Mr John Bradley
Chief Executive Officer
Energy Networks Association
Level 1, 110 Giles Street
Kingston ACT 2604

2 October 2013

Dear John,

Responding to AER's criticism of PwC's report on the benchmark term of debt

Scope and background

The Energy Networks Association (ENA) has requested PricewaterhouseCoopers (PwC) to respond to the Australian Energy Regulator's (AER's) criticisms of PwC's report on the benchmark term of debt issued by a regulated energy business.[1]

In August 2013, the AER released its draft decision on its approach to determine the return that electricity and gas network businesses can earn on their investments, known as the draft rate of return guideline. In arriving at its approach the AER considered a wide range of views and evidence, and amongst them a paper PwC prepared for the ENA that found that a benchmark 10 year debt term continues to be consistent with the observed average terms of debt at issuance for comparable Australian, UK and US entities.

The AER argued that PwC's analysis on the benchmark debt term is unreliable due to issues with PwC's methodology. In particular, the AER's concerns were that:

- There are significant differences between the different data sources PwC relied on to substantiate its estimate for the Australian average debt term at issuance;
- PwC was inconsistent in how it reconciled Bloomberg and Loan Connector data with annual report data; and
- PwC did not explain how it reconciled Bloomberg and Loan Connector data with annual reports for corporate bonds when the balance was greater in annual reports than the Bloomberg and Loan Connector data bases.

The scope of our subsequent analysis is to address the three identified concerns, and provide further clarity on PwC's methodology. Each of the three issues are discussed in turn.

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[1] AER, *Better regulation, explanatory statement draft rate of return guideline*, August 2013, pp.106-107

There are significant differences between the different data sources PwC relied on to substantiate its estimate Australian average debt term at issuance

Differences between the reported debt amounts from the Bloomberg and Loan Connector data bases, compared with annual reports, were anticipated and was the reason why we cross-checked the information from these data bases with annual reports.

As we commented on in our report, we anticipated that the Bloomberg and Loan Connector databases may not provide an accurate account of the debt on issue for each of the five benchmark businesses at the relevant reporting date.[2] Our particular concerns were that the total amount of debt suggested by these databases may misstate the actual debt on issue because (i) the databases may not provide a comprehensive coverage of all debt facilities on issue (and so understate the total value of debt on issue), or (ii) that the values provided by these databases (which are for the total facilities for bank debt, or the bonds that were not expected to have expired as at the reporting date) may overstate the actual debt on issue, with the difference reflecting undrawn facilities (in the case of bank debt) or bonds that had been repurchased prior to maturity.

In view of these anticipated shortcomings, we took the values reported in annual reports as the definitive statement on the value of debt on issue by the businesses in question as at the relevant reporting date. Notwithstanding these anticipated shortcomings in the Bloomberg and Loan Connector databases, however, the estimation of the average term of debt at issuance requires information provided by these (or similar) databases. This is because annual reports typically do not provide a comprehensive break down of the original term of the debt on issue, and typically also do not provide a listing of the different debt securities on issue, whereas this information can be obtained the Bloomberg and Loan Connector databases.

Accordingly, our method involved using the Bloomberg and Loan Connector databases to extract the information that was necessary for the exercise that we performed, and to cross check this against the information reported in annual reports (and, where necessary, adjust the Bloomberg and Loan Connector information to be consistent with what was provided in annual reports). As annual reports do allow bank debt and corporate bond debt balances to be identified separately, we were able to address these shortcomings separately for bank debt and bonds. We observe that the need to draw upon multiple data sources to obtain a complete picture – while ensuring consistency in the use of that information – is inherent in any estimation exercise. We further observe that the AER has not provided any alternative suggestions as to how it considers the exercise could have been performed using publicly available information.

We also observed in our report that we did not consider the inconsistencies between the sources of information to be material or to materially affect the results in any event.

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[2] PwC, *Energy Networks Association: Benchmark term of debt assumptions,* June 2013, p.9

Table 1 represents a table from our report that showed the extent to which estimates or adjustments were necessary.

Table 1 - Australia: Total debt, by debt type, reported by Bloomberg and Loan Connector, and in annual reports (AUD million)

Company	Corporate bonds				Bank debt			
	Bloomberg and Loan Connector data	Annual report	Diff-erence	%	Bloomberg and Loan Connector data	Annual report	Diff-erence	%
APA Group	2,616	3,068	-452	-17%	2,375	1,124	1,252	53%
DUET	3,419	3,224	195	6%	3,848	1,976	1,872	49%
Envestra[3]	865	951	-86	-10%	325	297	28	9%
Spark Infrastructure	3,705	3,905	-200	-5%	710	795	-85	-12%
SP AusNet	3,529	3,401	128	4%	1,750	1,315	435	25%

Source: PwC, *Energy Networks Association: Benchmark term of debt assumptions,* June 2013

PwC was inconsistent in how it reconciled Bloomberg and Loan Connector data with annual report data

As noted above, where the total value of debt on issue that we derived using the Bloomberg and Loan Connector databases differed from what was reported in annual reports, we adjusted the information that was obtained from the Bloomberg and Loan Connector data bases. Moreover, the adjustment that we applied differed depending upon whether the information from the Bloomberg and Loan Connector databases understated the actual debt level, or whether this information overstated the actual debt level. It is this difference in method that the AER has labelled as a "lack of consistency".

However, the reason that we applied a different approach to adjusting Bloomberg and Loan Connector information depending upon whether these databases understated or overstated actual debt balances is because the underlying cause of the inconsistency in information is different.

- Where we found that the Bloomberg and Loan Connector databases suggested a lower level of debt on issue than was actually the case, then it means that the Bloomberg and Loan Connector databases did not provide a comprehensive coverage and omitted debt issues. In this case, we know the value of omitted debt, and the assumption that is needed to calculate the average term of debt (at issuance) for the entity is the term of that omitted debt. In this instance, we assumed that the term of the omitted debt was the same as the sample average (3 years for bank debt and 13.6 for corporate bonds).

[3] Note that this does not include Envestra's US private placement bonds because they are not publically traded and their details to a large extent is not publically available.

- In contrast, where we found that the Bloomberg and Loan Connector databases suggested a higher level of debt on issue than was actually the case, then it means that the Bloomberg and Loan Connector data bases most likely provided a comprehensive coverage of debt issues, but that some of the facilities were not fully drawn down in the case of bank debt, or that bonds had been repurchased early in the case of corporate bonds. In this case, we have complete information about the term of the debt, and the assumption that is required is the value of the separate bank debt facilities (or, more specifically, which of the facilities were not fully drawn down and by how much). In this case, we have simply assumed that each facility was draw down to the same extent (so that the undrawn or repurchased amounts were pro-rated across each facility, again performed separately for bank debt and bonds).[4]

In view of this, it is not clear to us what the AER means by "inconsistency" and what it would propose as an alternative method to achieve consistency. In particular, given that the variable that needed to be adjusted or assumed differed according to whether the Bloomberg and Loan Connector databases understated or overstated the debt on issue (i.e., assumption required about term vs. adjustment needed for value) it is not immediately apparent what consistency in this context means.

We further observe that the assumptions or adjustments that we made in lieu of the first case were not material in any event. The extent of the omitted debt is not significant, and therefore various assumptions on the term at issuance for the omitted debt do not cause a material impact on the outcome from our analysis. As discussed in our report, we found that from assuming various reasonable terms at issuance for bank debt (1 to 5 years), the weighted average term at issuance stays within a range of 10.21 and 10.22 years. We have now further extended our analysis by testing various reasonable terms at issuance for corporate bonds (5 to 10 years), and found that the weighted average term at issuance is between 9.89 and 10.08 years. Furthermore, we found that the weighted average term at issuance is 9.88 years if we assume both the omitted bank debt and corporate bond has a term at issuance of 1 and 5 years respectively. These results are shown in Table 2 below.

Table 2 – Impact of varying assumptions on omitted debt on the weighted average term at issuance (years)

	Omitted corporate bond term at issuance (years)			
Omitted bank debt term at issuance (years)	5.0	7.0	10.0	13.6
1.0	9.88	9.96	10.07	10.21
3.0	9.89	9.96	10.08	10.21
5.0	9.89	9.97	10.08	10.22

[4] Another plausible assumption for corporate bonds is that the bonds closest to maturity were re-purchased first. If we made this assumption, we found that the weighted average term at issuance remains at 10.2 years.

PwC did not explain how it reconciled Bloomberg and Loan Connector data with annual reports for corporate bonds when the balance was greater in annual reports than the Bloomberg and Loan Connector data bases

As explained above, where we found that the Bloomberg and Loan Connector databases suggested a lower level of debt on issue than was actually the case then it means that the Bloomberg and Loan Connector databases did not provide a comprehensive coverage and omitted debt issues. In this case, we know the value of omitted debt, and the assumption that is needed to calculate the average term of debt (at issuance) for the entity is the term of that omitted debt. In this instance, we assumed that the term of the omitted debt was the same as the sample average.

Further, and as discussed above, we have tested the materiality of the assumed term at issuance on the weighted average term at issuance. Table 2 demonstrates that assuming a term at issuance of between five to 10 years, the weighted average term at issuance varies only between 9.9 and 10.1 years.

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Yours sincerely,

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Appendix A – Terms of Reference

Background

The Australian Energy Regulator (AER) is developing *Rate of Return Guidelines* that will form the basis of the regulated rate of return applied in energy network decisions. The AER published an issues paper in late December 2012, a consultation paper in early May 2013 and the draft Guideline on 30 August 2013 under the recently revised National Electricity Rules (NER) and National Gas Rules (NGR).

As further detailed below, the Energy Network Association (ENA) would like to engage you to respond to the AER's criticisms of the data, methodology and conclusions presented in your report 'Benchmark term of debt assumption' that was commissioned by the ENA and submitted with its response to the AER's consultation paper mentioned above.

Scope of work

The ENA requests that you respond to the AER's criticisms of PwC's analysis on the benchmark debt term. The AER argued that PwC's analysis on the benchmark debt term to be unreliable on three grounds:

- There are significant differences between the different data sources PwC relied on to substantiate its estimate for the Australian average debt term at issuance;
- PwC was inconsistent in how it reconciled Bloomberg and Loan Connector data with annual report data; and
- PwC did not explain how it reconciled Bloomberg and Loan Connector data with annual reports for corporate bonds when the balance was greater in annual reports than the Bloomberg and Loan Connector data bases.

The ENA requests the consultant to provide a short letter which must:

- Attach these terms of reference;
- Attach the qualifications (in the form of a curriculum vitae) of the person(s) preparing the report;
- Identify any current or future potential conflicts;
- Comprehensively set out the bases for any conclusions made;
- Only rely on information or data that is fully referenced and could be made reasonably available to the AER or others;
- Document the methods, data, adjustments, equations, statistical package specifications/printouts and assumptions used in preparing your opinion5;

The ENA intends to submit the letter to the AER in response to the draft Guideline. Accordingly the report will become a public report.

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[5] Note: this requires you to reveal information that you might otherwise regard as proprietary or confidential and if this causes you commercial concern, please consult us on a legal framework which can be put in place to protect your proprietary material while enabling your work to be adequately transparent and replicable.

Contacts

Any questions regarding this terms of reference should be directed to:

Nick Taylor (Jones Day)

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Phone: 02 8272 0500

Appendix B – CVs

Craig Fenton (PwC)

Partner

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Craig is a Partner in the Economics & Policy group, within the firm's Consulting practice. His professional background includes nearly 20 years working in regulatory and economic advisory positions for both Commonwealth and State Government organisations, as well as in commercial consultancy.

Relevant experience

- Regulatory advisor on a range of infrastructure transactions, involving risk, cost and transaction value implications of potential or actual regulatory oversight of the relevant assets, including the likely regulatory acceptability of proposed rates of return.
- Expert economic advisor to a major international resources company in relation to a port pricing and access dispute, involving arbitrated recourse to regulatory cost-recovery principles.
- Advising ActewAGL, Seqwater and other regulated utilities on the interaction between regulator-determined discount rates and rates used for purposes such as impairment testing for financial reporting
- Advising Gold Coast Water on an appropriate discount rate/cost of capital to use for recurrent and infrastructure charges setting, project/investment analysis, and for estimating economic cost concepts such as long run marginal cost.
- Providing advice to a number of major industrial water users in central Queensland to assist in their water supply negotiations. Specific advisory topics included cost of capital targets, appropriate pricing structures, supply terms and conditions, and potential regulatory implications.
- Advising an overseas utility regulator on how to determine an optimal capital structure, and capital structure issues relevant to establishing a cost of capital for regulatory pricing purposes.
- Prepared for the Water Services Association of Australia (WSAA) – the peak body for the country's largest metropolitan water authorities – the Association's submission to the Productivity Commission inquiry into the urban water sector, and appeared at the Commission's public hearings on behalf of WSAA.
  www.pc.gov.au/__data/assets/pdf_file/0011/109892/subdr145.pdf
- For the Independent Pricing and Regulatory Tribunal of NSW (IPART),

Craig led a review of the NSW Office of Water's water planning and management costs, which assisted IPART in its determination of bulk water prices. Our report can be accessed at: www.ipart.nsw.gov.au/files/Final%20Consultant%20Report%20-%20PricewaterhouseCoopers%20-%20Review%20of%20NSW%20Office%20of%20Water%20water%20management%20expenditure%20-%2030%20June%202010%20-%20Website%20Document.PDF

- Co-led an Essential Services Commission (ESC) review of the efficiency of capital and operating expenditure of five regulated urban water authorities in Victoria.
- Lead regulatory advisor to AllconnexWater, the former distributor-retailer water business owned by Gold Coast, Logan and Redland Councils, in south east Queensland. Craig was responsible for leading a team of PwC consultants working closely with Allconnex staff to develop Allconnex's overall regulatory strategy, regulatory submissions, and pricing strategies.
- Lead regulatory advisor to the Queensland Bulk Water Supply Authority (Seqwater), the owner of the major surface water storage and associated water treatment assets in south east Queensland. For this role Craig led a team which developed a comprehensive financial planning model for Seqwater, which the business has used to inform its regulatory submissions, business planning and, most recently, negotiations for the merger with WaterSecure, the entity which formerly was responsible for major wastewater recycling/desalination in south east Queensland.
- For the Economic Regulation Authority of Western Australia (WA) Craig was lead partner on a similar review of the efficiency and effectiveness of water planning and management activities as undertaken by the Western Australian Department of Water.
- For the Essential Services Commission of Victoria, Craig directed a review of the demand forecasts provided by the three regulated water retailers in metropolitan Melbourne, as an input to the ESC's regulated prices determination.
- For a consortium of coal companies, Craig provided commercial and regulatory advice in relation to the Goonyella-Abbot Point Expansion (GAPE) project, which principally involves an extension of the existing rail infrastructure to link the Goonyella and Newlands rail systems, in central/north Queensland.

Qualifications and memberships

- Bachelor of Economics (University of Queensland)
- Affiliate, Institute of Chartered Accountants (Australia)
- Member, Australian Water Association

Jeff Balchin
(Incenta Economic Consulting)

Managing Director

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Jeff is an economist at Incenta Economic Consulting. Jeff has almost 20 years of experience in relation to economic regulation issues across the electricity, gas and airports sectors in Australia and New Zealand and experience in relation to water, post and telecommunications. He has advised governments, regulators and major corporations on issues including the development of regulatory frameworks, regulatory price reviews, licensing and franchise bidding and market design. Jeff has also undertaken a number of expert witness assignments. His particular specialities have been on the application of finance principles to economic regulation, the design of tariff structures, the design of incentive compatible regulation and the drafting and economic interpretation of regulatory instruments.

In addition, Jeff has led a number of analytical assignments for firms to understand the responsiveness of consumers to changes to prices or other factors (like promotional activities) and to use this information to inform pricing strategy.

Relevant experience:

- Strategic regulatory advisor – he has been a strategic adviser to regulators during a number of major price reviews, including the precedent setting early Victorian gas and electricity distribution price reviews (1998, 2001, 2003 and 2006). He has also been retained by regulated businesses to provide strategic advice during major regulatory reviews, including Australian electricity transmission businesses during several major reviews of their regulatory regime, for gas and electricity businesses during price reviews and for two major New Zealand firms (Powerco and Christchurch International Airports) during New Zealand regulatory reviews. Has also assisted a number of firms in relation to unregulated infrastructure, to justify their prices (providers) or to respond pricing proposals (customers) for infrastructure assets, including Dunedin Airport, Virgin Australia and SunWater.
- Review of regulatory regimes – has assisted major utilities during the review of regulatory regimes, including major assignments for the Australian electricity network businesses during the drafting and subsequent review of the regulatory regime for electricity networks.
- Regulatory finance issues – he has provided advice on a range of finance issues to regulators and regulate businesses, including major reviews of equity betas and deriving a benchmark cost of debt and complex valuation issues (including the proper specification of target revenue formulae). He has also provided extensive advice in relation to regulatory accounting

issues, including the treatment of related party arrangements, provisions and revaluation gains, and on methodologies for allocating costs between activities. Similarly, he has provided extensive advice in relation to deriving an allowance for taxation for regulatory purposes. He has also provided substantial advice in relation to regulatory asset valuation and depreciation issues.

- Cost benefit studies – he has advised in relation to methodological issues in quantifying the economic costs and benefits of electricity distribution and transmission investment, including specific advices on the treatment of green obligations and on the economic benefits of IT projects to make expanded use of advanced metering infrastructure.
- Incentive regimes – he has advised on the design of incentives for regulated businesses to minimise cost, undertake efficient service improvement and on the design of price controls (an objective of which is to create an incentive for firms to structure prices efficiently).
- Market structure – he was involved in the early debate around market structure in the Australian energy sector and assisted in the design of the ring fencing arrangements in place for the gas sector. More recently, he undertook a major review for the Victorian government on the need for continuing with special cross ownership rules for the energy sector.
- Analytical pricing activities – has undertaken assignments for a major Australian supermarket and department store to use analytical techniques to estimate the sensitivity of sales to prices and other factors (including promotional activities) from transactions data bases to assist in pricing strategy and to review the effect of pricing activities.

Qualifications and memberships

- Bachelor Economics (First Class Honours) University of Adelaide
- CEDA National Prize for Economic Development]

Steven Hong (PwC)

Manager

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Steven is a Manager in PricewaterhouseCoopers' Australian Economics practice with specific experience in regulatory economics and the application of economic and financial principles in regulation.

Prior to joining PricewaterhouseCoopers, Steven was a Senior Analyst at the Australian Competition Consumer Commission, where he was mainly responsible for providing financial and economic advice in regulatory projects.

Relevant experience

- **Regional development authority** – Steven is currently helping a development authority build an investment case for a piece of energy network infrastructure. Part of the project involves identifying the major drivers of investment and the exploring whether future developments in the drivers will support a case for a regulatory investment.
- **Energy Networks Association** – Steven is currently helping the Energy Networks Association (ENA) with a strategy for the future cost of equity. Recent changes to regulatory cost of capital determination procedures allowed the Australian Energy Regulator more freedom to determine the cost of equity. As a result, the ENA want to develop a strategy for future cost of equity proposals.
- **Queensland Competition Authority** – Steven is currently developing a first principles study into the cost of debt. The major issues behind this study is what yield should long-term debt be paying that is supported by financial and economic theory and empirical evidence.
- **Indonesian gas pipeline operator** – Steven helped prepare a submission on the likely return on equity expected by investors on an Indonesian gas pipeline in the past, considering issues such as how the capital asset pricing model would have been applied and whether international cost of equity values can be used as comparators.
- **Goulburn-Murray Water** – Steven helped Goulburn-Murray water develop its operating and capital expenditure forecasts for its third water plan It involved collaborating with the operating, finance and capital expenditure teams within Goulburn-Murray water so that information can be collated and structured to explain to a regulator the cost forecasts for operating and capital expenditure.
- **Electricity and gas utilities** – Development of a methodology to estimate a regulatory debt margin in light of the current uncertainty of a fair

value of long term bonds.

- **Energy Networks Association –** Assisted in producing a report that advised on the risks and implications of two possible incentive mechanisms for capex during the AEMC's review of transmission frameworks. The two incentive frameworks are ex-post capex reviews and an efficiency carryover mechanism.
- **Investment consortium –** Steven helped advise an investment consortium on a bid for a regulated asset. Steven's major roles were to: review and identify risks in the asset's the pricing structure, and review the regulatory model that were used to project the asset's revenue in the future
- **Airline –** Steven assisted an airline in providing financial modelling and regulatory advice to help them negotiate aeronautical charges. The issues covered range from depreciation, allowance for funds used during construction and analysis of pricing models
- **Resources Company –** Steven assisted a resources company in negotiating gas tariffs for a pipeline that is about to be constructed.
- **Resources Company –** Steven helped a resources company re-negotiate gas capacity tariffs by modelling the impact on gas tariffs if they were to be regulated.
- **Resources Company –** Steven assisted a resources company in a gas tariff appeal whereby he modelled the impact of varying degrees of cost allocation. The outcome of this work secured a significant cost decrease by way of lower gas tariffs.
- **Powerco New Zealand –** Steven has assisted Powerco in New Zealand in a number of regulatory engagements in relation to the New Zealand Commerce Commission's review of input methodologies
- **Dunedin International Airport Limited -** Steven has helped Dunedin airport in preparing their pricing proposal to key stakeholders. In this, Steven played a key role in creating a regulatory modelling as well as drafting of the pricing proposal, covering topics such as cost allocation, cost of capital and financial modelling.
- **Kimberly Clark Australia –** Steven was involved in assisting in providing advice as to how an initial regulatory asset base would be set for a gas pipeline if it is to be declared.
- **Powerlink Queensland** – Steven helped Powerlink estimate how much it would cost to raise debt and equity. Steven is also helping to propose a methodology to estimate a debt risk premium in a situation where there is a lack of reliable information.
- **Aurora Energy –** Steven assisted Aurora Energy by writing their debt risk premium submission to the Australian Energy Regulator
- **Independent Market Operator WA –** Steven assisted Western Australia's wholesale electricity market operator, the Independent Market operator, by advising on the methodology to be used to calculate to estimate Allowance For Funds Used During Construction, and the WACC to be

applied in the determination of the maximum reserve price for generation capacity.

- **Jemena Gas Networks -** Steven assessed the appropriate methodology to estimate the cost of debt in relation for gas transmission assets. This is part of the WACC proposal for a gas network revenue determination.
- **Assorted energy companies and regulators –** Steven has prepared advice on the appropriate method to estimate a benchmark cost of debt.
- **Christchurch International Airport Limited -** Steven is regularly engaged to provide advice to Christchurch International Airport Limited in relation to input methodologies as part of a regulatory review undertaken by the New Zealand Commerce Commission.
- **Air Services Australia -** Steven assisted the review of WACC parameters applicable for Air Services Australia
- **Snowy Hydro Limited -** Steven reviewed and updated the regulatory WACC parameters for Snowy Hydro Limited.
- **Queensland Competition Authority –** Steven was involved in assessing the financial model used to support a proposed infrastructure charges schedule
- **Queensland Competition Authority –** Steven has prepared advice on the appropriate method to estimate a benchmark cost of debt.
- **Airline -** Steven was involved in a high level review of the WACC assumptions and methodologies applied by three airports with respect to aeronautical pricing.
- **Essential Services Commission of South Australia -** Steven was involved in a review on the advantages and disadvantages of two methodologies to set an initial regulatory asset base.

Qualifications and memberships

- Bachelor of Commerce (Economics) with Honours, University of Melbourne
- Chartered Financial Analyst
- Institute of Public Administration, corporate member