

Briefing

Water

→ Energy

Transport

Financial services

Telecoms

Media

Competition policy

Policy analysis and design

→ Regulation

Strategy

Contract design and evaluation

Dispute support services

Market design and auctions

APRIL 2016

Outcome of merits review of AER reset decisions for NSW and ACT networks

ANALYSIS OF AUSTRALIAN COMPETITION TRIBUNAL JUDGMENT

On 26 February 2016, the Australian Competition Tribunal (Tribunal) issued its judgment in relation to merits reviews, sought by consumer groups and several regulated energy networks, of recent revenue reset Decisions issued by the Australian Energy Regulator (AER). These were among the largest and most complex merits reviews of their kind seen to date in Australia, and the Tribunal's judgment is likely to have far-reaching consequences for how energy networks will be regulated in future. This briefing analyses the Tribunal's findings and discusses the implications for the AER's future Decisions.¹

¹ Frontier Economics gratefully acknowledges the very helpful comments on this briefing by Liza Carver, Partner – Herbert Smith Freehills.



1 Introduction

In April 2015, the Australian Energy Regulator (AER) published Final Decisions on the maximum allowed revenues that electricity distribution businesses in NSW and the ACT would be permitted to earn over the next regulatory period. Later, in June 2015, the AER issued a Final Decision on allowed revenues in relation to regulated pipelines owned by Jemena Gas Networks Ltd (JGN) in NSW.

Following these Decisions, the three NSW electricity distributors (known collectively as Networks NSW), the distributor in the ACT (ActewAGL) and JGN, sought from the Australian Competition Tribunal (the Tribunal) merits reviews of the Decisions.² A number of other electricity distribution networks regulated by the AER, who were yet to have Decisions issued, but who anticipated that they would in future be affected similarly by the AER's Decisions on certain matters, also joined as parties to the appeal.^{3, 4}

These were the first appeals of their kind under Australia's new *limited merits review* regime. This was also the first time consumers sought a merits review of the AER's Decisions. The Public Interest Advocacy Centre (PIAC), representing consumers in NSW, lodged applications for review with the Tribunal arguing that the AER had, in some areas, erred in ways that were too generous to the regulated networks. As part of the review process, the AER was permitted to explain and contend for the reasoning process it adopted in reaching its Decisions.

The scope of issues on which review was sought by parties under the National Gas Law and National Electricity Law was unprecedented in Australia. The Tribunal noted in its judgement that the review-related material for the purposes of hearing the applications was said to extend to more than one million pages. These appeals were also among the largest in the history of economic regulation in Australia, in terms of value at stake. Figure 1 plots the total value of the alleged errors in the AER's Decisions as calculated by the parties that sought review. The total value of claims brought by the six parties exceeded A\$8.5 billion.

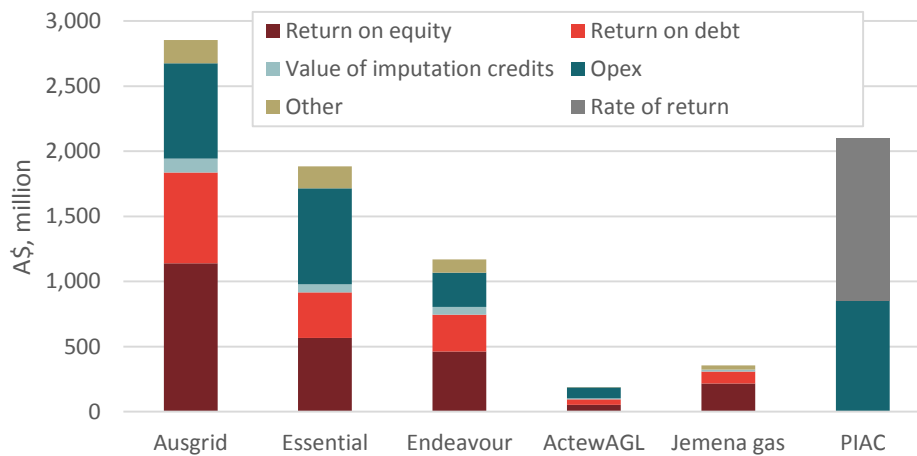
The Tribunal found in favour of the networks that sought review on most issues and concluded that PIAC had failed to make out grounds for review.

² The Tribunal was presided over by the Hon Justice Mansfield (judge, Federal Court of Australia), and also comprised Dr Darryn Abraham (economist) and Mr Robin Davey (the State of Victoria's first Regulator General).

³ These 'intervenor' were Ergon Energy, Energex, SA Power Networks, and all of the Victorian electricity distribution businesses.

⁴ Frontier Economics advised a number of networks (including most of the main parties to the merits review) on rate of return and operating expenditure issues through the revenue reset process. Frontier Economics was also retained by legal advisers and legal Counsel to Networks NSW to provide expert advice on rate of return and operating expenditure matters through the merits review process. This included providing Counsel with economic support through oral hearings.

Figure 1: Total value of errors in AER's Decision as calculated by the parties



Source: Frontier analysis of appeal applications submitted to the Tribunal by the parties

Note: PIAC did not quantify individually the revenue impact of the AER's Decisions on the return on equity, return on debt and value of imputation credits. Instead, PIAC quantified the overall impact of the AER rate of return Decision.

On 24 March 2016, the AER lodged applications with the Federal Court (the Court) seeking judicial review of the Tribunal's judgment. The AER stated that it had asked the Court to:⁵

...consider whether the grounds of review were properly established by the network businesses and whether these were correctly applied by the Tribunal.

The areas in which the AER has sought judicial review are in relation to the Tribunal's conclusions on matters pertaining to the *return on debt*, the *value of imputation credits* and *opex*. The Court is yet to decide whether leave will be granted to the AER to pursue the judicial review. The AER went on to say that, while the judicial review process is underway, the AER:

...will continue to consult with stakeholders about the remaking of its original decisions, as required under the Tribunal's findings

Hence, notwithstanding the prospect of a judicial review process, it is useful to examine the implications of the Tribunal's judgment, should the AER have to remake its 2015 Decisions for the NSW/ACT networks.

The remainder of this briefing is organised as follows:

- Section 2 summarises the main issues on which review was sought, and their revenue implications.

⁵ AER press release, *AER appeals against electricity and gas price decisions*, 24 March 2016.

- Section 3 provides an analysis of the Tribunal’s judgment on each of the key matters.
- Section 4 offers some overarching observations on the Tribunal’s judgment.

2 Key matters on which review was sought

The two most substantive issues on which the merits reviews were focussed were the AER’s Decisions in relation to:

- The *rate of return* that the businesses would be permitted to earn on their regulated asset bases — an issue on which all parties sought review. The rate of return matters related particularly to the AER’s Decisions on:
 - The return on debt;
 - The return on equity; and
 - The value of imputation credits for the purposes of determining the corporate taxation allowance.

Annexe A provides a detailed discussion of the grounds for review on the AER’s rate of return Decisions.

- The allowances for *operating expenditure* (opex), on which Network NSW, ActewAGL and PIAC sought review. At issue was the AER’s application of benchmarking to assess the efficiency of the networks’ historical opex. Annexe B provides a detailed discussion of the grounds for review of the AER’s opex Decisions.

2.1 Revenue impact of alleged errors in the AER’s rate of return Decisions

In terms of impact on regulated revenues, the rate of return issues represented the most significant of the issues on which review was sought. Figure 2 summarises the total revenue impact of the errors that the various parties claim the AER had made in its rate of return Decisions.

- In aggregate, the five networks that sought review claimed that errors in the AER’s rate of return Decisions had led to a revenue under-allowance, over the relevant regulatory period, of \$3.9 billion.⁶

⁶ The regulatory period for the NSW distributors and ActewAGL is 2015-16 to 2018-19. The regulatory period for JGN is 2015-16 to 2019-20.

- PIAC claimed that errors made by the AER's rate of return Decisions for the three NSW distribution networks had led to an over-allowance of regulated revenues of \$1.25 billion.

Figure 2: Value of errors in AER's rate of return Decision as calculated by the parties



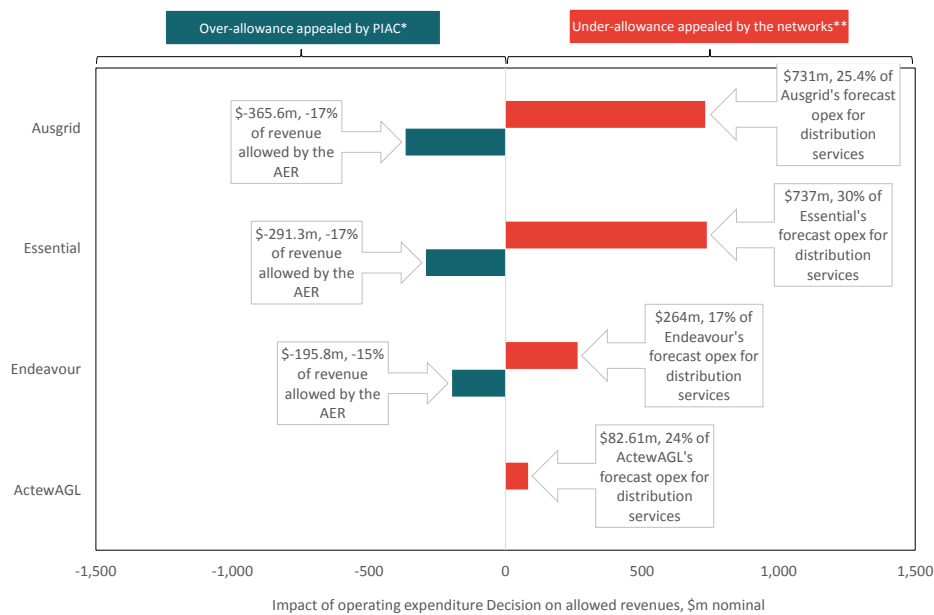
Source: Frontier analysis of appeal applications submitted by parties to the Tribunal

2.2 Revenue impact of alleged errors in the AER's opex Decisions

Figure 3 shows the total revenue impact of the errors that the various parties claim the AER had made in its opex Decisions.

- In aggregate, the four networks that sought review on this issue claimed that errors in the AER's opex Decisions had led to a revenue under-allowance, over the relevant regulatory period, of over \$1.8 billion.
- PIAC claimed that errors made by the AER's opex Decisions for the three NSW distribution networks had led to an over-allowance of regulated revenues of over \$850 million.

Figure 3: Value of errors in AER's opex Decision as calculated by the parties



Source: Frontier analysis of appeal applications submitted by parties to the Tribunal

3 The Tribunal's judgment

The Tribunal's judgment on the rate of return and opex matters was the following:

- **Return on debt.** The Tribunal set aside the AER's Decisions and ordered that the Decision be remade in relation to the introduction of the trailing average approach in accordance with the Tribunal's reasons.
- **Return on equity.** The Tribunal did not set aside the AER's return on equity Decisions.
- **Valuation of imputation credits.** The Tribunal decided that the AER's assessment of the value of imputation credits was too high. It ordered that the AER's Decision be remade in accordance with the Tribunal's reasons, including by reference to an imputation credit value of 0.25.
- **Opex.** The Tribunal found that the AER had erred in its application of opex benchmarking. The Tribunal ordered that the AER remake its opex decision in accordance with the Tribunal's reasons, including using a broader range of modelling and benchmarking against Australian businesses and a bottom-up review of the regulated networks' opex forecasts.

3.1 Return on debt

The parties that sought review on the AER's return on debt Decision put forward different grounds for review:

- Networks NSW and ActewAGL argued that, when setting the return on debt allowance, the AER should have moved immediately to a 10-year trailing average estimate instead of transitioning to that estimate over a 10-year period.
- JGN argued that, whilst a 10-year transition was reasonable in relation to the risk-free rate component of the return on debt allowance, the AER should have moved immediately to a 10-year trailing average estimate for the debt risk premium component.
- PIAC contended that the AER was right to apply a transition, but should have commenced the transition in 2015-16 (the first year of the regulatory period proper) rather than 2014-15 (during which a transitional determination, between the last control period and the next, applied). As the Tribunal set aside the AER's Decisions in relation to the return on debt and remitted them back for reconsideration, it concluded that PIAC's contentions did not need to be determined.

The Tribunal found that the AER's return on debt Decisions should be set aside and re-determined according to the reasons given in its judgment.

3.1.1 Definition of the benchmark efficient entity

The new NER and NGR each contain a rate of return objective, which provides that the rate of return for a regulated service provider is to be commensurate with the efficient financing costs of a benchmark efficient entity (BEE) with a similar degree of risk as that which applies to the regulated service provider in respect of the provision of standard control services/reference services.

Networks NSW argued that the AER had incorrectly interpreted the BEE to be a regulated, rather than an unregulated, efficient entity. As a result, the AER had concluded that *the only* efficient debt management approach under the previous NER/NGR was one in which a regulated network issues floating-rate debt and uses interest rate swaps to align its cost of debt to the AER's return on debt allowance.

Networks NSW had always adopted a different debt management approach (i.e., staggered issuance of fixed-rate debt without the use of swap contracts), and ActewAGL has no debt finance. This, according to the AER, precluded those networks' debt management approaches from being efficient as they did not match the strategy of the BEE that it had determined to be efficient under the previous Rules. However, said the AER, once it had implemented the trailing average approach, the efficient strategy would be to issue staggered, fixed-rate debt without the use of swap contracts. This implies that the BEE would adopt a new debt

management strategy under the new approach to setting the return on debt allowance. In other words, the AER's view is that the efficiency of the debt management strategy must be considered in light of the regulatory arrangements that are in place at the time. The AER argued that the change in the efficient debt management strategy, triggered by the change in regulatory approach, necessitated the transition it had applied.

Networks NSW argued that the AER was wrong to decide that the BEE was a regulated entity and that, had the AER concluded that the BEE was an unregulated efficient entity, the Networks NSW debt management strategy would have been found to be efficient. That, in turn, would have meant the AER ought to have implemented the trailing average approach immediately.

The Tribunal agreed with Networks NSW that the BEE is not a regulated entity:

[914] The BEE, in the view of the Tribunal, is likely to refer to the hypothetical efficient competitor in a competitive market for those services. Such a BEE is not a regulated competitor, because the regulation is imposed as a proxy for the hypothetical unregulated competitor. Otherwise, the starting point would be a regulated competitor in a hypothetically regulated market. That would not be consistent with the policy underlying the purpose of the NEL and the NGL in relation to the fixing of terms on which monopoly providers may operate. Indeed, the concept of a regulated efficient entity as the base comparator would divert the AER from the role of fixing the terms for supply of services on a proxy basis compared to those likely to obtain in a competitive market, and focus its attention on some different and unidentified regulated market.

The Tribunal also said that it was “ironic” for the AER to argue that the strategy adopted by Networks NSW was inefficient when, according to the AER, that very strategy would be the only efficient strategy once the trailing average approach had been adopted.

The Tribunal concluded that:

[938] The selection or identification of the BEE as a regulated entity involved the wrong exercise of a discretion about the character of the BEE in all the circumstances, and as a consequence its decision on the topic was unreasonable in all the circumstances.

The Tribunal's finding implies that when it re-determines the return on debt allowance, the AER must assume that the BEE is an unregulated efficient entity, and will need to consider what debt management such an entity would follow. Networks NSW argues that it has always followed the debt management strategy that efficient, unregulated infrastructure businesses adopt. If so, the Tribunal's decision implies that no transition to the trailing average should apply in Networks NSW's case.

3.1.2 One-size-fits-all approach to assessing efficient debt management

Networks NSW argued that the AER was wrong to apply a ‘one-size-fits-all’ approach when determining the BEE because circumstances vary between networks, and the efficient debt management approach is contingent on the

Outcome of merits review of AER reset decisions for NSW and ACT networks

characteristics and circumstances of each network. In other words, there need not be only one BEE.

The Tribunal agreed with this view:

[907] It is the Tribunal's view that the BEE referred to in the RoR Objective is not a regulated entity. It need not necessarily be the one entity for the purpose of all regulatory decision-making in a particular regulatory period for all regulated service providers.

The Tribunal noted further:

[916] ...it is necessary to focus on the characteristic that the BEE must have: a similar degree of risk to that of the relevant DNSP. The relevant DNSP is the DNSP for which the BEE is being determined by the AER. Once it is accepted that different DNSPs have in fact different degrees of risk (as is recognised in the discussions referred to) and so may have different efficient financing cost structures, it leads to the conclusion that there will not be an identical BEE for all DNSPs.

The Tribunal found that the AER was wrong to conclude automatically that the debt management strategy adopted by Networks NSW was inefficient simply because the AER had identified another strategy that it considered was efficient.

The Tribunal's finding means that when the AER re-determines the return on debt allowance, it will need to identify a BEE that has a "similar degree of risk to that of the relevant DNSP". To the extent that the degree of risk faced by networks varies, the BEE against which networks are assessed would differ also. This leaves open the possibility that a transition to the trailing average approach could be applied to some networks, but not others.

3.1.3 "Paying a second time" for the GFC

The AER said that if the trailing average approach had been implemented immediately, there would be double counting for the effect of the global financial crisis (GFC) because at the last reset, the AER's previous approach to determining the return on debt locked in a very high allowance at the peak of the GFC for 100% of the networks' debt portfolio, whereas in fact those high costs related to only a small proportion of the networks' debt portfolio since much of that debt had been issued well before the GFC, when interest rates were much lower.

The Tribunal noted that:

[942] ... s 16(1)(d) of the NE L may entitle the AER to make some adjustment if – as PIAC says – consumers may thereby be paying "a second time" for the consequences of the spike in rates following the GFC.

In the re-determination that the AER must make, it remains to be settled:

- whether in fact consumers would be "paying a second time" for the consequences of the GFC if a trailing average approach were to be implemented immediately;

Outcome of merits review of AER reset decisions for NSW and ACT networks

- whether the AER is permitted by s 16(1)(d) of the NEL to “make some adjustment” to the return on debt allowance as redress; and, if so
- what such an adjustment would entail, including how such an adjustment would be implemented and how it would be quantified.

3.2 Return on equity

The networks (Networks NSW, ActewAGL, JGN and interveners) argued that, when estimating the return on equity allowance, the AER had not had proper regard to relevant estimation methods, financial models, market data and other evidence as it was required to by recent amendments to the National Electricity Rules (NER) and National Gas Rules (NGR). PIAC argued that the AER had been unjustifiably generous to the networks when estimating some of the parameters needed to calculate the return on equity allowance.

The Tribunal did not uphold the grounds for review sought by the parties. In doing so, it accepted the AER’s return on equity Decisions in full.

3.2.1 The AER’s foundation model approach and reliance on a single model

The networks argued that the AER was wrong to specify a single “foundation model”, the Sharpe-Lintner Capital Asset Pricing Model (SL-CAPM), and treat all other relevant models and evidence only as secondary evidence. The networks argued further that the AER’s return on equity Decisions were driven by its foundation model, whereas the secondary evidence, including other models accepted by the AER as relevant, played “entirely subsidiary roles”.

At issue was the proper interpretation of the meaning of the requirement in the NER and NGR that, when determining the allowed rate of return, the AER must have regard to “relevant estimation methods, financial models, market data and other evidence”. The networks argued that this obliged the AER to use a wide range of models and evidence when determining the return on equity allowance. The Tribunal disagreed with that proposition:

[715] [the NER and NGR] do not suggest a prescriptive obligation to consider particular methods, models or data. If that were intended, one would expect it to be more prescribed. Rather, it is left to the AER to decide what is “relevant” and a dispute about relevance is not itself a basis for asserting error of the character now asserted. In fact, the AER did have regard – in the sense of considering – the material put forward by the Network Applicants. The same reasoning suggests that the obligation to “have regard to” certain material is to consider it and to give it such weight as the AER decides.

The Tribunal was not persuaded that the AER had made either an error of fact or of discretion by using a single “foundation model” or by adopting the SL-CAPM for that purpose in preference to other models and evidence. The Tribunal found that the AER had considered the strengths and weaknesses of the SL-CAPM and

other models proposed by the networks (as evidenced by lengthy appendices to its Decisions), and that the AER's analysis showed:

[720] ...it was not "locked in" to one model, relied on to the exclusion of all others.

The Tribunal went on to say:

[735] The Tribunal does not consider the AER, by selecting the SL CAPM as its foundation model made an error of fact. It was aware of the shortcomings of the SL CAPM, and on broad terms of the shortcomings of other models. It analysed their respective qualities, including as assessed or reported on by a range of expert commentators. Whilst it is possible to argue for an alternative model as the more suitable (Ergon argues for the Black CAPM), the Tribunal is faced with the range of competing views but that does not take the Tribunal itself to reaching a conclusion that the AER's selection of the SL CAPM involved an incorrect finding of fact. To get to that point would be to reach a firm view that a different model should have been chosen. The conflicting expert opinions, and supporting contentions based on other material, do not – in the Tribunal's assessment – get beyond showing that there are reasonable arguments for an alternative foundation model.

The Tribunal has concluded that, under the current NER and NGR, which are not prescriptive, the AER has significant discretion to decide what weight, if any, to assign to evidence submitted by stakeholders. The Tribunal held that the AER would be acting within the NER and NGR, as they are drafted at present, provided that that it:

- can point to analysis in its Decisions that weighs the evidence submitted by stakeholders; and
- demonstrates an awareness of the strengths and weaknesses of its preferred approach, as well as the strengths and weakness of the methods and evidence proposed by others.

The Tribunal has clarified that, under the present rules, the AER need not establish that the weight of evidence supports its proposed approach – only that it is aware of any submissions on the weaknesses of its approach, and that it has considered them when formulating its Decisions. If regulated networks (or indeed consumers) are dissatisfied with the discretion the AER has when considering evidence, changes to the NER and NGR, placing tighter limits on the discretion the AER may exercise, would need to be pursued.

3.2.2 Accounting for the Black CAPM

The AER did not estimate the Black CAPM empirically. Rather, it noted that studies using the Black CAPM suggest that the SL-CAPM underestimates the required return for low-beta companies. The AER used this insight to justify its selection of a beta estimate from the top of its estimated range, 0.4 to 0.7.

The networks contended that the way in which the AER took account of the Black CAPM was arbitrary because the AER did not actually apply the Black CAPM. The

Tribunal disagreed with the networks' view that the AER had taken only superficial account of the Black CAPM in its Decisions:

[750] ... The fact that the AER did not "run" the Black CAPM, the Fama-French Model or DGM with its own inputs does not demonstrate that it did not have regard to the various expert reports presented by the Network Applicants, or to the outcomes generated by those experts' use of those models.

The Tribunal concluded that the AER had considered to a sufficient degree the evidence on the Black CAPM put forward by the networks and, by doing so, had met its obligation under the NER and NGR to have regard to "relevant estimation methods, financial models, market data and other evidence".

The Tribunal also disagreed with the networks' contention that the AER's failure to apply the Black CAPM empirically had resulted in an arbitrary correction of the SL-CAPM's low-beta bias. The Black CAPM, noted the Tribunal, could itself be prone to error, so its application could not guarantee a precise correction of the bias identified by the networks and acknowledged by the AER:

[750] ... For instance, the low beta bias on the SL CAPM does not mean that the Black CAPM will necessarily generate a more reliable outcome. Consequently, the more precise adjustments to the SL CAPM suggested by the Network Applicants in their submissions, whilst they are capable of showing one way in which the SL CAPM would be adjusted, do not necessarily represent the best or only way to make the appropriate adjustment.

PIAC argued that the AER should have taken *no* account of the Black CAPM at all because the AER had expressed reservations about the reliability of that model.⁷ Specifically, PIAC argued that the AER should not have chosen the top of the range (0.7) but, instead, should have selected the point estimate (0.5) recommended by its adviser on beta. The Tribunal concluded that: (a) the AER was not wrong to begin by specifying a possible range for beta; and (b) there was no evidence that the AER had erred by selecting as its final estimate the top of that range. Further, the Tribunal found that, based on the evidence available, it was not unreasonable for the AER to conclude that the SL-CAPM suffered from a low beta bias, so PIAC had failed to demonstrate that the AER had erred in its weighing of the evidence:

[779] ... There are reasons why [the AER] might have chosen another point estimate. But the Tribunal accepts that the AER was entitled to start with a range. Upon reviewing the whole of the material before the AER, the Tribunal however is not satisfied that that material does not support a conclusion that the SL CAPM provided a low equity beta bias. When, therefore, it comes to the selection of a point estimate, and having regard to the range of data available to the AER, the Tribunal must consider whether it is

⁷ PIAC did not seek to have the AER's decisions on the return on equity set aside. However, PIAC did make submissions on the matter to the Tribunal as an intervener.

satisfied of the correctness of an alternative to that adopted by the AER. The short answer is that it is not so satisfied.

In summary, the Tribunal concluded that neither the networks nor PIAC had made out grounds for review, so the AER's analysis in relation to the Black CAPM was accepted. The limited merits review regime enshrined in the NEL/NGL requires that there be an error in the application of the NER/NGR before the Tribunal can set aside or vary the AER's Decisions. The applicants seeking review bear the onus of establishing that an error has occurred. On the facts before the Tribunal, the Tribunal found no error in the AER's approach.

The Tribunal's decision has a number of implications:

- Under the existing NER/NGR, there is no requirement on the AER to examine and weigh exhaustively all the relevant methods, financial models, market data and other evidence. It is sufficient if the AER merely considers the submissions made by stakeholders on these matters.
- Under the present NER/NGR, adjustments and corrections for biases acknowledged by the AER need not necessarily be made using direct quantitative analysis; adjustments based on qualitative judgments are permissible. Indeed, under the present rules, quantitative evidence may be treated as subsidiary to qualitative judgments if there are any weaknesses in the quantification.

3.2.3 Estimation of equity beta

The networks argued that the AER, having identified a "primary range" for the equity beta (a measure of equity risk used in the SL-CAPM) of 0.4 to 0.7, only considered other relevant material to select within that range, and effectively discounted material that pointed to an estimate above that range. The Tribunal disagreed with this view:

[754] ...The Tribunal does not accept that the AER chose to ignore empirical material suggesting an equity beta outside its starting range; the reasons of the AER in its Final Decisions show that it did consider all the empirical evidence. It was alert to the potential problems arising from the data source confined to the small number of publicly listed Australian energy network businesses. It is not shown to have failed to appreciate the terms of the Henry 2009 and 2014 Reports. It is not shown to have ignored the proposition of SFG (in several reports) that the data set for estimating equity beta should not be so confined to those businesses, or to have ignored empirical evidence of international energy network businesses.

The Tribunal found that the network businesses that sought review failed to establish that the AER had erred in its application of the NER/NGR.

The Tribunal considered explicitly whether data on non-Australian firms provided only "limited support" for an equity beta estimate above 0.5 (as contended by the AER), or unequivocal support for an estimate above 0.7 (as the networks contended). The Tribunal shared the AER's view that the international data

Outcome of merits review of AER reset decisions for NSW and ACT networks

provides limited support for an estimate above 0.5. The Tribunal found that the AER's conclusion did not represent a misunderstanding of the data available.

3.2.4 Estimation of the Market Risk Premium

The networks argued that, when estimating the Market Risk Premium (MRP), another input to the SL-CAPM, the AER gave undue weight to a single estimation approach, historical average excess returns. According to the networks, other approaches, which the AER acknowledged as relevant (such as the Dividend Growth Model (DGM) and the "Wright approach") exerted little or no influence on the final MRP estimate. This is because the AER's estimate of the MRP was effectively capped at the top of the range derived using historical average excess returns, 6.5%, regardless of the estimates produced by other relevant methods.

The Tribunal affirmed that there is no single method that will provide a correct estimate of the MRP. In the Tribunal's view, the AER had not relied on a single approach, but had instead weighed the relevant evidence submitted by stakeholders and had applied various cross-checks to its analysis. The Tribunal concluded that the AER had not erred in its Decision on the MRP.

The Tribunal noted further that, when confronted with evidence and competing experts' views, the AER is entitled to exercise its judgment on how that material is to be weighed:

[802] ...Like the AER, the Tribunal is called upon (as here) to assess the respective weighting of pieces of information, and to assess the respective competing views of experts. The mere existence of competing views or of reasons why a particular piece of information might point in one or other direction will not of itself mean that the Tribunal should or will reach a view different from that of the AER. That is particularly so where there are competing expert opinions. In the universe of the NEL and the NGL (as in other areas of decision making) it is a feature of the qualitative decision making process that competing materials, including competing expert opinions, may be available to the AER. It must make its decisions under, and in accordance with, the legislative and regulatory instruments having regard to that material. So too, on review, must the Tribunal.

The Tribunal did not opine on the relative merits of the evidence or views adduced by the parties or their experts. Instead, the Tribunal noted that:

- there were divergent views on the estimates of the MRP, and the AER was permitted to exercise discretion when assessing the evidence; and
- it was not satisfied that the AER had misunderstood, analysed incorrectly or ignored the evidence submitted.

In reaching its conclusions on the MRP, the Tribunal stated that it had followed the same process of weighing the evidence used by the AER, in light of the submissions put forward by the parties, and had not reached a different conclusion to the AER's. However, the Tribunal did not explain how it had weighed the evidence available. As a result, it remains unclear which aspects of the AER's

analysis the Tribunal found persuasive, and which aspects (if any) of the parties' submissions the Tribunal found compelling.

3.3 Value of tax imputation credits

The networks argued that the AER had mis-estimated a parameter known as gamma — an input into the calculation of the allowance for corporate income tax. Under Australia's dividend imputation tax system, when a firm pays a dividend out of income that has been taxed in Australia, it will attach dividend imputation tax credits, which can be used by some resident investors to reduce their personal tax obligations. Gamma represents the value to investors (in aggregate) of these tax credits. Gamma is computed as the product of the proportion of created credits that are attached to dividends and distributed to investors (the *distribution rate*) and the value of those distributed credits (known as *theta*). The AER had determined a gamma of 0.4, whereas the networks argued that the AER should have determined a gamma of 0.25. PIAC did not challenge the AER's Decisions in relation to gamma.

The networks argued that:

- the AER had misinterpreted the meaning of gamma, and the AER's estimate of 0.4 reflected that misunderstanding;
- the AER's estimate should have been derived using market prices that investors are willing to pay for traded stocks; and
- the AER's estimate is significantly above even the upper bound for the value of imputation credits, as indicated by tax statistics.

Of the various matters that the Tribunal reviewed, its orders were most prescriptive in relation to gamma. The Tribunal decided that the AER's Decisions on gamma should be set aside and re-determined using a gamma of 0.25.

3.3.1 Estimation of theta

The theta parameter reflects the value (to investors in aggregate) of the imputation credits that are distributed to them. The AER considered three different methods to estimate theta:

- **Equity ownership approach.** Under this approach, theta is taken to be the value-weighted proportion of domestic investors in Australian equities. The approach assumes that all eligible investors would value fully (i.e., gain 100% of the value of) the credits available. The AER defined "value" such that all eligible investors must value imputation credits at the full face amount.
- **Tax statistics.** Under this approach, theta is taken to be the actual rate of redemption of distributed imputation tax credits, calculated using information reported in investors' tax returns. This measure also does not reflect factors

that may result in the value of credits to investors being less than the face amount of the credits that were distributed to them.

- **Market value studies.** These studies use statistical techniques to infer the market value of imputation credits by examining stock prices before and after dividend payouts. Estimates of theta from these studies tend to be significantly lower than from the two approaches above, implying that investors do in fact value imputation credits at less than the full face amount, contrary to the assumption employed by the AER in considering the two approaches above.

Of these three approaches, the AER favoured the equity ownership approach, meaning that gamma was assumed to be equal to the proportion of distributed imputation credits available for redemption. The networks argued that theta should be estimated using market studies because traded market prices provide the most reliable indication of the value of imputation credits to investors, and because all other WACC parameters are estimated with reference to traded market prices, rather than being based on a different theoretical concept of “value.”

The Tribunal concluded that the equity ownership approach and tax statistics could provide only upper bound estimates of theta because there are factors that could reduce the value of credits below the theoretical or actual redemption rate of credits. The Tribunal noted in its judgment, it had found previously that tax statistics can only be treated as an upper bound estimate of the utilisation rate.⁸ The Tribunal concluded that as they can only produce upper bound estimates, these two methods could only be used as “a further check” on estimates derived by other methods.

The Tribunal agreed with the networks that market value studies are the best available method for estimating the utilisation rate:

[1096] Given that two of the three approaches adopted by the AER are considered no better than upper bounds, it follows that the assessment of theta must rely on market studies. The Tribunal considers that, of the various methodologies for estimating gamma employed by the AER, market value studies are best placed to capture the considerations that investors make in determining the worth of imputation credits to them.

The AER had dismissed in its Decisions the use of market value studies, in part due reservations that the econometric techniques used in such studies could estimate reliably the market value of imputation credits. The Tribunal noted that the AER’s criticisms of these studies was incongruent to its reliance on econometric benchmarking models used to set opex allowances:

[1052] The AER correctly identified a number of weaknesses in the market studies, particularly the dividend drop-off studies. These included that, because imputation credits are not traded, the studies must infer the value of imputation credits from

⁸ See Application by Energex Limited (No 2) [2010] ACompT 7.

econometrically estimated parameters, rather than observing market prices directly. This criticism is at odds with the AER's reliance on economic modelling in other aspects of its determinations, particularly the benchmarking model used to determine opex.

The Tribunal also concluded that the best estimate of the utilisation rate, 0.35, was to be found in a 2013 market value study conducted by SFG Consulting (now part of Frontier Economics), and that upward adjustments to that estimate made by the AER were erroneous.

The Tribunal went on to say that the AER's interpretation of the meaning of gamma was incorrect:

[1100] We consider that, by placing most reliance on the equity ownership approach and effectively defining the utilisation rate as the proportion of distributed imputation credits available for redemption, the AER has adopted a conceptual approach to gamma that redefines it as the value of imputation credits that are available for redemption. This is inconsistent with the concept of gamma in the Officer Framework for the WACC which underlies the Rules, and with the objective of ensuring a market rate of return on equity by making an adjustment to the revenue allowance for taxation to account for imputation credits.

The Tribunal's findings have a number of important implications for the way in which gamma should be estimated in future:

- Gamma must be interpreted as the worth of imputation credits to investors rather than the proportion of credits that might be redeemed by investors. This will require a revising of the AER's conceptual approach to gamma in its Rate of Return Guideline.
- Market value studies are the most appropriate method for estimating theta. Tax statistics and the equity ownership approach favoured by the AER can only provide upper bound estimates, so can only be used as checks in that no reasonable estimate of theta can be above the upper bound.
- When remaking its Decisions on gamma, the AER must use a theta of 0.35.

3.3.2 Estimation of the distribution rate

In the AER's past Decisions, its Rate of Return Guideline, and in its Draft Decisions for Networks NSW, ActewAGL and JGN, the AER had estimated the distribution rate using data on all equity in Australia. However, in its Final Decisions, on advice from one of its advisers, the AER estimated the distribution rate using only listed equity (a sub-set of all equity).

The Tribunal concluded that there was no basis for the change in approach followed by the AER:

[1106] ...the Tribunal on review is not of the view that [the AER's reason for the change in approach] is a sufficient explanation for introducing the alternative measure. It does not explain how the change would be consistent with the NEL or NER, or otherwise advance the NEO or the NGO. At present, the Tribunal is of the view that it is appropriate to follow past practice.

Given these findings, the AER must use a distribution rate of 0.7 (consistent with the data on all equity) when re-determining gamma.

3.4 Operating expenditure matters

The main area of dispute in relation to the AER's opex Decisions was the way in which the AER applied benchmarking analysis to assess the efficiency of the networks' past opex. While benchmarking analysis is applied widely by regulators in other jurisdictions overseas, the use of benchmarking analysis in revenue reset decisions for electricity networks was a new requirement introduced into the NER in 2012. As such, the Decisions subject to review were the first in which the AER had used formal benchmarking techniques to determine operating expenditure allowances. On the basis of that analysis, the AER concluded that the base year (i.e. 2013) opex for Ausgrid, Essential Energy and ActewAGL was inefficiently high, and should be adjusted down by between 24% and 33%.

The Tribunal decided to set aside the AER's opex Decisions and remit them back to the AER to remake in accordance with the reasons in the Tribunal's judgment. In doing so, the Tribunal ordered the use of a broader range of modelling, and benchmarking against Australian businesses, and including the use of "bottom up" analysis.

Below is an analysis of the Tribunal's decision on each of the key grounds for review in relation to the AER's opex Decisions. Annexe B sets out in further detail the main grounds for review on this matter.

3.4.1 Reliance on a single model

The networks argued that the AER had erred by relying on a single, flawed statistical benchmarking model (which became known as 'the EI model') to derive efficiency adjustments to base year opex for a number of electricity networks. The AER argued that, whilst its adjustments to base year opex had been derived using a single model, it had cross-checked the results from that preferred model using a range of other techniques, and those cross-checks had produced very similar results to its preferred model. The networks countered that the cross-checks the AER had applied were not real cross-checks because they generally used the same data and assumed cost drivers as the AER's preferred model, so were bound to show similar results. Further, the networks argued that the benchmarking results from several other models and techniques, which contradicted the AER's findings, had been ignored or dismissed unreasonably by the AER.

The Tribunal agreed with the networks that the AER had placed too much weight on a single model:

[471]...the AER placed too much weight on the outcome of the EI model. That, in the Tribunal's view represents an exercise of the AER's discretion about the use to which the EI model should have been put which was incorrect.

Outcome of merits review of AER reset decisions for NSW and ACT networks

[467] ... there are a number of issues with the EI model and the AER's application of it [including]...the AER's use of the EI model as the sole or principal determinative of opex.]

[495] Having regard to the DNSPs and PIAC's submissions as a whole the Tribunal concludes that the AER'S reliance on the EI model failed to discharge its obligations under rr 6.5.6 and 6.12.1(4).

The Tribunal also found that the AER had exercised incorrect discretion about its use of the EI model:

[471]...[The weight given by the AER to the EI model], in the Tribunal's view represents an exercise of the AER's discretion about the use to which the EI model should have been put which was incorrect.

Underlying the Tribunal's view that the AER had applied undue weight to the EI model were a number of concerns about the inputs to EI's model:

[472] Underlying that view are a series of concerns about the inputs to the EI model, and the OEF adjustments (including those of concern to PIAC), and including the AER's treatment of the vegetation management costs of Essential, Endeavour and ActewAGL, and further including the AER's treatment of the labour costs of the Networks NSW DNSPs.

[472] There are underlying elements to the EI model which mean that the AER at this point (accepting that the available Australian data is not sufficiently extensive for appropriate modelling) should not have placed the weight it did on the output of the EI model.

The Tribunal noted further that the weight the AER gave to the results of the EI model was inappropriate as it was applying benchmarking for the first time:

[496a] The AER's undue reliance on the EI model as a determinative factor in the AER's estimation of each DNSP's required opex pursuant to r 6.12.1(4)(ii). That reliance being placed on the model notwithstanding that it recognised it had limitations with respect to the specification of outputs and inputs, data imperfections, and other uncertainties in a context where economic benchmarking is being used for the first time

The Tribunal ordered the use of a broader range of modelling, and benchmarking against Australian businesses, and including the use of "bottom up" analysis:

[1.(a)]...the AER is to make the constituent decision on opex...including using a broader range of modelling, and benchmarking against Australian businesses, and including a "bottom up" review of Ausgrid's forecast operating expenditure

The Tribunal's findings mean that when re-determining opex allowances for Networks NSW and ActewAGL, the AER must use a much wider set of benchmarking models than it had done in the Decisions that were reviewed. Whilst the Tribunal raised some concerns about the reliability of the AER's preferred model, it did not order that the model be abandoned when the AER remakes its Decisions. However, for statistical reasons, the AER found that the EI model could only be implemented by pooling together data from Australia and other

jurisdictions — an approach that the Tribunal raised grave concerns about (see section 3.4.4). This may effectively disqualify the use of the EI model.

When the AER remakes its opex Decisions, it will need to consider:

- What broader range of models should be used when benchmarking the opex of the network businesses. This leaves open an opportunity for the networks to propose models (including other top down models) that they consider appropriate. The AER may also need to revisit the use of models that it had ruled out previously, in light of any new material and submissions put forward by the businesses.
- Whether the Tribunal’s instructions that the AER must conduct “benchmarking against Australian businesses” rules out the use of data from networks in other countries as a means to improve the statistical reliability of models that benchmark the networks against Australian businesses. The AER had argued that it had used data from other jurisdictions for that purpose alone, and that it had not benchmarked Australian networks against businesses in other countries.

If the use of overseas data for that purpose is permissible, the AER will have to find ways to overcome some of the very serious problems the Tribunal had found in relation to the use of data on overseas networks. The AER would, in that instance, also need to resolve:

- whether the data from Ontario and New Zealand are useable at all; and
- whether it ought to explore data from any other jurisdictions.

The issue of bottom up reviews of costs is discussed in greater detail in the next section.

3.4.2 Bottom up reviews

The Tribunal refers in its judgment to “a ‘bottom up’ review” of expenditure forecasts. Bottom up reviews of costs begin by identifying the characteristics and configuration of the network in question (e.g. load, service area, density, topography and environment, assets in place). Then, using engineering, operational and economics expertise, the minimum costs (comprising efficient and realistic input quantities and unit costs) required to operate such a network would be built up. Bottom up reviews are no doubt involved exercises. However, it is worth noting that the AER has conducted such analyses in the past.

During oral hearings, much attention was devoted to the topic of bottom up reviews. In previous regulatory resets, the Tribunal heard that the AER had relied significantly on bottom up assessments to determine the efficient level of operating expenditures. The networks argued in hearings that in the recent resets they had submitted bottom up opex evidence to the AER, but as the AER had focussed entirely on top down benchmarking techniques, this evidence had been ignored

when the AER made its determinations on the efficient level of opex. The AER countered that neither the NEL nor the NER mandate a line-by-line, bottom-up review of each category of forecast opex.⁹

This, argued the networks, was inappropriate because the top down approach relied on by the AER was incapable of accounting properly for important network features, which were inherited legacies of decisions taken long ago, and that it is unrealistic to think that these could be changed in the short run (or, potentially even over the long run). These legacy features were the source of many of the differences between networks that the AER's benchmarking model had failed to account for. During hearings, the Tribunal questioned whether it had been appropriate for the AER to abandon the use of bottom up cost assessments in favour of top down benchmarking techniques.

The Tribunal's judgment makes clear that these top down benchmarking (using an array of techniques) and bottom up assessments should be viewed as complements and not substitutes. The Tribunal also makes clear that, given the infancy of the AER's work on benchmarking, it was inappropriate that the AER should have given primary weight to benchmarking rather than bottom up reviews:

[389] While, as submitted by the AER, neither the NEL nor the NER mandate a line-by-line, bottom-up review of each category of forecast opex, in circumstances where benchmarking in Australia is in its infancy, sensible administration dictates that the AER should not have cast aside its previous practice of conducting bottom-up reviews in favour of the emphasis it placed on benchmarking. A fortiori, in circumstances where its preferred EI model's reliance on overseas data and the AER's final OEF adjustments could not have the benefit of full exposure to the consultation processes mandated by the NEL and the NER.

...

[408] Where, as here, the application of a new untested benchmarking model is applied to arrive at a total opex figure, sensible administration suggests that the regulator responsible for its application would apply some form of quantitative "reasonableness check" bottom-up analysis to at least some, if not all, of the opex components. That is, however, not the case here.

The Tribunal has not prescribed the nature of the bottom up analysis that the AER ought to take account of when remaking its opex Decisions. The nature of that evidence will need to be decided as part of the redetermination process. However, the Tribunal's reference to AER's past use of bottom up reviews suggests that past practice should guide the AER and the businesses.

⁹ Indeed, the AER has long-held that bottom up reviews that it should not have to rely on bottom up reviews because these are costly to undertake, and because it is at an information disadvantage to the networks so making such assessments is difficult. The AER has viewed benchmarking as the solution to these problems, and led to the AER seeking changes to the NER, which ultimately led to the present version of the rules that mandate the use of benchmarking.

Whilst the Tribunal has ordered that the AER must undertake bottom up reviews of costs, the Tribunal has not mandated how much weight should be applied to top down benchmarking techniques vis-à-vis bottom up assessments.

3.4.3 Limitations with Australian data

The networks contended that the Regulatory Information Notices (RIN) data that the AER had used in its benchmarking analysis was unreliable as it had been compiled over a very short time period, in some cases had been estimated or backcast, and had not been subjected to appropriate testing for accuracy or consistency. Frontier Economics had noted in reports submitted to the Tribunal that misinterpretation by businesses of how data ought to be reported (particularly given the newness of the RIN data collection process) could result in inconsistent reporting between businesses. This, in turn, would distort comparisons between businesses and impact on the measurement of inefficiency.

The AER argued that the process of compiling the RIN data involved extensive consultation with the industry, and the businesses had had ample opportunity to clarify how the data ought to be reported, and raise concerns about the quality and reliability of the data through that process. The AER also contended that the extent of estimation and backcasting claimed by the businesses was exaggerated.

The Tribunal disagreed. It found that:

[253] ... a significant number of DNSPs estimated three categories of data used by the AER in its models. It also shows that estimates were used in another two categories (by three DNSPs in one category and by two in another).

[254] Such an alternative reading should have put the AER on notice that it may, at this point in the evolution of the RIN data, have to treat the RIN data with greater caution than it did and not rely on it to the extent that it did...

The Tribunal went on to conclude that the AER had relied too much on the RIN data in its benchmarking analysis, and to corroborate its preferred model.

[259] The DNSPs' submissions to the effect that the AER's reliance on the RIN data point to a weakness in its benchmarking are persuasive...

[260] ... it is the view of the Tribunal that at this point in its evolution the RIN data is not data upon which the AER might rely on to the extent that it did:

(a) in its application of r 6.5.6(e)(4) to determine the benchmark opex that would be incurred by an efficient DNSP; or

(b) to corroborate the AER's use of the EI model.

Despite the serious reservations expressed by the Tribunal about the reliability of the RIN data at this point, it has not said that the RIN data must not be used for benchmarking purposes. That would seem an impractical approach as the RIN data are presently the only data available to the AER. However, the Tribunal's recognition of the problems with the data suggest that the AER cannot assume

that it has done enough to date to ensure the reliability of the data; much more work needs to be done over the coming years to improve both the quality, consistency and coverage of the RIN data.

This work could include:

- Working with the industry to improve the consistency of the RIN data reported (including by improving the clarity of reporting guidance, e.g. on the classification of costs as opex or capex).¹⁰
- Collecting data on a broader set of variables, including data on operating environment factors.

In light of the Tribunal's findings, the AER will need to consider, when it remakes its Decisions, whether it ought to rely only the most recent years of RIN data (to the extent that the most recent data may not have required as much estimation as historical data). Use of fewer years of data would limit the complexity of the benchmarking analysis the AER can undertake.

The Tribunal's decision implies that the present limitations of the RIN data mean that AER must, at least in the short run, be extremely cautious about the results of any benchmarking analysis it conducts. This is one of the main reasons that the AER must not use benchmarking as the key basis for determining efficiency adjustments to base year opex (see section 3.4.7).

3.4.4 Pooling of Australian and overseas data

The AER found that the dataset on Australian networks alone was not large enough to estimate robustly its preferred statistical models. Therefore, it expanded the sample size by pooling the data on Australian networks with data on regulated electricity distribution networks in New Zealand and Ontario, Canada.

The networks argued that this was inappropriate because:

- The AER had used overseas data that was most readily available and not necessarily data was likely to provide the most reliable measure of efficiency. The Tribunal agreed with this contention, and said that it the networks were right to submit that this “ought to cause the Tribunal significant concern about the reliability of the output of EI’s models.”

¹⁰ For example, in Great Britain, the energy regulator Ofgem visits each company once a year after initial data submissions have been made, to discuss new trends in the data and any unexpected or unexplained changes in the data compared to previous years, or any areas in which individual businesses look out of line with the industry. Ofgem uses these discussions to pick up any ambiguity in data reporting that has led to anomalies or inaccuracies, and issues specific guidance on how errors should be corrected. This gives Ofgem confidence in the data and the approach to reporting, and leads to ongoing refinement of the dataset used for benchmarking. Ofgem undertakes this collaborative work with the industry even though it has been applying benchmarking for over a decade.

- The use of overseas data had not been foreshadowed by the AER, and they had not had adequate opportunity to verify the accuracy of the data. The Tribunal agreed that there had been limited opportunity for the networks and PIAC to comment on the AER's use of overseas data, but said that does not of itself give rise to a relevant ground of review.
- There appeared to be errors in the overseas data (evidenced by sudden, unexpected and unexplained changes in the data). The AER argued that these changes were unlikely to be errors but, rather, movements attributable to the small size of some of the overseas networks. The Tribunal noted that such a response gave credence to the networks' argument that the cost drivers for networks in the three countries were very different, and that it makes no sense to compare small New Zealand and Ontarian networks experiencing volatile changes with large, stable Australian networks.
- The networks in these three jurisdictions face very large differences in operating environment, which were not accounted for properly in the AER's benchmarking model.

In relation to the last of these points, the AER argued that it had accounted for jurisdictional differences in its model by including 'country dummy variables'. The networks responded that the dummy variables only capture average differences in costs between jurisdictions, and not fundamental differences between jurisdictions in the relationship between opex and cost drivers.

The Tribunal agreed with the networks that the AER's use of dummy variables would not correct properly for country-specific differences:

[296] The Tribunal is not of the view that the country dummy variables, in the present circumstances, correct for systematic reporting differences. As Networks NSW rightly submits, the type of country dummy used by EI assumes the relevant relationships between cost drivers and opex is the same across the three jurisdictions and cannot control for the situation where one of the relevant cost drivers has been defined differently in one jurisdiction, thereby altering the relationship between it and opex for that jurisdiction. Thus, for the same reason, the country dummy variables do not "correct" for the differences in the examples provided by the AER relying on the Second EI Report, as outlined above.

The AER had argued that the underlying differences between costs and cost drivers would only be expected to differ between countries if networks in the three jurisdictions were using different technologies. The Tribunal that this explanation

[301a] ...glosses over the multitude of differences that no doubt exist between...Australian DNSPs and their overseas counterparts.

The Tribunal went on to say that the failure of the dummy variables to control for differences in cost relationships between countries, and the fact that most of the data used in the AER's analysis was drawn from overseas, meant that the AER's model had actually captured the cost relationships faced by overseas, not Australian, networks:

Outcome of merits review of AER reset decisions for NSW and ACT networks

[299] ...most of the data used within EI's models, including the EI model, comes from overseas. Australia only accounts for 19 percent of the data points used. Accordingly, even with the use of a "dummy variable", the slopes (coefficients) estimated by the regression models will closely follow the overseas DNSPs, rather than the Australian DNSPs, because of the sheer volume of data that comes from overseas. That is, the model will reflect cost relationships between opex and drivers of opex that exist in the overseas DNSPs, rather than modelling relationships that exist in Australia.

As noted in section 3.4.1 above, the Tribunal has instructed the AER to conduct "benchmarking against Australian businesses", when it remakes its opex Decisions. The AER may argue (as it had done previously) that its inclusion of overseas data was simply to improve the statistical precision of its model, and that its approach was not to benchmark Australian networks against overseas networks. However, even if that were true, the Tribunal has found that the volume of the overseas data used meant that it was the overseas data (and not Australian data) predominantly driving the benchmarking results.

Furthermore, the Tribunal has ruled definitively that the use of country dummy variables was an inadequate means by which to account for country-specific differences. Given these findings, it is difficult to see how the AER could in future justify pooling Australian data with overseas data in the way it had done in its opex Decisions. By the AER's own admission, the EI model cannot be implemented satisfactorily with Australian data alone. This may disqualify the use of the EI model favoured by the AER when it re-determines the opex Decisions.

3.4.5 Failure to account properly for large differences between Australian networks and inadequate analysis underpinning operating environment factor adjustments

The networks argued that there are very large inherent differences in the operating environments faced by different networks in Australia, and that the AER's preferred benchmarking model failed to control for these differences. As a result, argued the networks, the differences between networks that the AER had diagnosed as inefficiency were, at least in part, really differences in operating environment, beyond management control, which had not been accounted for properly.

The AER argued that it had accounted for heterogeneity between networks through ex post adjustments for operating environment factors (OEFs). However, the networks countered that the AER's OEF adjustments were ad hoc in most cases, rushed and lacked proper consultation. PIAC also argued that the AER's OEF adjustments were arbitrary and were too generous in favour of the networks.

The Tribunal concluded that the AER had not justified properly the reasonableness of the threshold the AER had applied for classifying some OEFs as 'material' and other OEFs as 'immaterial'. By way of context, when the AER was collecting RIN data from the networks for benchmarking purposes, it apparently did not foresee the large role that OEFs would play in the analysis. As

Outcome of merits review of AER reset decisions for NSW and ACT networks

a result (and as the AER itself has acknowledged) very little if any data on OEFs has been collected. This contributed to the ad hoc way in which OEFs were assessed by the AER.

For instance, PIAC noted that whenever it was unclear whether an OEF would push a network's costs up or down, relative to other networks, the AER assumed unreasonably that the OEF would raise the network's costs. The AER defended its approach by saying that such a conservative approach was reasonable in the absence of good information (because it erred in favour of network cost recovery), and that it may reconsider this approach in future as its "information set improves". The Tribunal considered this response by the AER as an admission of the limitations of the benchmarking data it had collected:

[342] ... the AER's response is an acknowledgement by it of the immaturity of its data. An acknowledgement that should have alerted it to the vagaries of relying on the data to the extent that it did.

The Tribunal went on to say that the way in which the OEFs had been *applied* was incorrect, because the RIN data should have been adjusted for inherent differences between networks, to ensure greater comparability, *before* the benchmarking analysis were conducted, *not* after the fact as the AER had done:

[333] Moreover, even if the OEF adjustments were properly quantified, the manner in which they have been applied is flawed. As ActewAGL submits, adjustments, where required, should be made before modelling, by normalising the data set, rather than ex post modelling...

This is because the cost relationships estimated by the model would have been influenced (distorted) by the unadjusted, non-comparable data. The resulting mis-estimated relationship cannot be corrected by post-modelling OEF adjustments of the kind attempted by the AER:

[335] ... the difficulty with the AER's approach is that despite making post modelling OEF adjustments, the efficiency scores of the EI model have been affected by the inclusion of non-comparable data. Post modelling adjustments do not address the fact that the costs relationships within the model, including those DNSPs for which no OEF adjustments have been made, have been affected by the non-comparable data. Thus, those cost relationships are skewed by heterogeneous differences between the DNSPs. The output of the model is therefore skewed by flawed data. That skewed cost relationship cannot be corrected by post modelling OEF adjustments made to some only of the DNSPs (ie the three Networks NSW DNSPs and ActewAGL).

The Tribunal noted that adjusting the data to improve comparability before applying the data to a benchmarking model would be bring the AER's approach more in line with Ofgem's approach in Great Britain.

The Tribunal's judgment implies that:

- Greater work must go into quantifying and justifying the reasonableness of the adjustments for OEFs. This will require contributions from the networks, as

well as greater effort from the AER — particularly since very little if any data required to assess OEFs has been collected through the RIN data.

- Any OEF adjustments should be pre-modelling rather than post-modelling adjustments.

When the AER remakes its opex Decisions, it will need to consider:

- How OEFs should be quantified, particularly given the present lack of data. This provides an opportunity for the networks to propose quantification methods.
- How pre-modelling normalisation of data should be undertaken. However, the Tribunal’s reference to Ofgem’s approach could provide some guidance on how these adjustments may be made.

To the extent that the OEFs cannot be quantified, and the benchmarking data normalised, properly in the short-run, because the AER has failed to collect the proper data to do so, that would argue for even less weight to be given to benchmarking, vis-à-vis the other opex factors specified in rule under rules 6.5.6(e), when the AER remakes the NSW/ACT opex Decisions.

Note that the Tribunal’s instruction that the AER must undertake bottom up reviews of expenditure forecasts will necessitate an analysis of OEFs, because the bottom up reviews must take account of any special circumstances faced by the networks in question.

3.4.6 AER’s lowering of the comparison point

When choosing the benchmark comparison point in its Final Decisions, the AER used the network with the fifth-highest efficiency score (AusNet Distribution) rather than choosing the network with the highest efficiency score (CitiPower).¹¹ This resulted in the efficiency scores of the networks being compared against a less onerous benchmark, thus increasing the likelihood that they would not be found to be inefficient. The AER argued that its lowering of the comparison point was motivated by caution, and that was appropriate “given it is our first application of benchmarking”. The AER also contended that its lowering of the comparison point was similar to the approach followed by Ofgem in Great Britain.

PIAC argued that lowering the benchmark comparison point in this way was over-generous to the NSW networks because it “artificially improved the apparent relative efficiency of” those networks’ base year opex”. ActewAGL also argued that the AER’s decision to lower the comparison point was arbitrary, and indicates that the AER was not confident about the results of the EI model – a submission

¹¹ This comparison point was even less onerous than the one used by the AER in its Draft Decisions, i.e. the average scores of the five most efficient networks.

made, as the Tribunal noted, notwithstanding that ActewAGL benefits from the lowering of the comparison point.

The Tribunal accepted the arguments made by PIAC and ActewAGL, noting that they were “cogent”. The Tribunal was in particular agreement with PIAC on the following points:

- The AER had not explained convincingly its lowering of the comparison point, and in some cases the reasons given by the AER (e.g., the need to provide “sufficient stability to promote efficient investment”) were “wholly out of place” or were at odds with reasoning applied by the AER elsewhere.
- Some of the reasons given by the AER “amount to no more than unreasoned box-ticking of some, but not all, of the [revenue and pricing principles] in s 7A of the NEL.”
- Properly understood, the AER’s approach was not the same approach as Ofgem’s. Whilst Ofgem does moderate the benchmark against which networks are compared, Ofgem’s approach results in a smaller lowering of the benchmark than the AER’s approach. Furthermore, Ofgem provides much fewer, and more selective, OEF adjustments than did the AER.¹²

Notwithstanding the Tribunal’s criticisms of the AER on this matter, the Tribunal did not say in its judgment that the AER was wrong to lower the comparison point. The main thrust of the Tribunal’s criticisms was that the AER’s lowering of the comparison point: was not motivated or justified properly; and belied the limitations of the AER’s benchmarking model, which, elsewhere, the AER had denied or glossed over. (The Tribunal’s finding in this regard gives credence to Networks NSW’s criticisms that the various post-modelling adjustments made by the AER in its Final Decisions were an “attempted bandaid on a flawed process.”)

It is difficult to see how the AER could re-do its benchmarking analysis without lowering the comparison point — particularly because Ofgem moderates the benchmark it uses in order to allow for imperfections in its model, and because the Tribunal has noted that:

[445] Ofgem is a regulator with over a decade’s experience in benchmarking and, because of that long history, is the primary point of reference when it comes to assessing the soundness of another regulator’s approach to benchmarking and its benchmarking models.

When remaking its opex Decisions, it will be incumbent on the AER to consider more carefully *how* it will adjust its comparison point, and then justify this approach properly.

¹² Furthermore, as Frontier noted in advice to Networks NSW (which the Tribunal cited extensively), the final cost allowances made by Ofgem are determined by placing 25% weight on the submissions of the distribution networks and 75% of Ofgem view derived through benchmarking.

3.4.7 Excessive reliance on benchmarking

In its opex Decisions, benchmarking analysis was the AER's key consideration when assessing the efficiency of the networks' base year opex, and was the sole determinant of adjustments to base year opex the AER considered to be inefficiently high.

The networks argued that, whilst the AER is required by the NER to have regard to benchmarking, the AER had over-reached by placed too much confidence in its benchmarking analysis (particularly as this had been the AER's first attempt at benchmarking), and that the AER had used its benchmarking results in too deterministic a fashion when determining opex allowances.

The Tribunal considered that, as the AER was applying benchmarking for the first time, it had given undue weight to those parts of the NER that required it to rely on benchmarking analysis when determining opex allowances:

[480] Suffice to say at this point that in a context where it is applying benchmarking for the first time, the AER's application of the EI model gave a discordant weight to r 6.5.6(e)(4) (benchmark opex that would be incurred by an efficient DNSP) *vis á vis* the other r 6.5.6(e) opex factors.

The other opex factors that the AER might have had greater regard to when making its opex Decisions include, for instance:

- the actual and expected opex of the network during any preceding regulatory control periods (r 6.5.6(e)(5));
- the substitution possibilities between opex and capex (r 6.5.6(e)(7)); and
- whether the network's opex forecast is consistent with incentive schemes such as the Efficiency Benefit Sharing Scheme (r 6.5.8) or the Service Target Performance Incentive Scheme (r 6.5.6(e)(8)).

The Tribunal's judgment suggests that when the AER remakes its opex Decisions, and until the AER's benchmarking approach becomes more settled, the AER's benchmarking analysis should play a much smaller role than it did in its 2015 Decisions, when assessing the networks' opex forecasts.

3.4.8 Limited opportunity for external review

The networks argued that the process the AER had followed was deficient in allowing insufficient time to consider and comment meaningfully on the model and data used to benchmark the networks and to set their opex allowances. ActewAGL argued that the manner in which the AER had prepared its Draft Decisions in reliance on the EI model had deprived the AER of a robust exchange of views with the networks and their experts.

In analysing this issue, the Tribunal noted that:

- The NER requires the AER to have regard to the most recent annual benchmarking report, when assessing networks opex forecasts.
- The first annual benchmarking report published by the AER (only nine days before the publication of the Draft Decisions) had focussed on an index number benchmarking technique (i.e., MTFP) rather than the econometric EI model relied on by the AER in its Decisions.
- Any comments that the networks had provided to the AER on its annual benchmarking report had therefore been directed at the MTFP analysis rather than the EI model.

Indeed, a number of aspects about the AER's analysis could not have been anticipated by the networks before the Draft Decisions or Final Decisions, including:

- The specific techniques the AER would use and rely upon in its opex Decisions.¹³
- The way in which the results from its benchmarking models would be translated into opex allowances.
- The use of overseas data in the analysis, which had not been foreshadowed by the AER.¹⁴
- The way in which the comparison point would be selected.
- Whether and how OEFs would be accounted for.

The Tribunal agreed with the networks' contention that the AER had provided limited opportunity for review of the EI model and data:

[496b] [there were] restricted opportunity afforded to the parties (and denied to third parties as the AER's obligation to consult was past) to test the veracity of the EI model. That is not to cast an adverse reflection on the AER. Nor is it to suggest that the AER did not conscientiously examine submissions it received after its draft decisions. It is simply to recognise that the AER has a large and most difficult task to perform within a limited timeframe – a timeframe that did not permit it to conduct the consultation required to:

- (i) adequately test the data in the EI model and the other models to which it had regard; and

¹³ For instance, the AER noted in its Expenditure Forecast Assessment Guideline that it intended to use a technique known as Data Envelopment Analysis but did not do so, even as a sense-check, in its Decisions.

¹⁴ The only mention of overseas data by the AER was a discussion about international benchmarking in its Expenditure Forecast Assessment Guideline, in which the AER said that international benchmarking is an "appropriate goal in the long term", but that "consistent and reliable international data and other analytical issues, may make implementation of an international benchmarking exercise difficult in the short term."

(ii) expose the DNSPs' consultants reports to the rigours of examination that the AER's consultation obligations are designed to foster.

The Tribunal noted that, whilst this did not in itself expose a relevant ground for review, it did indicate the extent to which the AER's analysis could be relied upon:

[288] The limited opportunity afforded the DNSPs and the lack of opportunity afforded to PIAC and other interested parties to comment on the AER's application of a benchmarking methodology reliant on overseas data does not of itself give rise to a relevant ground of review. However, as the DNSPs submitted, it tends to tell strongly against the acceptance of that methodology and the resulting estimates of the DNSPs' required opex that the AER derived from it.

There are way in which the AER could potentially facilitate more effective engagement with the industry, which Frontier Economics had suggested in submissions to the AER. For example, pointing to precedent from other regulators like Ofgem, Frontier recommended that the AER should consider creating a cost assessment working group in collaboration with the networks, tasked with developing empirical methods that may help it overcome the challenges it faces in regulating a sector within which there is such extensive heterogeneity. This may involve developing, defining and collecting additional measures, or considering methodologies to justify company specific adjustments to benchmarked costs, or the outcome of benchmarking models.

3.4.9 Rejection of transition and associated costs by the AER

The networks argued that the AER's rejection of proposals to phase in reductions in opex was an error because it would inhibit the maintenance of quality, safety and reliability of the networks (due to the imposition of immediate reductions to base year opex). As such, a step decrease to a materially lower level of opex would be neither prudent nor realistic. Further, argued the networks, the AER's failure to make allowance for the costs of business transformation and transition, including redundancy payments and other expenses associated with restructuring, is inconsistent with proper regulatory practice and amounted to an error of discretion and unreasonableness.

The AER argued that to the extent that it had identified any efficiencies in the networks' revealed costs, those inefficiencies should be removed from cost allowances immediately. Further, the AER argued that, if the networks needed to transition from their present expenditure levels to more efficient levels over a period of time, any associated transition costs should be borne by the networks' shareholders and not consumers.

The Tribunal did not deem it necessary to determine this issue as the networks' arguments regarding transition were premised on the need for large opex reductions. The need for such large changes will need to be assessed when the AER remakes its opex Decisions:

Outcome of merits review of AER reset decisions for NSW and ACT networks

[494] Due to the Tribunal's findings on opex, the Tribunal does not, in the circumstances, need to determine whether these contentions by Networks NSW, ActewAGL and Ergon are correct. When the AER revisits and redetermines the opex allowance, it will have to consider the costs involved in transitioning. It will do so at a time, and in relation to revenue streams, which will require it to make a fresh decision. The Tribunal is anxious not to inhibit the AER at this point in exercising its discretion in that regard.

3.5 Evidence used to justify a finding of inefficiency

In a statement issued by the AER on the day the Tribunal's judgment was published, the AER's Chair is quoted as saying the following:¹⁵

The Tribunal found we were correct to conclude that the electricity distribution businesses in NSW and the ACT were not operating as efficiently as other networks, so consumers were paying more than necessary for safe and reliable electricity and gas

This statement reads as though the Tribunal had vindicated the AER's efficiency analysis, even though the Tribunal had in fact criticised heavily the AER's benchmarking analysis. The AER statement above appears to be a reference to the following quote from the Tribunal's judgement:

As a first step in its consideration, the AER was required to decide whether it was satisfied that the total of the forecast opex in the Revised Regulatory Proposals of each of the DNSPs reasonably reflected each of the operating expenditure criteria set out in r 6.5.6(c). The AER's analysis of the Networks NSW and ActewAGL Revised Regulatory Proposals led to it expressing concerns about a number of components or elements of those proposals. The Tribunal is not persuaded, having regard to those concerns, that the AER's lack of satisfaction on that question exposes a ground of review. There was material upon which it could have reached that conclusion. There is no demonstrated ground of review made out in that step, even though (not surprisingly) there is considerable debate in the submissions about a number of the matters considered by the AER.

The "material" that the Tribunal refers to in this quote is somewhat ambiguous. The Tribunal notes in its judgment that the AER had concluded that:

- Ausgrid's opex was inefficient based on its "economic benchmarking" analysis, and a review of labour and workforce practices by Deloitte;
- Essential Energy's opex was inefficient based on benchmarking analysis and an analysis of vegetation management by Select Solutions; and
- ActewAGL's opex was inefficient based on benchmarking analysis, as well as reviews of labour and workforce practices and vegetation management, both by EMCA.

¹⁵ AER statement on Australian Competition Tribunal decisions, 26 February 2016, NR 02/16.

The Tribunal found that the AER's benchmarking analysis was unsound. Therefore, it is likely that the "material" referred to by the Tribunal relates to consultants' analysis of labour and vegetation management costs.¹⁶

However, in practice, the AER relied mostly on its benchmarking analysis to justify its conclusion that Ausgrid's, Essential Energy's and ActewAGL's base year operating expenditures were inefficient; the separate analysis of labour and vegetation management costs played only supporting roles in that assessment. Hence, the AER's claim that the Tribunal has endorsed its findings of inefficiency seems overstated.

Nevertheless, this is an indication that the AER continues to believe that its findings were correct. Any redeterminations made by the AER are likely to reflect this view.

4 Further observations

4.1 Questions that the AER must resolve

As noted above, the Tribunal has set aside several elements of the AER's Decisions for the networks that sought review, and ordered that the AER remake those Decisions. As the discussion in section 3 suggests, the Tribunal was not prescriptive in the way in which the AER must remake its opex and return on debt Decisions.¹⁷

This is understandable as the Tribunal's role is not to undertake a *de novo* review of the AER's Decisions. Nor is the Tribunal resourced to conduct the detailed analysis that would be necessary in order to mandate precisely the approach the AER should follow when it remakes its Decisions. As such, it is reasonable that the Tribunal has not been prescriptive about the approach the AER ought to follow. The onus lies on the AER to interpret the Tribunal's guidance sensibly, and to engage constructively with the industry and consumers, to develop an appropriate way forward when it remakes its Decisions.

The AER will need to find answers to complex questions in two main areas: *opex* and the *return on debt*.

¹⁶ Although the Tribunal noted that material of this kind was available, and that the AER could have concluded that there were inefficiencies based on that material, the Tribunal did not say clearly that it found that material to be compelling or persuasive. Indeed, the Tribunal noted some weaknesses in that analysis. For instance, the Tribunal noted [433] that, although Deloitte suggested inefficiencies in Networks NSW's labour practices, it did not quantify those inefficiencies and provided no corroboration of inefficiencies of the scale identified by the AER using its benchmarking model.

¹⁷ By contrast, the approach the AER must follow in relation to its Decisions on gamma are straightforward as the Tribunal was very prescriptive in how those Decisions must be remade.

4.1.1 Opex

In respect of opex, the main questions that must be resolved as part of the redetermination process are the following:

1. Is the AER's preferred benchmarking model, the EI model, effectively defunct, or can it be used alongside other models?
2. What broader set of benchmarking techniques should be used to assess the efficiency of historical opex, and to determine future opex allowances?
3. What bottom up analysis should inform the AER's opex Decisions?
4. How should bottom up and top down benchmarking analysis be weighted?
5. How should the AER take account of the apparent limitations of the RIN data when interpreting its benchmarking analysis?
6. What role, if any, can overseas data play in the AER's benchmarking analysis?
7. How should the AER normalise the data used in the benchmarking analysis for OEFs?
8. Is a lowering of the benchmark comparison point (to allow for imperfections in the modelling) permissible? If so, what would be an appropriate comparison point?
9. What weight should the AER give to its benchmarking analysis, vis á vis the other r 6.5.6(e) opex factors, when determining opex allowances — particularly if the AER is unable to address, in the short-run, all of the many shortcomings in its benchmarking analysis identified by the Tribunal?
10. If the AER's remade Decisions require certain networks to make significant opex reductions, what transition arrangements, if any, should be put in place?

4.1.2 Return on debt

In respect of the return on debt the following questions will need to be resolved:

1. Would consumers, in fact, be “paying a second time” for the consequences of the GFC if a trailing average approach were to be implemented immediately?
2. Is the AER permitted by s 16(1)(d) of the NEL to “make some adjustment” to the return on debt allowance as redress?
3. If so, what would such an adjustment entail? How would such an adjustment be quantified and implemented?

In our view, when deciding on whether it ought to make an adjustment to allowances for the effect of the GFC, the AER should consider what impact such an ‘after the fact’ adjustment would have on the incentive properties of the regulatory regime it administers. Under systems of incentive regulation, such as the AER’s, the regulator determines revenue allowances that are just sufficient to cover its assessment of efficient costs. Regulated businesses are incentivised to beat these allowances because, by doing so, they may keep (at least a proportion of) the savings for a time. In order for businesses to respond well to such incentives, it is necessary for regulators to commit credibly to not making adjustments retrospectively that have the effect of removing (and distributing to consumers) past outperformance by the businesses. This principle holds just as truly for financing costs as it does for operating or capital expenditures. Unless businesses are permitted to keep the benefits of outperformance relative to the benchmark that regulators determine, businesses are less likely to strive to beat such benchmarks in future. This is because the businesses will always be wary that the financial benefits from efficiencies made could be removed retrospectively by the regulator. Retrospective action of this kind by the regulator, which degrades efficiency incentives, could result in the regime collapsing to a system akin to rate of return regulation, where businesses do only enough to match the cost allowances determined by the regulator, but no more. A weakening of incentives in this way would ultimately be to the detriment of consumers, because they would not benefit from regulated businesses striving constantly to generate efficiencies.

Given the complexity of these unresolved questions, the redetermination process is likely to be a relatively lengthy one, involving significant public consultation. As such, any ‘placeholder’ Decisions that the AER puts into effect could remain in place for a significant period of time. During this period, the networks could potentially face under-recovery (if the placeholder Decisions result in too low a revenue outcome) or consumers may pay too much (if the placeholder Decisions result in too high a revenue outcome for the networks).

4.2 Important principles affirmed by the Tribunal

The Tribunal has helpfully affirmed at least two key regulatory principles.

Firstly, the AER’s task is to balance the legitimate business interests of the networks it regulates and the long-term interests of consumers; it is not mandated to act as a champion of consumers:

[465] ...The 2012 Rule Amendments simply do not contemplate that the NEO and the RPP are at cross purposes, or that their meaning has changed. They do not lead to a fresh policy subsidy to consumers by way of an artificially low opex figure or a bonus to a DNSP by way of an artificially high figure. Indeed, the AER (and the Tribunal on review) has a delicate task. Both must be conscious of the interests of consumers and the AER is bound to carefully scrutinise the information provided to it in support of a DNSP’s opex allowance. It must also have regard to the legitimate business interests of a DNSP and should not put itself in an adversarial position in relation to the DNSP

so that it may be perceived as a champion of consumers – cf: Re East Australian Pipeline Limited [2004] ACompT 8 at [16] and [33].

Secondly, the revenue and pricing principles (RPP) set out in the NEL and NGL, which relate, in part, to the need for the AER to provide regulated networks a reasonable opportunity to recover their efficient costs are not subordinate to the NEO (or NGO):

[787] As the Tribunal has discussed, the NEO and the RPP operate together. It is not the case that the NEO means that, where the long term interests of consumers is relevant, the RPP must be ignored or suppressed. The assumption in the regulatory scheme is that the long term interests of consumers is served by ensuring that monopoly infrastructure providers are permitted to recover at least the efficient costs of providing those services and, broadly speaking, the AER's role is to fix those efficient costs by reference to the proxy of the efficient costs of the competitive market.

In other words, the AER must not prioritise lower prices over efficient cost recovery, because the long-term interests of consumers are served by permitting recovery of at least the efficient costs associated with providing network services.

Annexe A: Main grounds for review on rate of return

Table 1 summarises the rates of return proposed by the networks that sought review, and the AER's Draft and Final Decisions.¹⁸

Table 1: Rate of return proposed by networks and AER's rate of return Decisions

Network	Initial proposal	Draft Decision	Revised proposal	Final Decision
ActewAGL	10.71%	8.10%	8.84%	6.38%
Ausgrid	8.83%	7.15%	8.85%	6.68%
Endeavour Energy	8.83%	7.15%	8.85%	6.68%
Essential Energy	8.83%	7.15%	8.85%	6.68%
JGN	7.30%	5.93%	7.06%	5.41%

Source: Frontier Economics analysis of networks' revenue proposals and AER's Decisions

Notes: Final Decisions relate to the 2015-16 only; the allowed rate of return would be updated in each year of the regulatory period as the return on debt is updated. Rates of return are expressed in nominal vanilla terms.

Return on debt

Under the previous NER, the allowed return on debt was based on the yield on 10-year BBB+ debt at the beginning of each regulatory period (the so-called 'rate-on-the-day approach'). Over the course of a major Australian Energy Markets Commission (AEMC) Rule Change process in 2011 and 2012, the AER, consumer groups and networks all recognised that the rate-on-the-day approach implied a debt management strategy that was neither efficient nor prudent.¹⁹ Further, all parties agreed a trailing average approach would overcome all the problems with the rate-on-the-day approach. Under the trailing average approach, the allowed return would be set by taking a 10-year historical average of yields on 10-year (BBB-rated) Australian corporate bonds. The allowed return on debt would then be updated annually by moving forward the 10-year averaging window as new market data becomes available. All parties agreed that the resulting allowance

¹⁸ The Table shows that the as the reset process progressed from the Draft stage to the Final stage, the allowed rate of return fell substantially. This was driven largely by a sharp decline in Australian government bond yields over the period, which the AER uses to determine the risk-free rate component of the rate of return allowance.

¹⁹ A network that tried to match its actual debt service costs to the allowed return on debt would face exposure to very large refinancing risks at the start of each regulatory period, as its entire debt portfolio would need to be refinanced within a very short period. Alternatively, the network could allow its actual debt service costs to deviate from the regulatory allowance, but such deviations could be significant, resulting in large windfall gains or losses to the network.

Outcome of merits review of AER reset decisions for NSW and ACT networks

would reflect the cost of debt of a network that follows an efficient and prudent staggered refinancing strategy.

In its Decisions for the NSW distributors, ActewAGL and JGN, the AER determined that it would not move to a full trailing average approach immediately. Rather, the AER decided it would transition to a full trailing average approach over a 10-year period.²⁰ The AER's rationale for the transition was different in relation to the risk-free rate and debt risk premium (DRP) components of the return on debt allowance.

- In respect of the **risk-free rate** component, the AER argued that under the rate-on-the-day-approach, the only efficient debt management strategy for networks would have been to issue floating rate debt and then use interest rate swaps to match the base-rate component of the floating rates to the risk-free rate allowed by the AER. The AER argued that it would take 10-years for such swap agreements to unwind, which would mirror its 10-year transition.
- In respect of the **DRP**, the AER accepted that there is no practical way for the networks to align the DRP they actually face with the DRP allowed under the rate-on-the-day approach.²¹ However, argued the AER, any networks that had followed a staggered refinancing policy would all have enjoyed a 'windfall gain' in the last regulatory period. This is because, the last round of resets were settled close to the peak of the global financial crisis (GFC), when corporate debt premiums reached all-time-highs, and those high rates would have been locked into revenue allowances for the duration of the regulatory period under the rate-on-the-day approach. However, the actual DRP faced by a network that had followed a staggered refinancing policy would have reflected the much lower premiums demanded by debt investors in the pre-GFC years.

In response, the NSW distributors and ActewAGL argued that their debt management strategy could not have been inefficient because:²²

- There is evidence that unregulated infrastructure businesses adopt the same type of staggered refinancing debt management approach that they had used; and

²⁰ Under the transition proposed by the AER, in year 1, the return on debt allowance would be calculated by placing 100% weight on the rate-on-the-day in that year. In year 2, the return on debt allowance would be calculated by placing 90% weight on the rate-on-the-day in year 1 and 10% weight on the rate-on-the-day in year 2, and so on. By year 10, the return on debt allowance would be comprised of an equal weighted average of the rates-on-the-day realised over the past 10 years. This transition path was consistent with the approach the AER proposed in its 2013 Rate of Return Guideline.

²¹ Specifically, the AER acknowledged that in Australia there is no market for financial instruments that can effectively, and in a cost-efficient manner, align networks' actual DRP to a DRP allowance derived using the rate-on-the-day approach.

²² The NSW distributors also argued that the swap strategy was not available to them given their size.

- The AER itself had concluded that the trailing average approach will be the only efficient and prudent debt strategy under the new NER.

Therefore, argued the NSW distributors and ActewAGL, the AER should move immediately to the full trailing average approach without any transition.

JGN accepted that it had followed the swaps strategy outlined by the AER, so agreed that it was reasonable to transition over 10 years to the full trailing average in respect of the risk-free rate.²³ However, argued JGN, as there is no practical way for it to align its actual DRP to the DRP allowed, the AER should move immediately to the full trailing average approach when setting the DRP allowance.²⁴

Return on equity

The parties seeking review claimed that the AER had failed to meet requirements in the NER by not having had proper regard to relevant estimation methods, financial models, market data and other evidence when setting the allowed return on equity.

Use of relevant financial models

The AER has traditionally used only the Sharpe-Lintner Capital Asset Pricing Model (SL-CAPM) to set the allowed return on equity. Concerned that estimates from this single model would not be robust under a range of foreseeable market conditions (including extreme conditions such as those that prevailed during the GFC), the AEMC sought in its 2012 Rule Change Decision to alter the practice of relying exclusively on the SL-CAPM. The new NER states that:²⁵

In determining the allowed rate of return, regard must be had to:

- (1) relevant estimation methods, financial models, market data and other evidence;

The AEMC linked explicitly the consideration of a range of models to the production of the best possible estimate of the efficient financing costs as required by the National Gas Objective (NGO), National Electricity Objective (NEO) and Revenue and Pricing Principles (RPP):²⁶

Achieving the NEO, the NGO, and the RPP requires the best possible estimate of the benchmark efficient financing costs. The Commission stated that this can only be

²³ A number of other small networks had also used a similar swap strategy to fix the base rate component of their cost of debt to the risk-free rate allowed by the AER. As such, these intervenors also agreed to the application of a transition to a trailing average risk-free rate.

²⁴ Precisely such an approach has recently been adopted by the Economic Regulation Authority of Western Australia.

²⁵ National Electricity Rules Version 78, section 6.5.2(e).

²⁶ AEMC 2012 Rule Change Final Determination, p. 43.

achieved when the estimation process is of the highest possible quality. The draft rule determination stated that this meant that a range of estimation methods, financial models, market data and other evidence must be considered.

In its Decisions, the AER used the SL-CAPM as a ‘foundation model’ to estimate a range for the return on equity. It then drew on additional models and evidence to inform its point estimate within the range derived using its foundation model. However, with the exception of only one model, the Dividend Growth Model (DGM), the AER did not estimate any alternative models to the SL-CAPM.²⁷ The networks argued that because the AER had not performed any quantification or estimation using any alternative model apart from the DGM, the AER had not had **proper** regard to the relevant financial models.

Beta

A key input into the SL-CAPM is beta, a measure of the non-diversifiable risk associated with the business in question. The AER applied a two-stage approach when estimating beta:

1. The AER engaged a consultant to estimate beta using four Australian comparator firms and five now delisted Australian. The consultant concluded that the evidence supported a beta within the range of 0.3 to 0.8. The AER rejected this recommendation and used its own preferred range of 0.4 to 0.7.
2. The AER then selected a point estimate of 0.7. The AER stated that its preferred statistical estimate (from the domestic comparators analysed in the first stage) was 0.5, but that an adjustment to the top of the range (0.7) was required to reflect:
 - a. A range of evidence from international comparators; and
 - b. The theoretical underpinnings of the Black CAPM.

The networks argued that the AER had no proper basis for selecting a point estimate of 0.7 for the following reasons:

- There is no basis for the AER’s approach of capping the possible beta estimate at 0.7 by reference to the very small number domestic comparators available, when the other relevant evidence supported a beta estimate above 0.7.
- Even if it was appropriate to set such a cap, it should have been set at 0.8 – consistent with the advice of its consultant.

²⁷ Specifically, of the three alternative models to the SL-CAPM identified by the AER as “relevant models”, the AER concluded that it would: (i) have regard to “the theory underpinning the Black CAPM” without estimating that model; (ii) not use the Fama-French three-factor model at all; and (iii) use the Dividend Growth Model to inform the estimate of the market risk premium that is inserted into the SL-CAPM.

- The estimates from the domestic comparators were unreliable and should not have been used to constrain the ability of all other relevant evidence to contribute towards the estimate of beta.
- As the AER had not performed any quantitative analysis in relation to the Black CAPM or the size of the adjustment required to reflect the international evidence, it was unclear that the adjustment the AER had made (from 0.5 to 0.7) was adequate.

Market risk premium

Another major input into the SL-CAPM is a parameter known as the market risk premium (MRP), which reflects the risk premium that an investor in the market as a whole would demand. As with beta, the AER adopted a two-stage approach when estimating the MRP:

1. In the first stage, the AER derived a range for the MRP based only on average long-run historical (i.e. realised) excess returns in the Australian equity market. The AER capped this range at 6.5%.
2. The AER then had regard to its DGM evidence when selecting a point estimate within the range. This evidence led the AER to select the upper bound of its primary range as its point estimate of the MRP.

The AER did derive estimates from another technique that it referred to as the ‘Wright approach’, but did not use those estimates to inform its MRP Decision.²⁸

The networks submitted that:

- There is no basis for the AER’s approach of capping the possible MRP estimate at 6.5% by considering a particular subset of the relevant evidence, when the other relevant evidence supported an MRP estimate above 6.5%.
- The AER had erred in holding its estimate of the MRP fixed at 6.5% from the time of its Rate of Return Guideline in December 2013 through to its Final Decisions in June 2015, even though the AER’s own DGM estimates of the contemporaneous MRP suggested that the MRP was well above 6.5% at the time it made its Final Decisions.
- The AER should have had regard to its own estimate from the Wright approach when setting the allowed MRP.

Gamma

The networks argued that the AER had estimated incorrectly a parameter known as gamma (an input into the calculation of the regulatory allowance for corporate

²⁸ Under the ‘Wright approach’, the AER computed the average real return on a broad market index in each year over a long (i.e. 50-year) historical period. The AER then subtracted from this figure its estimate of the prevailing risk-free rate. By this method, the AER estimated the MRP estimate to lie within the range 7.5% to 10.2%.

income tax). The NER and National Gas Rules (NGR) state that gamma “is the value of imputation credits”. The AER interpreted gamma to mean the proportion of credits that might be redeemed by investors. Based on this interpretation, the AER estimated gamma to be 0.4.

The networks argued that this interpretation was incorrect because the “value of imputation credits” means the worth of those credits to investors. The networks argued that, for this reason, gamma should be estimated using traded market prices (the so-called ‘market studies’ approach). Based on this interpretation of gamma, and recent market evidence analysed by their experts, the networks argued that the appropriate estimate of gamma was 0.25.

Annexe B: Main grounds for review on opex

The AER's approach to determining opex allowances is to start with a base year (2013) level of opex and test if that level of opex is efficient. If base year opex is found to be inefficient, the AER would adjust it down to a level it considers to be efficient. The allowed level of opex over the remainder of the regulatory period would then be determined by permitting the base year level of opex to grow each year taking into account the rate of change in input prices, growth in the scale of the network, productivity improvements, and expected step changes in costs. The AER refers to this as its 'base-step-trend' approach to setting expenditure allowances.

In its Final Decisions for Ausgrid, Essential Energy and ActewAGL, the AER made large downward adjustments to the revealed base year opex for these networks (Table 2). The magnitude of the reductions was determined by the AER's benchmarking analysis, which concluded that Ausgrid, Essential Energy and ActewAGL sit well below the AER's estimated benchmark comparison point.²⁹ The AER concluded that Endeavour Energy was more efficient than the benchmark comparison point, so its base year opex was not reduced.

Table 2: Reductions in base year opex in the AER's Decisions

Distribution network	Reduction (%)	Reduction (\$m, 2013-14)
ActewAGL	32.8%	\$22.1
Ausgrid	24.0%	\$118.0
Endeavour Energy	0.0%	\$0.0
Essential Energy	26.3%	\$109.8

Source: AER Final Decisions

Benchmarking is a new regulatory tool introduced by the AEMC's 2012 Rule Change, which allows the AER to make inferences about the relative efficiency of different networks by analysing their past expenditures.³⁰ The AER's Decisions for the NSW networks and ActewAGL were the first in which the AER applied formal benchmarking analysis to determine expenditure allowances. In these Decisions,

²⁹ The AER defined the benchmark firm to be the distribution network with the lowest efficiency score above a threshold of 75%. (A completely efficient network would have a score of 100%.) The network that satisfied this criterion was AusNet Distribution, which received a score of 76.8%.

³⁰ Under the new NER, the AER must produce annual benchmarking reports for electricity distribution and transmission networks, and have regard to the latest annual benchmarking report when assessing the expenditure forecasts of electricity distribution and transmission networks, for the purposes of setting allowed revenues for those businesses. No such requirements existed under the NER prior to 2012.

the AER used a statistical technique known as Stochastic Frontier Analysis (SFA) to assess the efficiency of networks' past opex.³¹

The main grounds for review sought by the parties are outlined below.

Reliance on a single model

The networks argued that the AER had erred by relied on the outputs of a single, flawed statistical model to impose large efficiency adjustments on the revealed base year opex. They argued that this approach contrasts with the practice of many regulators overseas, who combine efficiency estimates from a range of models to limit the possibility of model error. The AER responded that it had used three cross-check models that supported the findings from its preferred model. However, the networks countered during hearings before the Tribunal that the results from these cross-check models were not as consistent and supportive as suggested by the AER. In addition, the results from several other models that contradicted the findings of the AER's preferred model were not presented by the AER.³² When put forward by the networks, these alternative models were dismissed by the AER as suffering from a number of problems.

Data limitations

The networks pointed out that the data the AER had used in its benchmarking analysis had been compiled over a relatively short period of time. In many cases historical data on the variables sought by the AER were not unavailable so had to be estimated. The networks noted that they had expressed concerns to the AER about the reliability of the data, and about the consistency of reporting of the same data between networks. Inconsistent or erroneous data can distort the benchmarking results. The networks argued that the AER, in its first serious attempt at benchmarking, had rushed the collection and checking of the data, and therefore had failed to account for any flaws properly. The AER argued that it had developed its dataset for benchmarking over a two-year period following extensive consultation with the industry, and had undertaken a number of tests for consistency and reliability.

Pooling of international data with Australian data

When the AER applied its preferred statistical benchmarking model to Australian data alone, the results were found to be statistically unreliable due to the relatively small number of observations in that dataset. Seeking to improve the statistical

³¹ Regulators in some other jurisdictions, such as Ofgem in Great Britain, and the Ontario Energy Board in Canada, benchmark total expenditure rather than opex.

³² One of these models involved a technique known as Data Envelopment Analysis (DEA), which the AER identified in its 2013 Expenditure Forecast Assessment Guideline (approximately 16 months before the publication of the final decisions) as one of its preferred benchmarking techniques. However, in its decisions, the AER did not present any DEA results.

reliability of its results, the AER pooled the Australian data with data on regulated networks in New Zealand and Ontario. The networks argued that this was inappropriate because the networks in these three jurisdictions face very large differences in operating environment (e.g. scale of networks, climate, capitalisation practices, regulatory environment). The AER argued that it had accounted for jurisdictional differences in its model by including ‘country dummy variables’. The networks responded that the dummy variables only capture average differences in costs between jurisdictions, and not fundamental differences between jurisdictions in the relationship between opex and cost drivers. In addition, some doubts were raised about the consistency of the data reported in the three jurisdictions, which could undermine the reliability of the benchmarking results. Finally, the networks argued that the AER’s practice of pooling data across jurisdictions when benchmarking networks is a very unusual practice amongst regulators.³³

Failure to account properly for large differences between Australian networks

The networks argued that the extent of heterogeneity in the intrinsic characteristics of networks in Australia is very unusual, and that the AER had failed to account for these inherent differences properly. As a result, the AER’s benchmarking model had mistakenly identified large differences in operating circumstances as opex inefficiency. As a case in point, the networks showed that none of the networks in the States of Victoria and South Australia own high-voltage (i.e. >66kV) subtransmission assets, whereas, for legacy reasons, all of the distribution networks in NSW and Queensland, and ActewAGL, do. These assets are more expensive to maintain and also require more investment in transformers and other ancillary assets. This means that the distribution networks in NSW and Queensland, and ActewAGL, must incur opex that the Victorian and South Australian networks do not. This, in turn, means that some of the inefficiency identified by the AER in relation to the NSW networks may have been due to a failure to account for these networks’ ownership of high voltage assets. The networks presented evidence to the Tribunal that showed that if the AER’s benchmarking model were modified slightly to account for differences in ownership of high voltage assets, much of the inefficiency attributed by the AER to the NSW distribution networks disappears. The AER responded that it had accounted for heterogeneity, including ownership of high voltage assets, through ex post Operating Environment Factor (OEF) adjustments.

³³ The networks also pointed out that: of the several overseas regulators the AER had cited to the Tribunal, none except the Irish regulator pooled data from multiple jurisdictions when conducting benchmarking; the Irish regulator is forced to use data on networks from Great Britain in order to apply benchmarking because there is only one distribution network in Ireland; the networks in Great Britain are much more comparable to the distribution network in Ireland than are the networks in Ontario to those in Australia; and the Irish regulator only utilised overseas data after an extensive period of checking for consistency, and making several adjustments.

Outcome of merits review of AER reset decisions for NSW and ACT networks

Arbitrary OEF adjustments

The networks argued that the AER's OEF adjustments were ad hoc in most cases (because the data needed to compute these properly had not been collected by the AER), rushed and lacked proper consultation. PIAC also claimed that the AER's OEF adjustments were ad hoc and were over-generous in favour of the networks. For instance, argued PIAC, the AER had countenanced a long list of what it described as "immaterial" OEFs and, because it did not have the data to quantify these factors properly, the AER assumed that the impact of each immaterial OEF was to adjust the benchmark comparison point towards the individual network's score by $\pm 0.5\%$. The aggregate effect of these immaterial OEFs was, ironically, rather material, argued PIAC. Collectively, these factors lowered the benchmark comparison point towards: Ausgrid's efficiency score by 4.7%; Endeavour Energy's score by 6.7%; and Essential Energy's score by 5.4%.

Generosity of the benchmark comparison point

When choosing the benchmark comparison point, the AER used the network with the fifth-highest efficiency score (AusNet Distribution) rather than the network with the highest efficiency score (CitiPower). PIAC argued that lowering the benchmark comparison point in this way was over-generous to the NSW networks because it "artificially improved the apparent relative efficiency of" those networks' base year opex. The AER argued that its choice of a benchmark comparison point below the score of the most efficient network was consistent with practice of regulators overseas, and was reasonable given the uncertainties associated with benchmarking analyses of the kind it had undertaken.

Excessive reliance on benchmarking

The networks argued that, whilst the AER is required by the NER to have regard to benchmarking, the AER had over-reached by placing excessive reliance on, and confidence in, its particular benchmarking model. The networks argued that this was evidenced by the fact that very large cuts to opex were imposed on the basis of the AER's benchmarking analysis alone. They further argued that there is no requirement in the NER for this to occur. The networks argued that the way in which the benchmarking results were applied to adjust base year opex was mechanistic, unreasonable and erroneous given the shortcomings of the AER's analysis. The networks contended that in placing such reliance on benchmarking, the AER had failed to engage properly with their proposals, and why their forecasts were efficient, prudent and realistic, given the circumstances of their networks. In doing so, they said, the AER had failed to apply the NER properly.

Rejection of transition and associated costs by the AER

The networks argued that the AER's rejection of proposals to phase in opex reductions was an error because it will inhibit the maintenance of quality, safety,

Outcome of merits review of AER reset decisions for NSW and ACT networks

reliability and security of supply. They argued that the imposition of immediate reductions to base year opex will provide insufficient revenues to permit the networks to maintain quality, safety, reliability and security of supply, having regard to committed costs and legal obligations to employees (e.g. via Enterprise Bargaining Agreements). Further, argued the networks, the AER's failure to make allowance for the costs of business transformation and transition, including redundancy payments and other expenses associated with restructuring, is inconsistent with proper regulatory practice and amounted to an error of discretion and unreasonableness.

CONTACT	First Last stephen.gray@frontier-economics.com.au
	First Last dinesh.kumareswaran@frontier-economics.com.au
	Frontier Economics Pty Ltd
	FRONTIER ECONOMICS AUSTRALIA MELBOURNE SYDNEY BRISBANE
	www.frontier-economics.com.au