12 February 2015

Warwick Anderson
General Manager, Networks North
Australian Energy Regulator
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via email: aerinquiry@aer.gov.au and NSWACT@aer.gov.au

Dear Warwick,

Draft Decisions NSW/ACT Electricity Distribution Determination 2015-19

This submission is in response to the AER's Draft Decisions for the NSW and ACT Electricity Distribution Network Service Providers (DNSPs) published in November 2014.

AusNet Services welcomes the opportunity to make a submission on these first distribution regulatory decisions made under the new Chapter 6 Rules and the AER's Better Regulation Guidelines.
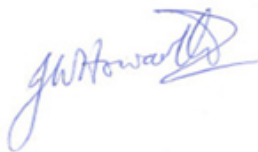
We support the AER's use of a wide range of tools to assess forecast expenditure, including benchmarking to form a high level comparative view of efficiency where relevant. As economic regulation must continue to evolve and improve, it is important that the AER continue to test new benchmarking techniques and refine them over time. This should be done in consultation with stakeholders to allow for transparent and robust outcomes which support sound regulatory decision making.

This submission highlights a number of specific approaches in the draft decision which AusNet Services would encourage the AER to consider, including:

- The reliance on repex modelling to determine a substitute repex forecast;
- The dismissal of materials cost escalation forecasts as too uncertain;
- The assumption that all insurance costs constitute base opex;
- The need to continue to provide an incentive for demand management;
- The application of a single 'labour and non-labour split' across all firms; and
- A number of elements of the rate of return approach.

We would be pleased to respond to any queries that you may have in relation to this submission.

Yours Sincerely

John Howarth
DIRECTOR REGULATION AND NETWORK STRATEGY

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1   Capex

1.1   Deterministic use of the repex model

The AER has made some significant cuts to the NSW/ACT distributors' forecast replacement expenditure (repex) by adopting the forecast of a top-down predictive model (the repex model) as a substitute.

The repex model is a high level probability-based model which takes the number and age of assets in service, the assumed replacement age of these assets (with asset age acting as a proxy for asset condition) and the corresponding unit costs to generate a range of repex estimates. The range of estimates is driven by different replacement ages and unit cost inputs.

AusNet Services observes that different scenarios have been used to derive the substitute forecasts, based on three variations of inputs:

1. *The base case*, which uses expenditure, volume, replacement life and age data provided by the businesses in their submitted RINs. Unit costs are derived from the historical and forecast unit costs provided by the businesses in their RINs and regulatory proposals;
2. *Calibrated model*, which uses replacement life extrapolated from actual reported replacement volumes. Unit costs are derived from the historical and forecast unit costs provided by the businesses in their RINs and regulatory proposals as well as industry wide benchmarked unit costs; and
3. *Benchmarked model*, which uses unit costs and replacement lives based on an industry wide average.

The table below sets out the model settings used to determine the substitute repex forecast for each and the figure or range adopted:

Table 1: Repex model settings providing substitute forecast

	Substitute forecast type	Replacement life	Unit costs
Ausgrid	Range	Calibrated to 5 year historic average volumes	Range between Forecast and Benchmark Average
Endeavour	Single point	Calibrated to 5 year historic average volumes	Forecast
Essential	Single point	Calibrated to 5 year historic average volumes	Forecast
ActewAGL	Range	Calibrated to 5 year historic average volumes	Range between Forecast and Benchmark Average

As the table above shows, the AER has identified either a range estimate or a single point estimate as the substitute. It would be useful if the AER could explain why it has applied these different approaches between the businesses.

AusNet Services urges the AER to reconsider its decision to adopt the product of the repex model as a substitute forecast for the following reasons.

Combining top-down and bottom-up information

A robust capex forecasting approach should be built upon good asset management information including empirical data on asset condition, deterioration trends and the criticality of specific assets to the network. This information on asset age, condition and risk (where risk is the function of probability and consequence of failure) is then used in asset planning models to generate a bottom-up forecast of required expenditure. Safety, security and compliance driven replacement is then taken into account. Such models are necessarily complex due to the range of factors and considerations which asset managers must balance in making investment plans. Top down analysis should then be undertaken, including applying predictive models, to test and adjust the forecast.

A methodology using the above combination of bottom up and top down forecasting produces superior forecasts which are much better suited for investment decision-making than a top down theoretical model alone. This is acknowledged by the AER:

> It should be recognised that the managers of capital assets will frequently rely on alternative techniques to determine their asset replacement strategies. A particular approach may include critical impact, condition based or risk based techniques or a mix of these or other techniques. The repex model approach does not replace those techniques. They are all valid approaches and may give superior estimates of replacement need in particular circumstances.[1]

In contrast, the repex model is limited because it uses asset age as a proxy for all replacement drivers and cannot factor in:

- empirical asset condition and actual deterioration rates;
- asset criticality and network risk; and
- safety and security requirements and advances in good industry practice.

Given this, where a regulatory proposal is based upon a rigorous bottom up and top down analysis, the AER should be thoroughly engaging with and interrogating the basis and contents of the forecast as well as analysing it using a top-down check such as the repex model. In such cases, a substitute forecast should result from adjustments to the proposal, rather than simply adopting the output of the repex model.

The calibration applied in the repex model is unreasonable

The calibration applied to determine asset replacement life in the repex model 'back solves' asset lives to fit with historic repex levels from the most recent 5 years of reported RIN data. This assumes that historic expenditure is a reasonable indication of future need. This is not a reasonable assumption where assets may be in different points in their life cycle. Further it ignores any safety, compliance or security driven replacement work which may not be reflected in historic expenditure.

The calibration can produce some questionable results. For example, when AusNet Services uses the model to calibrate its wooden poles to historic five year expenditure, the determined asset age is: 62+ years. Typically wooden poles are expected to last 45 years and in AusNet Services' network the vast majority of wooden poles need to be replaced by 36 - 50 years of age. As the following chart illustrates, calibrating to add/subtract 20 years onto/off the average 45 year life of wooden poles reveals highly variable replacement expenditure profiles.

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[1] AER, Repex Model Handbook, November 2013, p 10

Figure 1: Calibrated wooden poles repex profiles
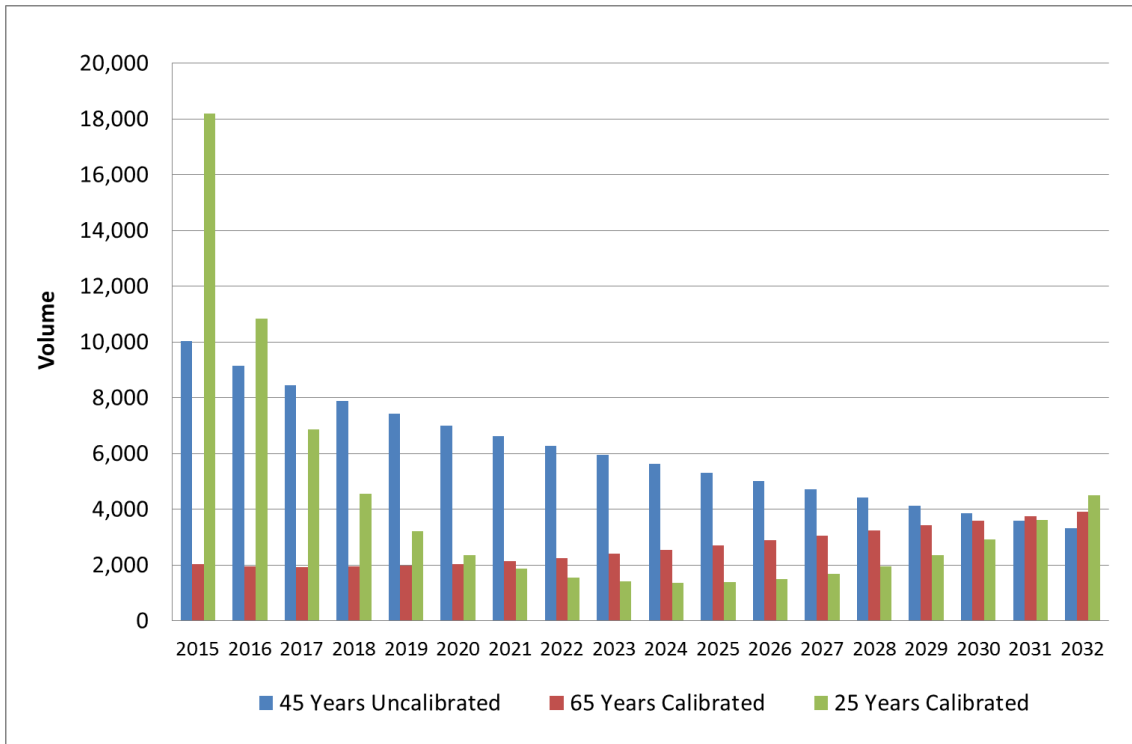
The above demonstrates how sensitive the model is to calibration and shows why the outputs of the repex model should be treated with caution. While a predictive model such as the repex model can be useful as a top down check as part of a sophisticated forecasting approach, the outputs of it should not form the sole basis of a substitute forecast.

The model is populated with back cast data

The back cast data the repex model relies upon was gathered in the first round of benchmarking RINs to enable the AER to publish its first Annual Benchmarking Report in 2014. As distributors' information systems were generally not designed to collect or record information in the form the RINs required, in some areas the data represents the best estimates of volumes and unit costs which businesses could provide in the time available. Given the above nature of the input data, AusNet Services submits that the outputs of the repex model should not be used in a deterministic manner.

1.2 Materials cost escalation

The Draft Decisions have not provided the distributors any real materials cost escalation. The adoption of a zero escalator has not resulted in significant reduction in the capex forecasts, however the principle behind this Draft Decision on cost inputs must be addressed. The Draft Decisions set real materials cost escalators at 0%, and a major reason for this decision is the inherent uncertainty of the commodity price forecast:

> It is our view that where we are not satisfied that a forecast of real cost escalation for a specific commodity is robust, and we cannot determine a robust alternative forecast, then real cost escalation should not be applied in determining a service provider's required capital expenditure. We accept that there is uncertainty in estimating real cost changes but we consider the degree of the potential

> inaccuracy of commodities forecasts is such that there should be no escalation for the price of input materials used by Ausgrid to provide network services[2]

Potential inaccuracy generally is an insufficient reason to reject a forecast. Moreover, all forecasts inherently involve some level of uncertainty; no forecast is 100% accurate. However, the inherent uncertainty of a forecast does not mean that a substitute of zero represents a "more reliable" estimation. This argument, taken to its natural conclusion would mean that all forecasts are of no value given the inherent uncertainty about the future.

A "realistic expectation of the cost inputs" is a principle which underpins the ex ante regulatory regime and incentive regulation. Therefore, a reasonable estimate must be provided, and the AER has not shown how its forecast of zero is superior to the materials cost estimate provided by experts using a robust and sound methodology.

Furthermore, although experts in materials costs may have differing views of the volatility of commodities prices, their views of average real price growth in relevant materials costs is generally consistent. This is shown in Figure 1 below which shows recent forecasts of real price growth for steel and aluminium by SKM, BIS Shrapnel and CEG.

Figure 1: Expert forecasts of materials costs for Ausgrid[3]
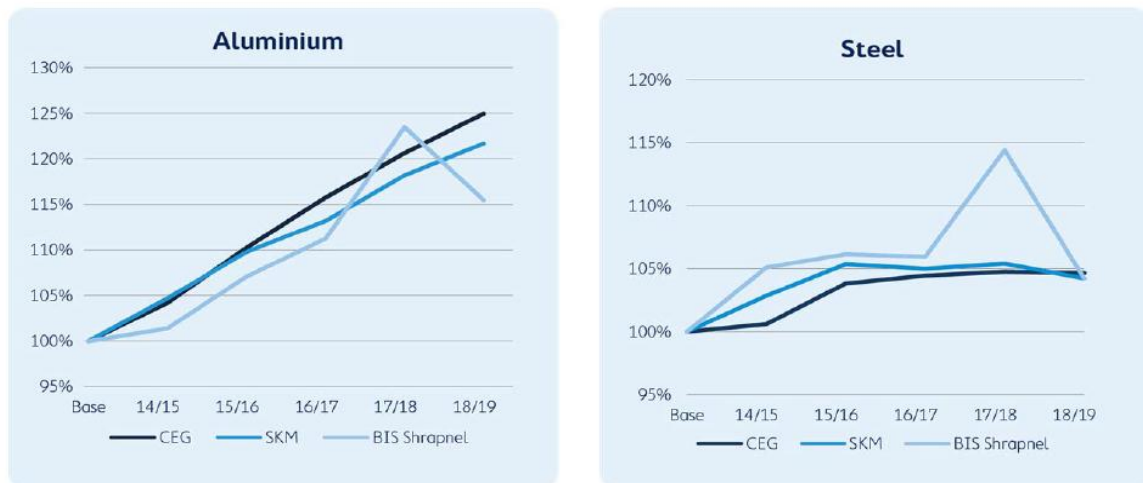
None of the above expert forecasts indicate a value of zero is reasonable.

AusNet Services agrees that evidence of historic materials cost increases would be useful for the AER's assessment of future materials costs. However, a lack of this has not precluded the AER from making regulatory decisions on this matter in the past, and should not prevent it from continuing to properly analyse expert evidence and assess forecast materials costs.

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[2] Draft Decision Ausgrid Electricity Determination 2015-19, Att. 6: Capex, p 111
[3] Ausgrid Revised Regulatory Proposal - Distribution Determination 2015-19, p 114

2 Opex

2.1 Forecasting insurance premiums

The Draft Decisions reject bottom-up forecasts of insurance premiums, and instead roll forward insurance costs as part of base opex. The reason for this has been summarised as:

> We note that the market price for insurance can, and does, change at a different rate than total opex. This will also be true of the cost of vegetation management contracts and many other opex cost items. If we separately forecast insurance and vegetation management contract costs because they are expected to increase in price more rapidly than the total opex basket, then we must also separately forecast opex items that increase in price less rapidly to avoid forecasting bias. Not doing so will systematically exceed the forecast opex required to meet the opex criteria. Moreover, the NER requires us to form a view on forecast total opex, rather than on subcomponents such as insurance or vegetation management.[4]

AusNet Services notes that, while this logic appears reasonable generally, for certain situations, it does not reflect a prudent approach to forecasting opex. Rather, there should be flexibility in the AER's opex assessment approach where:

- there is evidence that a firm's insurance costs have grown at a steep rate;
- this price growth is not reflected in the industry-wide opex rate of change; and
- there is no reasonable expectation that the price growth will be balanced by potential falling prices in the remaining base opex components.

In the above situation, revealed costs and a base step trend approach are unlikely to be helpful. This is when a bottom-up forecast by an insurance expert which takes into account firm-specific factors such as claims history, risk profile, forecast exposure and forecast insurances rates would provide a superior forecast.

AusNet Services therefore encourages the AER to continue considering bottom up insurance forecasts where appropriate when making assessments of forecast opex.

2.2 Labour and non-labour splits

The Draft Decision imposes a single labour/non-labour split on the distribution businesses for forecast opex which is not based on the actual revealed costs of the businesses but rather a "benchmark" split adopted by Economic Insights in its benchmarking approach. This has resulted in all firms receiving opex forecasts which reflect a 62% weighting for labour and 38% for non-labour (which includes materials). Labour is escalated at the rate of the Electricity, Gas, Water and Waste Services (EGWWS) industry forecast price index and non-labour is forecast using CPI. The AER explains the basis of its approach to the split as follows:

> These weightings are broadly consistent with Economic Insight's benchmarking analysis which applied weight of 62 per cent EGWWS wage price index (WPI) for labour and 38 per cent for five producer price indexes (PPIs) for non-labour. The five PPI's cover business, computing, secretarial, legal and accounting, and public relations services.
> …
> Our weightings which have been used in our economic benchmarking represent a benchmark weighting between labour and non-labour. We consider these weighting represent the weightings for a prudent firm because it has been used in

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[4] Draft Decision Ausgrid Distribution Determination 2015-19, Att. 7: Opex, p 173

previous economic benchmarking analysis by Pacific Economic Group Research and Economic Insights.[5]

AusNet Services does not agree with this approach as it goes against the AER's established 'revealed cost' approach to forecasting opex and incentive regulation. Under our ex ante approach to incentive regulation where the Efficiency Benefit Sharing Scheme (EBSS) provides a continuous incentive for businesses to operate more efficiently whilst maintaining service levels, a firm's actual revealed costs are the basis of future opex using a base-step-trend forecasting methodology.

The firm's actual costs, and its components, are therefore important to this approach as these reflect how the individual firm has organised its business to deliver its services efficiently. This might reflect a favourable EBA with its employees or good terms for service contract/leases which are crucial to the firm's ability to control opex. As such, it is important that firms have the freedom to organise their activities in a manner which enables them to continue to deliver efficiencies and take advantage of opportunities to control costs.

Furthermore, it appears the opex shares (presumably the weights used for each index) adopted in the Draft Decision are from 2004:

> The price of opex is taken as a weighted average of the Electricity, gas, water and waste sector (EGWW) Wages price index (WPI) and five ABS Producer price indexes (PPIs) as used in Economic Insights (2012a) and **using opex shares reported in PEG (2004) based on analysis of Victorian electricity DNSP regulatory accounts data**. (our emphasis) The component price indexes and weights are as follows:
>
> * EGWW sector WPI – 62.0 per cent
> * Intermediate inputs – domestic PPI – 19.5 per cent
> * Data processing, web hosting and electronic information storage PPI – 8.2 per cent
> * Other administrative services PPI – 6.3 per cent
> * Legal and accounting PPI – 3.0 per cent, and
> * Market research and statistical services PPI – 1.0 per cent. [6]

Unless the AER can prove that a firm is not responding to efficiency incentives and its current operating arrangements (with respect to its labour/non-labour split) are preventing it from operating more efficiently, there is no justification for applying PEG's 2004 opex shares.

AusNet Services, therefore, encourages the AER to reconsider its use of a 'benchmark' labour/non-labour split and instead continue to apply the cost splits reflected in the firm's actual opex unless there is evidence that the firm is not responding to incentives.

3   Benchmarking

In the Draft Decisions the AER has relied heavily upon benchmarking in adjusting the opex forecasts of the distributors. AusNet Services notes that benchmarking is one of a number of factors which the AER must take into account in assessing forecasts. As such, weight given to benchmarking should not only reflect how meaningful the

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[5] Draft Decision Ausgrid Distribution Determination 2015-19, Att. 7: Opex, p 146
[6] Economic Insights, Economic Benchmarking Assessment of Operating Expenditure for NSW and ACT Electricity DNSPs, November 2014,p 14

benchmarking results are but also the quality and availability of other assessment information.

AusNet Services supports the use of benchmarking to form a high level comparative view of efficiency where relevant.

It is critical that the AER test the explanatory power of benchmarking; that is, how useful is benchmarking in explaining the efficiency of businesses and how well can it deal with differences? AusNet Services submits that the AER must establish the explanatory power of benchmarking measures before relying upon benchmarking to make regulatory decisions.

We also encourage the AER to continue to test new benchmarking techniques and refine them over time, including undertaking peer review to ensure the techniques are robust and sound.

Areas where further work could be undertaken to develop and improve benchmarking include:

- Determining appropriate data sets including the appropriate use of international data;
- Ensuring data is comparable and provided on a consistent basis across businesses;
- Testing model specification for volatility, adjustments for business specific factors and sensitivity to weightings;
- Developing an understanding of which benchmarking outcomes are meaningful and how they can be interpreted; and
- Ensuring the application of benchmarking does not diminish the incentive properties of the regulatory framework.

AusNet Services encourages the AER undertake the above in consultation with stakeholders, including industry, to allow for transparent and robust outcomes and to support sound regulatory decision making. AusNet Services would be pleased to work with the AER on all of the above in the lead up to the 2015 Annual Benchmarking Report.

4   Demand management

AusNet Services has undertaken broad based research and development and demand management using the innovation allowance provided by the Demand Management Incentive Scheme (DMIS). We would not have been able to fund this work in the absence of the scheme. This is because the long-term returns from R&D investments are truncated in an economically regulated industry and so a specific incentive scheme is required to encourage investment.

AusNet Services agrees with the AER that there still remains a need to provide incentives for demand management and non-network alternatives as the market and industry continues to develop and mature in this area.

The AER is awaiting the finalisation of Rule Changes flowing from the AEMC's Power of Choice Rule Changes before consulting upon a revised DMIS. AusNet Services agrees with the approach it has taken to allow flexibility for the revised Scheme to be applied in NSW and the ACT. This also reflects what the AER has stated in Victoria's Framework and Approach paper:

> Under the Power of Choice review it is possible that a new DMIS will be applied within the next regulatory control period. The F&A is only intended to provide an

outline of our proposed approach and is not binding. It is our intention to have a demand management scheme and we would want to adopt a revised scheme, subject to the requirements of the rules, which may include transitional provisions requiring or allowing us to apply a new scheme or some variations within period.[7]

We would be pleased to work with the AER to develop the next version of the DMIS when it is time to undertake this work.

5   Pass throughs- insurance cap definition

In its draft decision for Essential Energy the AER accepted an Insurance Cap pass through event but substituted its own definition which states:

> An insurance cap event occurs if:
> 1. Essential Energy makes a claim or claims and receives the benefit of a payment or payments under a relevant insurance policy,
> 2. Essential Energy incurs costs beyond the relevant policy limit, and
> 3. the costs beyond the relevant policy limit materially increase the costs to Essential Energy in providing direct control services.
>
> For this insurance cap event:
> 4. the relevant policy limit is the greater of:
>   a. Essential Energy's actual policy limit at the time of the event that gives, or would have given rise to a claim, and
>   b. the policy limit that is explicitly or implicitly commensurate with the allowance for insurance premiums that is included in the forecast operating expenditure allowance approved in the AER's final decision for the regulatory control period in which the insurance policy is issued.
> 5. A relevant insurance policy is an insurance policy held during the 2015-19 regulatory control period or a previous regulatory control period in which Essential Energy was regulated.
>
> Note for the avoidance of doubt, in assessing an insurance cap event cost pass through application under rule 6.6.1(j), the AER will have regard to:
> i. the insurance policy for the event, and
> ii. the level of insurance that an efficient and prudent NSP would obtain in respect of the event
> iii. the extent to which a prudent provider could reasonably mitigate the impact of the event.[8]

AusNet Services suggests the following refinements to the above drafting to achieve greater clarity and consistency with existing definitions and Rules:

- The reference in para 5(i) should be to a "relevant insurance policy" (as that term is defined); and
- Delete para 5(iii) as it duplicates clause 6.6.1(j)(3) of the NER and potentially introduces confusion. The existing clause in the Rules requires the AER to consider whether a business had failed to take any action to "reduce the magnitude of the eligible pass through amount", while the drafting in the Draft Decision focuses on whether a "prudent provider could reasonably mitigate the impact of the event." These are two different tests which may have divergent interpretations, due to the introduction of the idea of 'a prudent provider'. Further,

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[7] Final Framework and Approach for the Victorian Electricity Distributors – 24 October 2014, p 114
[8] Draft Decision Essential Energy Electricity Determination 2015-18, Att. 15: Pass through events, p 8

para 5(iii) refers to the "impact of the event", which could be read as something other than the magnitude of the eligible pass through amount. In the event the Final Decision retains this provision, then an explanation which clarifies how the AER sees its drafting operating differently to the existing 6.6.1(j) factors in the NER would be useful.

6 Rate of return

The new National Electricity and National Gas Rules adopted in 2012 were intended to constitute a significant reform to the prior Rate of Return arrangements which, for the electricity sector, involved moving away from the tightly prescribed use of:

- the SL-CAPM model for establishing the allowed rate of return for equity; and
- the "on the day" method of determining the allowed rate of return for debt.

Under these Rules, the AER is required to consider all the available inputs when setting the allowed rates of return for equity and debt. The Rules continue to provide that gamma is a market valuation of the imputation credits that would be distributed by a benchmark firm.

AusNet Services submits that:

- The AER is approaching the task of establishing an allowed rate of return on equity in a way that will not deliver a rate of return that is commensurate with the efficient costs of a benchmark firm nor accords with the requirements of the Rules.
- Although the central concept of introducing a trailing average for debt is a good one, there are some issues that need to be addressed in the way this would be implemented, including whether or not a transition path is required to implement the new approach.
- For gamma, the AER's "conceptual approach" is incorrect and updating the data to deliver 0.4 instead of the value in the Guideline of 0.5 will not remedy the error.

Attachment 1 to this submission discusses these issues in more detail.

ATTACHMENT 1 – RATE OF RETURN DRAFT DECISION

1.   Setting an Allowed Rate of Return for Equity

In establishing an allowance for equity the rule requirement is that the AER considers the full range of relevant models and data available. The Draft Decisions proceed on the basis that it is sufficient to consider all the available material and then choose to accord some relevant inputs a very substantial weight, some a very constrained role and others no role at all. In contrast, the businesses consider that the Rules should be interpreted in the same way the equivalent language was interpreted in the DBNGP case[9]. We are of the view that all the relevant information needs to be given a real weight that is proportionate to its probative merits.

The AEMC's explanatory statement that accompanies the Rules repeats a number of times that all the relevant material must be considered.[10] For example: [11]

> *"Whether or not the estimated rate of return meets the allowed rate of return objective will invariably require some level of judgement, but this judgement should be based with reference to all relevant estimation methods, financial models, market data and other evidence that could reasonably be expected to inform a regulator's decision.*
> *…*
> *In addition, the regulator must make a judgement in the context of the overall objective as to the best method(s) and information sources to use, including what weight to give to the different methods and information in making the estimate."*

The AEMC reformed the rules to permit a departure from the SL-CAPM and required an evaluation of all the available alternatives. This indicates it is inappropriate to disregard models or inputs that are found to be relevant and revert to the pre-existing approach. The concept of a "foundation model" and its implementation prevents a proper assessment on the merits of how much real weight each input should be accorded.

Another similar error arises through the use of extra-legislative criteria[12] that distract and distort a proper application of the allowed rate of return objective, the National Electricity Objective and the Revenue and Pricing Principles directly to the models and other inputs. A number of these criteria are, on their face, irrelevant (for example whether the model is 'fit for purpose' i.e. whether it was originally developed for the purpose that it is now being put[13] and whether the methodologies are "complex" [14]). Other criteria are applied in a way that improperly closes off a full consideration of the material (for example whether a model is "well accepted" [15]).

Our second concern is that the AER's assessment of the SL-CAPM appears to have been undertaken less than objectively whereby:

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[9] re Michael AM; ex parte Epic Energy (WA) Nominees Pty Ltd & anor [2002] WASCA231 at paragraph 55.
[10] Pages i, iii, 26, 27, 30,31, 48
[11] Page 48
[12] AER, Rate of Return Guideline Explanatory Statement, Page 31.
[13] AER, Rate of Return Guideline Explanatory Statement, 17 December 2013, Page 31, Criterion 2(a)
[14] AER, Rate of Return Guideline Explanatory Statement, 17 December 2013, Page 31, Criterion 2(b)
[15] AER, Rate of Return Guideline Explanatory Statement, 17 December 2013, p 31, Criterion 1(a)

- There is an inadequate acknowledgement of the flaws of the SL-CAPM;[16]
- There is an inadequate recognition of the value that other models have in addressing flaws in the SL-CAPM;[17] and
- Inadequate weight is given to an empirical testing of the various models and empirical testing strongly favours models other than the SL-CAPM.[18]

Equally, the criticisms of other models are unreasonable:

- There is a suggestion that the Fama French three factor model is lacking because it arose from empirical observation rather than "theory" when in fact all theories are developed as a way to explain observed phenomena;
- Regardless of which came first – theory or empirical testing – the order does not affect the relevance of the model;[19] and
- There is a spurious distinction between a model's ability to explain past equity returns as opposed to explaining future equity returns.[20] Unless there is a reason why the world has changed there is no basis for doubting the prospective usefulness of a model that very well explains past returns.

Ever since its adoption 40 years ago, the SL-CAPM has been acknowledged to have significant weaknesses but superior models were not widely available. Today a lot more is known about the weaknesses and why it is that the SL-CAPM performs poorly in empirical tests and alternative asset pricing models are widely available.[21] The SL-CAPM is a highly simplified model that takes a risk free rate and adds the product of a "beta" with a general market risk premium.

Over time preferable asset pricing models have become widely accessible. The Black CAPM has a more flexible functional form and can more closely model observed returns and be used for predictions.[22] The Fama-French model has put forward additional variables that can have considerable explanatory power when seeking to explain or predict market rates of return.[23]

Further, the previous approach of prescribing the use of a single asset pricing model excludes other ways to establish fair returns. These include methods that do not seek to value assets but attack the task in a different way, such as the dividend growth model. These methods were not given significant weight even though they have been

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[16] Compare SFG Consulting, The required return on equity for regulated gas and electricity network businesses 6 June 2014, p 8, pp 20 - 24 with AER, Rate of Return Guideline Explanatory Statement, Appendix A, pp 10-12.

[17] Compare SFG Consulting, The required return on equity for regulated gas and electricity network businesses 6 June 2014, pages 8, 26 to 40 with AER Rate of Return Guideline Explanatory Statement, Appendix A, p 17

[18] Compare SFG Consulting, The required return on equity for regulated gas and electricity network businesses 6 June 2014, pages 8, 25, 35 with AER Rate of Return Guideline Explanatory Statement, Appendix A, pp 8, 11 - 12

[19] AER Rate of Return Guideline Explanatory Statement, 17 December 2013, Appendix A, p 8

[20] AER Rate of Return Guideline Explanatory Statement, 17 December 2013, Appendix A, pp 19 - 20

[21] SFG Consulting, 6 June 2014, pp 25, 35 and SFG Consulting 22 May 2014, Cost of equity in the Black Capital Asset Pricing Model pp 10 -11

[22] SFG Consulting, The required return on equity for regulated gas and electricity network businesses 6 June 2014, p 8: "*The Black CAPM provides a better fit to the empirical data than the Sharpe-Lintner CAPM…*"

[23] SFG Consulting, The required return on equity for regulated gas and electricity network businesses 6 June 2014, p 8: "*The Fama-French model has the advantage of providing an unambiguously better fit to the data than the Sharpe-Lintner CAPM.*"

employed for decades by energy regulators such as the Federal Energy Regulatory Commission in the United States.:

> *"The return on equity is derived from a range of equity returns developed using a Discounted Cash Flow (DCF) analysis of a proxy group of publicly held natural gas companies. The Commission currently uses a two-stage Discounted Cash Flow (DCF) methodology. The two-stage method projects different rates of growth in projected dividend cash flows for each of the two stages, one stage reflecting short term growth estimates and the other long term growth estimates. These estimates are then weighted, two-thirds for the short-term growth projection and one-third on the long-term growth, and utilized in determining a range of reasonable equity returns."*[24]

However, the Draft Decisions make only minor adjustments to the approach that has existed since the advent of modern economic infrastructure regulation in Australia.

A significant part of the reasoning supporting the reselection of the SL-CAPM as a foundation model is explicitly conservative. Important factors in selecting this model included giving weight to the idea that other regulators adopt the SL-CAPM or the AER's perceptions as to whether the model is "well accepted"[25]. This is analogous to the rejection in the 1600s of Galileo Galilei's submissions that an astronomical model in which the Earth revolves around the Sun better explains observed phenomena than the then "well accepted" Earth-centric model. If an existing model is shown to be flawed in ways that newer models are not, collective inertia is not a proper decision making constraint upon giving the newer model(s) real weight according to the substantive contributions they can make. It cannot be the case that by removing any reference within the rules to the incumbency of the SL-CAPM, the AEMC intended a "chicken and egg" situation that prevents the regulator from moving to adopt a new model until another regulator has.[26]

AusNet Services has devoted a substantial effort individually and through the Energy Networks Association to assemble a wealth of theoretical and empirical analysis to enable the AER to establish an allowed rate of return that integrates all the insights now available to finance theorists and market practitioners.[27] Many of these insights were not available when the SL-CAPM was first employed for economic regulation in Australia and the fact that past practice has did not take them into account is not a basis today to exclude them. Indeed the preponderance of that evidence now available speaks very loudly of the need for change.

The above concerns with respect to a failure to recognise and respond to problems with the existing regulatory approach are even more acute when the Draft Decisions do not significantly reform the way in which the AER implements the SL-CAPM. In the current economic conditions, the AER's previous approach to specifying that model (i.e. by combining an immediate contemporaneous measure of the risk free rate with a market risk premium derived from more than 100 years' worth of data) delivers values that are necessarily materially lower than prevailing market returns.

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[24] FERC June 1999, Cost-of-Service Rates Manual for gas pipelines, p 16

[25] AER Rate of Return Guideline Explanatory Statement, 17 December 2013, p31.

[26] AER, Rate of Return Guideline Explanatory Statement, 17 December 2013, Appendix A, pp 12 - 13

[27] ENA, Response to the Draft Rate of Return Guideline of the Australian Energy Regulator 11 October 2013

Experts explain that there is no one-to-one relationship between movements in the risk free rate and the risk adjusted returns that investors require. In fact the market risk premium tends to fluctuate in the reverse direction from risk free rates.[28]

Although the expert work is informative at an aggregate level, there are also occasions when this concept is readily apparent. For example, shortly after the collapse of Lehman Brothers two key propositions were inescapably prominent to finance market practitioners and the general business community alike – at the same time that investors became nervous and were demanding significantly increased returns, central banks were significantly reducing wholesale interest rates to try and stimulate the economy. This is a stark example of what the expert evidence shows is generally the case: the market risk premium and risk free rates tend to move in opposite directions.

This means that adding a long run average market risk premium to an immediately observed risk free rate will deliver downwardly biased results when risk free rates are low and upwardly biased results when risk free rates are high. In the current environment of record low risk free rates, a simple addition of a very long term market risk premium with an instantaneous risk free rate is almost bound to significantly under compensate equity investors.

Indeed, the approach in the Draft Decisions delivers a nominal post tax return on equity of just 8.1% which is substantially lower than five years previously which provided for a return on equity of 11.86%. More than two percentage points of that drop can be attributed to the fall in the underlying risk free rate. While the risk free rate has dropped in this way, there is simply no evidence available from which to conclude that equity investors' required rates have fallen in proportion to the fall in the risk free rate.

Our business has direct experience in dealing with market sourced equity investors. In our considered opinion, equity investors expect to receive considerably higher post tax returns in the current economic environment than the 8.1% produced by the AER's modelling and we disagree that the AER's approach produces an allowed rate of return that is commensurate with prevailing conditions.

It might be tempting to jump to the conclusion that under-compensating investors at this time is of little concern if, once the economic cycle turns, the current under-compensation could be off-set by future over-compensation but this is not the case. If there is a mismatch in either direction between prevailing rates and regulatory allowances inefficiencies will arise. Firstly, there are costs for the businesses of absorbing inter-temporal fluctuations in returns through explicitly or implicitly carrying a balance sheet provision for such a mismatch. Secondly, at times of under-compensation timely investments are discouraged or delayed and at times of over-compensation the opposite effect applies and there is an incentive to invest earlier than required. Neither is efficient. Note also that these effects are pro-cyclical which means that the direction of the mismatch encourages businesses to reduce capital expenditures at times that input costs are likely to be low and to increase capital expenditures at times when input costs are likely to be high.

It is appropriate, therefore, that the rules require that each determination provides for a regulatory allowance that is commensurate with the prevailing efficient costs for a benchmark firm at the time. In the AEMC's words:

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[28] SFG Consulting, The required return on equity for regulated gas and electricity network businesses 6 June 2014, page 51 to 53

"If the allowed rate of return is not determined with regard to the prevailing market conditions, it will either be above or below the return that is required by capital market investors at the time of the determination. The Commission was of the view that neither of these outcomes is efficient nor in the long term interest of energy consumers."[29]

In the current economic environment, this requires a significant change from the status quo.

2. AusNet Services' Approach to the Allowed Return on Equity

AusNet Services supports the approach in the June 2014 SFG Consulting report[30] that gives real weight to:

- to the rates of return predicted by the Black CAPM, Fama French and dividend growth models; and
- to both the Wright and Ibbotson approaches to estimating the market risk premium parameter to the SL-CAPM and other asset pricing models—thereby addressing the mis-match between instantaneous risk free rates and a long run market risk premium.

The approach adopted by SFG Consulting, and the allowed rates of return it calculates, constitute a modest, balanced, inclusive and responsible proposal that would deliver an allowed return on equity that is in line with current market conditions. The approach proposed does not opportunistically seize upon the model or particular inputs that delivers the highest returns but instead accepted that all models should contribute to the resulting allowance – including the Ibbotson SL-CAPM even though it is known to be downwardly biased and delivers materially lower results than all the other available models and could legitimately be characterised as an 'outlier'.

It is disappointing that the Draft Decision rejects this approach and instead makes only relatively minor adjustments to a "business as usual" approach that relies principally on a model that was "state of the art" more than 40 years ago for both the central focus of deriving a point estimate, and a source of strict constraint on the use of other information. Indeed, the only material differences in approach by the AER in the draft determinations compared with the old rules is that the value of beta has been reduced to 0.7 and the value of gamma has increased to 0.4 and each of these changes is unrelated to the adoption of the new rules. The net effect is that the AEMC rule change process and Rate of Return Guideline had not occurred at all.

AusNet Services commends the SFG Consulting paper and requests that the AER move away from the 'foundation model' approach in favour of an approach that gives real weight to each of the models that both the AER and SFG Consulting agree are the relevant models to consider.

In the current environment an allowed rate of return of approximately 10% (as established using SFG Consulting's weightings) is appropriate and consistent with our views concerning the prevailing efficient costs of equity capital in our industry.

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[29] AEMC Rule Determination, 29 November 2012, p 44

[30] SFG Consulting, The required return on equity for regulated gas and electricity network businesses 6 June 2014, pp 7 - 8

3. *Implementing the Trailing Average Method for Debt*

AusNet Services supports the adoption of a regulatory framework that reflects the efficient costs of a benchmark entity. We agree with the AER[31] that both under the old rules and the new rules efficient debt raising practices had to effectively manage refinancing risks and, therefore, efficient debt portfolios necessarily involve staggered maturities and that annual updating better reflects efficient practices. However, there are a number of ways in which we consider the approach to establishing the allowed rate of return for debt does not reflect the efficient costs of a benchmark firm.

The first consideration concerns the credit rating. In AusNet Services' view, the benchmark credit rating should be a BBB credit rating based on the median credit rating of the businesses that do not benefit from the implicit support of significant Australian or foreign government equity.

The second consideration is that not all the efficient costs have been included in the AER's proposed allowance. The AER draws its benchmarks from independent service providers who report on secondary market trades. However, businesses do not sell their debt in piecemeal quantities on secondary traded markets. Rather electricity network businesses must issue bonds in substantial tranches and CEG has established[32] that a new issue premium of approximately 30 basis points is borne by electricity network businesses.

4. *Gamma*

Notwithstanding the detailed material set out in the Draft Decision, AusNet Services considers that a correct and internally consistent regulatory determination requires that the gamma be established based on a true market valuation as are all the other WACC parameters.

Although gamma is an input into the corporate income tax calculation, the value adopted for gamma ultimately has a role determining returns for equity-holders. If the value ascribed to imputation credits is higher than the value that equity-holders place on them, the overall return to equity-holders will be less than what is required to promote efficient investment in, and efficient operation and use of, energy network services for the long term interests of consumers.

A secondary reason why gamma needs to be established as a market value concerns internal consistency. If a market valuation for gamma is not adopted, the market valuations of other WACC parameters would not make sense where the valuations rely on investors' market valuations for gamma.

While it is interesting to consider the original writings by Officer, there are limitations to the usefulness of doing this. While his work clearly recognised the fundamental point – the need for imputation credits to be considered – a lot of much more detailed work has subsequently been done to explore fully how the concept should be implemented in practice.

The Draft Decisions acknowledge that there are apparent ambiguities in the way in which Officer's original documents described gamma because reference was made to

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[31] AER Rate of Return Guideline Explanatory Statement, 17 December 2013, p 107
[32] CEG, The New Issue Premium, October 2014.

both "value of a dollar of tax credit to the shareholder" and to the "proportion of the tax collected from the company will be rebated against personal tax".

On page 4-34, Handley is quoted asserting that these two terms were used interchangeably with the "proportion of tax" concept being what Officer intended but this is unconvincing. It would seem more likely that Officer had in mind a valuation concept but had not researched the issue of why the market valuation might diverge significantly from the face value and for that reason he used the terms interchangeably.

In any event, when looking at the broader picture in which energy network businesses need to compete in equity markets to attract investment capital, it is a market valuation which is relevant.

Neither the 'equity ownership approach' developed by the AER nor an examination of tax statistics concerning the nominal dollar amounts are suitable for establishing a market valuation. In AusNet Services' view, neither the equity ownership approach nor the tax statistics approach are relevant (except in as much as tax statistics provide an upper bound on the value of gamma because it is highly unlikely that the market valuation could ever materially exceed the nominal value of the credits).

SFG Consulting[33] provides the most comprehensive and up to date analysis using market valuation methodologies and a number of criticisms have been levelled at his work in the draft determinations. SFG Consulting has responded to those criticisms in full.

Based on the SFG Consulting work, AusNet Services considers that 0.25 is the most appropriate market valuation of gamma.

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[33] SFG Consulting, An appropriate regulatory estimate of gamma, May 2014