

Appendix 5.10 –Memo by CEG

Debt and inflation forecast estimates

Revised 2016-21 access arrangement proposal

Response to the AER's draft decision

January 2016



Memorandum

To: ActewAGL
From: CEG – Asia Pacific
Date: 4 January 2015
Subject: **September 2015 cost of debt and inflation forecasts**

1 Purpose

1. This memo, and the attached spreadsheet, provides, for the 20 businesses days from 3 to 30 September 2015:
 - an estimate of the cost of debt, using data from the RBA and Bloomberg;
 - an estimate of forecast inflation.

2 Cost of debt

2. Table 1 below provides estimates of the cost of debt for each transition methodology in the first year of the transition. The transition is assumed to begin in the 2015/16 regulatory year (i.e., using data up to the 2014/15 financial year). The first nine averaging periods are the full financial years 2005/06 to 2013/14.¹ The averaging periods for:
 - 2014/15 is the 15 trading days from 4 June to 25 June 2015 inclusive. This is the averaging period at the beginning of the transition (if any).
 - 2015/16 is the 20 trading days from 3 September to 30 September 2015 inclusive. This is the averaging period in the first year of the transition and underpins the first annual update of the cost of debt.
3. In addition, the hybrid and the optimal hedging transition are based (initially) on 11.5 bp swap transaction costs on that portion of the portfolio assumed to be

¹ To be clear, the first averaging period is from 1 July 2005 to 30 June 2006, while the ninth averaging period is from 1 July 2013 to 30 June 2014.

covered by interest rate swaps. This is consistent with Chairmont² advice to the ERA and phases out over the transition.³

Table 1: Cost of debt allowance in years 1 and 2 (AER extrapolation in all periods, annualised)

	50/50 Bloomberg/RBA in measurement periods prior to June 2014	RBA only
	<i>RBA only beyond that</i>	
Year one of transition (2015/16)		
Immediate transition (0% of the base rate hedged)	7.81%	7.87%
Hybrid (100% hedged base rate) transition*	5.34%	5.40%
Guideline transition	5.34%	5.34%
Optimal hedging path (1/3 hedging)^	6.99%	7.05%
Year two of transition (2016/17)		
Immediate transition (0% of the base rate hedged)	7.70%	7.76%
Hybrid (100% hedged base rate) transition*	5.58%	5.64%
Guideline transition	5.35%	5.35%
Optimal hedging path (1/3 hedging)^	6.99%	7.05%

Source: RBA, Bloomberg, Reuters, CEG analysis.* As set out in CEG, Critique of the AER's JGN draft decision on the cost of debt, April 2015. ^The 1/3rd average of the 0% and 100% hedged strategies for the reasons set out in CEG, Efficient use of interest rate swaps to manage interest rate risk, June 2015.

- Note that CEG's previous advice was that prior to calendar year 2014/15 the trailing average DRP could reasonably be estimated using the average of Bloomberg and RBA estimates, both extrapolated using the AER extrapolation methodology – although we noted that the RBA and Bloomberg estimates were all very similar as were the average estimates using AER or SAPN extrapolation.⁴ This assumption is retained in the first two columns of numbers. In the two averaging periods falling in

² Chairmont, ERA Hedging Costs in the Cost of Debt, May 2015.

³ We note that this is conservative as discussed in our report: CEG, Critique of the AER's approach to transition, January 2016.

⁴ CEG, Critique of the AER's JGN draft decision on the cost of debt, April 2015.

2015 (June and September) we have been instructed to use RBA only.⁵ However, we include an option of RBA only for all periods.

5. We have only included AER extrapolation in these numbers. We note that in the 15 trading days from 4 June to 25 June 2015 inclusive SAPN extrapolation of the RBA curve resulted in an estimated DRP only 2bp higher than AER extrapolation. In the September 2015 placeholder period the difference was 5bp.

3 Inflation

6. The following table provides a variety of both break-even and actual inflation estimates.

Table 2: Break-even (and actual) inflation estimates

Estimate	Value	Estimate	Value
10 year	2.19%		
5 year	1.94%		
4 year	1.83%		
Actual June 14 to June 15	1.51%	Weighted average of 10 year and 5 year break even	2.04%
80% of 4 year forecast and 20% of 1 year actual	1.77%	Weighted average of 10 year and 5 year (where 5 year estimate is 20% actual and 80% forecast)	1.94%

Source: Bloomberg, RBA, ABS, CEG analysis.

7. The following estimates are appropriate in each circumstance:
 - 10 year break even (2.19%) – if all that is being challenged is the source of forecast estimate;
 - Weighted average of 10 and 5 year break even (2.04%) – if it is accepted that debt costs are nominal costs and, therefore, in order to deliver appropriate compensation the PTRM should adopt the same term for the inflation forecast as the regulatory period;
 - Weighted average of 10 and a mix of actual and forecast inflation over 5 years from June 2014 (1.94%) – as above plus recognition that the 5 year term should cover the same period as will be covered in the next RFM model (which we understand will be from June 2014 to June 2019).

⁵ We understand that ActewAGL had nominated the use of RBA for the June 2015 averaging period and also that, in the absence of specific examination and analysis for an averaging period, the use of RBA only is consistent with our advice in our report. CEG, Criteria for assessing fair value curves, January 2016.

8. We consider that the last of these options is the economically correct one.

4 4 June to 25 June 2015 swap values

9. The following table provides the 4 June to 25 June 2015 2015 swap values used in our calculations.

Table 3: Daily swap rates over 3 to 30 September by maturity (semi-annual)

	1	2	3	4	5	6	7
4/06/2015	2.214	2.2785	2.44	2.555	2.7125	2.8325	2.9756
5/06/2015	2.201	2.27	2.442	2.625	2.785	2.9488	3.0788
9/06/2015	2.207	2.264	2.418	2.6175	2.785	2.94	3.0838
10/06/2015	2.215	2.282	2.435	2.625	2.7988	2.9675	3.0988
11/06/2015	2.247	2.331	2.517	2.6288	2.8113	2.9613	3.0938
12/06/2015	2.235	2.301	2.458	2.6425	2.8125	2.9675	3.1025
15/06/2015	2.2215	2.275	2.438	2.595	2.77	2.935	3.065
16/06/2015	2.228	2.2845	2.4405	2.5694	2.7463	2.8888	3.0325
17/06/2015	2.23	2.279	2.419	2.545	2.7225	2.88	3.0231
18/06/2015	2.201	2.226	2.337	2.5419	2.7163	2.86	3.0144
19/06/2015	2.19	2.208	2.315	2.465	2.6425	2.8075	2.9519
22/06/2015	2.229	2.25	2.386	2.585	2.7625	2.93	3.0763
23/06/2015	2.237	2.314	2.453	2.62	2.7975	2.985	3.1138
24/06/2015	2.245	2.296	2.435	2.56	2.7375	2.915	3.0556
25/06/2015	2.244	2.303	2.442	2.5988	2.7763	2.9463	3.09

Source: Bloomberg

5 Historical swap and DRP values

10. The following table provides the historical DRP values used in our calculations.

Table 4: Historical DRPs (measured to swap values, semi-annual)

Full financial year (unless otherwise stated)	10 year swap rates	RBA (AER extrapolation)	Bloomberg (AER extrapolation)	Reuters*
2005/06	5.859	0.652	0.639	
2006/07	6.313	0.779	0.613	
2007/08	7.037	1.897	1.416	
2008/09	5.612	5.432	3.357	
2009/10	6.054	2.504	3.116	
2010/11	5.836	2.000	3.514	
2011/12	4.782	2.977	3.069	
2012/13	3.920	2.960	2.801	
2013/14	4.396	2.967	2.469	
4-25 June 2015	3.370	1.900	1.780	
3-30 September 2015	3.014	2.357	2.064	2.1651

Source: Bloomberg, AER, RBA, Reuters and CEG analysis; *Reuters DRP calculated using Reuters yield less Bloomberg swap rates.

5.1 Description of DRP calculations

11. We note the following about the DRP calculations.

- The DRP estimates presented in Table 4 above are not the same as the corresponding estimates in Table 18 of our previous report for JGN.⁶ This reflects revisions to the RBA historical series since the time we published that report. The values in Table 4 above are on average lower.
- That historical revision by the RBA also led them to not publish a 10 year target tenor for 11 months (in addition to other changes).⁷ In those months we must extrapolate from a published tenor of 7 years using SAPN extrapolation.⁸
- Historically we have used the Bloomberg BVAL curve from May 2014 and the Bloomberg BFV curve prior to that. This reflects the reasoning set out in our April 2015 report.⁹

⁶ CEG, Critique of the AER's JGN draft decision on the cost of debt, April 2015, p 91 in Appendix F.

⁷ March May and August 2005, September 2007 to March 2008 inclusive and June 2008.

⁸ We consider that this is a more reliable method of extrapolating from an effective tenor of around 6.5 years to an effective tenor of 10 years in these months. The alternative is to use straight line extrapolation using the slope of the swap curve between effective tenors of around 5.5 and 6.5 years (i.e., a very small portion of the yield curve). The average difference between these approaches is 22bp – which affects the 10 year trailing average RBA number by 2.2bp.

⁹ CEG, Critique of the AER's JGN draft decision on the cost of debt, April 2015, section 6.1.1 beginning on p. 65.