United Energy 2014 Revised AMI Charges Application – Update following averaging period

22nd October 2013

United Energy 2014 Revised AMI Charges Application - Amended

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1. Introduction

On 30th August 2013, United Energy (UE) submitted an application to the Australian Energy Regulator (AER) for revisions to the charges that are levied by the business in relation to advanced metering infrastructure (AMI) services. The proposal for revised charges was made in accordance with the applicable governing instrument which is the AMI Cost Recovery Order in Council (CROIC)[1].

The Order-in-Council provides for the weighted average cost of capital (WACC) to be evaluated for the "subsequent AMI WACC period", being 1st January 2014 to 31st December 2015. The application that was lodged on 30th August 2013 was made in connection with a pricing period which commences on 1st January 2014 and extends through to 31st December 2014. Since the 2014 calendar year falls, self-evidently, within the subsequent AMI cost of capital interval (subsequent AMI WACC period), then the current charges application should take into account the calculation of the WACC. Clause 4.1 (j) sets forth the conventions for the measurement and determination of the input parameters that are used to compute the WACC. The clause stipulates that the input parameters must be calculated with:

i. Measurement of the market observables to occur in a period in 2013 proposed by the distributor and agreed by the Australian Energy Regulator, (with such an agreement not to be unreasonably withheld); and

ii. Market observables and non-market observables determined in accordance with the Statement of Regulatory Intent issued by the AER pursuant to clause 6.5.4 of the National Electricity Rules (NER) and as if clause 6.5.4(g) of the NER applied.

Clause 4.1(k) of the CROIC describes certain procedures that must be followed for the determination of actual or forecast revenues.

As was explained in the joint distributor submission on the rate of return[2], the CROIC does not express an intention to calculate the rate of return by reference to the approach that is generally adopted in the NER from time to time. Therefore, UE has construed clause 4.1(j) of the CROIC as being a reference to the specific approach of the WACC formula, and of the related input parameters, that is set out in the SORI[3] and in clause 6.5.4 of a particular edition of the NER. The applicable version of the NER is that which existed prior to the amendments to the cost of capital provisions which were completed in November 2012.

A similar issue of interpretation arises in respect of the definition of the WACC, with the CROIC referring to clause 6.5.2(b) of the NER as follows:

> "WACC" means benchmark weighted average cost of capital calculated in accordance with the formula set out in clause 6.5.2(b) of the National Electricity Rules.

UE has interpreted the mention, in the CROIC, of clause 6.5.2(b) of the NER, as being a reference to the particular form of clause 6.5.2(b) that was in operation prior to 29th November 2012. Hence, the mention

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[1] Cost Recovery Order in Council (CROIC) originally gazetted on 28 August 2007 and amended on 12 November 2007, 25 November 2008, 2 April 2009, 21 October 2010 and 22 December 2011.

[2] Submission on the rate of return to apply to the charges revision applications for Advanced Metering Infrastructure, prepared jointly by the Victorian Electricity Distribution Businesses, 30th August 2013; section 1.2, page 6.

[3] AER (2009), Electricity transmission and distribution network service providers, Statement of regulatory intent on the revised WACC parameters (distribution), May 2009.

of clause 6.5.2(b) hasn't been interpreted as being a reference to clauses 6.5.2(d) and (e) of the current version of the NER.

On 4th July 2013, UE proposed a suitable reference period which would be used for measurement of the market observables that comprise part of the WACC formula. UE nominated an averaging period, pursuant to clause 4.1(j) of the CROIC, and wrote to the AER, indicating that the period would encompass the 20 business day interval from 16th September 2013 to 11th October 2013, inclusive[4]. The AER accepted the proposed averaging period, as was explained in correspondence sent to UE on 22nd July 2013[5].

2. Indicative and final decision averaging periods

UE provided analysis of the rate of return in a submission to the AER which was lodged on 30th August 2013[6]. The date on which the submission was provided to the AER happened to precede, by several weeks, the actual averaging period which had been chosen by the business. A requirement arose to choose an indicative averaging period so as to facilitate the analysis of a number of cost of capital components. Hence, a placeholder averaging period was selected, and was designated to be the 20 business day interval from 24th June 2013 to 19th July 2013. Provisional values of the market observables, and of certain non-market observables, could then be ascertained for the indicative averaging period.

The key market observables, the nominal risk-free rate and the debt risk premium, were evaluated over the indicative averaging period[7]. The market risk premium, a non-market observable, was also calculated for the placeholder averaging period, drawing upon a forward-looking value for the expected return on the market. The Victorian electricity distribution businesses argued that there was persuasive evidence to depart from the MRP value that had been set in the SORI. The forecast inflation rate made use of recent projections from the Reserve Bank of Australia.

The level of another non-market observable, gamma, being the value that is ascribed to imputation credits, was set at a value which was consistent with a decision of the Australian Competition Tribunal (ACT), as handed down in May 2011[8].

The levels of the remaining non-market observables, gearing and the equity beta, were set at the values which were written down in the SORI[9].

The rate of return submission that was delivered to the AER in August 2013 was supported by a large number of annexure documents, comprised of consultancy reports, academic articles, AER decisions,

[4] Letter to the AER, PROPOSED AVERAGING PERIOD FOR ADVANCED METERING INFRASTRUCTURE (AMI) WACC FOR 2014 AND 2015, 4th July 2013.

[5] Letter to United Energy from Mr Chris Pattas, Accepted averaging period for 2014-15 AMI WACC – United Energy, 22nd July 2013.

[6] Submission on the rate of return to apply to the charges revision applications for Advanced Metering Infrastructure, prepared jointly by the Victorian Electricity Distribution Businesses, 30th August 2013. See Appendix C of United Energy 2014 Revised AMI Charges Application.

[7] Ibid, Summary, pages 1 to 2.

[8] Australian Competition Tribunal, Application by Energex Limited (Gamma), (No 5) [2011], ACompT9.

[9] Submission on the rate of return to apply to the charges revision applications for Advanced Metering Infrastructure, prepared jointly by the Victorian Electricity Distribution Businesses, 30th August 2013; pages 1 to 2. See Appendix C of United Energy 2014 Revised AMI Charges Application.

and other relevant material. The main submission report foreshadowed the later provision of a supplementary submission, which would address matters pertaining to the actual averaging period, 16th September 2013 to 11th October 2013[10].

The averaging period applicable to the final decision has now elapsed, and so the current charges application document should be read in conjunction with a supplementary submission on the rate of return which has been prepared by UE in conjunction with the other Victorian electricity distribution businesses[11].

Although UE endorses the supplementary submission which has been lodged by the five Victorian electricity distributors, UE would like to propose a departure from that submission in relation to the overall cost of debt, and, specifically, the debt risk premium component of the cost of debt. Further details about the cost of debt are provided in section 3 below.

The supplementary submission notes that the values of a number of WACC parameters have changed since 30th August 2013. In particular, the risk-free rate and the debt risk premium have been amended so that the values now presented to the AER are those determined over the actual averaging period. CEG has prepared an updated report, which explains the results from the application of methods to evaluate the DRP[12]. The expected return on the market, which has been derived using the dividend discount model (DDM) of SFG, has also been subject to revision, with the result that the best estimate of the market risk premium (MRP) has changed[13]. The amended values of the WACC parameters are shown below in the final column of Table 3.1.

3. Subsequent AMI WACC

In accordance with clause 4.1(j), UE is required to calculate a subsequent AMI WACC to apply for the period 1 January 2014 to 31 December 2015.

The input parameters and subsequent AMI WACC are described in a document which has been appended to this report: *Supplementary Submission on the rate of return to apply to the charges revision applications for Advanced Metering Infrastructure: Updated for the actual averaging period*. The supplementary submission at Appendix A provides a summary of WACC parameters, a number of which are shown in column five of Table 3.1 below.

The values in column four of Table 3.1 were derived in relation to the indicative averaging period, comprised of the 20 business days from 24th June to 19th July 2013, inclusive. The parameter values in column five were assessed over the averaging period for the final decision, 16th September to 11th October 2013, inclusive. The values of the cost of capital parameters shown in Table 3.1 are consistent with those reported in Table 1 of the supplementary submission on the rate of return, although there are differences in terms of the debt risk premium and the cost of debt. As a result of those

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[10] See, for instance, the description of a placeholder WACC value on page 1 of the submission on the rate of return. There is also a description of placeholder market observables in section 2.

[11] Supplementary Submission on the rate of return to apply to the charges revision applications for Advanced Metering Infrastructure: Updated for the actual averaging period, prepared jointly by the Victorian Electricity Distribution Businesses, 21st October 2013; pages 1 to 2. See Appendix A of this document.

[12] CEG (2013d), Estimating the debt risk premium: Update report, prepared for the Victorian electricity distributors by the Competition Economists Group, October 2013.

[13] SFG (2013), Cost of equity estimates implied by analyst forecasts and the dividend discount model, prepared for the Victorian electricity distributors by SFG Consulting, 18th October 2013.

differences, the nominal WACC shown in Table 3.1 is not the same as the nominal vanilla WACC reported in Table 1 of the supplementary submission. Table 3.1 presents a nominal WACC of 8.17%, whereas Table 1 in the supplementary submission records a nominal WACC of 7.92%[14].

The five Victorian electricity distributors have drawn upon the expert report from CEG to sustain their proposed value of the debt risk premium of 2.62%[15]. However, UE notes that the same report from CEG also discusses the results from a separate, meritorious method of estimating the DRP which is empirically well founded. The application of this alternative method gave a DRP of 3.04% which is reported in Table 3.1 below. A further discussion of the cost of debt is provided in section 3.1 of this application for revised charges.

Table 3.1: AMI WACC parameters 2014-2015

WACC parameter	Units	AER FD 2009-2013	AER Placeholder 2014-2015	Proposed on 31st August 2013, 2014 to 2015	Revised proposal, 22nd October 2013, 2014 to 2015
Nominal risk free rate	Per cent	4.63%	5.56%	3.85%	4.02%
Inflation	Per cent	2.56%	2.55%	2.47%	2.47%
DRP	Per cent	4.00%	3.81%	2.95%	3.04%
Debt-raising costs	Basis points per annum (bppa)	0.125	0.108	0.23	0.23
Equity beta	Fraction	1.0	0.8	0.8	0.8
MRP	Per cent	6.0%	6.0%	8.15%	7.28%
Gearing (D/V)	Per cent	60%	60%	60%	60%
Gamma	Number	0.65	0.25	0.25	0.25
Credit rating	Rank	BBB+	BBB+	BBB+	BBB+
Nominal COE	Per cent	**10.63%**	**10.36%**	**10.37%**	**9.84%**
Nominal COD	Per cent	**8.76%**	**9.37%**	**6.80%**[16]	**7.06%**

[14] Supplementary Submission on the rate of return to apply to the charges revision applications for Advanced Metering Infrastructure: Updated for the actual averaging period, prepared jointly by the Victorian Electricity Distribution Businesses, 21st October 2013; Table 1, page 1. See Appendix A of this document.

[15] CEG (2013d), Estimating the debt risk premium: Update report, prepared for the Victorian electricity distributors by the Competition Economists Group, October 2013.

[16] Debt raising costs have previously been incorporated as a margin in the WACC in 2012 and 2013. Debt raising costs now form part of the 2014 and 2015 operating expenditure and have not been forecast at this point in the 14/15 forecasts provided in this submission.

WACC parameter	Units	AER FD 2009-2013	AER Placeholder 2014-2015	Proposed on 31st August 2013, 2014 to 2015	Revised proposal, 22nd October 2013, 2014 to 2015
Nominal WACC	Per cent	**9.51%**	**9.77%**	**8.23%**	**8.17%**

Sources: (1) AER (2009), Final determination, Victorian advanced metering infrastructure review, 2009-11 AMI budget and charges applications, Australian Energy Regulator, October 2009; Table 4.6, AER final determination on WACC parameters for AMI period 1st January 2009 to 31st December 2013, page 61. (2) AER (2011), Final determination, Victorian Advanced Metering Infrastructure Review, 2012-15 budget and charges applications, Confidential Version, October 2011, Table 1.2, AER placeholder WACC for 2014-15, page 30; Table 2.25, page 122; page 125. (3) Submission on the rate of return to apply to the charges revision applications for Advanced Metering Infrastructure, prepared jointly by the Victorian Electricity Distribution Businesses, 30th August 2013; Table 1, page 1. (4) Supplementary submission on the rate of return to apply to the charges revision applications for Advanced Metering Infrastructure: Updated for the actual averaging period, prepared jointly by the Victorian Electricity Distribution Businesses, 21st October 2013; Table 1, page 1.

Note: (1) The debt risk premium in the final column of the table, the revised proposal for 2014 and 2015, is derived from the CEG report: *Estimating the debt risk premium: update report*, prepared for the Victorian electricity distribution businesses, October 2013. (2) Gamma is included for completeness but has no impact on the revenue requirements because the value of tax losses is sufficient for the tax liabilities to be zero for the purposes of the Order in Council.

3.1. Cost of debt

An important feature of this amended charges application is that UE is proposing a debt risk premium of 3.04% to apply to the 2014 and 2015 periods. This estimate of the DRP is underpinned by the econometric estimation of Nelson-Siegel yield curves, as applied to the broadest sample of bonds considered by CEG[17]. The application of a yield curve methodology offers a number of advantages. Firstly, the approach is capable of harnessing a broad array of information that is available through the observed yields on a sample of bonds. Secondly, the methods of econometric estimation are replicable and transparent. Thirdly, term structure models are theoretically well specified, which means that the pre-conditions for capturing the relationship between term to maturity and yield are in place. The Nelson-Siegel model is parsimonious in parameters, but has the ability to generate the shapes typically associated with yield curves.

The analysis by CEG made use of a large and diverse sample of bonds, and produced results which are demonstrably robust. An examination of Table 2 in the CEG update report reveals that when broader sub-samples of bonds were employed in the analysis, the empirical estimates of the DRP were clustered in a range between 3.02% and 3.12%[18].

CEG undertook its analysis by making use of data from the final decision averaging period, 16th September to 11th October 2013. An earlier empirical investigation by CEG relied upon data from a

[17] CEG (2013d), Estimating the debt risk premium: Update report, prepared for the Victorian electricity distributors by the Competition Economists Group, October 2013; paragraph 6, page 5.

[18] Ibid; Table 2, page 23. See the results presented at the bottom of the table.

February 2013 reference period[19]. The empirical work performed by CEG was subjected to a detailed review by Diamond, Brooks and Young, and Diamond et al found that they were able to replicate the main results, based on the broadest bond samples[20]. Subsequent to the review, CEG implemented improvements to its own application of Nelson-Siegel curve-fitting methods, and then documented the refinements in the update report of October 2013[21].

Note that on 30th August 2013, United Energy submitted a report by Diamond et al into the AMI cost of capital review. The report emphasised the merits of yield curve methods[22].

3.2. Market risk premium

Another salient feature of Table 3.1 is that the market risk premium is shown to have fallen as between the initial version of the charges application filed by UE in August 2013, and the current version. As has been mentioned in section 2, the MRP figures were derived using estimates of the expected return to the market which were produced by SFG using a dividend discount model, (DDM).

Although SFG has recorded the results from an application of the DDM over an extended time period, encompassing an interval from the last six months of 2002 to the first six months of 2013, UE has chosen to concentrate on the model results for the first half of 2013 only. The DDM is a forecasting model, and the estimates from the most recent six month period are the most pertinent, from a forward-looking perspective[23], or if the intention is to consider the prevailing cost of funds.

For its report of October 2013, SFG was able to draw upon analysts' projections of dividends and earnings which were measured over the near half-yearly time period from 1st January 2013 to 13th June 2013[24]. After applying an adjustment for the market valuation of imputation credits (with gamma equal to 0.25), SFG obtained an estimate of the market cost of equity under regulation, equal to 11.3%. SFG also reported an average value of the yields on 10-year Commonwealth Government Securities (CGS), thereby providing an estimate, (3.4%), of the risk-free rate for the first half of 2013.

As is shown in Table 3.1, the nominal risk-free rate over the final averaging period was worked out to be 4.02%. Hence, subtracting this figure from the expected return on the market (11.3%) gives a market risk premium of approximately 7.28%. The latter figure has been reported in column five of Table 3.1.

In its earlier report (30th August 2013), SFG obtained a market cost of equity of 12.0% for the most recent six-monthly period. In mid-August, the SFG dividend discount model was using data from equity

[19] CEG (2013c), Estimating the debt risk premium (Incorporating CEG notice of errata data 22 August 2013), prepared for the Energy Networks Association by the Competition Economists' Group, August 2013.

[20] Diamond, N., R. Brooks, and D. Young (2013b), The development of yield curves, zero coupon yields, and par value yields for corporate bonds, a report prepared for United Energy and Multinet Gas in response to the AER's draft rate of return guideline, ESQUANT Statistical Consulting, 17th October 2013.

[21] CEG (2013d), Estimating the debt risk premium: Update report, prepared for the Victorian electricity distributors by the Competition Economists Group, October 2013; section 2.2.2, page 12.

[22] Diamond, N., R. Brooks, and D. Young (2013a), Review of CEG report: *Estimating the debt risk premium*, a report for United Energy prepared by ESQUANT Statistical Consulting, 30th August 2013.

[23] SFG (2013), Cost of equity estimates implied by analyst forecasts and the dividend discount model, prepared for the Victorian electricity distributors by SFG Consulting, 18th October 2013; section 2.6.4, page 11.

[24] Ibid; footnote 16, page 11.

analysts up until 18th April[25]. The result of 12.0% took into account the effect of the grossing up of returns to allow for the impact of imputation credits. The risk-free rate was reported to be 3.4%, over the six-month timespan.

For the placeholder averaging period, the nominal risk-free rate was calculated to be 3.85%, and hence the use of this value, in conjunction with an expected return to the market portfolio of 12.0%, yielded a market risk premium of 8.15%. This MRP estimate is reported in column four of Table 3.1.

4. Charges for Regulated Services

This section sets out UE's proposed charges for 2014 and describes how those charges comply with the AER's pricing principles.

4.1. Proposed charges

The figures in Table 4.1 point to the similarity between the charges that were approved by the AER for 2014, and the charges that UE expects to levy for the 2014 calendar year. In addition, there is no difference between the charges that UE is proposing to implement in the context of the current application (October 2014), and the charges that UE put forward in its earlier submission (August 2014) on the revised charges application[26].

Table 4.1: Proposed 2014 Charges

Nominal $/Meter	2014 approved charges[27]	Proposed 2014 charges
Single phase single element meter	$142.64	$142.64
Single phase single element meter with a contactor [28]	$145.58	$142.64
Three phase direct connected meter	$160.87	$160.87
Three phase current transformer connected meter	$171.60	$171.60

Note: UE has proposed to harmonise the charges for single phase, single element meters and single phase, single elements meters with a contactor.

4.2. Approach to setting charges

[25] SFG (2013), Cost of equity estimates implied by analyst forecasts and the dividend discount model, prepared for the Victorian electricity distributors by SFG Consulting, 28th August 2013.

[26] United Energy 2014 Revised AMI Charges Application, 30th August 2013.

[27] AER, United Energy – AMI 2012-15 Charges Model, Final Determination, 31 October 2011.

[28] This charge is applicable for single phase, single element meters with a contactor and for two element meters with a contactor. The two element metering configuration is not currently available.

In determining the charges, UE has taken the building block revenue requirements over the initial and subsequent AMI budget period. UE has:

- Allocated costs to service category (for instance by meter type);
- Adjusted the WACC in the subsequent AMI WACC period; and
- Divided the allocated costs by service category by forecast customer numbers in each service category.

Consistent with the CROIC clause 4.1(p), UE has opted to set its charges based on its revenue requirement over the initial and subsequent AMI budget periods. UE has previously noted[29] that this approach has resulted in an under-recovery of annual revenue requirements over the initial AMI budget period (from 1st January 2009 through to 31st December 2011), and in 2012. However, UE anticipates that it will recoup the revenue shortfalls in the latter years of the subsequent AMI budget period, from 2013 onwards. UE would nonetheless like to achieve a gradual price path over all three years of the subsequent AMI budget period (from 2012 to 2015).

UE believes that the proposed price path for its AMI charges will deliver an outcome that balances the interests of customers, in terms of the minimisation of price volatility, with the commercial imperatives of the business, in terms of revenue generation. The projected stream of cash flows should be commensurate with the significant outlays of investment that will be needed to meet the obligations on the provision of a regulated service.

The current configuration of prices and the forecast of levels of prices are essentially the same as those set out by the AER in its final determination on UE charges which was handed down in October 2011[30]. UE considers that the structure of prices also conforms to the regulatory principles that are set out in section 4 of the CROIC[31].

In the revised budget which was approved for UE by the AER in October 2011, the AER incorporated a provision for the supply, by UE, of two element interval meters, in circumstances in which dedicated load circuits were active and were being separately metered. UE has previously imposed a charge for single phase, single element with contactor metering. UE proposes to levy the same charge for customer installations with a two element meter plus contactor. The aforementioned approach will ensure that the interests of customers are well-served.

5. Information upon which reliance has been placed

Clause 5.3 of the CROIC requires UE to identify the documents upon which the company has relied in the course of preparing the amended, revised charges application. The documents include the following:

- The current, amended, revised charges application for 2014.
- Appendix A of the current report, the *Supplementary Submission on the rate of return to apply to the charges revision applications for Advanced Metering Infrastructure: Updated for the actual*

[29] See, for instance, United Energy 2013 Revised AMI Charges Application, 31st August 2012.

[30] AER (2011), Victorian Advanced Metering Infrastructure Review, 2012-15 budget and charges applications, Confidential Version, October 2011; separate, confidential chapter for Jemena Electricity Networks and United Energy.

[31] Cost Recovery Order in Council (CROIC) originally gazetted on 28 August 2007 and amended on 12 November 2007, 25 November 2008, 2 April 2009, 21 October 2010 and 22 December 2011.

averaging period. Note that UE does not rely fully on the supplementary submission to the extent that the latter proposes a debt risk premium value of 2.62 per cent.

- Supporting materials for the aforementioned *Supplementary Submission*.
- The earlier, revised charges application for 2014 which was submitted on 30th August 2013. Part of the content of the earlier application has not been repeated in the current application.
- Appendix C to the revised charges application for 2014 (as at 30th August 2013): *Submission on the rate of return to apply to the charges revision applications for Advanced Metering Infrastructure*. The report was prepared jointly by the Victorian electricity distribution businesses. All of the documents that have been itemised as Appendix C to that submission should be regarded as having been incorporated into an overall list for lodgement with the AER. A number of the documents were provided to the AER as part of UE's charges revision application for 2014; and
- Supporting materials for the *Submission on the rate of return*, to the extent that these have not been mentioned elsewhere.
- The reports that have been mentioned in footnotes to the current, amended, revised charges application for 2014.
- All other information provided to the AER by UE with its previous budget and charges applications.

6. Contact details

If you have any queries please contact:

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Appendix A – Supplementary Submission on the rate of return to apply to the charges revision applications for Advanced Metering Infrastructure: Updated for the actual averaging period. A report prepared jointly by the Victorian electricity distribution businesses, 21st October 2013.

Supplementary Submission on the rate of return to apply to the charges revision applications for Advanced Metering Infrastructure: Updated for the actual averaging period

Prepared jointly by the
Victorian Electricity Distribution Businesses

21 October 2013

1 Summary

This supplementary submission is made on behalf of Jemena Electricity Networks (Vic) Ltd (**JEN**), CitiPower Pty (**CitiPower**), Powercor Australia Limited (**Powercor**), SPI Electricity Pty Ltd (**SPAusnet**), and United Energy Distribution Pty Ltd (**UED**) (collectively **the Businesses**).

On 30 August 2013 each of the Businesses submitted a charges revision application for Advanced Metering Infrastructure (**AMI**) under the Advanced Metering Infrastructure Cost Recovery Order in Council (**CROIC**) in order to set charges for "Regulated Services" (as defined in the CROIC) for year commencing 1 January 2014.

1.1 Purpose of this submission

The purpose of this supplementary submission is to update—for the actual averaging period (16 September to 11 October 2013)—relevant supporting materials for the rate of return proposed by each of the Businesses as part of their charges revision applications.

The Businesses indicated in their joint submission on the rate of return that they would update relevant materials provided to the Australian Energy Regulator (**AER**) for the actual averaging period once that period had passed.

1.2 Rate of return guideline consultation

The AER informed the Businesses via email on 17 October 2013 that it will not be relying on any of the new evidence or analysis published, or yet to be published, as part of the draft rate of return guideline when making its decision on the AMI cost of capital for the subsequent AMI WACC period. Because the Businesses were unsure of the AER's position prior to receipt of the AER email, the Businesses provided some materials to the AER on 16 October 2013 that formed part of the Energy Networks Association's (**ENA**'s) response to the AER's draft rate of return guideline.

In light of the AER's email, the Businesses have not sought to otherwise respond to the draft rate of return guideline materials in this charges revision application process.

1.3 Proposed AMI WACC

Based on the actual averaging period, and analysis undertaken by the Businesses' independent experts (SFG and CEG) for this period, the Businesses propose a nominal WACC of 7.92 per cent. This WACC is calculated using parameters set out in Table 1.

Table 1: Businesses' position on proposed AMI WACC

Parameter	Value
Market observables	
Nominal risk-free rate (R_f)	4.02%
Debt risk premium (DRP)	2.62%
Non-market observables	
Equity beta ($ß_e$)	0.8

Parameter	Value
Expected return on the market (R_m)	11.30%
Market risk premium (MRP = $R_m - R_f$)	7.28%
Value of debt as a proportion of the value of equity and debt (D/V)	0.60
Value of imputation credits (gamma)	0.25
Forecast inflation	2.47%
Nominal vanilla WACC	**7.92%**

1.4 Summary of positions

The position of the Businesses on each of the relevant parameters is set out in summary below:

- **Nominal risk-free rate.** In accordance with the AER's Statement of Regulatory Intent (**SoRI**), the nominal risk-free rate is to be calculated on a moving average basis from the annualised yield on Commonwealth Government Securities (**CGS**) with a maturity of 10 years. Table 1 sets out the updated value for the risk-free rate for the actual averaging period.

- **Equity beta.** The equity beta is 0.8, as set out in the SoRI. The Businesses maintain their position that there is no persuasive evidence to depart from the SoRI in respect of the equity beta at this time.

- **Market risk premium (MRP).** The MRP is 7.28 per cent. The Businesses consider that there is persuasive evidence to depart from the MRP value set out in the SoRI. The most recent evidence indicates that the current MRP is well above 6.5 per cent.

- **Debt risk premium (DRP).** In accordance with the SoRI, the DRP is calculated as the margin between the annualised nominal risk-free rate and the observed annualised Australian 10-year BBB+ corporate bond rate. Table 1 sets out the value for the DRP for the actual averaging period calculated by extrapolating the Bloomberg BBB fair value curve from seven to 10 years. The Businesses rely on this extrapolated Bloomberg fair value curve for estimating 10-year BBB+ corporate bond yields.

- **Leverage.** The value of debt as a proportion of the value of equity and debt is 0.6. The Businesses maintain their position that there is no persuasive evidence to depart from the SoRI in respect of the debt value proportion at this time.

- **Forecast inflation.** The Businesses continue to propose an inflation rate of 2.47 per cent, based on the most recent annual forecast of inflation by the Reserve Bank of Australia (**RBA**).

- **Gamma.** The Businesses continue to propose a value for gamma (the value of imputation credits) of 0.25.

- The Businesses continue to propose a debt raising costs allowance of 23 basis points per annum, based on recent expert analysis.

The following sections of this supplementary submission provide a short summary of the materials that the Businesses have updated following the conclusion of the actual averaging period.

2 Businesses' position on market observables

Each Business nominated an averaging period of 16 September to 11 October 2013 (inclusive) and the AER agreed to this measurement period for each. The Businesses propose to calculate the market observables using data observed over this period.

2.1 Nominal risk-free rate

The proposed nominal risk-free rate is calculated from the annualised yield on CGS with a maturity of ten years using the indicative mid rates published by the RBA for the placeholder measurement period. The ten-year rate has been calculated by interpolating on a straight line basis between the relevant CGS yields.

The nominal risk-free rate of 4.02 per cent is calculated by applying the above method over the actual averaging period.

2.2 Debt risk premium

The Businesses continue to propose that the DRP be calculated over the actual averaging period by taking the arithmetic average of the daily longest-dated Bloomberg BBB fair value yields over the measurement period and extrapolating that to a ten-year yield using a paired bond analysis.

2.2.1 CEG report (attachment 1)

The Businesses commissioned CEG to analyse the Bloomberg BBB fair value curve during the actual averaging period. CEG concluded that based on its analysis the extrapolated Bloomberg BBB fair value curve is a reasonable, albeit conservative, basis upon which to estimate a 10 year cost of debt for BBB+ rated bond during the actual averaging period.

CEG found that the Bloomberg BBB fair value curve provides a reasonable fit to the data up to a maturity of seven years—this being the period for which Bloomberg currently publishes the curve. Going beyond seven years it is necessary to extrapolate the curve from seven to 10 years maturity. In its report, CEG finds that there is sufficient market data available to reasonably extrapolate from seven to 10 years. Based on a bond pairing analysis, CEG calculates that the extrapolated 10 year Bloomberg BBB fair value DRP is 2.62 per cent.

CEG also implements Nelson-Siegel curve-fitting techniques to estimate a benchmark DRP for BBB+ rated bonds at 10 years maturity. CEG finds that the application of these techniques generates 10 year BBB+ yield estimates that are consistent with, or higher than, the extrapolated Bloomberg BBB fair value curve. CEG finds that the BBB+ curve generated by the curve fitting approach has a similar shape to the Bloomberg BBB fair value curve, although the level of the BBB+ curve is 40 basis points above the Bloomberg BBB fair value yield at seven years. Nelson-Siegel curve-fitting uses a term structure model to capture the relationship between yield and term to maturity by finding the best fit to a given sample of bonds.

CEG's report supports the use of the Bloomberg BBB fair value curve to measure the DRP during the actual averaging period.

2.2.2 Paired bond analysis

As noted above, CEG uses paired bond analysis to extrapolate the Bloomberg fair value curve from seven to 10 years. To do this, CEG identifies bond pairs (from the total bond population) with the following characteristics:

- are between five and 12 years from maturity;
- were issued by the same issuer;
- have the same credit rating;
- were issued in Australian dollars;
- do not have any optionality features, other than make whole callable bonds;
- are either both fixed bonds or both floating rate notes; and
- have yields from the same source (that is, yields from the same Bloomberg price source or from UBS).

CEG identified five bond pairs with these characteristics that could be used for extrapolation of the Bloomberg fair value curve.

The CEG report also recognises an alternative approach to using bond pair analysis is to extrapolate the Bloomberg BBB fair value curve to 10 years using curve fitting. This can be done by either:

- superimposing the shape of the Nelson-Siegel curve between seven and 10 years on the Bloomberg BBB fair value curve; or
- extrapolating the Bloomberg BBB fair value curve so that it transitioned to the Nelson-Siegel curve over a certain period.

The CEG report provides results from applying the first of these curve fitting approaches and summarises the outcomes of its extrapolation methods as set out in Table 2.

Table 2: Summary of different extrapolation methods [Table 6 of CEG report]

Extrapolation methodology	Average increase in DRP (bppa)	Implied 10 year DRP
Bond pair analysis		
Citigroup	19.5	2.90%
Commonwealth	5.3	2.48%
Stockland	0.0	2.32%
Sydney Airport	13.2	2.71%
Wesfarmers	13.0	2.71%
CEG curve fitting analysis		
BBB to A- bonds issued in AUD by any issuer and bonds in any currency by Australian issuers including UBS data and bonds with options (1)	10.8	2.64%
(1) excluding foreign bonds issued in AUD (2)	10.2	2.62%
(1) excluding all foreign currency bonds (3)	14.4	2.75%

Note: "average" refers to a simple arithmetic average of values.
Source: Bloomberg, UBS, RBA, CEG analysis.

2.2.3 Proposed DRP

For the purposes of this charges revision application, the Businesses propose a DRP of 2.62 per cent, calculated by extrapolating the Bloomberg BBB fair value curve to 10 years using the averaging bond pair estimate of 10.2 bppa.

3 Businesses' position on non-market observables

3.1 Value of debt as a proportion of the value of equity and debt

In accordance with the SoRI, the Businesses continue to propose to adopt a 0.6 value of debt as a proportion of the value of equity and debt.

3.2 Equity beta

The Businesses do not propose to depart from an equity beta value of 0.8.

3.3 Market risk premium

As set out in their joint submission, the Businesses consider that there is persuasive evidence that demonstrates that a value of 6.5 per cent for the MRP is no longer appropriate and that in the current circumstances, a departure from the 6.5 per cent MRP value specified in the SoRI is justified.

One of the key pieces of evidence relied upon by the Businesses to show why a departure from the SoRI in respect of the MRP is warranted in the current circumstances included evidence based on updated and refined dividend discount model (**DDM**) analysis.

3.3.1 SFG report (attachment 2)

In support of the joint submission the Businesses provided two reports by SFG which indicated:

- an MRP of over eight per cent for the 12-month period ending June 2013 (once dividend imputation is factored in);
- a market return of 12 per cent over the first six months of 2013, which implied an MRP of 8.6 per cent.

The Businesses commissioned SFG to provide estimates of the expected return on the market and market risk premium over the following two time periods:

- 1 January 2013 to 30 June 2013; and
- 1 July 2002 to 30 June 2013.

SFG's estimates are formed from a sample of 4,835 observations over the 11 year period from 1 July 2002 to 30 June 2013, from 42,366 analyst inputs. SFG averaged all cost of equity estimates for each firm in each six month period, resulting in 4,835 average cost of equity estimates. This represents the entire time period for which data was available. For each Australian-listed firm, SFG compiled dividend forecasts, using earnings forecasts and price targets for all analysts covering that firm, every six months, and used all firms for which data was available.

SFG found that the average market cost of equity excluding imputation benefits over the 22-half year periods from 1 July 2002 to 30 June 2013 is 10.6 per cent. The average yield on 10 year government bonds was 5.2 per cent over the same period; therefore the estimated MRP excluding imputation benefits is 5.4 per cent. Incorporating the benefits of imputation, as implemented by the AER, implied an average cost of equity for regulation over the period of 11.7 per cent (assuming gamma equal to 0.25). This implies an MRP including imputation benefits of 6.5 per cent.

In respect of the period from 1 January 2013 to 30 June 2013, SFG found that the market cost of equity excluding imputation benefits was 10.2 per cent, which is a premium of 6.8 per cent over average government bond yields of 3.4 per cent. Incorporating the benefits of imputation, SFG concludes that the implied cost of equity under regulation is 11.3 per cent (again assuming gamma equal to 0.25). This is an MRP of 7.9 per cent.

3.3.2 Proposed MRP

The Businesses propose a value of 7.28 per cent for the MRP for the actual averaging period, based on the difference between SFG's estimate of the market return for the first half of 2013 (11.3 per cent) and the risk-free rate prevailing over the actual averaging period (4.02 per cent).

The Businesses consider that the most persuasive evidence of the current MRP is provided by SFG's recent DDM analysis. This analysis supports a current MRP value of 7.28 per cent for the averaging period. This is further supported by market evidence from independent expert reports.

4 Businesses' position on proposed AMI WACC

Based on the actual averaging period, and analysis undertaken by the Businesses' independent experts (SFG and CEG) for this period, the Businesses propose a nominal WACC of 7.92 per cent, calculated using the parameters set out in Table 3.

Table 3: Businesses' position on proposed AMI WACC

Parameter	Value
Market observables	
Nominal risk-free rate (R_f)	4.02%
Debt risk premium (DRP)	2.62%
Non-market observables	
Equity beta ($ß_e$)	0.8
Expected return on the market (R_m)	11.30%
Market risk premium ($MRP = R_m – R_f$)	7.28%
Value of debt as a proportion of the value of equity and debt (D/V)	0.60
Value of imputation credits (gamma)	0.25
Forecast inflation	2.47%
Nominal vanilla WACC	**7.92%**

5 Business' position on expected inflation rate

The expected inflation rate is not used to calculate the nominal vanilla WACC, although it underpins some of the WACC parameters and is therefore determined in conjunction with the WACC parameters.

The Businesses continue to propose that the method for determining the expected inflation rate be a geometric average of the forecast inflation rate for each year over the ten year period starting from 1 January 2014, where the annual expected inflation rates are taken from:

- the most recent annual forecast of inflation by the RBA; and
- for the remaining years in the ten year period, the mid-point of the RBA's target inflation range, that is 2.5 per cent, per annum.

The most recent RBA inflation forecast from the August 2013 Statement on Monetary Policy was 2.50 per cent for 2014 and 2.25 per cent for 2015.[1] Adopting the mid-point of the RBA

[1] The RBA forecasts inflation to December 2014 of 2–3 per cent and to December 2015 of 1.75–2.75 per cent. From these ranges, the Businesses propose point estimates of 2.50 per cent

inflation target for the remaining eight years results in a geometric average expected inflation rate of 2.47 per cent.

6 Business' position on value of imputation credits

For the reasons set out in their previous submission, the Businesses maintain that the appropriate value for gamma is 0.25, based on a distribution rate of 0.7 and a value for theta of 0.35.

7 Business' position on debt raising costs

The Businesses continue to propose an allowance of 23 bppa for debt raising costs for the purposes of the charges revision applications.

The Businesses reiterate that debt raising costs are dependent upon the term of debt. If the AER determines that the term of debt is other than 10 years, then the calculation of debt raising costs will need to be recalculated accordingly. As set out in the 30 August 2013 submission, the Businesses submit that a 10 year term is appropriate.

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and 2.25 per cent, respectively. See Reserve Bank of Australia, *Statement on Monetary Policy,* 9 August 2013, p. 55.

Appendix A: Index of supporting documents

	Author	Title	Date
1.	CEG	*Estimating the Debt Risk Premium: Update Report*	21 October 2013
2.	SFG	*Cost of Equity Estimates Implied by Analyst Forecasts and the Dividend Discount Model*	18 October 2013