Ms Paula Conboy  
Chair  
Australian Energy Regulator  
GPO Box 520  
Melbourne VIC 3001

13 March 2015

Dear Ms Conboy

**Stakeholder’s responses to the Australian Energy Regulator’s draft determination**

I am taking this opportunity to write to you in regard to the stakeholder responses that the Australian Energy Regulator (AER) received in response to their draft determination and the Networks NSW revised proposals.

This submission will cover material related to the stakeholder’s responses to the AER’s consultation and some reports that are highly relevant to the AER’s consideration for the final determination that the NSW distributions have become aware of since the revised proposal was submitted.

Networks NSW is supportive of a wide variety of stakeholders, including consumer groups, retailers and environmental groups responding to the AER’s draft determination and Networks NSW revised proposals as we strongly support a decision making process that is open and transparent to the wider community.

Networks NSW has read the submissions from interested parties. We note that some of these submissions contained factual errors that we would like to draw the AER’s attention to in order assist the AER to make robust final determinations. We have set out the errors below along with the correct information.

**Factual Errors**

**CCP on benchmarking and the Productivity Commission**

The Consumer Challenge Panel (CCP) state “the 2014 benchmarking released by the AER is certainly ‘good’ in that it is robust enough to be applied for regulatory purpose, as the Productivity Commission proposed.”¹ (emphasis added).

The claim that the AER’s approach is consistent with the approach recommended by the Productivity Commission proposed is incorrect. As set out in the Huegin report², attached to the revised proposals, the Productivity Commission set out 19 criteria for assessing good benchmarking practice. The AER’s approach did not satisfy 12 of the criteria with a question mark against a further two criteria. The AER’s approach to benchmarking is therefore not consistent with the approach proposed by the Productivity Commission.

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¹ CCP, Responding to NSW draft determinations and revised proposals from electricity distribution networks, 2 January 2015 (sic), p50
² Huegin, Technical response to the application of benchmarking by the AER, 16 January 2015, p8.
EUAA on replacement capex being higher
The Energy Users Association of Australia (EUAA) stated that “NSW DNSPs are proposing increases in their replacement capex spend”. This is incorrect. Endeavour and Ausgrid are both forecasting decreases in their replacement capex spend for the 2015-19 period when compared to the 2009-14 regulatory control period. In real terms the total replacement capex spend for the NSW DNSPs is forecast to fall by 9 percent compared to actual replacement capex the previous regulatory control period.

EUAA on reduction in reliability capex
The EUAA also stated “The AER is claiming that its draft determinations have addressed the implications of the reduced reliability standards by applying adjustments of 15% to Ausgrid and Endeavour Energy’s forecasts and an adjustment of 20% to Essential Energy’s forecast.” This statement about the AER’s actions and statements is incorrect. The AER reduced the reliability capex for Endeavour by 100 percent.

EUAA on constant replacement capex
The EUAA state “Replacement capex is more predictable than growth-related capex. In general, repex levels are expected to remain relatively constant over time”. This statement could only be expected to be true if assets are installed evenly across time. This is not the case.

EMRF on efficient overspend of Capex
In their submission to the AER the Energy Markets Reform Forum (EMRF) state it “must also be noted that the DBs have the ability, if they consider the AER is in error, to spend more on capex than the AER considers is efficient. The risk of this to the DBs is slight as they have the ability to overspend and have the overspend rolled into the RAB after undergoing an ex post review of the capex. Overall, the cost to the DBs of such an approach is low if the DBs can prove that they needed more capex than was considered efficient by the AER.” This is incorrect. The risk of the AER not allowing any capex above the AER’s forecast amounts is untested and therefore considered high. In addition, the Capital Expenditure Sharing Scheme penalises networks for any overspend regardless of any finding of an ex-post efficiency review by the AER.

Origin on Endeavour’s provision of the EBSS calculation
Origin state “Endeavour does not appear to have provided its EBSS worksheet as part of its regulatory proposal. This has not allowed stakeholders to establish a more informed view on its proposal.” Endeavour provided its EBSS attachment to the AER. The AER chose not to publish this on its website but it was available by request.

EUAA on asset condition information.
The EUAA state that “the DNSPs’ repex proposals provided very scant details of asset condition information”.
Ausgrid supplied Asset Condition & Planning Summary documents, Endeavour supplied Strategic Asset Management Plans and Essential provided Network Asset Management Plan all of which outline asset condition information. In addition, Essential Energy provided

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3 EUAA, Submission to NSW DNSP revised revenue proposal to AER draft determination (2014 to 2019), 13 February 2015, p23
4 ibid, p23
5 EMRF, AER draft decision and revised proposals from Ausgrid, Endeavour Energy and Essential Energy: A Response, February 2015, p62
6 Origin, Submission to AER draft determination for NSW electricity distributors, 13 February 2015, p20
7 EUAA, Submission to NSW DNSP revised revenue proposal to AER draft determination (2014 to 2019), 13 February 2015, p26
investment cases for all replacement capital expenditure that clearly set out the condition information and associated risk for each programme of works. The AER chose not to publish these however they were available on request.

We also note a number of stakeholder submissions contained assertions that were not supported by evidence. Some of these are set out below.

**Unsupported Claims**

**ERAA on bottom up assessments**
The Energy Retailers Association of Australia (ERAA) state "Using only a bottom-up assessment has a tendency to overstate required allowances as they do not adequately account for inter-relationships and synergies between projects or areas of work which are more readily identified at a portfolio level." There is no evidence that a top down assessment produces a better outcome than a well-developed bottom up plan that accounts for inter-relationships and synergies through processes such as area plans like those used by the NSW DNSPs. In any case, all three NSW distributors used a combination of bottom up and top down assessment methods in developing their forecasts as detailed in our regulatory proposals. The ERAA's statement appears to have been copied from the AER's draft decision and is not supported by any evidence from the ERAA.

**CCP claims of factual error by Ausgrid when it claimed the AER set aside consumer engagement.**
The CCP state "The AER has not rejected the findings of Ausgrid's consumer engagement program, nor is the sub panel aware of any evidence that the AER has made alternative findings based on anecdotal evidence and a lack of testing of consumer views. The sub panel believes that the AER's decision is based on a solid evidence base and sound knowledge of consumer views." The claim that the AER's decision is based on a solid evidence base and sound knowledge of consumer views is not supported by any evidence.

Ausgrid's proposal, as required by the Rules, summarised the views of consumers and how Ausgrid had taken them into account in formulating its proposal. The AER draft determination stated: "Based on the submissions in response to Ausgrid's regulatory proposal and our consultation with consumers, we are not satisfied that Ausgrid's proposal adequately reflects the views of consumers." Section 4.1 of the draft decision outlines the AER's engagement activities, which lacks any direct 'consumer' engagement. The submissions provided to the AER also provided the view of the responding stakeholder, but also lacked any evidence to support what customers' views actually are.

In other words, no actual solid or verifiable evidence has been presented by any party other than Ausgrid. As the draft determination shows the AER did not utilise this evidence in reaching their decision, therefore their decision cannot be based on a solid evidence base.

**EUAA on reduction in need for replacement capex**
EUAA asserts that the DNSPs previous replacement capex programs have effectively 'pre-installed' a good deal of their replacement capex requirements for the next regulatory period. No evidence

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10 EUAA, Submission to NSW DNSe revised revenue proposal to AER draft determination (2014 to 2019), 13 February 2015, p27
has been supplied to support this statement. The DNSPs’s revised proposals supplied significant evidence to justify the replacement capex levels proposed.

PIAC on Capital Expenditure
Public Interest Advocacy Centre (PIAC) considers that the AER’s draft capex decision has simply taken the DNSPs back to a more “normal” level of capital expenditure, only one that is now based on a much younger and less stressed network system. PIAC has supplied no evidence to support any of this assertion. This statement does not appreciate the significant volume of assets that are at or beyond their useful lives. In fact, the weighted average age of Essential Energy’s assets continued to increase over the 2009-14 regulatory control period. We strongly reject any suggestion that the AER can or should simply ignore its 2009-14 distribution determinations.

Claims specific to Ausgrid and Essential networks
A number of erroneous or unsubstantiated claims were made in relation to the Ausgrid network, in particular in relation to public lighting and asset lives. These claims in relation to Ausgrid are dealt with in more detail in Attachment 1. Claims in relation to public lighting on the Essential network will be formally addressed in a letter sent to relevant Councils in the Essential region.

Networks NSW supports the open and transparent processes adopted by the AER in its decision making process. However, the right of stakeholders to participate and make submissions does not diminish the imperative upon the AER to make decisions on the basis of coherent reasoning and probative factual information. The AER should not adopt propositions made to it by stakeholders unless it is satisfied that the basis of those propositions can be substantiated.

Other matters related to submissions

Consistency in requirements
Networks NSW also supports all parties to this process displaying consistency in expectations. We note that the CCP states “We are disappointed that there remains a lack of transparency over cost inputs, with businesses still hiding behind ‘confidentiality agreements’ with their suppliers.” In the case of public lighting Ausgrid’s approach to the treatment of confidential information was based on legitimate concerns of public lighting providers, where the disclosure of such information could cause significant commercial detriment.

The AER authorised a limited form of disclosure of confidential information under the proviso that those seeking this information accept a confidentiality undertaking and sign a conflict of interest declaration. SSROC did not accept these confidentiality arrangements as there is a clear conflict of interest in providing this information to their consultants. All cost inputs that are not commercial in confidence have been provided and explained.

The CCP, however refers to information apparently supporting a lower rate of return that they have chosen not to make available for public disclosure on the ground of confidentiality, and yet suggest the AER take it into account. The CCP states in their submission that “...we are not at liberty to divulge material provided to us in confidence”. The rate of return adopted by the AER is a very significant component of the allowed revenue of the NSW DNSPs. In making its decision the AER

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11 CCP, Responding to NSW draft determinations and revised proposals from electricity distribution networks, 2 January 2015 (sic), p40
12 ibid, p45
should not give any weight to information or opinion that the NSW DNSPs have not been given the opportunity to consider and respond to.

Misunderstanding 3rd party analysis.
We are also concerned that there may have been some stakeholders who misunderstood the nature of some of the material that they were relying on. For example the CCP referred to material produced by the AEMC on consumers' willingness to accept lower reliability. The CCP state “The sub panel notes the significant percentage of customers who reported they would be willing to accept the specified interruptions in their electricity supply.”\(^\text{13}\) Based on the same data as referred to by the CCP the AEMC, who produced the report, concluded “that customers would require a significant discount on their bill to accept poorer reliability.”\(^\text{14}\) In the report the AEMC also notes that “residential customers required a significantly higher level of compensation to accept a reduction in their reliability, compared to the residential VCR and the willingness of customers to pay for improved reliability.”\(^\text{15}\) These findings are broadly consistent with those of the NSW DNSPs that while customers are concerned about price and affordability, the majority are not willing to trade reliability, safety and service for lower charges.

NIEIR's forecast of demand.
A good example of the benefit of stakeholder responses in the determination process is the submission by the National Institute of Economic and Industrial Research Pty Ltd (NIEIR) on demand forecasts. NIEIR find that “the operating environment for the electricity industry has now changed fundamentally. This will lead electricity sales to resume growth and peak demands to continue to increase over 2015 to 2019.”\(^\text{16}\) We are not proposing a change to our energy forecast based on this information. However, we view the NIEIR submission as highlighting that growth forecasts are uncertain, with some informed commentators suggesting growth could be higher, rather than lower, than the forecasts put forward by the NSW DNSPs, suggesting calls for reductions to the NSW DNSP demand forecasts may be premature.

Material of relevance to the AER's final determination

Additional analysis on the cost of equity
The NSW DNSPs revised proposals incorporated a report from SFG consulting (SFG) titled “The required return on equity: Initial review of the AER draft decisions”.\(^\text{17}\) This report contains important reasons for why the AER should have regard to all relevant financial models. SFG has now completed its initial review of the AER's decision and its final report provides some further clarity on issues raised in the initial report. The NSW DNSPs seek to rely on the final report prepared for the NSW DNSPs, provided as Attachment 2 to this submission.

NERA has now completed a report that contains an empirical review of the Sharpe-Lintner and Black CAPM model.\(^\text{18}\) This report provides further evidence that regression based estimates of the equity beta within the Sharpe-Lintner CAPM framework are likely to produce downwards biased estimates of the required cost of equity. This supports the NSW DNSPs' proposed approach to

\(^{13}\) CCP, Responding to NSW draft determinations and revised proposals from electricity distribution networks, 2 January 2016 (sic), p20
\(^{14}\) AEMC, Fact sheet: NSW customer survey on electricity reliability, 31 August 2012, p3
\(^{15}\) AEMC, Review of Distribution Reliability Outcomes and Standards: Final Report- NSW Workstream, 31 August 2012, p40
\(^{16}\) NIEIR, Comments on New South Wales Energy and Peak Demand Forecasts, February 2015, p1
\(^{17}\) SFG, The required return on equity for the benchmark efficient entity, 25 February 2015.
\(^{18}\) NERA, Empirical Performance of Sharpe-Lintner and Black CAPMs, February 2015.
adopt an allowed cost of equity of 10.15% based on the range of estimates from the relevant financial models and calculated using the Sharpe-Lintner CAPM with an equity beta of 0.82 and internally consistent long term estimates of the risk free rate and the expected return on the market. The NSW DNSPs seek to rely on the final report prepared for the NSW DNSPs, provided as Attachment 3 to this submission.

Networks NSW also notes that United Energy in response to the AER’s draft determinations submitted a report titled “Beta and the Black Capital Asset Pricing Model” that outlines how the AER’s consideration of evidence from the Black CAPM is incorrect and does not support the AER’s draft decision approach to setting the cost of equity. The SFG report supports the use of an equity beta of 0.82 when using the Sharpe-Lintner CAPM to estimate the required cost of equity for the benchmark efficient energy network firm. This is consistent with the positions of the NSW DNSPs as contained in their initial and revised proposals. While the report has already been provided by United Energy, we are providing report as Attachment 4 to this submission for completeness. The NSW DNSPs seek to rely on this report.

The NSW DNSPs revised proposals also incorporated a report from Incenta Consulting that reported findings on the cost of equity for energy networks from various independent expert reports. The Incenta report also noted a letter from Grant Samuel to TransGrid, which highlighted how the AER had misinterpreted a valuation report Grant Samuel had prepared on Envestra Limited. The NSW DNSPs note that the letter from Grant Samuel has been provided to the AER by TransGrid as part of its regulatory determination and is publicly available. The NSW DNSPs also seek to rely on the letter from Grant Samuel.

Overall WACC
The CCP submitted pre-tax cash flow figures to support its claim that the AER’s draft decision provides sufficient cash flows for the NSW DNSPs to operate without financial risks. The CCP’s pre-tax cash flow analysis appears to use the AER’s draft decision revenues, opex and interest cost assumptions.

As outlined in the NSW DNSPs’ revised proposals, the reductions of up to 39% in opex from current levels would not enable the NSW DNSPs to operate the NSW electricity network at safe, secure and reliable levels, and also remain financially viable. Higher opex will be required over 2015-19 than assumed by the AER’s draft decision to operate our networks in a safe and reliable manner, while providing commercial returns to equity and debt holders.

The interest costs assumed by the AER in its draft decisions are significantly below the efficient benchmark interest costs and the NSW DNSPs’ actual costs of debt. As a result, the interest costs faced would be higher than assumed under the AER’s draft decision. Overall, the CCP’s stated pre-tax returns are significantly overstated compared to the returns that would likely ensue from the AER’s draft decision revenues. The NSW DNSPs outlined analysis from Standard & Poor’s on the likely credit assessment outcomes for the NSW DNSPs if the AER’s draft decision on revenues were applied. This analysis clearly demonstrates insufficient cash flows to maintain an investment grade credit rating.

\[\text{\textsuperscript{19} SFG, Beta and the Black CAPM, February 2015.}\]
\[\text{\textsuperscript{20} Grant Samuel, Letter to the Directors TransGrid, Australian Energy Regulator – Draft decision, 12 January 2015.}\]
\[\text{\textsuperscript{21} CCP, Submission to the AER, February 2015, pp. 42-43.}\]
The CCP also submitted that the rate of return in the AER’s draft determination is significantly higher than Office of Gas and Electricity Markets’ WACC for utilities in Great Britain. This comparison is fundamentally flawed as the UK and Australia have completely different financial markets, which result in Australian businesses having a higher cost of capital than the UK.

If the NSW DNSPs were to try to raise their funds offshore in the UK, that debt would need to be borrowed in UK Pounds and then converted into Australian dollars. This would crystallise significant cross-currency risks. To try to hedge this risk through exchange rate swaps would be highly costly, if possible at all given the liquidity for such instruments.

In addition, to start borrowing overseas would require retiring existing debt and paying a prohibitively high mark-to-market loss based on current rates. These mark-to-market losses were identified in the NSW DNSPs’ revised regulatory proposals.

The factors outlined above make it incorrect to set the NSW DNSPs cost of capital equivalent to the cost of capital set for UK firms.

Cost of debt
PIAC has submitted that the transition approach to the cost of debt does not pose a financial risk to the NSW DNSPs. Origin Energy submitted that the approach submitted by the NSW DNSP’s seeks to “lock-in” the GFC benefit (Origin submission pp. 2, 18).

PIAC has referred to a cost of debt of 8.10%, a minor mistake as the figure proposed by the NSW DNSPs is 7.98%. We also note that this figure would decline over time assuming rates remain low and new debt is refinanced at lower rates than in the past. This would be reflected under the trailing average approach.

The NSW DNSPs manage their debt on a staggered portfolio basis. This means that only some of their debt was raised during the GFC. Contrary to Origin’s claims, this is not a “benefit”, but rather an efficiently incurred cost of debt for a small portion of the total debt portfolio. The NSW DNSPs have asked that the AER recognise that the NSW DNSPs already issue debt according to the benchmark efficient strategy (i.e. a trailing average) and therefore no debt transition is required.

Based on rates prevailing between February and June 2014, the NSW DNSPs would be heavily under-compensated relative to the benchmark efficient approach. This is inconsistent with the National Electricity Rules and the National Electricity Law. Moreover, the analysis conducted by S&P and UBS illustrates the real financial risks placed upon the NSW DNSPs under the AER’s draft decision approach.

The CCP submitted that proprietary analysis from investment banks concludes a long run cost of debt of 5%. There does not appear to be any evidence of this, only an assertion which is contradicted by all the available data on debt costs for BBB rated entities in Australia, which is outlined in the NSW DNSPs’ revised proposals.

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22 CCP, Submission to the AER, February 2015, p. 47.
23 Origin, Submission to AER draft determination for NSW electricity distributors, 13 February 2015, p2, 18.
24 CCP, Submission to the AER, February 2015, p. 5.
Financing arrangements with NSW TCorp

The PIAC submitted that the NSW DNSPs have the flexibility under the Government Guarantee Fee framework to rearrange their debt portfolio at little cost and suggest that based on statements from NSW Treasury, it is (and has been) possible to match the regulatory allowance under an “on the day” approach. For the NSW DNSPs to match the AER’s cost of debt allowance would require either:

1. re-issuing the majority of debt over the period February to June 2014 and smaller tranches thereafter.
2. using interest rate swap contracts to swap debt that is already issued from fixed to floating rate debt and then using another set of swap contracts to lock in rates prevailing over the period February to June 2014.

With regard to point 1, practically it is not possible to issue debt based on rates in February to June 2014 through the Treasury Corporation (TCorp) arrangements or otherwise, because that period has already passed. Even when that period was prospective, it would not have been efficient or prudent to do so. Refinancing all existing debt as at February 2014 would have incurred a significant mark-to-market loss, which was quantified in the NSW DNSPs revised proposals. More importantly, taking such an approach would have exposed the NSW DNSPs to immense refinancing and interest rate risk.

With regard to the second point, the NSW DNSPs have the ability to direct TCorp to use interest rate swaps to convert debt between fixed and floating rates using interest rate swap contracts (as per option 2 above). This is the flexibility offered under the NSW Treasury policies and referred to in the document cited by PIAC.

However, as outlined in the NSW DNSPs’ revised proposals, the transaction costs of doing so and the limited liquidity in the swaps market make this a tenuous option. As outlined in analysis prepared by UBS and submitted with the NSW DNSPs revised proposals, there is insufficient liquidity in interest rate swap markets to hedge the amount of debt that would need to be swapped to follow this approach. In addition, the counter-party risks that would need to be absorbed would be prohibitively high (effectively 2 swap contracts for each $1 of debt) and the pricing of the necessary swap contracts would not be efficient. The facility referred to by NSW Treasury, gives some ability to use swap contracts to convert issued debt between fixed and floating rate debt. However, to utilise the facility would still require the NSW DNSPs to engage in swap contracts on its debt through TCorp. As outlined in the NSW DNSPs’ revised proposals, this assumes there is liquidity in the market, but not an ability to restructure the actual maturity dates and underlying instruments already issued to raise debt finance.

Origin Energy have submitted that NSW DNSPs would not be prevented from recovering their efficient costs of debt because debt is issued through NSW TCorp and that in the past the “on-the-day” approach allowed businesses to recover their efficient costs of debt. As noted by Origin Energy, the NSW DNSPs are indeed legally subject to cover the difference between their stand-alone credit risk and the NSW Government’s credit risk. This means that the NSW DNSPs are legally bound to pay a Government Guarantee Fee (GGF) in addition to the cost of debt issued at the NSW Government’s AAA rating. However, the actual debt issuances that the NSW DNSPs are

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responsible for servicing have been issued on a staggered portfolio basis. That means that the actual base rate of interest and the GGF is charged on that basis.

Effectively, the NSW DNSPs are subject to a cost of debt equivalent to the stand-alone cost of debt for a privately owned BBB business that issued debt on a 10 year staggered portfolio basis. This is in fact the benchmark efficient approach that the AER has stated, and Origin Energy appears to agree, is the benchmark efficient approach. However, by the AER adopting a transition approach to their efficient Trailing Average approach they are setting the initial allowed cost of debt using rates from February to June 2014. This approach would not allow the NSW DNSPs to recover their efficiently incurred (and currently on-going) costs of debt finance.

Origin Energy also submitted that if a DNSP chose not to enter into risk mitigation measures that prevent it from achieving the benchmark (regulatory) return that was its own choice.  

As outlined in the NSW DNSPs revised proposal and advice from UBS investment bank, it simply would not have been possible for the NSW DNSPs to match the regulatory allowance under the previous on-the-day approach given the size of their debt portfolios. In fact an attempt to do so would have exposed the NSW DNSPs to even greater risk and cost than simply adopting the staggered portfolio approach.

Legal opinion on cost of equity
We have obtained a legal opinion from Herbert Smith Freehills on the appropriateness of the AER’s calculation of the ROE, which is provided as Attachment 5. As highlighted in the opinion, the AER’s specification of the cost of equity (ROE) in the draft decision results from the AER largely adopting its traditional approach to ROE and, in practical terms, disregarding other sources of evidence on the basis that those sources do not meet certain evidence and reliability thresholds and therefore do not compel a different conclusion. The AER does not apply those thresholds to its traditional approach.

In terms of the practical effect of its approach, the ROE calculated under the AER’s approach has declined in recent years and since the draft decision as a result of the impact of the reduction of the yield of Commonwealth Government Securities (CGS) when combined with a relatively inflexible market risk premium, now specified by the AER at 6.5%.

Last Friday, 6 March 2015 was the end of the AER’s specified averaging period for the calculation of the risk free rate for the ROE for the NSW DNSPs. That period saw the yield on CGS drop to a fresh historic low of approximately 2.5% as illustrated below:

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26 Origin, Submission to AER draft determination for NSW electricity distributors, 13 February 2015, pp. 17-18.
If the AER was to adopt the approach to calculating the ROE set out in the draft decisions, then the resulting cost of equity would be 7.11%.

By way of illustration, the yield on 10 year CGS, and thus the ROE calculated using the AER’s approach, has declined by approximately 175 basis points over the past 14 months. The yield on 10 year CGS was 4.31% on 19 December 2013 and is 2.56% measured over the averaging period. The ROE calculated using the AER’s approach has likewise declined by almost 100 basis points over the past four months alone. Thus the ROE calculated using the AER’s approach has declined from 8.10% in the draft decision to 7.11% now. There is no reason to think that the true ROE for the benchmark entity has declined by these amounts over these periods.

An approach that produces a reduction in ROE of 175 basis points in the last 14 months, or approximately 100 basis points in the last 4 months, is not a properly functioning approach.

If you would like to discuss this submission further please contact Mr Mike Martinson, Group Manager Regulation at Networks NSW on (02) 9249 3120 or via email at michael.martinson@endeavourenergy.com.au.

Yours sincerely

Vince Graham
Chief Executive Officer
Ausgrid, Endeavour Energy and Essential Energy

Attachments

Attachment 1 – Response to Ausgrid specific issues
Attachment 2 – SFG, The required return on equity for the benchmark efficient entity, 25 February 2015

Attachment 3 – NERA, Empirical Performance of Sharpe-Lintner and Black CAPMs, February 2015

Attachment 4 – SFG, Beta and the Black CAPM, February 2015

Attachment 5 – Legal opinion on return on equity