



2016–2020 Price Reset

Appendix I
Annual updating process for cost of debt

April 2015

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1 Introduction

We have proposed a process for nomination and approval of averaging period for each year of regulatory proposal in chapter 12 of our regulatory proposal. In attachment to our regulatory proposal we have also submitted a confidential letter in relation to nomination of averaging period.¹ Once the averaging period is nominated and approved as per the process set out chapter 12, we propose the calculation of the annual return on debt to be mechanistic and to occur in accordance with the annual debt process proposed below in section 2 and the resultant change to the annual revenue requirement is effected through automatic application of the formula specified in section 3 below. We have also provided a spreadsheet model along with our proposal to demonstrate how our proposed approach and automatic application of formula would work.²

¹ CitiPower, Letter proposing return on debt averaging periods (confidential version)

² Rate of return.xlsx

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2 Annual update process

We note the Australian Energy Regulator's (AER's) concern expressed in the recent draft determinations for ActewAGL Distribution and JGN concerning the establishment of additional annual process, we explain below that these calculations can be included in our annual pricing proposal for the second and subsequent regulatory years, with the AER able to assess these for compliance with any applicable requirements embodied in the distribution determination and remedy any non-compliance in approving that pricing proposal under clause 6.18.8 of the National Electricity Rules (**Rules**). This proposed approach renders a discrete, additional annual debt update process unnecessary.

We propose a process for the nomination and approval of averaging periods for use in determining the annual return on debt for the second and subsequent regulatory years, set out above, ensures that, as contemplated by the Guideline:

- an averaging period is specified for each regulatory year within the regulatory control period;
- at the time it is nominated, all dates in the averaging period for use in determining the annual return on debt for each of the second and subsequent regulatory years take place in the future;
- the averaging period for use in determining the annual return on debt for each of the second and subsequent regulatory years is as close as practical to the commencement of that regulatory year; and
- the proposed averaging periods for the different regulatory years of the regulatory control period do not overlap.

However, our averaging period proposal in respect of the annual return on debt for the second and subsequent regulatory years departs from the Guideline insofar as it provides for:

- the specification of the averaging periods for use in determining the annual return on debt for the third and subsequent regulatory years after the commencement of the regulatory control period;³ and
- the specification of the averaging periods for use in determining the annual return on debt for the second and subsequent regulatory years otherwise than in our initial regulatory proposal.

In light of the above discussion, once the averaging period is nominated and approved as per the process outlined in chapter 12 of our regulatory proposal, we propose to include for each of the second and subsequent regulatory years:

- our calculation of the annual return on debt,
- the resultant change to our annual revenue requirement through application of the formula specified in section [3] below; and
- the X factor.

In the pricing proposal for that regulatory year that we provide to the AER by 30 September in the preceding regulatory year, in accordance with clause 6.18.2 of the Rules.

The AER is required to approve the pricing proposal only if it is satisfied that (amongst other things) the pricing proposal complies with the distribution determination (clause 6.18.8(a)(1) of chapter 6⁴ of the Rules). If the AER determines that the pricing proposal is deficient, it may require us to make, or to itself make, any amendments to the pricing proposal (including both the calculations for the annual debt

³ As noted above, pursuant to our averaging period proposal the averaging period for use in determining the annual return on debt for the second regulatory year must be nominated by [31 July] 2015 - that is, *prior* to the commencement of the regulatory control period, as contemplated by the Guideline.

⁴ As above.

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update and the resultant prices) necessary to correct those deficiencies and bring the proposal into conformity with the requirements of the distribution determination (clause 6.18.8(b) and (c) of chapter 6⁵ of the Rules).

It follows that there is no reason for the establishment of a discrete, additional AER regulatory process for the annual updating of the return on debt for the second and subsequent regulatory years. Provided the AER adequately specifies the method of calculation of the updated return on debt, annual revenue requirement and X factor for the second and subsequent regulatory years in its distribution determination, these calculations should be mechanistic and uncontroversial.

⁵ As above.

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3 Annual update formula

This section provides the automatic application of formula to update both the return on debt and the annual revenue requirement each regulatory year.

3.1 Formula to update annual revenue requirement

Clause 6.5.2(l) of the Rules requires that if the debt allowance is to differ within the regulatory control period from one regulatory year to the next:

...then a resulting change to the Distribution Network Service Provider's annual revenue requirement must be effected through the automatic application of a formula that is specified in the distribution determination.

For each of the four years 2016-2020, the annual revenue requirement will be updated by adjusting the return on debt each year using the AER's Post Tax Revenue Model (**PTRM**).

The return on capital building block will be adjusted for that year as follows:

$$\Delta ROCT = \Delta COD \times 60\% \times ORABt$$

Where,

$\Delta ROCT$ is the adjustment to the return on capital building block in regulatory year t;

ΔCOD is the change in the trailing average cost of debt in regulatory year t determined in accordance with the process set out in this section 4 of the proposal relative to the cost of debt for that year applied by the AER in making its distribution determination; and

$ORABt$ is the Opening RAB in year t set out in the distribution determination.

Note: The 60 per cent represents the gearing ratio assumed for the benchmark firm.

The annual values return on debt will flow through all linked building block revenue components in the PTRM to update the annual revenue requirement. Further, the updated return on debt will automatically be used in calculating the half year adjustment of capex rolled into the RAB in the PTRM.

The revenue building blocks in the earlier years of the regulatory control period 2016-20 would remain the same as set in the distribution determination, as adjusted in previous annual updates. We propose that, when calculating the revenue requirement for regulatory year (t), the return on capital estimated in the remaining years of the regulatory control period (year t+1 onwards) will be the same as set out in the the distribution determination.

When smoothing the revenue requirement, we propose that the updated return on debt for regulatory year (t) determined in accordance with the methodology set out in Chapter 12 of our regulatory proposal would be used in the PTRM and only the X-factor for that year would be adjusted. This will help reduce the revenue volatility from these annual updates. That is, the X-factor for that year only would be adjusted to equalise the net present value of the revenue building blocks and the calculated smoothed revenue, as described in the PTRM handbook.⁶

3.2 Formula to update annual return on debt

For clarity, in addition to the formula required under clause 6.5.2(l), we have also included the formulae to describe how the return on debt will be updated under our proposed approach of transition from

⁶ AER, Final decision – Amendment Electricity Distribution Network Service Providers Post-tax Revenue Model Handbook, January 2015.

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hybrid approach to trailing average approach. For each regulatory year the return on debt will be calculated as follows:

Table 1.1 Annual update of return on debt

Year	Formula
2016	$Kd = (1 + (S_{2016} + TDRP_{2016} + TC + NIP) / 2)^2 - 1$
2017	$Kd = (1 + (S_{2017} + TDRP_{2017} + TC + NIP) / 2)^2 - 1$
2018	$Kd = (1 + (S_{2018} + TDRP_{2018} + TC + NIP) / 2)^2 - 1$
2019	$Kd = (1 + (S_{2019} + TDRP_{2019} + TC + NIP) / 2)^2 - 1$
2020	$Kd = (1 + (S_{2020} + TDRP_{2020} + TC + NIP) / 2)^2 - 1$

Source: CitiPower.

Where:

S2016 is the simple average (SA) of - swap rates, with term to maturity of one to ten years, prevailing in averaging period for 2016;

S2017 is the simple average of - swap rates, with term to maturity of two to ten years, prevailing in averaging period for 2016 and the ten year swap rate calculated in accordance with Chapter 12 (10YSR) prevailing in averaging period for 2017;

S2018 is the simple average of - swap rates, with term to maturity of three to ten years, prevailing in averaging period for 2016, 10YSR prevailing in averaging period for 2017 and the 10YSR prevailing in averaging period for 2018;

S2019 is the simple average of - swap rates, with term to maturity of four to ten years, prevailing in averaging period for 2016, 10YSR prevailing in averaging period for 2017, the 10YSR prevailing in averaging period for 2018 and the 10YSR prevailing in averaging period for 2019;

S2020 is the simple average of - swap rates, with term to maturity of five to ten years, prevailing in averaging period for 2016, the 10YSR prevailing in averaging period for 2017, the 10YSR prevailing in averaging period for 2018, the 10YSR prevailing in averaging period for 2019 and the 10YSR prevailing in averaging period for 2020;

TDRP is the ten year trailing average debt risk premium where each year's debt risk premium is the return on debt in the relevant averaging period for that year (calculated in accordance with Chapter 12) less the 10YSR in the same averaging period;

TC is the transaction cost of entering swap contracts;

NIP is the new issue premium and is assumed to be zero for our regulatory proposal; and

Kd is the annualised return on debt.

All the rates above except Kd are semi-annual rates.

Table 1.2 shows the S2016 for 2016 using the placeholder averaging period:

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Table 1.2 Simple average of swap rates

Term to Maturity	Swap Rate (%) in Averaging Period for 2016 ⁷
1 year	2.62
2 year	2.51
3 year	2.50
4 year	2.53
5 year	2.60
6 year	2.68
7 year	2.76
8 year	2.83
9 year	2.89
ten year	2.95
Simple Average	2.69

Source: CEG, Critique of the AER’s JGN draft decision on the cost of debt, April 2015.

Table 1.3 below shows the TDRP2016 is estimated using the January 2015 placeholder averaging period for regulatory year 2016:

Table 1.3 Trailing average DRP for 2016

Measurement Period	Regulatory year	DRP (%) over swap rate ⁸
2006	2007	0.65
2007	2008	1.05
2008	2009	3.00
2009	2010	3.92
2010	2011	2.78
2011	2012	2.81
2012	2013	3.08
2013	2014	2.87
2014	2015	2.05
Jan-2015	2016	1.82
Simple Average (TDRP2016)		2.40

Source: CEG, Critique of the AER’s JGN draft decision on the cost of debt, April 2015.

⁷ Based on a placeholder averaging period (2–30 January 2015)

⁸ Based on a placeholder averaging period (2–30 January 2015)

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Table 1.4 provides the return on debt estimate for 2016 using the abovementioned formula:

Table 1.4 Return on debt for 2016⁹

Average Swap rate	Trailing Average DRP	Swap transaction costs	NIP	Annualised Return on debt
2.69	2.4	0.23	0.00	5.39

We have also provided a Rate of Return workbook along with our regulatory proposal that demonstrate how the above methodology will be applied.

⁹ Based on a placeholder averaging period (2–30 January 2015).