

## Memorandum

To Ms Jo DeSilva  
SA Council of Social Services

Cc

From Steve Whetton  
Deputy Director, SA Centre for Economic Studies

Subject Review of ESCOSA draft determination on SA Water

Date 25 March 2016

*Faculty of the Professions*

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### Background

The Essential Services Commission of South Australia (ESCOSA) is currently in the process of making a determination on the allowable revenue for the SA Water Corporation over the period 2016/17 to 2019/20, which includes identifying appropriate levels of operating and capital expenditures, as well as determining the rate of return to allow on SA Water's regulated asset base.

ESCOSA issued their draft determination on 10 February 2016 and you have asked SACES to comment on the approach taken by ESCOSA on the cost of debt (and the weighted average cost of capital more generally).

There are six key choices have made with respect of the cost of debt of ESCOSA's determination:

- 10-year trailing average approach, with no weightings applied
- Immediate application of 10-year trailing average approach, from 1 July 2016
- Current bond rate is the best estimate for future bond rates
- The benchmark-efficient entity has a Standard & Poors credit rating of BBB
- Debt-raising costs to be added to cost of debt (12.5 basis points); and
- With respect to the cost of equity adopted an equity  $\beta$  of 0.7

We would note that many of the theoretical considerations of aspects of the weighted average cost of capital are subject to debate in the relevant literature with conflicting interpretations placed on the available evidence. As such there are a range approaches that are arguably consistent with the existing evidence.

In making its determination ESCOSA has followed standard Australian regulatory practice and based it on an of what the funding costs and behaviours of a 'benchmark efficient entity' in the sector would be, rather than examining SA Water's specific cost structures. Our assessment of the draft determination will be made on the same basis.

## Assessment of Draft Determination

Taking each of the choices made by ESCOSA in turn our assessment of the approach to the WACC taken in the draft determination is as follows.

### ***10-year trailing average approach, with no weightings applied***

We agree with ESCOSA that a shift from an 'on the day' to a trailing average approach to calculating the cost of debt more appropriately captures the costs that would be faced by a benchmark efficient entity and should therefore be adopted (albeit with a transition arrangement).

We remain unconvinced that the benefit for a benchmark efficient entity in the water utility sector of having certainty of rates over a 10 year rather than a 7 year timeframe would deliver benefits that outweigh the past ten year average of 37 basis points of additional yield for a 10 year rather than a 7 year bond, absent a desire to match bond tenor of actual debt to that used by the regulator in their determination. As such we continue to recommend a 7 year tenor as the appropriate benchmark bond yield.

### ***Immediate application of 10-year trailing average approach, from 1 July 2016***

We continue to believe that the advice of Professor Lally to the AER that the adoption of the QTC's recommended transition to 10-year trailing average approach is approach most likely to minimise the prospect of windfall gains or losses when shifting from an 'on-the-day' approach to a trailing average approach.

ESCOSA claims on page 102 of the regulatory determination that an internal analysis they have undertaken has determined that the historical cost of debt allowance for SA Water was not materially different than it would have been had it made an immediate transition to a 10-year trailing average approach in mid-2006. As such ESCOSA believes that it is appropriate to implement a trailing average immediately

ESCOSA do not define materiality in this context. However, given the Regulated Asset Base of SA Water is to be \$12.1 billion in 2016/17 even small differences in interest rates can produce numerically large changes in allowable revenue. For example, a cost of debt that is 10 basis points higher will, given assumed debt share of 60 per cent, increase the allowable return by \$7.3 million in 2016/17.

### ***Current bond rate is the best estimate for future bond rates***

We agree with ESCOSA that the prices observed in debt market are too influenced by term risks and liquidity preferences to provide a reliable guide as to market expectations of future interest rates.

### ***The benchmark-efficient entity has a Standard & Poors credit rating of BBB***

We do not see any evidence that the credit rating of a benchmark efficient entity should be BBB, particularly given the stability of revenue afforded by current regulatory settings. The median credit rating of Australian gas and electricity utilities for the period from 2002 to 2012 was BBB+,<sup>1</sup> and it is hard to see any evidence that water utilities face higher risks. As such we recommend that any calculation of rates draws on not just the RBA's 'BBB' series, which includes bonds with ratings between BBB- and BBB+ but also the A- series (with respective weights of 0.75 and 0.25) as this will effectively produce a yield representative of BBB+ rated debt.

Whilst we believe international comparisons should be used with extreme caution given the substantial differences in regulatory settings, we believe that the international evidence collected by IPART suggests that debt issued by water utilities is regarded by the market

<sup>1</sup> Australian Energy Regulator (2013c), 'Better Regulation, Explanatory Statement, Rate of Return Guideline (Appendices)'

as of relatively low risk. Credit ratings were identified for six US water utilities, two of which were rated A+ and three, A, and one A- for one UK utilities which had a rating of BBB-.<sup>2</sup>

**Debt-raising costs to be added to cost of debt (12.5 basis points); and**

We agree that it is appropriate to make an allowance for debt raising cost in calculating the cost of debt, and this level accords with other recent regulatory decisions.

**With respect to the cost of equity, adopted an equity  $\beta$  of 0.7**

ESCOSA has proposed the use of an equity  $\beta$  of 0.7, matching the  $\beta$  adopted by the AER for electricity utilities in its most recent determinations.

The expert advice commissioned by the AER as part of their most recent price determinations<sup>3</sup> (Henry 2014) tested a wide range of analysis periods, data frequencies and variations between analysis at the individual firm level and for weighted portfolios of firms to identify values for the Equity Beta of listed electricity and gas distribution firms. He also tested a range of hypotheses relating to the stability of the underlying data including calculating Dimson's  $\beta$ s to adjust for the potential impact of thin trading, and testing whether data from the GFC period should be excluded from the analysis.

Henry's three preferred models all used the longest available sample, and weekly data, and included a firm level analysis, an analysis using a fixed portfolio with equal weighting, and an analysis using a fixed portfolio with a value weighting. Henry concluded that the evidence points to  $\beta$  lying between 0.3 and 0.8 (p. 63) for regulated utility distribution firms, with the average value from this set of most reliable results being **0.4463** (or 0.480 if the average is calculated only from the means).

There is evidence that equity  $\beta$ s calculated using a SL-CAPM framework could have a systematic tendency to understate the degree of variance in returns of those firms with a  $\beta$  below 1; and the estimated  $\beta$ s of similar international firms (this evidence comes from estimates of  $\beta$  using the Black CAPM framework). However, there is other evidence that would suggest that the analysis of Henry may have overstate the current risk of Australian electricity firms. In particular, the time period over which Henry's results are calculated relate to the previous regulatory approach in which most electricity distribution utilities bore some of the volume risk. However, as SA Water is being regulated on the basis of maximum allowable revenue it is not subject to that risk, and therefore it would be reasonable to expect the value of beta to be in the lower range modelled by Henry.

International evidence also points to a lower level of  $\beta$  being potentially appropriate. International comparisons should be used with caution as differences in the regulatory framework between countries can create systematic differences in risk, however that does not rule it out as a source of evidence. IPART identified equity betas for nine listed water utilities based in the USE and based in the UK. The average  $\beta$  of this sample was 0.61 (median 0.67) with individual  $\beta$ s ranging from 0.28 to 0.89.<sup>2</sup>

These countervailing factors suggest to us that it would be more appropriate to select a value for  $\beta$  only slightly above the Henry's empirical estimates, either 0.5 or 0.6.

**General comment**

One final point we would make is that in making a determination on the building blocks that feed into the overall weighted average cost of capital it is important to consider the overall impact of the decisions made as well as each building block in isolation. In each case the approach adopted by ESCOSA is broadly consistent with the relevant evidence and theory

<sup>2</sup> IPART (2016) Review of prices for Sydney Water Corporation From 1 July 2016 to 30 June 2020, Water — Draft Report, March 2016, p. 249.

<sup>3</sup> Henry, O.T. (2014), 'Estimating  $\beta$ : An update, April 2014', report prepared for the AER.

(although, as noted above, there are several cases where we believe that an alternative decision would better fit the evidence), however in five of the six cases<sup>4</sup> ESCOSA's decision has been relatively more favourable to the regulated utility given the range of plausible parameters (see, for example, the set of past regulatory decisions on water utilities collated by IPART reported in the table below where five of the nine determinations adopted a lower  $\beta$  than proposed by ESCOSA and five of the ten adopted a lower risk credit rating than that proposed by ESCOSA, with only one determination having *both*  $\beta$  and the credit rating as high as that proposed by ESCOSA).

Regulator	Utility	Decision date	Gearing	Equity Beta	Credit rating
ACCC	State Water Corporation	June 2014	60%	0.7	BBB+
ESC	Greater metropolitan water businesses	June 2013	60%	0.65	BBB- to BBB+
	Regional urban water businesses	June 2013	60%	0.65	BBB- to BBB+
	Rural water businesses	June 2013	60%	0.65 for 1 business and 0.7 for 2 businesses	BBB- to BBB+ for 1 business and BBB+ for 2 businesses
QCA	Seqwater irrigation	April 2013	60%	0.55	BBB+
Industry panel	Actew	April 2015	60%	0.7	BBB
ERA	Water corporation, Water boards	March 2013	60%	0.65	A for Water corp., BBB- BBB+ for Water boards

Source: IPART (2016), p. 250

<sup>4</sup> The exception being the approach to estimation of future bond rates where SA Water's preferred approach of