drivers – ActewAGL Distribution Electricity (ACT)*, January 2015, page 114.

⁸⁰ Huegin Consulting, *Technical response to the application of benchmarking by the AER*, January 2015, page 65.

⁸¹ ActewAGL, *Revised Regulatory Proposal 2015-19*, January 2015, page 84.

⁸² ActewAGL, *Revised Regulatory Proposal 2015-19*, January 2015, page 84.

I discuss further the implications of the operating expenditure allowance in the draft decision in sections 4.2 and 4.4.

4.2 Incentive mechanisms

In relation to the incentive mechanisms applying to operating expenditure, the AER determined not to apply a penalty under the Efficiency Benefit Sharing Scheme (EBSS) arising from the additional operating expenditure spend in the current regulatory period, and to suspend the operation of the EBSS for the forthcoming regulatory period.

The AER decided to continue to apply the capital expenditure sharing scheme (CESS) to ActewAGL in the forthcoming regulatory period.

In its revised regulatory proposal ActewAGL contends that the use of benchmarking by the AER to set base year operating expenditure and the retrospective abandonment of the EBSS undermines the incentives of the regulatory regime and creates a framework within which perverse incentives exist.

ActewAGL's revised regulatory proposal is to continue to set base year operating expenditure on the basis of revealed expenditure, and to continue to apply the EBSS to ActewAGL in the forthcoming regulatory period.

4.2.1 HoustonKemp

I was engaged by ActewAGL to prepare a separate report addressing the efficiency benefit sharing scheme (EBSS) and the implications of the AER's draft decision on the incentive arrangements under which ActewAGL's previously operated and under the regulatory regime more generally.

I find that the draft decision changes the implications of operating expenditure overruns incurred over the 2009-2014 regulatory period from a sharing ratio of 30:70 between ActewAGL and its customers to one where ActewAGL bears 100 per cent of the cost of the operating expenditure overruns. Specifically, I state that:⁸³

In my opinion, an unanticipated, retrospective change to the regulatory framework that imposes a substantial material negative financial loss to a DNSP materially increases the regulatory risk applying to all network service providers. This cannot be consistent with the NEO. I calculate that, to maintain the intended sharing ratio of 30:70 in net present value terms, would require the AER to add \$36.7 million (2013-14 dollars) to ActewAGL's 2014-15 revenues.

Further, I find that the operating expenditure incentive arrangements set out in the draft decision are inconsistent with the long term interests of consumers, because they:⁸⁴

- undermine the incentive for DNSPs to reduce future opex costs, by discouraging businesses from efficiently incurring expenditure to restructure;
- do not provide a continuous incentive when outturn opex is below benchmark levels, and so encourage DNSPs to defer efficiency improvements;
- increase the incentive to capitalise expenditure when opex is above benchmark levels while providing an incentive to substitute capex for opex when below benchmark levels;
- frustrate the incentive to procure demand management services since the penalty for spending additional opex is over three times greater than the reward offered under the CESS for deferring network investments; and

⁸³ HoustonKemp, *Opex and Efficiency Benefit Sharing Scheme*, January 2015, page 31.

⁸⁴ HoustonKemp, *Opex and Efficiency Benefit Sharing Scheme*, January 2015, page 32.

- obstruct the incentive to improve service performance since the penalty for spending additional opex is substantially greater than the reward provided for improved service performance under the STIPS.

I conclude that the efficiency incentives implied by the operating expenditure arrangements set out in the draft decision given undesirable weight to short term, allocative efficiency considerations, such that the achievement of long term dynamic efficiency is undermined.

Such an outcome cannot be consistent with the NEO and, in particular, its emphasis on the 'long term' interests of consumers.

Notwithstanding, of particular relevance to the conclusion I draw in section 4.1, ie, that the operating expenditure allowance in the draft decision is below an efficient level, is the commentary I provide in this separate report as to the risks associated with such an outcome. Specifically, I state in this separate report that:⁸⁵

A critical requirement for the responsible use of a benchmark expenditure allowance is for the benchmark to be a reasonable reflection of the 'efficient level' of expenditure for a DNSP. Significant risks arise in circumstances where the opex allowance underestimates the efficient level of expenditure, ie, the benchmark is too low.

Adoption of a benchmark that is too low not only fails to provide the right incentive to a DNSP, but may encourage a DNSP to make decisions that are contrary to the long term interests of consumers. Most notably, a benchmark opex allowance that is 'too low' encourages a DNSP to spend less on opex than is efficient – because it bears more than 100 per cent of any expenditure above the opex allowance.

These interactions inevitably cause significant attention to be given to the degree to which the benchmark can be relied upon, and the risk of disconnect between the benchmark and actual efficient levels of expenditure. The merits of the AER's benchmarking approach are beyond the scope of my report. Nevertheless, I note that the greater the uncertainty associated with the benchmark level of opex, the greater the potential for benchmarking of businesses to have detrimental outcomes for consumers.

4.2.2 Conclusion

To summarise, the draft decision has the effect of diminishing, or undermining, the incentive for ActewAGL to improve the efficiency of its operating expenditure. In section 3.3.6 I highlighted the importance of effective incentive arrangements in a regulatory regime that promotes the NEO consistent with the revenue and pricing principles. For the reasons set out in my separate report, the draft decision gives rise to incentives arrangements that will not promote productive efficiency, ie, the efficient operation of the electricity services for the long term interests of consumers.

It follows that the efficiency incentives implied by the operating expenditure arrangements set out in the draft decision, and their interaction with the CESS and service target performance incentive scheme (STPIS), do not meet the NEO requirement.

4.3 Capital expenditure

ActewAGL's revised regulatory proposal contains a \$341 million allowance for capital expenditure for the 2014 to 2019 regulatory control period,⁸⁶ whereas the draft decision provides an allowance for capital expenditure that is 28 per cent lower, ie, \$244 million.⁸⁷ In other words, the draft decision provides an

⁸⁵ HoustonKemp, *Opex and Efficiency Benefit Sharing Scheme*, January 2015, page 27.

⁸⁶ ActewAGL, *Revised Regulatory Proposal 2015-19*, January 2015, page 275.

⁸⁷ ActewAGL, *Revised Regulatory Proposal 2015-19*, January 2015, page 275.

allowance for forecast capital expenditure for the 2014 to 2019 regulatory control period that is approximately \$97 million less than that in ActewAGL's revised regulatory proposal.

Moreover, approximately \$52 million of this difference arises from the draft decision:

- to disallow \$18 million of augmentation capital expenditure (augex) in ActewAGL's revised regulatory proposal;⁸⁸ and
- to disallow \$34 million of replacement capital expenditure (repex) in ActewAGL's revised regulatory proposal.⁸⁹

I have been provided with four expert reports assessing various aspects of this constituent component of the draft decision that identify material shortcomings and errors in the AER's approach to forecasting capital expenditure. I summarise the findings presented in these expert reports below.

4.3.1 Jacobs – augmentation expenditure

An expert report prepared by Jacobs addresses the AER's assertion that ActewAGL's system security and planning criteria are overly conservative and does not provide an assessment framework for evaluating and managing risks associated with expected unserved energy.

In Jacobs' expert opinion, the system security and planning criteria applied by ActewAGL:⁹⁰

- to transmission system feeders applies emergency overhead ratings that are at the 'upper end' of contemporary industry practice;
- to the primary distribution system are similar to other distribution network businesses in the NEM; and
- to zone substations utilise the relevant Australian standard.

In light of these findings, Jacobs rejects the AER's assertion that ActewAGL has been overly conservative when assessing augmentation expenditure.

Jacobs also considers the AER's use of unserved energy calculations in disallowing a substantial amount of ActewAGL's capital expenditure. Jacob's notes that, like ActewAGL, a number of network businesses in the NEM do not use unserved energy modelling to justify the scope and timing of augmentation projects.⁹¹ Further, Jacobs finds that ActewAGL:

... may be operating within the same 'risk zone' as the unserved energy approach used by the Victorian DNSPs.

Further, Jacobs notes that:⁹²

... unserved energy modelling is not suitable for all augmentation projects, and in some cases involves a number of subjective assumptions that leads to potential inaccuracies in the output results of the modelling.

Jacobs undertook an engineering review of ActewAGL's major augmentation projects and concludes that the analysis underpinning the AER's draft decision has erred.⁹³ Jacobs is not aware of any requirement in the law, the rules or other relevant documentation for unserved energy assessments to be included in the cost evaluation of major augmentation projects.

⁸⁸ ActewAGL, *Revised Regulatory Proposal 2015-19*, January 2015, pages 323, 270 and 271.

⁸⁹ ActewAGL, *Revised Regulatory Proposal 2015-19*, January 2015, page 354, 270 and 271.

⁹⁰ Jacobs, *Review of AER Draft Decision - Augex*, January 2015, page 3.

⁹¹ Jacobs, *Review of AER Draft Decision - Augex*, January 2015, page 9.

⁹² Jacobs, *Review of AER Draft Decision - Augex*, January 2015, page 13.

⁹³ Jacobs, *Review of AER Draft Decision - Augex*, January 2015, page 12.

4.3.2 Jacobs – replacement expenditure

Another expert report prepared by Jacobs contains a review of the AER's reasons for providing a substantially lower allowance for repx and provides further background information and justification for the repx projects disallowed by the AER.

Jacobs identifies a number of instances in which the AER has misinterpreted information in justifying a lower level of repx. The AER interprets Figure A8 and A9 in the draft decision to show a correlation between repx and customer density and demand. The AER then misinterprets the graphs by concluding that ActewAGL compares unfavourably under both density measures.⁹⁴

However, Jacobs considers that there is no such correlation and that the correlation purported by the AER demonstrates a lack of understanding of the nature of repx drivers.⁹⁵ Notwithstanding, in contrast to the AER's interpretation that ActewAGL compares unfavourably in Figure A8 and A9⁹⁶ in the AER's draft decision, Jacob's find that:⁹⁷

ActewAGL Distribution shows the lowest level of REPEX spend of any DNSP over the period 2008-13.

Second, the AER interprets Figure A10⁹⁸ in its draft decision to show that ActewAGL has incurred an average proportion of repx relative to the size of its RAB comparable to other network businesses. In contrast, Jacobs' expert opinion is that the same figure shows:⁹⁹

ActewAGL Distribution's REPEX over the period 2008-13 is well below the industry average trend line by about 50%.

The AER is not satisfied that ActewAGL's proposed repx for the overhead conductor and pole-top structure assets reflects the capital expenditure criteria. However, Jacobs presents further justification for these programs and highlights the risks associated with not implementing them. In relation to the rural pole top upgrade Jacob's notes that:¹⁰⁰

ActewAGL Distribution took the prudent risk management approach of establishing a targeted refurbishment upgrade program, starting with the highest risk areas.

Similarly, Jacobs reviews:¹⁰¹

... ActewAGL Distribution's pole-top assembly replacement / refurbishment program and considers it to be efficient and prudent.

Further, in relation to ActewAGL's proposed repx for underground cables, Jacobs finds that:¹⁰²

ActewAGL has decided to implement the condition monitoring strategy..., which Jacobs considers to be the most prudent and efficient strategy, and totally consistent with ActewAGL Distribution's asset management philosophy.

⁹⁴ Jacobs, *Review of the AER Draft Decision – REPEX*, January 2015, page 7.

⁹⁵ Jacobs, *Review of the AER Draft Decision – REPEX*, January 2015, page 7.

⁹⁶ AER, *Draft Decision ActewAGL distribution determination 2015-16 to 2018-19*, Attachment 6: Capital expenditure, November 2014, page 6-48 & 6-49.

⁹⁷ Jacobs, *Review of the AER Draft Decision – REPEX*, January 2015, page 8.

⁹⁸ AER, *Draft Decision ActewAGL distribution determination 2015-16 to 2018-19*, Attachment 6: Capital expenditure, November 2014, page 6-50.

⁹⁹ Jacobs, *Review of the AER Draft Decision – REPEX*, January 2015, page 8.

¹⁰⁰ Jacobs, *Review of the AER Draft Decision – REPEX*, January 2015, page 7.

¹⁰¹ Jacobs, *Review of the AER Draft Decision – REPEX*, January 2015, page 12.

¹⁰² Jacobs, *Review of the AER Draft Decision – REPEX*, January 2015, page 18.

With reference to the methodology used by the AER to evaluate repex, Jacobs ‘fundamentally disagrees’ with the AER’s premise that future requirements for sustainable replacement and refurbishment expenditure can be predicted by past trends and averages of actual volumes and expenditure.¹⁰³ Further, Jacobs considers that the AER’s repex model for ActewAGL produces invalid results. Jacobs expands on this contention in the report I summarise in section 4.3.3.

4.3.3 Jacobs – Calibrated Model Critique

I have been provided with an expert report prepared by Jacobs that reviews the AER’s calibrated forecast repex model (calibrated model) and considers the effect of any shortcomings or errors on the results derived by the AER.

Jacobs find that the AER’s base case model materially overstates the repex:¹⁰⁴

- expended by ActewAGL in the 2009-14 regulatory period; and
- forecast by ActewAGL for the 2014 to 2019 regulatory control period.

Further, the AER’s calibrated model uses replacement expenditure from the previous regulatory control period to predict the efficient level of asset replacement in the 2014 to 2019 regulatory control period. In Jacobs’ expert opinion, this premise is flawed. Further, Jacobs considers that:

This fallacy is then compounded by the calibrated model being ‘back-engineered’ such that it recalculates new average asset class lives which are in many cases in excess of the generally accepted lives experienced in the Australian electricity industry.¹⁰⁵

Adopting asset replacement lives that exceed industry experience is not the approach of a responsible network operator.¹⁰⁶

Jacobs also identifies a number of other shortcomings in the AER’s approach that, collectively, lead Jacob’s to conclude that the AER’s calibrated model is fundamentally flawed.¹⁰⁷

Ultimately, Jacobs’ expert opinion is that:¹⁰⁸

... the distorted picture presented by the AER’s overstated base case model has corrupted the AER’s analysis, and given them an incorrect perspective that ActewAGL Distribution has previously overspent on Repex.

This is clearly not the case, and when combined with the distortions caused to the average asset class lives in the calibrated model, results in an inadequate level of Repex being proposed in the draft decision document.

4.3.4 Jacobs – Cost Escalation

I have been provided with an expert report prepared by Jacobs that addresses the AER’s decision to reject ActewAGL’s methodology for developing real composite cost escalators for network assets.

Jacobs highlights that in previous regulatory decisions the AER has allowed and set a precedent for escalating costs related to capital expenditure and operating expenditure in real terms using relevant weighted baskets of cost indicators, ie, the approach used by ActewAGL. However, the AER rejects this approach in the draft decision in favour of reverting to the approach used prior to the 2009-14 regulatory

¹⁰³ Jacobs, *Review of the AER Draft Decision – REPEX*, January 2015, page 20.

¹⁰⁴ Jacobs, *Review of the AER Draft Decision – REPEX*, January 2015, page 5 and 6.

¹⁰⁵ Jacobs, *Focussed critique of AER’s REPEX – ‘Calibrated model’*, January 2015, page 2.

¹⁰⁶ Jacobs, *Focussed critique of AER’s REPEX – ‘Calibrated model’*, January 2015, page 16.

¹⁰⁷ Jacobs, *Focussed critique of AER’s REPEX – ‘Calibrated model’*, January 2015, page 10.

¹⁰⁸ Jacobs, *Focussed critique of AER’s REPEX – ‘Calibrated model’*, January 2015, page 12.

control period, ie, using the consumer price index (CPI) to represent cost escalation in network material costs.¹⁰⁹

Jacobs considers that the methodology proposed by ActewAGL, and previously applied by the AER, is both robust and more reliable than using a single index based on projections of price movements in a non-representative basket of goods, ie, the CPI index.¹¹⁰ Further, the approach used by ActewAGL in its revised regulatory proposal is less prone to bias because the CPI tracks a basket of consumer goods, rather than costs relevant to electricity network businesses.¹¹¹

In addition, Jacobs considers that the AER has not substantiated its departure from the previous forecasting approach.¹¹²

4.3.5 Conclusion

In this section I summarise the key shortcomings and errors in the AER's approach to forecasting capital expenditure on the basis of the expert opinions provided in the expert reports that I have been provided.

Table 1 summarises the level of forecast capital expenditure in ActewAGL's revised proposal, the draft decision and the shortcomings and errors in the AER's approach, as identified by the respective experts.

Table 2 Summary of matters relevant to forecast capital expenditure

Forecast capital expenditure	
ActewAGL's revised proposal	<ul style="list-style-type: none"> Total forecast capital expenditure of \$341 million for the 2014 to 2019 period,¹¹³ which includes: <ul style="list-style-type: none"> > \$80 million for augex;¹¹⁴ and > \$133 million for repex.¹¹⁵
AER's Draft Decision	<ul style="list-style-type: none"> Total forecast capital expenditure of \$244 million for the 2014 to 2019 period, which includes:¹¹⁶ <ul style="list-style-type: none"> > \$62 million augex; and > \$99 million for repex.
Expert Opinion	<ul style="list-style-type: none"> ActewAGL has not been overly conservative in assessing augex. The assessment of repex that underpins the draft decision: <ul style="list-style-type: none"> > has a flawed premise; > misinterprets information; > produces invalid results; and > results in an inadequate allowance for repex. In contradiction to the AER's contention, ActewAGL's proposed repex is found to be prudent and efficient. ActewAGL's approach to estimating cost escalation is robust as well as more reliable and less prone to bias than the approach that underpins the draft decision.

¹⁰⁹ Jacobs, *Commodity Price Forecasting*, January 2015, page 1.

¹¹⁰ Jacobs, *Commodity Price Forecasting*, January 2015, page 2.

¹¹¹ Jacobs, *Commodity Price Forecasting*, January 2015, page 19.

¹¹² Jacobs, *Commodity Price Forecasting*, January 2015, page 2.

¹¹³ ActewAGL, *Revised Regulatory Proposal 2015-19*, January 2015, page 275.

¹¹⁴ ActewAGL, *Revised Regulatory Proposal 2015-19*, January 2015, page 323.

¹¹⁵ ActewAGL, *Revised Regulatory Proposal 2015-19*, January 2015, page 354.

¹¹⁶ ActewAGL, *Revised Regulatory Proposal 2015-19*, January 2015, pages 270 and 271.

The AER contends that the lower augex allowance in the draft decision, as compared with that in ActewAGL's revised regulatory proposal, is in part a consequence of ActewAGL adopting an overly conservative approach to assessing augex. However, I have been provided an expert report that reviews ActewAGL's approach to assessing augex and rejects the contention that it is overly conservative.

Consequently, to the extent the allowance for augex in the AER's final decision reflects that in the draft decision, and so is premised on an incorrect inference that ActewAGL has been overly conservative in its assessment of the need for augex, there is a material risk that the AER will underprovide for augex.

Further, this risk will be exacerbated to the extent that, in making its final decision, the AER does not consider the additional information on major augex projects that ActewAGL provided as part of its revised regulatory proposal, and the AER continues to rely on a desk-top analysis.

In addition to likely underproviding for augex, the draft decision also provides an allowance for repex that is approximately \$34 million less than that in ActewAGL's revised regulatory proposal. However, on the basis of the expert reports provided to me, the analysis that underpins the allowance for repex in the draft decision contains a number of flaws, both in its critique of ActewAGL's analysis and in calculating an alternate allowance for repex.

Further, the AER misinterprets information to the extent that it concludes ActewAGL's repex is inefficient on a number of occasions when, in fact, the information before it goes to the opposite conclusion. By way of example, the AER interprets Figure A8 and A9 in the draft decision to show a correlation between repex and customer density and demand and that ActewAGL compares unfavourably to its peers. However, Jacobs considers that there is no such correlation and that:¹¹⁷

Clearly ActewAGL Distribution has the lowest level of REPEX of all DNSPs in Australia, as reflected on both graph's A-8 and A-9.

Finally, there are a number of shortcomings and flaws in the AER's approach to estimating repex, so much so that the calibrated model used by the AER to estimate repex is deemed by Jacobs to be fundamentally flawed.¹¹⁸ Further, Jacobs highlight that:¹¹⁹

... the distorted picture presented by the AER's overstated base case model has corrupted the AER's analysis, and given them an incorrect perspective that ActewAGL Distribution has previously overspent on Repex.

This is clearly not the case, and when combined with the distortions caused to the average asset class lives in the calibrated model, results in an inadequate level of Repex being proposed in the draft decision document.

The consequence of the above errors is that the AER incorrectly concludes that ActewAGL's repex for pole replacement, overhead conductors and pole structures as well as HV underground cables is not prudent and efficient. Further, Jacobs highlights that by underproviding for repex the draft decision has adverse implications as to the safe operation of the network, eg, by increasing the risk of bushfires and harm to the public.

To summarise, I understand Jacobs' expert opinion to support the proposition that the flaws in the AER's analysis of capital expenditure has led an allowance for capital expenditure in the draft decision that is less than the cost that would be incurred by a prudent and efficient operator and that will have adverse

¹¹⁷ Jacobs, *Review of the AER Draft Decision – REPEX*, January 2015, page 7.

¹¹⁸ Jacobs, *Focussed critique of AER's REPEX – 'Calibrated model'*, January 2015, page 10.

¹¹⁹ Jacobs, *Focussed critique of AER's REPEX – 'Calibrated model'*, January 2015, page 12.

implications for the safe operation of the network. It follows that the allowance for capital expenditure in the draft decision:

- does not meet the capital expenditure criteria and so the requirements of rule 6.5.7(c); and
- does not promote dynamic and allocative efficiency for the long term interests of consumers.

For these reasons, in my opinion the allowance for capital expenditure in the draft decision does not meet the NEO requirement. Further, the significance of this conclusion in the context of the electricity services provided by ActewAGL is magnified by the quantum of expenditure to which it relates.

4.4 Implications for service, safety and performance

The expert reports I summarise in section 4.1 and 4.3 draw attention to the material risk and, indeed, likelihood that the AER's final decision will underprovide for operating expenditure and capital expenditure if it replicates the draft decision.

I have explained that such an outcome will not promote efficiency for the long term interests of consumers. However, I have been provided an expert report by AECOM addressing in more detail the implications of underproviding for capital expenditure and operating expenditure on customers, service levels, safety and network performance.

4.4.1 AECOM

An expert report by AECOM analyses the probable impact of the substantial reduction in repex and operating expenditure in the draft decision on ActewAGL's customers and the ability of ActewAGL to maintain its level of service.

In AECOM's expert opinion, ActewAGL is prudent in its approach to asset management, efficient in its use of resources and one of the best performing distribution network businesses in Australia when judged on the basis of:¹²⁰

- its long-term average distribution network charge; and
- its long-term ability to meet level of service obligations.

Notwithstanding, the draft decision imposes material expenditure cuts with reference to a benchmarking analysis. However, AECOM identifies a number of shortcomings in the AER's benchmarking analysis and concludes that:

- the results do not provide useful information in relation to ActewAGL; and
- any inferences drawn from the results of the AER's benchmarking should be heavily qualified.

Further, AECOM notes that an alternative means of assessing asset management now exists, ie, ISO 55001:2014,¹²¹ and could be mandated for the next round of pricing determinations.

Notwithstanding, AECOM highlights that the AER's draft decision contemplates a reduction in operating expenditure in the order of 42 per cent,¹²² which would force ActewAGL to reduce its staffing on a permanent basis. AECOM considers that this would, in turn:¹²³

¹²⁰ AECOM, *The impact of the AER's draft decision on ActewAGL's service and safety performance*, January 2015, page 1 and

¹²¹ ISO 55001:2014 requires a 'least cost' approach to asset management on a whole-of-life basis, and a demonstrated commitment to continuous improvement.

¹²² AECOM, *The impact of the AER's draft decision on ActewAGL's service and safety performance*, January 2015, page 20.

¹²³ AECOM, *The impact of the AER's draft decision on ActewAGL's service and safety performance*, January 2015, page 20.

- increase response time to more than double that at present, which would increase the total customer minutes of service interruption and delivering a reduction in level of service.
- reduce ActewAGL's ability to carry out planned maintenance by more than 33 per cent; and
- give effect to a 'vicious cycle' of increasing numbers of unplanned faults because planned maintenance would not be carried out, causing further increases to response times.

Ultimately, AECOM considers that the reduction in operating expenditure in the draft decision will result in ActewAGL being:¹²⁴

... faced with aging assets failing more frequently, an inability to carry out planned maintenance, and steadily worsening response times. The cumulative impact will be a drastically lower level of service for customers.

Similarly, AECOM finds that the reduction in repex in the draft decision will substantially increase the risk of service interruptions and reduce the cost of service for current customers at the expense of future customers, who will have to pay higher prices, ie, due to deteriorating assets, for an inferior service. AECOM concludes that:¹²⁵

Customers unable to accept a decline in level of service or an increased risk of service interruption will have to invest in contingency measures. The forced reduction in funding will therefore increase supply costs for some customers, and force the remainder to accept a lower level of service.

AECOM identifies a number of interrelationships associated with the cost reductions in the draft decision. By way of example, AECOM highlight that delaying repex will increase maintenance costs by means of an increased risk of failure, which will, in turn:¹²⁶

- lead to an increase need for inspections;
- a higher cost of repair over the life of an asset;
- higher use of materials than would otherwise have been necessary, along with an increase in procurement and inventory costs; and
- a higher cost of ownership along with a reduced level of service.

Similarly, reducing augex may give rise to greater strain on existing assets, which will increase the risk of failure and potentially increase maintenance costs.¹²⁷

AECOM finds that a reduction in repex of the scale contemplated in the draft decision would have material adverse effects on the level of service provided by ActewAGL and increase the risk of failures.¹²⁸

4.4.2 Conclusion

At a high level, I take AECOM's finding that ActewAGL is prudent, efficient and one of the best performing networks in Australia to give weight to the proposition that the substantial cuts to capital and operating expenditure in the draft decision will underprovide for the costs that a prudent and efficient operator would incur.¹²⁹

¹²⁴ AECOM, *The impact of the AER's draft decision on ActewAGL's service and safety performance*, January 2015, page 21.

¹²⁵ AECOM, *The impact of the AER's draft decision on ActewAGL's service and safety performance*, January 2015, page 16.

¹²⁶ AECOM, *The impact of the AER's draft decision on ActewAGL's service and safety performance*, January 2015, page 18.

¹²⁷ AECOM, *The impact of the AER's draft decision on ActewAGL's service and safety performance*, January 2015, page 18.

¹²⁸ AECOM, *The impact of the AER's draft decision on ActewAGL's service and safety performance*, January 2015, p. 16 and 17.

¹²⁹ AECOM, *The impact of the AER's draft decision on ActewAGL's service and safety performance*, January 2015, page I and

Notwithstanding, AECOM's expert opinion is that the level of capital expenditure and operating expenditure in the draft decision is likely to result in:¹³⁰

- an increase in the risk and duration of interruptions and so unserved energy;
- a reduction in ActewAGL's ability to carry out planned maintenance;
- a 'vicious cycle' of increasing unplanned faults; and
- an increase in required inspections, repair costs.

Ultimately, this will give rise to an increase in the cost of providing electricity services with no corresponding increase in the level of service provided. Indeed, to the contrary, the increase in the cost of provision in the long term will be accompanied by a corresponding decrease in service levels.

AECOM notes that there may be some benefit to customers in the short term by virtue of lower electricity prices. Nevertheless, these benefits will accrue at the expense of future customers, who will be faced with higher electricity prices and lower service levels. AECOM also highlights interrelationships that I discuss further in section 4.7.

To summarise, I understand AECOM's expert opinion as confirming that the operating and capital expenditure allowance in the draft decision does not promote the efficient operation of electricity services for the long term interests of consumers, ie, does not promote productive efficiency. Specifically, it will have adverse effects on the:¹³¹

- price, quality, safety, reliability and security of supply of electricity; and
- the reliability, safety and security of the national electricity system.

It follows that, in my opinion, the allowance for capital and operating expenditure in the draft decision does not meet the NEO requirement.

4.5 The allowed rate of return

ActewAGL's revised regulatory proposal applies an allowed rate of return of 8.84 per cent (nominal vanilla) to calculate the return on capital building block whereas, in contrast, the AER's draft decision applies a rate of return of 6.88 per cent.¹³²

The allowed rate of return in the draft decision is lower than that in ActewAGL's regulatory proposal because the AER:¹³³

- estimates the return on equity to be 2.06 per cent lower, in absolute terms;
- estimates the return on debt to be 1.89 per cent lower, in absolute terms; and
- estimates the value of gamma to be 0.15 higher, in absolute terms.

More generally, the principal methodological differences between the approach to estimating the return on capital in the draft decision and ActewAGL's revised regulatory proposal arise from the draft decision:

- to impose a transition to the efficient debt financing practice of a benchmark efficient entity;
- to adopt and incorrect definition of theta in estimating gamma;
- to have little regard to financial models other than the Sharpe-Lintner CAPM;

¹³⁰ AECOM, *The impact of the AER's draft decision on ActewAGL's service and safety performance*, January 2015, page 18 and 20.

¹³¹ The law, part 7.

¹³² ActewAGL, *Revised Regulatory Proposal 2015-19*, January 2015, page 426 and 430.

¹³³ ActewAGL, *Revised Regulatory Proposal 2015-19*, January 2015, page 426 and 430.

- to place a large degree of reliance on Australian data to estimate the equity beta; and
- to disallow a material proportion of ActewAGL's debt raising transaction costs.

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. I summarise these reports below.

4.5.1 The return on equity

An expert report prepared by SFG addresses the AER's approach to estimating the return on equity. In particular, SFG's expert report addresses the AER's reasoning for rejecting all financial models other than the Sharpe-Lintner CAPM for the purpose of estimating the required return on equity as well as the AER's approach to considering relevant evidence as to the required return on equity.

The rules require that:¹³⁴

In determining the allowed rate of return, regard must be had to... relevant estimation methods, financial models, market data and other evidence.

SFG unequivocally identifies an array of inconsistencies and problems in the AER's reasoning for not using direct estimates of the Black CAPM, Fama-French model (FFM) and dividend discount model to estimate the required return on equity.¹³⁵ By way of example, SFG identifies instances where the AER's criticism of the FFM also applies to its application of the Sharpe-Lintner CAPM.¹³⁶ For example, SFG states that:¹³⁷

The AER also states that the Fama-French model can produce different results depending upon which period of data is examined. Again, this applies equally to the AER's implementation of the Sharpe-Lintner CAPM.

In contrast to the AER's draft decision to use only estimates derived from the Sharpe-Lintner CAPM for the purpose of estimating the return on equity, SFG's expert opinion is that:¹³⁸

... estimates of the required return on equity from other models would provide relevant evidence and should have been considered.

Further, SFG highlights that the AER 'invents' the notion of primary and secondary evidence as to the required return on equity¹³⁹ and that:¹⁴⁰

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.

SFG describes a number of examples in which the AER's approach to considering information serves to 'neuter' relevant evidence that is not allocated to its 'primary' category.¹⁴¹ With reference to the recent reduction in the risk free rate, SFG demonstrates that, notwithstanding the AER's statement that its application of the Sharpe-Lintner CAPM results in more stable estimates of the return on equity through time:¹⁴²

¹³⁴ The rules, rule 6A.6.2(e)(1).

¹³⁵ SFG, The Required Return on Equity: Initial Review of the AER Draft Decisions, January 2015, pages 11 to 24.

¹³⁶ SFG, The Required Return on Equity: Initial Review of the AER Draft Decisions, January 2015, pages 18 and 19.

¹³⁷ SFG, The Required Return on Equity: Initial Review of the AER Draft Decisions, January 2015, page 19.

¹³⁸ SFG, The Required Return on Equity: Initial Review of the AER Draft Decisions, January 2015, page 2.

¹³⁹ SFG, The Required Return on Equity: Initial Review of the AER Draft Decisions, January 2015, page 2.

¹⁴⁰ SFG, The Required Return on Equity: Initial Review of the AER Draft Decisions, January 2015, page 27.

¹⁴¹ SFG, The Required Return on Equity: Initial Review of the AER Draft Decisions, January 2015, pages 27 to 40.

¹⁴² SFG, The Required Return on Equity: Initial Review of the AER Draft Decisions, January 2015, pages 41.

... the actual outcome is precisely the same as under the previous Rules in that the allowed return on equity varies up and down one-for-one with changes in the risk-free rate.

SFG also highlights that:

- the AER gives undue weight to domestic evidence as to the equity beta despite the existence of relevant international evidence¹⁴³; and
- there are a number of shortcomings in the AER's analysis of the market risk premium, eg, it gives undue weight to historical data.¹⁴⁴

SFG concludes by presenting updated estimates of the return on equity that reflect the recent reduction in the risk free rate. With reference to estimates from the Sharpe-Lintner CAPM, the Black CAPM, the FFM and the dividend discount model, SFG's expert opinion is that the required return on equity is 10.63 per cent.¹⁴⁵

I understand from ActewAGL that, at the time of preparing this report, SFG is preparing an additional report that includes a revised estimate of the return on equity that is higher than the above estimate.

Conclusion

I understand SFG's expert opinion to support the proposition that the shortcomings and inconsistencies in the AER's approach to considering relevant estimation methods, financial models, market data and other evidence (relevant information) has led to the AER adopting an estimate of the return on equity with a downward bias.

SFG highlights that the AER:

- does not estimate any financial models other than the Sharpe-Lintner CAPM for the purpose of estimating the required return on equity;¹⁴⁶ and
- considers relevant information in such a way that a large amount of relevant information has no material effect on its estimate of the return on equity.¹⁴⁷

Notwithstanding the 2012 rule change that requires the AER to have regard to a wider breadth of information, SFG highlights that the AER's approach effectively produces:¹⁴⁸

... the same outcome that would have been obtained under the previous rules

SFG's expert opinion is that estimates of the return on equity derived from the Sharpe-Lintner CAPM, Black CAPM, FFM and a dividend discount model provide relevant evidence and should be considered. Further, with reference to each of these models, SFG estimates the required return on equity to be 10.63 per cent.¹⁴⁹ In contrast, the AER's estimate of the return on equity in the draft decision is materially lower, ie, 8.1 per cent.

Therefore, on the basis of SFG's evidence, in my opinion the required return on equity in the draft decision will undercompensate investors, given the perceived level of risk, and so:

- result in an allowed rate of return that does not meet the allowed rate of return objective;

¹⁴³ SFG, The Required Return on Equity: Initial Review of the AER Draft Decisions, January 2015, pages 33 to 39.

¹⁴⁴ SFG, The Required Return on Equity: Initial Review of the AER Draft Decisions, January 2015, pages 28 to 33.

¹⁴⁵ SFG, The Required Return on Equity: Initial Review of the AER Draft Decisions, January 2015, page 44.

¹⁴⁶ SFG, The Required Return on Equity: Initial Review of the AER Draft Decisions, January 2015, page 3.

¹⁴⁷ SFG, The Required Return on Equity: Initial Review of the AER Draft Decisions, January 2015, page 3.

¹⁴⁸ SFG, The Required Return on Equity: Initial Review of the AER Draft Decisions, January 2015, page 3.

¹⁴⁹ SFG, The Required Return on Equity: Initial Review of the AER Draft Decisions, January 2015, page 44.

I understand from ActewAGL that, at the time of preparing this report, SFG is preparing an additional report that includes a revised estimate of the return on equity that is higher than this estimate.

- not promote ongoing investment in the network, ie, not promote allocative and dynamic efficiency; and
- not promote the long term interests of consumers.

In my opinion, the return on equity in the draft decision does not therefore meet the NEO requirement.

The above reasoning also highlights that increased profits

4.5.2 Gamma

ActewAGL's revised regulatory proposal contains an estimate of gamma (ie, the value of imputation credits¹⁵⁰) equal to 0.25, whereas the AER's draft decision adopts a significantly higher gamma estimate of 0.4.

The value of gamma is estimated as the product of the utilisation rate (theta) and the distribution rate. ActewAGL's revised regulatory proposal and the AER's draft decision each apply a distribution rate of 0.7. However, the AER's draft decision contains an estimate of theta that is materially higher than that in ActewAGL's revised regulatory proposal. Specifically, the value of theta is estimated to be:¹⁵¹

- 0.57 in the AER's draft decision; and
- 0.35 in ActewAGL's revised regulatory proposal.

I have been provided with a report by SFG that identifies a number of problems and errors in the AER's approach to estimating theta, which I summarise below.

SFG

The rules require that theta 'is the value of imputation credits'.¹⁵² However, as both the AER and SFG note, there are two possible interpretations of theta, ie, theta can be defined as either:

- the value of distributed credits; or
- the proportion of distributed credits that are likely to be redeemed by investors (the redemption rate).

SFG contemplates the appropriate definition of theta and considers the degree to which each of the above definitions are consistent with the building block approach prescribed in the rules. SFG finds that:

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.¹⁵³

However, to the contrary, the AER defines theta in the draft decision to be the redemption rate. SFG highlights a number of problems associated with the basis for this definition, including that it has erred in considering the redemption rate to be commensurate with the concept of a weighted-average representative investor. SFG concludes that, in its expert opinion:

...there is no reasonable basis for the AER's approach of simply defining theta to be the redemption rate.¹⁵⁴

...the AEMC Rule change (which now specifically defines gamma to be "the value of imputation credits") does not support the AER's new conceptual definition. It seems clear that the intention of

¹⁵⁰ The rules, rule 6.5.3.

¹⁵¹ ActewAGL, *Revised Regulatory Proposal 2015-19*, January 2015, page xiii and xiv.

¹⁵² The rules, rule 6.5.3.

¹⁵³ SFG, *Estimating gamma for regulatory purposes*, February 2015, page 9.

¹⁵⁴ SFG, *Estimating gamma for regulatory purposes*, February 2015, page 5.

the AEMC was simply to tidy up the Rule to properly reflect the longstanding regulatory practice of adopting a market value interpretation of theta and gamma.¹⁵⁵

SFG highlights that the approach to estimating theta will depend on the particular conceptual definition of theta adopted and that the two alternate definitions highlighted above:¹⁵⁶

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

In other words, the conceptual definition of theta has direct implications as to the methodology used to estimate theta, and so its value. SFG states that:

If theta is to be defined as the value (as in worth to investors) of imputation credits, the redemption rate estimates cannot be used to estimate theta. They can, at best, be used to provide an upper bound for theta. The AER and Tribunal have both previously accepted this point...

Similarly, SFG notes that the Tribunal and an advisor to the AER agreed that the redemption rate cannot be used to estimate the value of theta directly, but rather can be used to provide a reasonable estimate of the upper bound of theta, and so gamma.¹⁵⁷

SFG concludes by highlighting that the 2011 SFG market study was accepted by the Tribunal as an appropriate approach to estimating theta and supports a conservative estimate of theta equal to 0.35. SFG conclude an estimate of 0.35 to be conservative on the basis that the evidence supports a theta value of between 0 and 0.35.

Conclusion

I take the evidence provided by SFG to indicate that the AER has erred in its approach to estimating theta, and so gamma. Specifically, the AER interprets theta to be the proportion of distributed credits that are likely to be redeemed by investors (the redemption rate), rather than the value of distributed credits, which leads the AER to adopt a point estimate of theta that can, at best, be interpreted as a reasonable estimate of the upper bound of theta.¹⁵⁸

By means of this flawed approach, the AER adopts an estimate of theta, and so gamma, that is materially higher than what, in SFG's expert opinion, is a conservative estimate of theta, ie, 0.35. In other words, the AER's draft decision overestimates the benefit to investors of imputation credits and so undercompensates investors for the cost of corporate income tax.

I explain in section 3 that providing a reasonable assurance as to the recovery of efficiently incurred costs is a core principal of a framework for economic regulation that has the objective of achieving the NEO. Moreover, this principal is explicitly reflected in the revenue and pricing principles.

By underproviding for the cost of corporate income tax the draft decision does not promote ongoing investment in the network and so does not promote dynamic and allocative efficiency.

Consequently, in my opinion the draft decision as to the value of gamma does not meet the NEO requirement.

¹⁵⁵ SFG, *Estimating gamma for regulatory purposes*, February 2015, page 17.

¹⁵⁶ SFG, *Estimating gamma for regulatory purposes*, February 2015, page 6.

¹⁵⁷ SFG, *Estimating gamma for regulatory purposes*, February 2015, pages 22 and 18.

¹⁵⁸ SFG, *Estimating gamma for regulatory purposes*, February 2015, pages 22 and 18.

4.5.3 The return on debt

I have been provided two reports pertaining to the return on debt:

- an expert report prepared by CEG addressing the draft decision to impose a transition to the trailing average approach to debt financing; and
- an expert report prepared by Incenta addressing the draft decision to allow total debt raising costs of only \$2.4 million or 9.1 basis points relative to ActewAGL's forecast benchmark debt levels.

I summarise the key findings of each of these reports in turn below.

CEG

I have reviewed an expert report prepared by CEG addressing the AER's draft decision to impose a transition to the trailing average approach to debt financing.

The cost of debt allowance in the draft decision is determined using an approach that will be different to that used in previous regulatory periods. The AER and CEG agree that the most appropriate basis on which to compensate a business for the cost of debt is the trailing average approach, ie, calculating debt financing costs as the trailing average of historical debt costs over a period of ten years.

However, the AER and CEG disagree as to the approach to debt financing that would be adopted by a benchmark efficient entity under the AER's previous approach to determining the cost of debt allowance, ie:

- the AER considers that, under the AER's previous approach to setting the cost of debt allowance, a benchmark efficient entity would have adopted what CEG refers to as the hybrid approach and so requires a transition to the trailing average approach used in the draft decision; whereas
- CEG contends that, under the AER's previous approach to setting the cost of debt allowance, a benchmark efficient entity would have adopted the trailing average approach, and so requires no transition to the trailing average approach used in the draft decision.

CEG highlights the AER's contentions as to why a transition is necessary, including the contention that many businesses derived windfall gains during the global financial crisis and that a transition is likely to reverse these gains in the 2014 to 2019 regulatory period, which the AER considers to be a desirable outcome.¹⁵⁹

However, CEG finds that the reasoning used by the AER to justify a transition are:¹⁶⁰

...deeply flawed and are not consistent with the promotion of the allowed rate of return objective.

Further, CEG goes on to conclude that:¹⁶¹

Ultimately, the effect of the transition is to delay the realisation of the benefits that accrue from the implementation of the newly defined (and implementable) regulatory benchmark. This is inconsistent with the ARORO [the rate of return objective] and... inconsistent with the NEO and RPP.

Incenta

The provision for total debt raising costs in the AER's draft decision is lower than that in ActewAGL's revised regulatory proposal because the draft decision does not include costs associated with Standard and Poor's:

- liquidity requirements; and

¹⁵⁹ CEG, *Efficient debt financing costs*, January 2015, page 13.

¹⁶⁰ CEG, *Efficient debt financing costs*, January 2015, page 2.

¹⁶¹ CEG, *Efficient debt financing costs*, January 2015, page 52.

- requirement to finance three months ahead.

Incenta finds the AER's reasoning for disallowing costs associated with liquidity requirements to be flawed and so concludes that:¹⁶²

... there is no valid reason for the AER not to accept liquidity costs as prudent costs that the benchmark entity would need to incur in order to achieve its operating expenditure objectives.

Similarly, Incenta highlights that the AER has provided no evidence that it has empirically investigated whether costs associated with Standard and Poor's requirement to finance three months ahead are prudent and efficient. Incenta emphasises that:¹⁶³

Standard & Poor's requires investment grade issuers to re-finance bonds 3 months ahead of expiry. There is a cost to this...

To summarise, Incenta does not agree with the AER's draft decision to reject liquidity costs and three month ahead financing costs and consider these costs to be both prudent and efficient.¹⁶⁴ Incenta estimates total levelised debt raising transaction costs equal to 19.7 basis points per annum.

Conclusion

I take the evidence provided by CEG and Incenta to support the proposition that the allowance for the return on debt in the draft decision will give rise to an allowed rate of return that is not commensurate with the efficient financing costs of a benchmark efficient entity with a similar degree of risk, and so will not meet the allowed rate of return objective.

CEG specifically states that imposing a transition is:

... inconsistent with the ARORO [the rate of return objective] and... inconsistent with the NEO and RPP.

Similarly, by not allowing the recovery of debt raising transaction costs that, in Incenta's expert opinion, are both prudent and efficient, the draft decision will undercompensate investors, given the perceived level of risk.

On the basis of the expert evidence provided to me, in my opinion the required return on debt in the draft decision will not meet the rate of return objective, and so will:

- not promote ongoing investment in the network, ie, not promote allocative and dynamic efficiency; and
- not promote the long term interests of consumers.

In my opinion, the return on debt in the draft decision does not meet the NEO requirement.

Further, this conclusion is reinforced to the extent that ActewAGL's other contentions with the return on debt in the AER's draft decision hold, eg, that the pre-existing regulatory approach to estimating the return on debt is not relevant to the 'efficient financing costs' referred to in the allowed rate of return objective.¹⁶⁵

4.5.4 Conclusion

In this section I summarise the key shortcomings and errors in the AER's approach to estimating the allowed rate of return on the basis of the expert opinions provided in the expert reports that I have been provided.

¹⁶² Incenta, *Debt raising transaction costs – updated report*, January 2015, page 8.

¹⁶³ Incenta, *Debt raising transaction costs – updated report*, January 2015, page 9.

¹⁶⁴ Incenta, *Debt raising transaction costs – updated report*, January 2015, page 10 and 11.

¹⁶⁵ ActewAGL, *Revised Regulatory Proposal 2015-19*, January 2015, page 473.

Table 3 summarises the allowed rate of return in ActewAGL's revised proposal, the draft decision and the shortcomings and errors in the AER's approach, as identified by the respective experts.

Table 3 Summary of matters relevant to the allowed rate of return

The allowed rate of return	
ActewAGL's revised proposal	<ul style="list-style-type: none"> • An allowed rate of return of 8.84 per cent, ie: <ul style="list-style-type: none"> > A return on equity of 10.16. > A return on debt of 7.96.
AER's Draft Decision	<ul style="list-style-type: none"> • An allowed rate of return of 6.88 per cent, ie:¹⁶⁶ <ul style="list-style-type: none"> > A return on equity of 8.1 per cent. > A return on debt of 6.07 per cent.
Expert Opinion	<ul style="list-style-type: none"> • In regard to the return on equity: <ul style="list-style-type: none"> > the AER does not estimate any financial models other than the Sharpe-Lintner CAPM for the purpose of estimating the required return on equity; and > the AER considers relevant information in such a way that a large amount of relevant information has no material effect on its estimate of the return on equity. • In regard to the return on debt: <ul style="list-style-type: none"> > the AER incorrectly imposes a transition to the trailing average approach to debt financing; and > the AER incorrectly concludes that debt raising transaction costs associated with Standard and Poor's liquidity requirements and the requirement to finance three months ahead are not prudent and efficient. • The AER adopts an incorrect definition of theta when estimating gamma.

I have explained that, on the basis of the expert evidence provided to me, in my opinion the draft decision as to the return on equity, return on debt and gamma does not meet the NEO requirement. The errors in the AER's approach contribute to an allowed rate of return in the draft decision that is 2.11 per cent lower than that in the ActewAGL's regulatory proposal. Collectively, the expert evidence gives weight to the proposition that the allowed rate of return in the draft decision will not meet the allowed rate of return objective and, specifically, will undercompensate investors, given the perceived level of risk.

It follows that the allowed rate of return in the draft decision will not promote ongoing investment in the network, ie, dynamic and allocative efficiency, for the long term interests of consumers.

Consequently, in my opinion the allowed rate of return in the draft decision does not meet the NEO requirement.

¹⁶⁶ ActewAGL, *Revised Regulatory Proposal 2015-19*, January 2015, page 426.

4.6 Demand and consumption forecasting

The AER accepted that the system demand forecasts in ActewAGL's regulatory proposal for the 2014–2019 period reasonably reflected a realistic expectation of demand and highlighted that it will consider updated demand forecasts and other information in the final decision.¹⁶⁷

The AER rejects the method used by ActewAGL to forecast consumption and, instead, forecasts consumption on the basis of models with different dependent and independent variables that were drawn from the set of models rejected by ActewAGL as part of its model selection process.¹⁶⁸ By means of this different approach, the consumption forecasts in the draft decision are, on average, 4.48 per cent higher than that in ActewAGL's revised regulatory proposal.¹⁶⁹

I have been provided an expert report by Jacobs that addresses, and rejects, each of the AER's contentions with ActewAGL's approach to forecasting consumption. Further, I have also been provided an expert report by Jacob's that updates peak demand forecasts to reflect current expectations in respect of the forecast period.

I summarise these two expert reports in turn below.

4.6.1 Jacobs – Consumption forecast

An expert report prepared by Jacobs addresses the contentions that underpin the AER's draft decision to reject ActewAGL's consumption forecast, ie, the AER contends that:¹⁷⁰

- the model selection suffers from the biasing effects of autocorrelation;
- the preferred models do not include price as an explanatory variable;
- the specification of the dependent variable in its preferred models are not in 'per customer' terms;
- ActewAGL did not consider the drivers of customer forecasts, such as changes in the profile of customers, in sufficient detail.

Further, the AER also concludes that ActewAGL should conduct tests to ensure it has not double-counted energy efficiency schemes, particularly for the Residential GP category where energy efficiency has a strong effect.¹⁷¹

However, Jacobs considers each of the AER's above contentions on an individual basis and rejects each contention unequivocally.¹⁷² Further, in Jacobs' expert opinion it is:¹⁷³

... unlikely that the ActewAGL projections include any double counting. It should therefore not be necessary to undertake sensitivity analysis.

¹⁶⁷ AER, *Draft Decision ActewAGL distribution determination 2015-16 to 2018-19*, Attachment 6: Capital expenditure, November 2014, page 6-82 and 6-83.

¹⁶⁸ AER, *AER draft decision – ActewAGL 2014-15 to 2018-19 regulatory control period*, Attachment 6: Capital expenditure, November 2014, page 6-92.

¹⁶⁹ ActewAGL, *Revised Regulatory Proposal 2015-19*, January 2015, page xv.

¹⁷⁰ ActewAGL, *Revised Regulatory Proposal 2015-19*, January 2015, page 380.

¹⁷¹ ActewAGL, *Revised Regulatory Proposal 2015-19*, January 2015, page 380.

¹⁷² Jacobs, *Response to AER on its draft determination on ACT energy forecasts*, January 2015, page 17.

¹⁷³ Jacobs, *Response to AER on its draft determination on ACT energy forecasts*, January 2015, page 15.

4.6.2 Jacobs – Demand forecast

An expert report prepared by Jacobs undertakes a high level review of ActewAGL's peak demand forecast and considers that:¹⁷⁴

- the general accuracy of the input data;
- the reasonableness of any assumptions or estimations;
- the extent to which ActewAGL has addressed earlier recommendations by Jacobs; and
- the extent to which the 2014 peak demand forecast supports the need for the major projects included in the augmentation capex forecast for the 2014 to 2019 regulatory control period.

I interpret the Jacobs report to constitute an independent verification of ActewAGL's updated peak demand forecast, ie, a peak demand forecast that reflects current expectations for the forecast period.

4.6.3 Conclusion

I take Jacobs' expert opinion as:

- providing an independent verification of the updated peak demand forecast contained in ActewAGL's revised regulatory proposal; and
- supporting the consumption forecast in ActewAGL's revised regulatory proposal by addressing and, unequivocally, rejecting the AER's contentions relating to the methodology used to derive ActewAGL's consumption forecast.

It follows that, on the basis of Jacobs' expert opinion, if the AER's final decision replicates the draft decision:

- the electricity demand forecast will have an upward bias to the extent it is higher than that in ActewAGL's revised regulatory proposal; and
- the consumption forecast will have an upward bias to the extent it is higher than that in ActewAGL's revised regulatory proposal.

Relevantly, the consumption forecast in the draft decision was, on average, 4.48 per cent higher than that in ActewAGL's regulatory proposal, and was underpinned by contentions with ActewAGL's forecast that are rejected by Jacobs.¹⁷⁵ Therefore, I interpret Jacobs' expert opinion as supporting the proposition that there will be an upwards bias in the consumption forecast in the final decision if it replicates that in the draft decision.

Applying a building block approach using an electricity demand or consumption forecast with an upward bias will cause ActewAGL to derive a level of revenue that is insufficient to recover its costs under the average revenue cap price control mechanism it is subject to. I explain in section 3 that providing a reasonable assurance as to the recovery of efficiently incurred costs is a core principal of a framework for economic regulation that has the objective of achieving the NEO. Moreover, this principal is explicitly reflected in the revenue and pricing principles, which state that's:

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.

¹⁷⁴ Jacobs, *Review of ActewAGL 2014 Demand Forecast*, January 2015, page 4.

¹⁷⁵ AER, *Draft Decision ActewAGL distribution determination 2015-16 to 2018-19*, November 2014, page 12.

By not providing a reasonable opportunity for ActewAGL to recover its efficient costs the final decision will not promote ongoing investment in the network and so will not promote dynamic and allocative efficiency.

Therefore, in my opinion, if the consumption forecast in the final decision replicates that in the draft decision the final decision will not meet the NEO requirement. Similarly, if the demand forecast in the final decision is higher than that in ActewAGL's revised regulatory proposal, the final decision will not meet the NEO requirement.

4.7 Interrelationships

In its revised regulatory proposal, ActewAGL contends that:

- the AER has erred in not taking into account the inter-relationship between its constituent draft decisions on operating expenditure and capex in setting the expenditure allowances;
- the AER's operating expenditure arrangements in the draft decision undermine the incentive regime operated through the EBSS;
- the AER's operating expenditure and capital expenditure draft decision undermines the STPIS; and
- the AER has erred by making drastic reductions to operating expenditure and capital expenditure allowances that, when combined with the retrospective removal of the EBBS, fail to adjust the equity beta for the increased risk faced by investors.

Each of these interrelationships, and ActewAGL's contentions that the manner in which the draft decision addresses each of them is detrimental to the achievement of the NEO, are discussed in turn below.

4.7.1 Operating expenditure and capital expenditure

I explain in section 4.3 that the draft decision provides an allowance for repex that is approximately 34 million, or 26 per cent, lower than that in ActewAGL's revised regulatory proposal, which is largely based on the AER's predictive modelling. Notwithstanding whether the level of repex in the draft decision is compliant with the rules, the draft decision does not adequately consider the interrelationship between repex and operating expenditure.

Specifically, AECOM highlights that a reduction in repex will increase the risk of failure, which will lead to:¹⁷⁶

- an increasing frequency of inspections in an attempt to reduce the impact of the failure by having at least some advance warning;
- a higher cost of repair over the life of the asset, where interventions are carried out that would not otherwise have been necessary;
- higher use of materials for repair than would otherwise be necessary, together with increases in procurement and inventory costs; and
- a higher total cost of ownership (together with a reduced level of service).

Consideration of the total costs of the business, recognising the interrelationship between operating expenditure and capital expenditure and the resulting total implied expenditure over the long term, is a feature of good regulatory practice. For example, Ofgem recognises the interrelationship between capital expenditure and operating expenditure, ie, capital solutions and non-capital solutions, and the resulting implications for achieving long run cost efficiency in its statement that:¹⁷⁷

We are focusing on total costs of delivering outputs, wanting network companies to make choices between infrastructure (capital) solutions and non-capital solutions on the basis of which is least

¹⁷⁶ AECOM, *The impact of the AER's draft decision on ActewAGL's service and safety performance*, January 2015, page 18.

¹⁷⁷ Ofgem, *Handbook for implementing the RIIO model*, 4 October 2010, page 2.

cost over the long term. The relevant time horizon will vary by the activity being considered; for some costs 'long term' may be within the [...] price control period whilst for others it will span a number of price control periods.

4.7.2 Operating expenditure arrangements and the incentive regime

I explain in section 4.2 that the operating expenditure arrangements in the draft decision affect the efficiency incentives faced by ActewAGL. By way of example, the operating expenditure arrangements in the draft decision:¹⁷⁸

- undermine the incentive for network businesses to improve efficiency;
- encourages network businesses to defer efficiency improvements in some circumstances;
- obstruct the incentive to improve service performance.

4.7.3 Expenditure forecasts and the service quality incentive framework

The draft decision applies the national STPIS to ActewAGL without adequately adjusting for the performance targets and incentive rates for the reliability component of the STPIS in the 2009 to 2014 regulatory control period. In other words, ActewAGL contends that in setting STPIS performance targets, the AER has not taken into account the requirement for operating expenditure and capital expenditure forecasts to comply with regulatory obligations, as distinct from maintaining reliability.¹⁷⁹ Consequently, ActewAGL contends that the expenditure arrangements in the draft decision will operate to impose an expected loss on ActewAGL in the form of a STPIS penalty.¹⁸⁰ This in turn means that the resulting revenue allowance will not be sufficient to provide ActewAGL with a reasonable opportunity to recover its efficient costs.

Further, I explain in a separate expert report that the AER's decision to continue to apply the STPIS whilst no longer applying the EBSS to operating expenditure efficiencies leads to perverse incentives, ie, I state that:¹⁸¹

... under the proposed opex arrangements, a DNSP would:

- not have an incentive to incur any additional opex costs in order to improve service performance, even if it was efficient to do so; and
- have an incentive to reduce opex costs, even if it results in an inefficient deterioration in service performance.

It is difficult to reconcile how the distortion between the incentives for service performance and those that operate for operating expenditure, which could potentially result in inefficient levels of service performance, could be in the long-term interests of consumers, or consistent with the NEO.

4.7.4 Expenditure cuts, the incentive regime and the equity beta

ActewAGL contends that the draft decision does not adequately account for the interrelationship between its cuts to expenditure, along with the resulting effects on the incentive regime, on the equity beta used to estimate the cost of equity and so the return on capital building block.

¹⁷⁸ HoustonKemp, *Opex and Efficiency Benefit Sharing Scheme*, January 2015, page 32.

¹⁷⁹ ActewAGL, *Revised Regulatory Proposal 2015-19 Regulatory Control Period*, January 2015, page 58.

¹⁸⁰ ActewAGL, *Revised Regulatory Proposal 2015-19 Regulatory Control Period*, January 2015, page xvii.

¹⁸¹ HoustonKemp, *Opex and Efficiency Benefit Sharing Scheme*, January 2015, page 27.

Specifically, ActewAGL considers that the regulatory uncertainty and so systematic risk for the benchmark efficient entity will be increased if the final decision replicates the draft decision:¹⁸²

- to impose operating expenditure reductions determined by the deterministic application of benchmarking results;
- to impose capital expenditure reductions of 35 per cent on the basis of a flawed analysis;
- to impose large P0 adjustments on a largely fixed cost business;
- to substantially depart from prior regulatory practice in relation to determining expenditure allowances; and
- to undermine the incentives for ActewAGL to improve efficiency.

4.7.5 Conclusion

I describe above a number of interrelationships that arise by consequence of the AER's draft decision. In my opinion, not adequately taking account of these interrelationships is likely to materially inhibit the AER's ability to assess whether its draft decision contributes to the achievement of the NEO. From the evidence provided to me it appears that the AER has not given adequate consideration to each of these interrelationship.

Consequently, in my opinion the AER's failure to adequately take account of these interrelationships in the draft decision, as required by clause 16(1)(c) of the law, gives weight to the conclusion that the constituent components of the draft decision to which these interrelationships relate do not meet the NEO requirement.

4.8 Conclusion

I have reviewed 16 reports by experts, each addressing one or more aspects of the constituent decisions arising in the application of the building block methodology to determine the total revenue in each year, and so electricity network tariffs. A common thread through all these reports is the magnitude of the gap between the methodological approach adopted and the outcome of applying that approach, as between ActewAGL's revised regulatory proposal and the draft decision of the AER.

One means of gaining some perspective on that gap is the extent to which either ActewAGL's revised regulatory proposal or the AER's draft decision departs from the *status quo*. Although no explicit weight is given to the *status quo* in the application of the building blocks or the NEO requirement, in my opinion it draws particular significance from:

- the profit-driven focus that arises as a result of ActewAGL's 50 per cent private ownership; and
- the fact that it operates under an incentive based framework of economic regulation.

This combination of economic forces gives rise to the presumption that ActewAGL's current mode of operation is likely to be generally prudent and efficient, and in accordance with good industry practice. By virtue of the sustainability implied by these criteria, it can also be presumed to be in the long term interest of consumers.

Consistent with this presumption, I understand from ActewAGL that its revised regulatory proposal involves forward looking average prices (expressed in terms of revenue per MWh) that for distribution are approximately 6 per cent lower than the prices at the end of the 2009 to 2014 regulatory control period. By contrast, the AER's draft decision contemplates a downward adjustment to average prices (revenues per MWh) in the order of 32 per cent of average prices at the end of the previous regulatory control period.

¹⁸² ActewAGL, *Revised Regulatory Proposal 2015-19 Regulatory Control Period*, January 2015, pages 456 and 457.

In my opinion, the AER's contention that changes of such magnitude – driven primarily by cuts to allowances for capital expenditure, operating expenditure and the rate of return – can meet the NEO requirement stretches credulity.

This characteristic of the draft decision is particularly evident in the allowance provided for operating expenditure, where the AER imposes a reduction in the order of 40 per cent, informed largely by the application of benchmarking exercises. In my opinion, the application of cuts to expenditure allowances of this magnitude sets aside the degree of caution that should otherwise be applied in light of the finding that:

- the application of benchmarking approaches by the AER follows a recent change to the rules, is largely untested in the context of economic regulation in Australia, and contrary to international best practice;
- a number of independent experts have highlighted fundamental flaws in the AER's benchmarking analyses that, collectively, are likely to result in it underestimating operating expenditure that would be required by a prudent and efficient operator;
- the future operating expenditure arrangements completely undermine ActewAGL's incentive to improve efficiency and, in some circumstances, provides incentives to engage in inefficient behaviour; and
- the operating expenditure allowance is likely to put the long term interests of consumers at risk and so does not meet the NEO requirement.

Indeed, my review of each expert report identifies strong evidence that, in relation to the constituent decision that the AER is to make in determining each cost building block, there is strong evidence that the NEO requirement will not be met. The collective implications for achievement of the NEO are substantial.

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 the long term interests of consumers. However, in weighing the trade-off, virtually every reference by the AER to the interests of consumers is characterised by a short term perspective that generally does not extend beyond the 2014 to 2019 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 draft 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 draft decision cannot be said to meet the NEO requirement.

For these reasons I conclude that the AER has not met the NEO requirement in its draft decision.

5. A Materially Preferable Decision

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

- if the draft decision is replicated in its final 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
- if the errors were corrected, and having regard to all other relevant considerations, this would be likely to result in a materially preferable designed NEO decision overall.

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:¹⁸³

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'. In section 4 I conclude that the AER's draft decision does not meet the NEO requirement. Clause 16 of the law also requires that:¹⁸⁴

...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 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 draft 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 is distinct from the others put to me by ActewAGL 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 review of a reviewable regulatory decision. If there is such an application, clause 71P of the law requires that:

... 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.

In the remainder of this section, I set out my opinion as to whether:

- if the draft decision is replicated in its final decision, the AER will have met the NEO requirement; and
- if any errors in the draft decision were corrected, and having regard to all other relevant considerations, this would be likely to result in a materially preferable decision.

¹⁸³ The law, clause 16(1)(a).

¹⁸⁴ The law, clause 16(1)(d)(i)

In addressing these questions, it is helpful first to set out the 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 draft decision in concluding that its decision meets the preferable decision requirement.

5.1 Framework

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

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

5.1.1 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:¹⁸⁵

... 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 Minister 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:¹⁸⁶

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

5.1.2 Determining the preferable regulatory decision

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

I conclude in section 3.5 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 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 to the greatest degree.

A more difficult task is identifying the preferable regulatory 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 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 be 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.

¹⁸⁵ Expert Panel, Review of the Limited Merits Review Regime, Stage 2 Report, 30 September 2012, page 4.

¹⁸⁶ Hansard, South Australia House of Assembly, 9 February 2005, 26 September 2013, page 7172.

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 regulatory 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. 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:¹⁸⁷

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:¹⁸⁸

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 say 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 long-term dimension of efficiency.¹⁸⁹ 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:¹⁹⁰

...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. It follows that the trade-off, or balancing, to which I refer above relates to the extent a decision promotes dynamic efficiency without unduly compromising short term productive and allocative efficiency. Conversely, a 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 interest of consumers in the short term, eg, as promoted by short term allocative and productive efficiency, and the interests of consumers in the long term, eg, as promoted by dynamic efficiency. Indeed, this fundamental trade-off was recognised by the LMR expert panel, which noted that:¹⁹¹

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 regulatory decision should promote the dimension of efficiency that goes to the long term interests of consumers, ie, dynamic efficiency, without unduly compromising other dimensions of

¹⁸⁷ Hansard, South Australia House of Assembly, 9 February 2005, 26 September 2013, page 7173.

¹⁸⁸ Expert Panel, *Review of the Limited Merits Review Regime*, Stage 2 Report, 30 September 2012, page 38.

¹⁸⁹ See section 3.1.1.

¹⁹⁰ See section 3.1.1.

¹⁹¹ Expert Panel, *Review of the Limited Merits Review Regime*, Stage 1 Report, 29 June 2012, page 37.

efficiency, ie, short term considerations such as short term productive and allocative 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.

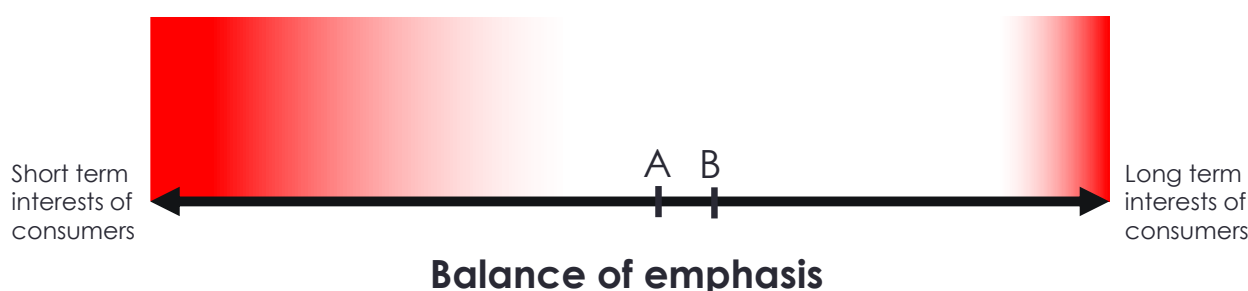
To summarise, in my opinion the preferable regulatory decision is that which promotes the long term interests of consumers of electricity to the greatest degree. Further, in my opinion the long term interests of consumers will be best served by promoting long term dynamic efficiency to the greatest extent, 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 disproportionately large costs is realised) in the long term.

5.1.3 Identifying a preferable regulatory 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. This is illustrated in Figure 1.

Figure 1 A preferable decision



This assessment is an inherently difficult task because:

- it requires assessment of a 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.

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 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.

In my opinion, the identification of where two decisions may sit relative to each other can usefully be informed by consideration of:

- the differing short and long term potential effects of the different decisions, in relation to both cost and service outcomes; 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 long term significant consequences for future outcomes.

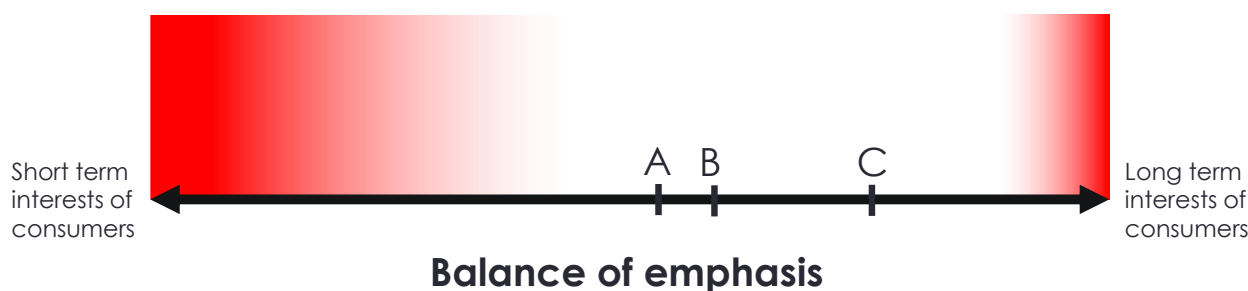
5.1.4 Identifying a materially preferable decision

For the Tribunal to make a determination to vary or set aside the 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 reviewable regulatory decision in making a contribution to the achievement of the NEO.¹⁹²

The framework I present above focuses on identifying 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, 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 2 A materially preferable decision



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, without compromising short term efficiency. The elements of a decision that are likely to be relevant for drawing this conclusion include those I listed 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 to which the differences between the decisions relate to fundamental elements of the overall framework, and therefore may be expected to have long term, significant consequences for future outcomes.

¹⁹² The law, clause 71(p)(2a).

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.

5.2 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 the AER to provide reasons as to the basis on which it is satisfied that its decision is the preferable regulatory decision.¹⁹³

Notwithstanding, the AER provides limited guidance as to the framework it applied in determining that the draft decision is the preferable regulatory decision. In the AER's opinion, a preferable regulatory decision is that which:¹⁹⁴

... will contribute to the achievement of the NEO to the greatest degree where we [the AER] are satisfied that it delivers the best balance between the NEO's factors. We consider this means a decision we are satisfied is most likely to result in consumers having a reasonable level of service at the lowest sustainable price. To assess this, we especially consider whether we are satisfied that:

- the overall revenue allowance is consistent with the key drivers
- the constituent components of a potential decision comply with the NER's requirements.

I interpret this guidance below.

5.2.1 What constitutes a preferable decision?

I agree in principle with the AER that, the extent to which a particular regulatory decision contributes to the achievement of the NEO will, by nature of the NEO, be determined by the degree to which it achieves a favourable balance between the NEO's factors.

The AER states that a decision that achieves the best balance between the NEO's factors, ie, the preferable decision, will be that which:¹⁹⁵

... is most likely to result in consumers having a reasonable level of service at the lowest sustainable price.

In my opinion, this statement has two significant shortcomings. First, the establishment by the AER of a 'reasonable level of service' as the reference point for what is to be provided to consumers is not obviously consistent with the requirements of the NEO. The NEO effectively specifies that the level of service to be provided to consumers is that which is in their interests, with respect to quality, safety, reliability and security of supply. In economic terms, such levels of service are those that customers value and are prepared to pay for, subject to those service obligations with which the businesses are required to comply. The concept of 'reasonable' has no obvious connection to these principles.

Second, the AER has focused on the lowest sustainable 'price', rather than the achievement of the lowest sustainable cost outcomes. I set out in section 3 that the promotion of the NEO requires that incentive mechanisms be put in place that allow the service provider to retain some of the benefit of any efficiency improvements it achieves. A focus on the lowest sustainable *price* appears to preclude recognition of the widely recognised regulatory principle that prices must remain above costs for a period in order to drive further cost efficiencies, to the long term benefit of consumers.

¹⁹³ The law, clause 16(1)(d)(ii).

¹⁹⁴ AER, *Draft Decision ActewAGL distribution determination 2015-16 to 2018-19*, Overview, November 2014, page 27.

¹⁹⁵ AER, *Draft Decision ActewAGL distribution determination 2015-16 to 2018-19*, Overview, November 2014, page 27.

5.2.2 How to assess regulatory decisions?

The AER assesses whether a decision results in consumers receiving a 'reasonable level of service at the lowest sustainable price' by considering whether:¹⁹⁶

- the overall revenue allowance is consistent with the key drivers
- the constituent components of a potential decision comply with the NER's requirements.

Taking the first consideration, the AER states that the key drivers of the revenue allowance in the draft decision are:¹⁹⁷

- its assessment that there are inefficiencies in ActewAGL's previous and forecast expenditure;
- its assessment that ActewAGL's risk management strategies for capital expenditure that are overly risk adverse;
- the expected moderate or declining demand and consumption forecasts; and
- the easing of financial market conditions.

This leads the AER to conclude that:¹⁹⁸

Together [the drivers] indicate a consistent picture. ActewAGL's efficient level of overall revenue during the 2015-19 regulatory control period should decrease substantially, compared to both the current regulatory control period and ActewAGL's proposal.

I note that the first two of the factors cited by the AER relate to its own conclusions, following its assessment of the efficiency of expenditure against the rules. The second two factors refer to external conditions, which are also taken into account by the rules and so encompassed in the draft decision.

By way of illustration of the circularity of the AER's reasoning, the rules require that forecast expenditure include only that which is deemed to be efficient and, similarly, that the allowed rate of return reflects changes in financial market conditions. The AER offers no explanation of how these key criteria illuminate the best balance between the factors that comprise the NEO beyond the observation that a particular decision complies with its own assessment against the rules.

The AER's second consideration is uncontroversial since it is widely accepted that the rules are designed to contribute to the achievement of the NEO. I interpret the AER's above statement to mean that a regulatory decision will be preferable to the extent that its constituent components comply with the rules. However, this provides little guidance as to the best balance between the factors that comprise the NEO where the evaluation is between two alternative decisions that both comply with the rules.

5.2.3 Summary of the AER's approach

To summarise, I agree with the principle identified by the AER that the extent to which a particular 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 service at the lowest sustainable price' is not grounded in the interests of consumers, and incorrectly emphasises price outcomes over efficiency outcomes.

¹⁹⁶ AER, *Draft Decision ActewAGL distribution determination 2015-16 to 2018-19*, Overview, November 2014, page 27.

¹⁹⁷ AER, *Draft Decision ActewAGL distribution determination 2015-16 to 2018-19*, Overview, November 2014, pages 23 to 25.

¹⁹⁸ AER, *Draft Decision ActewAGL distribution determination 2015-16 to 2018-19*, Overview, November 2014, page 25.

Similarly, the AER's assessment of the appropriate balance between the factors that comprise the NEO appears to emphasise the degree of compliance with its own assessment made under the rules. 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 framework I describe in section 5.1 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:¹⁹⁹

... 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:

The long term interests of consumers must be the Australian Competition Tribunal's paramount consideration in determining that a materially preferable decision exists.²⁰⁰

And, further:

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.²⁰¹

It is unclear whether and, if so, how, 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 reviewable regulatory 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 reviewable regulatory 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 so is a preferable decision.

5.3 Does the AER's decision represent a preferable decision?

I concluded in section 3.5 that failure to give effect to each and every building block, and to comply with each of the main revenue and pricing principles, will compromise the achievement of the NEO requirement. I further concluded in section 4.8 that, having had regard to the errors identified in the AER's draft decision in the expert reports that have been provided to me, and to the matters raised in ActewAGL's revised regulatory proposal, the AER has offended the building block requirements in the rules and the revenue and pricing principles. In particular, I identified that in weighing the trade-off between the short and long term interests of consumers, the AER's decision takes an overly short term perspective that does not extend beyond the 2014 to 2019 regulatory control period.

¹⁹⁹ Expert Panel, Review of the Limited Merits Review Regime, Stage 2 Report, 30 September 2012, page 38.

²⁰⁰ Hansard, South Australia House of Assembly, 9 February 2005, 26 September 2013, page 7172.

²⁰¹ Hansard, South Australia House of Assembly, 9 February 2005, 26 September 2013, page 7173.

In terms of the framework set out in section 5.1, the scant weight given to long term interests of consumers means that it is infeasible for the draft decision to reflect the long term interests of consumers, and so to further the NEO, regardless of the level of short term benefit the decision may provide. It follows that the draft decision falls outside of the range of those that are consistent with the NEO, as illustrated by decision D in figure 3.

Figure 3 The NEO requirement



In my opinion, the AER's decision cannot be a preferable decision. An alternative proposal that does not offend the building block requirements and the revenue and pricing principles would clearly be a preferable 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 the AER's draft decision could be a preferable reviewable decision, even 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 above that the preferable regulatory 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.

The framework I described in section 5.1 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 short and long term potential effects of the different decisions, in relation to both cost and service outcomes; 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.

In its draft decision, the AER states that:²⁰²

We consider productive efficiency is most relevant for assessing cost forecasts. Accordingly, when we assess total forecast opex in accordance with the first opex criterion – the efficient cost of achieving the opex objectives – we are principally focused on the service provider's productive efficiency.

²⁰² AER, *Draft Decision ActewAGL distribution determination 2015-16 to 2018-19*, Attachment 7: Operating expenditure, November 2014, page 38.

The AER goes on to say:²⁰³

Productive efficiency is most relevant to assessing cost forecasts because using benchmarking to measure and report relative productive efficiency will also promote dynamic efficiency and allocative efficiency due to it incentivising service providers to innovate and adopt best practice.

I disagree with this contention.

The AER's explicit focus on productive efficiency in assessing cost forecasts causes it to place undue weight on short term efficiency, at the expense of longer-term considerations. The benchmarking analysis on which the AER relied in determining the operating expenditure allowance for ActewAGL necessarily reflects a comparison of current outcomes. Even putting aside fundamental questions as to its robustness, the exclusive focus of the AER's benchmarking analysis is short-term productive efficiency. The AER does not adequately consider the effect of its decision on dynamic efficiency, which is critical for assessing whether the draft decision is in the long term interests of consumers.

The AER's contention that the use of benchmarking will also promote dynamic efficiency through providing an incentive for businesses to innovate is simplistic and incorrect. In a separate expert report in which I evaluate the incentives implied by the AER's decision, I conclude that the AER's use of benchmarking, in combination with its decision not to apply the EBSS in the forthcoming regulatory period, results in the businesses facing incentives that are not consistent with dynamic efficiency and the long term interests of consumers, ie, I state that:²⁰⁴

Adoption of a benchmark that is too low not only fails to provide the right incentive to a DNSP, but in fact encourages a DNSP to make decisions that are contrary to the long term interests of consumers. Most notably, the low benchmark provides the DNSP with a price signal to spend less on opex than is efficient – a price signal that is considerably stronger than the normal incentive, amplified by the fact that the DNSP bears over 100 per cent of any expenditure above the opex allowance.

I note in section 4.1 that I have been provided with a number of expert reports, each of which expresses the opinion that there is a high likelihood that the operating expenditure allowance in the AER's draft decision does not reflect the efficient expenditure required by the business – because of both a range of errors and shortcomings in the analysis undertaken, as well as the primacy given to the benchmarking results in the AER's decision.

Further, it does not follow that the use of benchmarking will, of itself, promote dynamic efficiency:²⁰⁵

Even if the benchmark were assumed to be free of uncertainty, it does not follow that the benchmark is achievable. I have already described the circumstances where a business might not respond to the incentives provided by the regulatory framework, and those circumstances also correspond to a DNSP not being able to achieve its benchmark level of opex.

In the event that a business cannot achieve the benchmark, the end result is ultimately a loss of revenue for the DNSP – revenue that the DNSP requires to maintain its network and ensure reliable supply to its customers. This gives rise to the question of whether adherence to an efficient but unachievable benchmark leads to recovery of the level of revenue that is consistent with the long term interest of consumers. In my opinion, it does not.

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

²⁰³ AER, *Draft Decision ActewAGL distribution determination 2015-16 to 2018-19*, Attachment 7: Operating expenditure, November 2014, page 38, footnote 55.

²⁰⁴ HoustonKemp, *Opex and Efficiency Benefit Sharing Scheme*, January 2015, page 27.

²⁰⁵ HoustonKemp, *Opex and Efficiency Benefit Sharing Scheme*, January 2015, page 27.

A similar, fundamental shortcoming is also evident in the AER's decision to make retrospective changes to the operation of the EBSS incentive mechanism under the rules. I concluded in my separate report on incentives that:²⁰⁶

The regulatory arrangements are critical to determining the basis for cost recovery and the risk of not recovering the cost of an investment. Ex-post adjustments that affect investors' reasonably anticipated returns will increase the level of uncertainty and predictability in the regulatory environment. [..]

A failure to adjust revenue to maintain the acknowledged sharing ratio would increase the level of uncertainty in the regulatory environment and, in so doing, substantially increase the level of regulatory risk. Regulatory risk increases the prospect of investors' expectations as to the return on or return of capital for a particular project not being met, and so increases a regulated firm's cost of providing capital to the detriment of the long term interests of consumers.

In my opinion, retrospective changes to the regulatory framework that result in unanticipated and material financial losses to a DNSP are unnecessary and inconsistent with the long term interests of consumers as required by the national electricity objective (NEO).

I explained in section 5.1 that identification of a preferable decision requires consideration of the differing short and long term effects associated with different decisions. Differences in revenue allowances of the magnitude that exists between the AER's decision and ActewAGL's revised proposal will inevitably lead to different outcomes.

This expectation is substantiated by the expert evidence provided by AECOM, which sets out the expected impact on future service levels implied by the AER's constituent decisions for both operating expenditure and repex. AECOM concludes that future customers are likely to have to pay higher prices for inferior services, due to deteriorating assets.²⁰⁷ The conclusions drawn by AECOM add weight to the contention that the AER's decision focuses on short term productive and allocative efficiency, to the detriment of dynamic efficiency and the long-term interests of consumer.

Moreover, the AER's failure to account for the interactions between operating expenditure and repex, and effectively to determine allowances for each in isolation, further raises the likelihood that its decision overall will not provide sufficient revenue to meet the expenditure required by the business, acting prudently and efficiently, and will therefore have material implications for future price and service levels.

The final relevant consideration in the assessment of whether a decision is materially preferable is the extent to which differences between possible decisions relate to fundamental 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 to its benchmarking analysis in determining operating expenditure represents a fundamental change in the regulatory approach, which has implications both for the level of the operating expenditure allowance and also for the incentives faced by the regulated business. It can therefore be expected to have wide reaching consequences for the future actions of the business and future outcomes.

I noted earlier that the interaction between the approach to determining efficient operating expenditure and the incentive arrangements facing the business has not been sufficiently taken into account in the AER's decision. The incentives established by the AER's change in approach can be expected to result in outcomes that are not in the long term interests of consumers. Moreover, the uncertainty created by the approach in terms of whether it will result in sufficient revenue to meet the business' efficient costs increases the riskiness associated with the business and affects investment incentives, which will adversely affect the achievement of dynamic efficiency.

A decision that imposes such fundamental changes, whilst at the same time being subject to deep-seated criticisms in relation to the adequacy of the analysis underpinning the approach, is unlikely to represent a

²⁰⁶ HoustonKemp, *Opex and Efficiency Benefit Sharing Scheme*, January 2015, page 27 and 28.

²⁰⁷ AECOM, *The impact of the AER's draft decision on ActewAGL's service and safety performance*, January 2015, page 16.

preferable regulatory decision. I noted in section 3.5 that benchmarking is a tool that may aid the AER with its determinations in relation to efficient expenditure. However, in and of itself, the benchmarking analysis does not reflect a requirement or principle of the regulatory framework, consistent with the law and the rules. In circumstances where there is significant doubt as to whether the results of the benchmarking analysis cannot be taken as an effective guide to determining efficient expenditure, then the continued application of the analysis will not result in outcomes that are consistent with the regulatory framework and the achievement of the long term interests of consumers.

My assessment of the AER's draft decision and the expert reports provided to me against the framework I set out in section 5.1 leads me to conclude that the AER has not met the preferable regulatory decision requirement. The AER's draft decision does not provide sufficient weight to dynamic efficiency, being that element of efficiency directed to the long term interests of consumers. Rather, the AER's decision is predicated on its view that near term productive efficiency is the most important dimension of efficiency in determining expenditure allowances. The AER's 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 regulatory decision should be determined by reference to the long-term interests of consumers

5.4 Is ActewAGL's revised proposal a materially preferable decision?

I explain in section 5.1.3 that, 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 draft decision. By consequence of these errors, the draft decision involves 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 revenue allowance apply as a result of the AER's draft decision, as compared with that set out in ActewAGL's Revised Regulatory Proposal. The difference between the implied smoothed revenue allowances for the forthcoming regulatory period is 27 per cent, a magnitude that can be expected to lead to materially different outcomes.

The emphasis on the short term interests of consumers in the AER's draft decision would cause prices to be lower in the 2014 to 2019 regulatory control period. However, scale of the expenditure cuts contemplated by the draft decision has been identified in the expert reports provided to me is being highly likely to have adverse implications on the quality, reliability and safety of electricity supply. These effects are expected to begin to be felt even within the 2014 to 2019 regulatory period. Such outcomes alone would serve to mitigate any short term benefit to consumers that may arise in the form of lower electricity prices.

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

- the future costs that the business will need to incur;
- its ability to continue to attract finance and the cost of so doing; and
- the quality, reliability and safety of electricity supply provided to consumers.

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

By contrast, ActewAGL's revised regulatory proposal corrects the errors and shortcomings I discuss in section 4, and so re-aligns the balance of emphasis so that primacy is given to the long term interests of consumers. In particular:

- ActewAGL's revised proposal reflects an operating expenditure allowance that is based on revealed base year costs, and identified step changes that reflect changes in the scope of activities compared with the base year, rather than being set on the basis of benchmarking analysis.
 - > A forecast derived on this basis is more likely to reflect the actual efficient costs required to operate the business, and so is more consistent with achieving dynamic and productive efficiency and therefore the long-term interests of consumers.
- The revised proposal reflects augex proposals that have been based on detailed, project-by-project business case assessments of the least cost options for meeting the relevant obligations ActewAGL faces, including consideration of both different investment options and variation in the timing of those options. It also reflects a proposed repex allowance that is based on an assessment of the key drivers of ActewAGL's repex expenditure in the forthcoming regulatory period, rather than a comparison with previous repex levels, which the expert reports provided to me conclude are not an appropriate guide to future needs.
 - > Again, forecasts derived on the basis above are more likely to reflect the actual efficient costs required to operate the business, and so more be more consistent with achieving dynamic and productive efficiency and therefore the long-term interests of consumers.
- ActewAGL has directly considered the interaction between operating expenditure and repex, and its repex forecast reflects an increase in repex in order to offset the higher level of reactive operating expenditure that it considers would otherwise be incurred to respond to asset failures, as its asset base ages.
 - > A decision that is based on a holistic consideration of both operating expenditure and capital expenditure is again more likely to reflect the actual efficient costs required to operate the business, and to result in an overall lower cost of service through time. As a result, the decision would promote dynamic and productive efficiency and so the long-term interests of consumers.
- ActewAGL's revised proposal is based on a continuation of the existing EBSS incentive mechanism, which provides the business with incentives to make continuous operating expenditure efficiency gains throughout the regulatory period, and interacts with the Capital Expenditure Sharing Scheme (CESS) in order to provide consistent incentives across both operating expenditure and capital expenditure.
 - > I discussed in section 3.2 that the provision of effective incentives is a key feature of a regulatory regime that meets the NEO, and an explicit requirement of the regulatory and pricing principles. It is of particular importance in addressing the constant change in what constitutes efficient outcomes and the inability to directly observe whether businesses are operating efficiently. A decision that provides effective incentives is more likely to promote efficient outcomes over time, and therefore dynamic efficiency and the long-term interests of consumers.

My assessment of ActewAGL's revised proposal indicates that it is more likely to result in outcomes that enable the business to recover its efficient costs, and to provide appropriate incentives for ActewAGL to achieve efficiencies going forward, consistent with the revenue and pricing principles. As a consequence, the revised proposal better promotes dynamic efficiency. Compliance with the building block requirements in the rules (such as the requirement to demonstrate that the expenditure is efficient) ensures that the proposal does not unduly compromise short term productive and allocative efficiency. The expert reports I have been provided with, particularly that from AECOM, suggest that future service quality would not be compromised by ActewAGL's revised proposal, in contrast to likely future outcomes under the AER's decision.

In my opinion, ActewAGL's Revised Proposal reflects a materially preferable decision, because it is more likely to promote the long term interests of consumers to a materially greater degree, as compared with the AER's decision.

6. Declaration

In accordance with the 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
13 February 2015

Annexure A – Letter of Instruction



12 February 2015

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

Dear Mr Houston

AER'S DISTRIBUTION DETERMINATION FOR ACTEWAGL - CONTRIBUTION TO NEO AND PREFERABLE NEO DECISION REQUIREMENTS

ActewAGL Distribution (**ActewAGL**) would like to engage Houston Kemp to provide an expert report in relation to the Australian Energy Regulator's (**AER's**) draft decision on the distribution determination for ActewAGL for the 2015/16 to 2018/19 subsequent regulatory control period published by the AER on 27 November 2014 (**Draft Decision**) which addresses the matters set out in the scope of work contained in this letter.

1. BACKGROUND

ActewAGL operates and owns the ACT's electricity distribution network. The AER is responsible for the economic regulation of electricity distribution services in the ACT under the National Electricity Law (**NEL**). The AER is required to make distribution determinations for distribution network service providers (**DNSPs**), including ActewAGL under the National Electricity Rules (**NER**).¹

The AER's distribution determinations are predicated on constituent decisions 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

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

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. Clause 11.56.4 of the Savings and Transitional Rules in Chapter 11 of the NER provides that except as specified in that clause, "current Chapter 6" governs the making of a distribution determination for the subsequent regulatory control period for NSW and ACT DNSPs. Clause 11.65.2(a) of the NER provides that references to "current Chapter 6" are to be read as Chapter 6 of the NER as in force immediately after the *National Electricity Amendment (Network Service Provider Expenditure Objectives) Rule 2013* came into force. That Rule came into force on 26 September 2013 and version 58 of the NER was the version of the NER in force from 26 September 2013. Accordingly, the NER currently provides that Chapter 6 in version 58 of the NER applies to the making of distribution determinations for NSW and ACT DNSPs for the subsequent regulatory control period. Accordingly, your expert opinion should also be based on the provisions of Chapter 6 in version 58 of the NER.

² Clause 6.12.1(2) of the NER.

³ Clause 6.4.3 of the NER.

As a result of those changes, the AEMC deferred the full regulatory determination process for the 2014/15-2018/19 regulatory control period. As part of the transitional arrangements under the NER,⁴ on 16 April 2014 the AER determined a placeholder distribution determination for a transitional regulatory control period (1 July 2014 to 30 June 2015) and is in the process of making a distribution determination for ActewAGL for the 2015/16-2018/19 subsequent regulatory control period (1 July 2015 to 30 June 2019).

In making ActewAGL's distribution determination for the subsequent regulatory control period, the AER is required to determine a "notional" annual revenue allowance for the transitional regulatory control period.⁵ The AER must adjust ActewAGL's total revenue requirement for the subsequent regulatory control period (1 July 2015 to 30 June 2019) by increasing or decreasing the annual revenue allowance(s) for one or more of the regulatory years of the subsequent regulatory control period.⁶ The amount of that adjustment is calculated as the amount of the annual revenue allowance approved for the transitional regulatory control period in its placeholder distribution determination for that period less the amount of the "notional" annual revenue allowance for the transitional regulatory control period determined in the distribution determination for the subsequent regulatory control period (subject to modifications as set out in the AER's Framework and Approach Paper).

ActewAGL submitted its regulatory proposal for the subsequent regulatory control period (2015/16-2018/19) to the AER in July 2014 (**ActewAGL's Subsequent Regulatory Proposal**).⁷ The AER published its Draft Decision on 27 November 2014. ActewAGL's revised regulatory proposal was submitted on 20 January 2015 (**Revised Regulatory Proposal**) and submissions on the Draft Decision and Revised Regulatory Proposal are due by 13 February 2015. The AER expects to publish a final decision on 30 April 2015 in respect of the subsequent regulatory control period (1 July 2015 to 30 June 2019).

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

The national electricity objective (NEO) is defined 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.*

Under the NEL, the AER must, in performing or exercising an economic regulatory function or power, including the making of a reviewable regulatory decision, perform or exercise that function or power in a manner that will or is likely to contribute to the achievement of the national electricity objective⁸ (**the NEO requirement**).

Further, the NEL requires the AER when making a reviewable regulatory decision to specify:⁹

- the manner in which the constituent components of the decision relate to each other; and

⁴ Division 2 of Part ZW of Chapter 11 of the NER.

⁵ Clause 11.56.4(c) of the NER.

⁶ Clause 11.56.4(h) and (i) of the NER.

⁷ ActewAGL first submitted its regulatory proposal to the AER on 2 June 2014. The AER issued ActewAGL with a notice under clause 6.9.1(a) of the NER, to resubmit its regulatory proposal on the basis that it was not compliant with the NER. On 10 July 2014, ActewAGL resubmitted its regulatory proposal which addressed the deficiencies identified by the AER.

⁸ Section 16(1)(a) of the NEL.

⁹ Section 16(1)(c) of the NEL.

- the manner in which that interrelationship has been taken into account in the making of the decision.

The NEL also requires the AER to take into account the revenue and pricing principles in section 7A of the NEL (**revenue and pricing principles**) when exercising a discretion in making those parts of a distribution determination relating to direct control network services.¹⁰

In addition, where the AER is making a reviewable regulatory decision and there are two or more possible reviewable regulatory decisions that will, or are likely to, contribute to the achievement of the NEL, the AER is required to:¹¹

- make the decision that the AER is satisfied will, or is likely to, contribute to the achievement of the NEO to the greatest degree (defined in the NEL as the "preferable reviewable regulatory decision"); and
- specify reasons as to the basis on which the AER is satisfied that the decision is the preferable reviewable regulatory decision,

(collectively, **the preferable reviewable regulatory decision requirement**).

The AER's final decision on the distribution determination for ActewAGL for the 2015/16 to 2018/19 subsequent regulatory control period is a reviewable regulatory decision under the NEL.¹² Accordingly, the above provisions of the NEL apply to the AER in making the final distribution determination for ActewAGL.

We also observe that on any merits review before the Australian Competition Tribunal (**Tribunal**) by ActewAGL of the AER's final decision on the distribution determination for ActewAGL for the 2015/16 to 2018/19 regulatory control period (**Final Decision**), the Tribunal is only entitled to vary or set aside the Final Decision if it is satisfied that to do so will, or is likely to, result in a decision that is materially preferable to the Final Decision in making a contribution to the achievement of the NEO (**materially preferable NEO decision**).¹³ In deciding whether to vary or set aside the Final Decision the Tribunal must (without limiting any other matter that may be relevant under the NEL):¹⁴

- consider how the constituent components of the reviewable regulatory decision interrelate with each other and with the matters raised as a ground for review;
- 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
- in assessing the extent of contribution to the achievement of the NEO, consider the reviewable regulatory decision as a whole.

¹⁰ Section 16(2)(a) of the NEL.

¹¹ Section 16(1)(d) of the NEL.

¹² "Reviewable regulatory decision" is defined in section 71A of the NEL to include a network revenue or pricing determination that sets a regulatory period. "Network revenue or pricing determination" is defined in section 2 of the NEL as a distribution determination or a transmission determination. "Distribution determination" is, in turn, defined in section 2 of the NEL as a determination of the AER under the NER that regulates one or more of (a) the terms and conditions for the provision of electricity network services that are the subject of economic regulation under the NER including the prices an owner, controller or operator of a distribution system charges or may charge for those services; and/or (b) the revenue an owner, controller or operator of a distribution system earns or may earn from the provision by that owner, controller or operator of electricity network services that are the subject of economic regulation under the NER.

¹³ Section 71P(2a)(c) of the NEL.

¹⁴ Section 71P(2b)(a) to (c) of the NEL.

The following matters must not, in themselves, determine the question about whether a materially preferable NEO decision exists:¹⁵

- the establishment of a ground for review under section 71C(1) of the NEL;
- consequences for, or impacts on, the average annual regulated revenue of a regulated network service provider; and
- 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 Draft Decision

The AER describes the manner in which it has made the Draft Decision in section 3 of the Overview to its Draft Decision. The AER describes the constituent components of its decision and the interrelationships between those components in section 5 of the Overview to its Draft Decision and why it considers its decision, as a whole, will contribute to the achievement of the NEO to the greatest degree in section 6 of the Overview to its Draft Decision.

2. SCOPE OF WORK

We request that you prepare an expert report on the Final Decision on the assumption that the position adopted by the AER, including the errors (if any) in the Draft Decision as identified in ActewAGL's Revised Regulatory Proposal and related material, is repeated in the Final Decision. Your expert report should address the following matters (in each case making that assumption).

1. If the Final Decision contains the errors identified in the Revised Regulatory Proposal and related material, please provide your opinion whether, in making the Final Decision, the AER will have met the NEO requirement. When expressing your opinion on this issue, please:
 - (a) set out your understanding of the NEO requirement and the revenue and pricing principles;
 - (b) set out the principles which should be adopted in a regulatory regime which promotes the NEO requirement, including the way in which the revenue and pricing principles may be relevant and the importance of incentives;
 - (c) explain the role of the building blocks approach under the NER and whether it is concordant with the NEO and the revenue and pricing principles;
 - (d) explain the role of benchmarking within the regulatory framework in the NER and its relationship to the NEO requirement;
 - (e) describe the basis on which (if at all) a distribution determination that is not in accordance with either the revenue and pricing principles or the NER is likely to result in a failure to meet the NEO requirement;
 - (f) indicate whether the AER has, as required by the NEL,¹⁶ adequately (or at all) specified:
 - (i) the manner in which the constituent components of the decision relate to each other; and

¹⁵ Section 71P(2b)(d) of the NEL.

¹⁶ Section 16(1)(c) of the NEL.

- (ii) the manner in which that interrelationship has been taken into account in the making of the decision,

and if not, whether in your opinion this may have affected the AER's ability to assess whether the NEO requirement has been met;
 - (g) summarise any aspects of the Final Decision (assuming it adheres to the Draft Decision) that, as identified in your analysis of the Revised Regulatory Proposal and related material, suggest that one or more of the NER or NEL requirements you have identified in your response to paragraphs (b) to (e) above have been offended;
 - (h) summarise each material constituent component of the Final Decision (assuming it adheres to the Draft Decision) and its overall impact on the business of ActewAGL over the review period (1 July 2014 to 30 June 2019); and
 - (i) opine on whether, having regard to the matters above, which will be dealt with in your report, the AER is likely to have met the NEO requirement. When assessing whether in your opinion the AER has met the NEO requirement, please take into account the whole of the matters raised in the Revised Regulatory Proposal and related material, not only the errors as identified in that Proposal and material.
2. Having regard to the opinions you have expressed when addressing the first issue above, please assess and report on whether, having regard to the Revised Regulatory Proposal and related material, the AER will have met the preferable reviewable regulatory decision requirement. Please note that in assessing whether in your opinion the AER has met this requirement, you should take into account the whole of the matters raised in the Revised Regulatory Proposal and related material, not only the errors as identified in that Proposal and material.
 3. Having regard to the opinions you have expressed when addressing the first and second issues above, please assess and report on whether, having regard to the Revised Regulatory Proposal and related material, the errors identified in the Proposal and material, if corrected, would, or would be likely to, result in a materially preferable NEO decision overall. If you make an affirmative assessment in relation to this issue, please provide the basis upon which you make that assessment and in your report address in respect of that assessment:¹⁷
 - (a) a consideration of how the constituent components of the Final Decision interrelate with each other and with the matters which the Revised Regulatory Proposal and related material have raised as errors (and which may therefore be grounds for review);
 - (b) how you have taken into account the revenue and pricing principles;
 - (c) your consideration of the Final Decision as a whole in assessing the extent of the contribution of the correction(s) identified in the Revised Regulatory Proposal and related material to the achievement of the NEO; and
 - (d) any other matter you consider relevant under the NEL.
 4. It is recognised that the Revised Regulatory Proposal and related material have identified a significant number of errors in the Draft Decision (which may be repeated in the Final Decision).

¹⁷ Which the Tribunal is required to have regard to in deciding whether to vary or set aside a distribution determination under section 71P(2b) of the NEL.

If you consider it relevant to do so, please prepare a "matrix" of error outcomes, assessed against the materially preferable criteria referred to above.

5. Any other matters you consider relevant.

For the purpose of undertaking this work, we will provide you with a copy of the documents listed in Attachment A to this letter.

3. EXPERT WITNESS

ActewAGL anticipates providing a copy of Houston Kemp's report to the AER.

To this end, ActewAGL has attached a copy of the Federal Court of Australia's Practice Note "Expert Witnesses in Proceedings in the Federal Court of Australia" (Attachment B). The Practice Note contains useful direction regarding the steps that should be taken by expert witnesses to ensure the veracity of their reports. ActewAGL requires Houston Kemp to comply with the Practice Note in preparing its report.

A list of all documents provided to Houston Kemp, as well as those documents relied on by Houston Kemp, should be included in the expert report and those documents should be annexed to the report or, in the alternative, provided to ActewAGL if they were not provided to Houston Kemp by ActewAGL.

In addition, you should attach a copy of your CV containing your qualifications and relevant experience to your expert report.

4. TIMING

ActewAGL requests Houston Kemp to deliver its final report by 13 February 2015.

5. CONTACT

Usman Saadat, Manager of Regulatory Affairs, will be the day to day contact for Houston Kemp. Usman's contact details are:

Usman Saadat
Manager Regulatory Affairs
ActewAGL
Phone: 02 6248 3806
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Please contact Usman if you have any questions regarding the preparation of your report.

Yours sincerely



David Graham

Director, Regulatory Affairs and Pricing

Attachment A

List of documents

1. ActewAGL's regulatory proposal for the subsequent regulatory control period (2015/16 to 2018/19) (resubmitted 10 July 2014).
2. ActewAGL's revised regulatory proposal for the subsequent regulatory control period (2015/16 to 2018/19).
3. AER, *Draft decision ActewAGL distribution determination 2015/16 to 2018/19* published on 27 November 2014, including the Overview and Attachments 1 to 19.
4. AER, *Electricity distribution network service providers, Annual benchmarking report*, November 2014.
5. Economic Insights, *Economic Benchmarking Assessment of Operating Expenditure for NSW and ACT Electricity DNSPs*, 17 November 2014.
6. *National Electricity (South Australia) Act 1996*.
7. Chapter 6 in version 58 of the National Electricity Rules.
8. Chapter 10 in version 66 of the National Electricity Rules.
9. Division 2 of Part ZW and Part ZY of Chapter 11 in version 66 of the National Electricity Rules.
10. AER, *Better Regulation Expenditure Forecast Assessment Guideline for Electricity Distribution*, November 2013. AER, *Explanatory Statement, Expenditure Forecast Assessment Guideline*, November 2013.
11. AER, *Explanatory Statement, Expenditure Forecast Assessment Guideline*, November 2013.
12. ActewAGL Distribution, Revised Regulatory Proposal, January 2015, Attachment C2, Advisian, *Opex cost drivers: ActewAGL Distribution Electricity (ACT)*, January 2015
13. ActewAGL Distribution, Revised Regulatory Proposal, January 2015, Attachment C3, CEPA, *Benchmarking and setting efficiency targets for the Australian DNSPs: ActewAGL Distribution*, January 2015
14. ActewAGL Distribution, Revised Regulatory Proposal, January 2015, Attachment C4, Huegin, *Huegin's response to Draft Determination on behalf of NSW and ActewAGL, Technical response to the application of benchmarking by the AER*, January 2015
15. ActewAGL Distribution, Revised Regulatory Proposal, January 2015, Attachment C1, HoustonKemp, *Opex and the efficiency benefit sharing scheme*, January 2015
16. ActewAGL Distribution, Revised Regulatory Proposal, January 2015, Attachment D4, Jacobs, 5, *Review of AER Draft Decision – Augex*, January 2015
17. ActewAGL Distribution, Revised Regulatory Proposal, January 2015, Attachment D13, Jacobs, *Focussed Critique of AER's REPEX – Calibrated model*, January 2015
18. ActewAGL Distribution, Revised Regulatory Proposal, January 2015, Attachment D15 Jacobs, *ActewAGL Distribution Cost Escalation Factors – Commodity Price Forecasting*, January 2015
19. ActewAGL Distribution, Revised Regulatory Proposal, January 2015, Attachment D17, Jacobs, *Review of AER Draft Decision – REPEX*, January 2015

20. ActewAGL Distribution, Revised Regulatory Proposal, January 2015, Attachment E2, Jacobs, *Regulatory Submission, ActewAGL, Review of ActewAGL 2014 Demand Forecast*, January 2015
21. ActewAGL Distribution, Revised Regulatory Proposal, January 2015, Attachment E3, Jacobs, *Response to AER on its draft determination on ACT energy forecasts, ActewAGL*, January 2015
22. ActewAGL Distribution, Revised Regulatory Proposal, January 2015, Attachment F1, SFG Consulting, *The required return on equity: Initial review of the AER draft decisions, Note for ActewAGL, Ausgrid, Essential Energy and Endeavour Energy*, January 2015
23. ActewAGL Distribution, Revised Regulatory Proposal, January 2015, Attachment F2, *Efficient debt financing costs*, January 2015
24. ActewAGL Distribution, Revised Regulatory Proposal, January 2015, Attachment F3, Incenta, *Debt raising transaction costs – updated report*, January 2015
25. ActewAGL Distribution, Revised Regulatory Proposal, January 2015, Attachment F5, Detailed response to the AER's draft decision in relation to Gamma
26. ActewAGL Distribution, Revised Regulatory Proposal, January 2015, Attachment B8, AECOM, *The Impact of the AER's Draft Decision on ActewAGL's Service and Safety Performance*, January 2015
27. Ausgrid, *Revised Regulatory Proposal for the period 1 July 2014 to 30 June 2019*, 20 January 2015, Attachment 1.10 – PWC – *Independent Expert Advice on appropriateness of RIN data for benchmarking comparisons*.
28. SFG, *Estimating gamma for regulatory purposes*, February 2015

Attachment B

Federal Court's Practice Note

"Expert Witness Proceedings in the Federal Court of Australia"

Appended separately

FEDERAL COURT OF AUSTRALIA
Practice Note CM 7
EXPERT WITNESSES IN PROCEEDINGS IN THE
FEDERAL COURT OF AUSTRALIA

Practice Note CM 7 issued on 1 August 2011 is revoked with effect from midnight on 3 June 2013 and the following Practice Note is substituted.

Commencement

1. This Practice Note commences on 4 June 2013.

Introduction

2. Rule 23.12 of the Federal Court Rules 2011 requires a party to give a copy of the following guidelines to any witness they propose to retain for the purpose of preparing a report or giving evidence in a proceeding as to an opinion held by the witness that is wholly or substantially based on the specialised knowledge of the witness (see **Part 3.3 - Opinion** of the *Evidence Act 1995* (Cth)).
3. The guidelines are not intended to address all aspects of an expert witness's duties, but are intended to facilitate the admission of opinion evidence¹, and to assist experts to understand in general terms what the Court expects of them. Additionally, it is hoped that the guidelines will assist individual expert witnesses to avoid the criticism that is sometimes made (whether rightly or wrongly) that expert witnesses lack objectivity, or have coloured their evidence in favour of the party calling them.

Guidelines

1. General Duty to the Court²

- 1.1 An expert witness has an overriding duty to assist the Court on matters relevant to the expert's area of expertise.
- 1.2 An expert witness is not an advocate for a party even when giving testimony that is necessarily evaluative rather than inferential.
- 1.3 An expert witness's paramount duty is to the Court and not to the person retaining the expert.

¹ As to the distinction between expert opinion evidence and expert assistance see *Evans Deakin Pty Ltd v Sebel Furniture Ltd* [2003] FCA 171 per Allsop J at [676].

² The "*Ikarian Reefer*" (1993) 20 FSR 563 at 565-566.

2. The Form of the Expert's Report³

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

- (a) be signed by the expert who prepared the report; and
- (b) contain an acknowledgement at the beginning of the report that the expert has read, understood and complied with the Practice Note; and
- (c) contain particulars of the training, study or experience by which the expert has acquired specialised knowledge; and
- (d) identify the questions that the expert was asked to address; and
- (e) set out separately each of the factual findings or assumptions on which the expert's opinion is based; and
- (f) set out separately from the factual findings or assumptions each of the expert's opinions; and
- (g) set out the reasons for each of the expert's opinions; and
- (ga) contain an acknowledgment that the expert's opinions are based wholly or substantially on the specialised knowledge mentioned in paragraph (c) above⁴; and
- (h) comply with the Practice Note.

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

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

2.4 If, after exchange of reports or at any other stage, an expert witness changes the expert's opinion, having read another expert's report or for any other reason, the change should be communicated as soon as practicable (through the party's lawyers) to each party to whom the expert witness's report has been provided and, when appropriate, to the Court⁵.

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

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

2.7 Where an expert's report refers to photographs, plans, calculations, analyses, measurements, survey reports or other extrinsic matter, these must be provided to the opposite party at the same time as the exchange of reports⁶.

³ Rule 23.13.

⁴ See also *Dasreef Pty Limited v Navaf Hawchar* [2011] HCA 21.

⁵ The "*Ikarian Reefer*" [1993] 20 FSR 563 at 565

⁶ The "*Ikarian Reefer*" [1993] 20 FSR 563 at 565-566. See also Ormrod "*Scientific Evidence in Court*" [1968] Crim LR 240

3. Experts' Conference

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

J L B ALLSOP

Chief Justice

4 June 2013

Annexure A – 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. In his securities and finance work Greg has advised clients on a number of securities class action, market manipulation and insider trading proceedings, as well as on cost of capital estimation. 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.

Greg's industry experience spans the aviation, beverages, building products, cement, e-commerce, electricity and gas, forest products, grains, medical waste, mining, payments networks, 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 State 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

1989-2014 **NERA ECONOMIC CONSULTING**
Director (2000-2014)
London, United Kingdom (1989-1997); and 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

Competition and Mergers

2014	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	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	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	Australian Government Solicitor/ACCC Merger clearance Analysis and advice prepared in the context of the ACCC's review of two proposed merger transactions.
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.
- 2004** **Clayton Utz/Sydney Water Corporation**
Competition in sewage treatment
Retained to assist with Sydney Water's response to the application to have Sydney's waste water reticulation network declared under Part IIIa of the Trade Practices Act.
- 2004** **Blake Dawson Waldron/Boral**
Competition analysis of cement market
Advice on Boral's proposed acquisition of Adelaide Brighton Ltd, a cement industry merger opposed in Federal Court proceedings by the ACCC. Boral subsequently decided not to proceed with the transaction.
- 2004** **Minter Ellison/Singapore Power**
Merger clearance
Advice on competition issues arising from the proposed acquisition of TXU's Australian energy sector assets by Singapore Power. This included the submission of an expert report to the ACCC.
- 2004** **Mallesons/Orica**
Competition in gas production and retail markets
Retained as expert witness in the appeal by Orica against the Minister's decision to revoke coverage under the gas code of the substantial part of the Moomba to Sydney gas pipeline. The case was subsequently settled.
- 2004** **Courts, Fiji**
Merger clearance, abuse of market power
Prepared a report for submission to the Fijian Commerce Commission on the competition implications of the Courts' acquisition of the former Burns Philip retailing business, and related allegations of abuse of market power. The Commission subsequently cleared Courts of all competition concerns.
- 2003-04** **Mallesons/Sydney Airport Corporation**
Competition in air travel market
Expert report and testimony before the Australian Competition Tribunal on economic aspects of the application by Virgin Blue for declaration of airside facilities at Sydney Airport under Part IIIa of the Trade Practices Act.
- 2003-04** **Bartier Perry/ DM Faulkner**
Alleged collusive conduct
Submitted an expert report to the Federal Court in connection with allegations under s45 of the Trade Practices Act of collusive conduct leading to the substantial lessening of competition in the market for scrap metal. The 'substantial lessening of competition' element of this case was subsequently withdrawn.
- 2002-04** **Essential Services Commission**
Effectiveness of competition
Advisor on six separate reviews of the effectiveness of competition and the impact of existing or proposed measures designed to enhance competition in the markets for wholesale gas supply, port channel access services, liquid petroleum gas, retail electricity and gas supplies, and port services.

- 2003** **Gilbert + Tobin/AGL**
Vertical integration in electricity markets
 Prepared a report on the international experience of vertical integration of electricity generation and retailing markets, in connection with proceedings brought by AGL against the ACCC. This report examined the principles applied by competition authorities in assessing such developments, and evidence of the subsequent impact on competition.
- 2002-03** **National Competition Council**
Gas market competition
 Expert report in connection with the application by East Australian Pipeline Limited for revocation of coverage under the Gas Code of the Moomba to Sydney Pipeline System. The report addressed both the design of a test for whether market power was being exercised through pipeline transportation prices substantially in excess of long-run economic cost, and the assessment of existing prices by reference to this principle.
- 2001-03** **Blake Dawson Waldron/Qantas Airways**
Alleged predatory conduct
 Directed a NERA team advising on all economic aspects of an alleged misuse of market power (section 46 of the Trade Practices Act) in Federal Court proceedings brought against Qantas by the ACCC. The proceedings were withdrawn soon after responding expert statements were filed.
- 2002** **Phillips Fox/AWB Limited**
Access and competition in bulk freight transportation
 Expert report on the pricing arrangements for third party access to the Victorian rail network and their impact on competition in the related bulk freight transportation services market, preparation for the appeal before the Australian Competition Tribunal of the Minister's decision not to declare the Victorian intra-state rail network, pursuant to Part IIIA of the Trade Practices Act.
- 2002** **Australian Competition and Consumer Commission**
Anti-competitive bundling or tying strategies
 Prepared two (published) reports setting out an economic framework for evaluating whether the sale of bundled or tied products may be anti-competitive. These reports define the pre-conditions for such strategies to be anti-competitive, and discuss the potential role and pitfalls of imputation tests for anti-competitive product bundling.
- 2002** **Minter Ellison/SPI PowerNet**
Merger clearance
 Advice on competition issues arising in the acquisition of energy sector assets in Victoria.
- 2001** **Gilbert + Tobin/AGL**
Gas market competition
 Advised counsel for AGL in connection with the application by Duke Energy to the Australian Competition Tribunal for review of the decision by the National Competition Council to recommend that the eastern gas pipeline should be subject to price regulation under the national gas code.
- 2000** **One.Tel**
Competitive aspects of Mobile Number Portability
 Advised on the competitive aspects of proposed procedures for Mobile Number Portability and whether these arrangements breached the Trade Practices Act in relation to substantial lessening of competition.
- 2000** **Baker & McKenzie/Scottish Power**
Impact of consolidation on competition
 Expert report on the extent to which the acquisition of the Victorian electricity distribution and retail business, Powercor by an entity with interests in the national electricity market may lead to a 'substantial lessening of competition' in a relevant market.

Regulatory Analysis

2014	Actco 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	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.
- 2004** **Deacons/ACCC**
Implementation of DORC valuation
 Prepared a report on the implementation of a cost-based DORC valuation, for submission to the Australian Competition Tribunal in connection with proceedings on the appropriate gas transportation tariffs for the Moomba to Sydney gas pipeline.
- 2003-04** **Natural Gas Corporation, New Zealand**
Gas pipeline regulation
 Advisor in relation to the inquiry by the Commerce Commission into the case for formal economic regulation of gas pipelines. This role included assistance with the drafting of submissions, the provision of expert reports, and the giving of evidence before the Commerce Commission.
- 2001-03** **Rail Infrastructure Corporation**
Preparation of access undertaking
 Advised on all economic aspects arising in the preparation of an access undertaking for the New South Wales rail network. Issues arising included: pricing principles under a 'negotiate and arbitrate' framework, asset valuation, efficient costs, capacity allocation and trading, and cost of capital.
- 2002** **Clayton Utz/TransGrid**
National Electricity Tribunal hearing
 Retained as the principal economic expert in the appeal brought by Murraylink Transmission Company of NEMMCO's decision that TransGrid's proposed South Australia to New South Wales Electricity Interconnector was justified under the national electricity code's 'regulatory test'.
- 2001-02** **SPI PowerNet**
Revenue cap reset
 Advisor on all regulatory and economic aspects of SPI PowerNet's application to the ACCC for review of its revenue cap applying from January 2003. This included assistance on regulatory strategy, asset valuation in the context of the transitional provisions of the national electricity code, drafting and editorial support for the application document, and the conduct of a 'devil's advocate' review.

2002	Corrs Chambers Westgarth/Ofgar Economic interpretation of the gas code Provision of expert report and sworn testimony in the matter of Epic Energy v Office of the Independent Gas Access Regulator, before the Supreme Court of Western Australia, on the economic interpretation of certain phrases in the natural gas pipelines access code.
Securities and Finance	
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.
2013	Sydney Water Corporation Cost of capital estimation Preparation of two 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.
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.
2012-13	HWL Ebsworth/Confidential client Insider trading Expert advice and analysis in the context of criminal proceedings alleging insider trading in certain ASX-listed securities.
2011-12	Freehills/National Australia Bank Shareholder damages assessment Expert advice in connection with representative proceedings before the Federal Court alleging misstatement and/or breach of the continuous disclosure obligations of an ASX-listed entity.
2012	Johnson Winter & Slattery/Victorian gas distributors Cost of equity estimation Expert report submitted to the AER on the appropriate methodology for estimating the cost of equity under the Capital Asset Pricing Model.
2009-13	Minter Ellison/Confidential client Misleading and deceptive conduct Expert report and related advice in light of investor claims and pending litigation following the freezing of withdrawals from a fixed interest investment trust that primarily held US-denominated collateralised debt obligations (CDOs), as offered by a major Australian financial institution. Analysis undertaken includes the extent to which the investment risks were adequately described in the fund documents, and the quantum of any potential damages arising.
2011	Barringer Leather/Confidential client Market manipulation Expert report prepared in the context of criminal proceedings brought in the Supreme Court of NSW alleging market manipulation in the trading of certain ASX-listed securities.

- 2010-11** **Wotton Kearney/Confidential client**
Misleading and deceptive conduct
Expert report and analysis in light of investor claims and pending litigation following the freezing of withdrawals from two fixed interest investment trusts that primarily held US-denominated collateralised debt obligations (CDOs).
- 2010-11** **Maurice Blackburn/Confidential client**
Shareholder damages assessment
Analysis prepare for use in connection with representative proceedings before the Federal Court alleging misstatement and/or breach of the continuous disclosure obligations of an ASX-listed entity.
- 2010-11** **Mallesons/ActewAGL**
Judicial review of rate of return determination
Expert report and testimony in Federal Court proceedings seeking judicial review of a decision by the Australian Energy Regulator of its determination of the risk free rate of interest in its price setting determination for electricity distribution services.
- 2009-11** **William Roberts/Clime Capital**
Shareholder damages assessment
Preparation of two expert reports in representative proceedings before the Federal Court alleging misstatement and/or breach of the continuous disclosure obligations of ASX-listed entity, Credit Corp.
- 2009** **Jemena Limited**
Cost of equity estimation
Co-authored an expert report on the application of a domestic Fama-French three-factor model to estimate the cost of equity for regulated gas distribution businesses.
- 2008-09** **Clayton Utz/Fortescue Metals Group**
Materiality of share price response
Preparation of expert report and testimony before the Federal Court addressing alleged breaches of the ASX continuous disclosure obligations and the associated effect on the price of FMG securities arising from statements made by it in 2004.
- 2008-09** **Energy Trade Associations – APIA, ENA and Grid Australia**
Value of tax imputation credits
Preparation of expert report on the value to investors in Australian equities of tax imputation credits, for submission to the Australian Energy Regulator.
- 2008-09** **Freehills/Centro Properties**
Shareholder damages assessment
Assistance in the estimation of potential damages arising in representative proceedings concerning accounting misstatements and/or breach of the continuous disclosure obligations of an ASX-listed entity.
- 2008** **Slater & Gordon/Boyd**
Shareholder damages assessment
Preparation of an expert report for submission to a mediation on the damages arising in representative proceedings before the Federal Court alleging accounting misstatements and/or breach of the continuous disclosure obligations of EDI Downer.
- 2007-08** **Maurice Blackburn/Watson**
Shareholder damages assessment
Preparation of advice estimating the damages arising in representative proceedings before the Federal Court alleging accounting misstatements and/or breach of the continuous disclosure obligation by the ASX-listed entity, AWB Limited.

- 2007** **Freehills/Telstra Corporation**
Shareholder damages assessment
 Advice and assistance in the preparation of the expert report of Dr Fred Dunbar submitted to the Federal Court in the context of proceedings alleging breaches of the continuous disclosure obligations by Telstra. The principal subject of this work was the assessment of the extent to which of material alleged not to have been disclosed was already known and incorporated in Telstra's stock price.
- 2006-07** **Maurice Blackburn/Dorajay**
Shareholder damages assessment
 Advice and assistance in the preparation of the expert report of Dr Fred Dunbar submitted to the Federal Court in the context of proceedings between Dorajay and Aristocrat Leisure. The principal subject of this work was the assessment of the extent and duration of share price inflation arising from various accounting misstatements and alleged breaches of the continuous disclosure obligations.

Valuation and Contract Analysis

- 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.
- 2002-03** **ActewAGL**
Consumer willingness to pay
Directed a one year study of consumers' willingness to pay for a range of attributes for electricity, gas and water services in the ACT. This study involved the use of focus groups, the development of a pilot survey and then the implementation of a stated preference choice modelling survey of household and commercial customer segments for each utility service.
- 2002-03** **National Electricity Market Management Co**
Participant fee determination
Advice to NEMMCO in the context of its 2003 Determination of the structure of Participant Fees, for the recovery of NEMMCO and NECA's costs from participants in the national electricity market.

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.
- 2003-04** **Ministry of Finance, Thailand**
Framework for economic regulation
Lead a team advising on the detailed design and implementation of a framework for the economic regulation of the Thai water sector in order to support the proposed corporatisation and then privatisation of the Metropolitan Water Authority of Bangkok.

2003**Metrowater and Auckland City, New Zealand****Water industry reform options**

Report on alternative business models for the Auckland City water services supplier, Metrowater, in the context of proposals for structural reform elsewhere in the industry. This work examined the long term drivers of water industry efficiency and the costs and benefits of alternative structural reform options.

Sworn Testimony, Transcribed Evidence¹

- 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 Columbia, 18 January 2011
- 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

¹ Past ten years.

- 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 Publications²

- 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
- GCR 3rd Annual Law Leaders Asia Pacific**
Role of Economists in Competition Law Enforcement in Asia-Pacific and
Speech, Singapore, 6 March 2014
- 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

² Past seven years

Law and Economics Association of New Zealand
Shareholder Class Actions – A Rising Trend in Australia
Speeches, Auckland and Wellington, 15-16 November 2010

2009

ACCC Regulatory Conference

Substitutes and Complements for Traditional Regulation
Speech, Gold Coast, 30 July 2009

Minter Ellison Shareholder Class Action Seminar

Investor Class Actions – Economic Evidence
Speech, Sydney, 18 March 2009

Competition Law and Regulation Conference

Commerce Amendment Act: Impact on Electricity Lines Businesses
Speech, Wellington, 27 February 2009

2008

Non-Executive Directors

Shareholder Class Actions in Australia
Speech, Sydney, 28 July 2008

Mergers & Acquisitions: Strategies 2008

Competition Law Implications for Mergers & Acquisitions
Speech, Sydney, 27 May 2008

Institute for Study of Competition and Regulation

Role of Merits Review under Part 4 and Part 4A of the Commerce Act
Speech, Wellington, 20 February 2008

2007

Law Council of Australia - Trade Practices Workshop

Hypothetical breach of s46

Economic expert in mock trial, 20 October 2007

Assessing the Merits of Early Termination Fees, *Economics of Antitrust: Complex Issues in a Dynamic Economy*, Wu, Lawrence (Ed)

NERA Economic Consulting 2007

Assessing the Impact of Competition Policy Reforms on Infrastructure Performance

ACCC Regulation Conference

Speech, Gold Coast, 27 July 2007



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