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# TRAILING AVERAGE COST OF DEBT AND EFFICIENT DEBT MANAGEMENT

A REPORT BY TRANSPOWER NZ LTD

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*Keeping the energy flowing*



**TRANSPOWER**



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## 1. Introduction and summary

In the “Input methodologies review – Update paper on the cost of capital topic” (the update paper) published 30 November 2015, the Commerce Commission (Commission) invited additional evidence to support specific areas of the cost of capital IMs.

This document presents analysis and observed market evidence to support the decision making process for changes to the following parameters used to estimate the cost of capital:

1. cost of debt allowance
2. term credit spread differential
3. debt issuance costs and
4. notional leverage.

Transpower has made submissions on these issues as part of the present cycle of Input Methodologies (IM) review. The issues raised in those past submissions all remain valid concerns. This submission is not exhaustive in repeating all of the issues raised in previous submissions to the Commission. Instead, it focusses on responding to the direct questions raised in the update paper.

### Updating cost of debt methodology is the highest priority

We consider the most pressing need for change to the cost of capital IM to be how the cost of debt allowance is determined. We recommend that the Commission adopt a trailing average approach, similar to that adopted by Australian and UK regulators. The trailing average approach, implemented well, will go a considerable way to addressing the main problems with the current *rate-on-the-day* methodology. These problems include:

1. Large exposures to refinancing risks implicit in the current approach
2. Market disruption (i.e., elevated spreads, inability to hedge risk) due to the narrow refinancing window assumed
3. Inability of prudent and efficient suppliers to match their actual debt service costs to the regulatory allowance and
4. Volatility in transmission prices between Regulatory Control Periods (RCPs).

In addition to the above, there are a number of issues with the parameters or benchmark rates used to estimate the allowed return to compensate regulated suppliers for efficiently incurred debt costs. The issues are considered in this document and the costs associated with the relevant parameters are estimated using market evidence. The problems with the existing parameters and benchmarks include:

1. Five year tenor used for risk-free rate and debt premium. The document explains how the current five year tenor undercompensates suppliers who on average manage debt on a ten year tenor and refinancing cycle as demonstrated by market evidence.
2. Leverage of ca. 40% as opposed to 70%. The document illustrates leverage of Transpower and international transmission peers of ca. 60% to 80%.
3. Additional costs of raising debt in foreign markets. There are additional costs in accessing foreign debt capital markets to fulfil funding and market diversity requirements. Australasian issuers market issuance practise and associated costs are not compensated under the current methodology.
4. Debt capital market issue costs. Debt issuance and hedging costs are undercompensated under the current regulation. The document discusses the cost associated with offsetting risk through hedging to the narrow determination window.
5. The determination lag and requirement for forward starting swaps. The document explains the determination lag - between the determination window and the commencement of the RCP; ca. seven to eight months which requires suppliers to enter into forward starting swaps, as opposed to “vanilla swaps” and there is an associated cost incurred by the regulated supplier, not compensated through the regulation.

## Current settings impose unnecessary cost on consumers and suppliers

Through this report we attempt to estimate the cost to both regulated suppliers and consumers. Some of the costs of elevated or disrupted markets and associated hedging strategies are borne by suppliers, some by consumers and some are borne symmetrically by both (e.g., the Commission's current approach produces more volatile price paths and elevated rates).

The costs include:

1. Elevated costs to consumers flowing from upward pressure on rates due to volume and liquidity pressures during the determination window. We estimate the likely cost to consumers, for Transpower alone, as up to ca. \$25 million p.a.<sup>1</sup>
2. Costs of hedging to the narrow window incurred by Transpower, not compensated through the regulatory allowance. We estimate this cost to be ca. \$11 million p.a.<sup>2</sup> (ca. 6-7% of Transpower's annual net profit after tax (NPAT)).
3. Debt Risk Premium (DRP) costs incurred but not compensated through funding not aligned to the determination window. We estimate this to be ca. \$15 million p.a.<sup>3</sup> (ca. 8-9% of Transpower's NPAT).

In aggregate the estimated cost to consumers (1 above) and Transpower (2 & 3 above) of the current rate-on-the-day regulatory framework is ca. \$50 million p.a. In relation to item 1 above we consider this to be a reasonable, if conservative estimate (it could be significantly higher).

When applied to all firms regulated under the cost of capital IM the cost is likely to be multiples of this.

## No compelling arguments against trailing average approach

Arguments of "swings and roundabouts" and "evens out in the long run" have been used to dismiss challenges to the current framework, over attempts to quantify or estimate the costs. However, Transpower considers these costs can be reasonably estimated and demonstrate material value loss to regulated suppliers and electricity consumers.

Market practice and associated costs are observable and/or able to be reasonably estimated based upon historical market rates and debt portfolio management theory and practice. Where this is the case then greater weight should be given to this empirical evidence than to theoretical argument or assertion.

## We recommend a trailing average for the risk free rate with annual indexation

The introduction of a trailing average approach with annual indexation may still present some issues and residual risk relative to best practice. However, the approach addresses the more profound issues associated with the *rate-on-the-day* approach.

We recommend adoption of a trailing average approach, implemented in the following way:

1. The trailing average approach would be used to determine the whole of the return on debt rather than one or other of its individual components (i.e. the risk-free rate and the debt premium)
2. The assumed term to maturity of debt would be ten years, which is consistent with the term to maturity presently assumed by Australian regulators, and consistent with the average tenor of debt issued by infrastructure businesses in New Zealand and Australia
3. The cost of debt allowance would be updated annually through the regulatory period by rolling the ten year trailing average forward each year

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<sup>1</sup> Assuming market volume over the narrow determination window results in elevated rates of ca. 50 bps (basis points) on ca. \$5 bn (billion) Regulated Asset Base (50 bps x \$5 bn = \$225 million) – advice from market intermediaries indicate the elevated rates could be significantly higher.

<sup>2</sup> Assuming est. cost of forward starting swaps; ca. 20 - 25 bps and additional costs of hedging to the determination window; ca. 5 - 7 bps on debt; ca. \$3.3 billion (32 bps x \$3.3 bn = \$11 million).

<sup>3</sup> Assuming average DRP outside the determination window of ca. 40 - 50 bps (determined by reference to the rate history in Appendix E) higher than the determination window (45 bps x \$3.3 bn = \$15 million).

4. The transition should align with the commencement of RCP3 and forward curves, such as independently published Bloomberg forward curves should be used for determining the trailing average at transition. However, there is some work will need to be undertaken to determine a suitable approach and suitable parameters or benchmarks. This paper does not contemplate an extensive and exhaustive list of possibilities and recommendations and
5. No AER-style transitional arrangements would be applied – the trailing average would immediately replace the current rate-on-the-day approach.

Transpower considers a simple model without unnecessary complexity to be the most suitable trailing average model for adoption. Regulatory precedent has been worked through internationally, meaning guidance and reasonable examples are available for analysis and consideration.

## 2. The trailing average approach to setting the cost of debt allowance

The trailing average approach involves setting the cost of debt allowance at the start of the regulatory period using a specified averaging period (e.g. ten year average) of the rate-on-the-day borrowing cost (for a given maturity and credit rating). The return on debt allowance would then be updated annually through the regulatory period by applying a (ten year) rolling window of rates-on-the-day, thus necessitating an annual recalculation of the revenue allowance for the remainder of the regulatory period.

This approach is, in broad terms, consistent with the trailing average approach accepted by the Office of Gas and Electricity Markets (Ofgem) in the UK, the Australian Energy Regulator (AER), and the Economic Regulation Authority (ERA) in Western Australia, and proposed recently by the Essential Services Commission of South Australia (ESCOSA).

### Transpower's position on the trailing average approach

Transpower strongly supports adoption by the Commission of a trailing average approach to determining the cost of debt allowance.<sup>4</sup> Under the existing cost of capital IM provides, the cost of debt allowance is determined using a 'rate-on-the-day' approach.

The rate-on-the-day approach has several major weaknesses, which the trailing average approach overcomes:

#### 1. High exposure for suppliers to refinancing risk.

The rate-on-the-day approach assumes implicitly that suppliers will refinance their entire debt portfolios at once (or within a very short timeframe) at the beginning of every regulatory period. A supplier that strives to match its actual cost of debt to the regulatory allowance under the rate-on-the-day approach would have to refinance its debt portfolio in this way. This would leave the supplier with all of its debt maturing, and having to be refinanced, at the end of the regulatory period. This means that the entire debt portfolio will be subject to refinancing risk at the same time.

Refinancing risk means that at the time the supplier needs to refinance its debt portfolio, borrowing rates have moved substantially. These market movements might occur because:

- There is particularly high demand for corporate debt of the kind sought by the supplier (e.g., because many other issuers are seeking to refinance at the same time);
- Lenders and other market participants anticipate that the supplier must refinance a very large quantity of debt at once and so bid up the price of lending; and
- There is particularly low supply of corporate debt (e.g. during periods of crisis, such as during the Credit Crises, when corporate debt markets faltered, and then closed completely for some time).

Regulated suppliers tend to have large debt portfolios, which mean that they face significant exposure to refinancing risk under the rate-on-the-day approach. To avoid this refinancing risk, most efficient and prudent suppliers, including Transpower, stagger their debt refinancing.

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<sup>4</sup> Under the 'rate-on-the-day' approach, when determining both the risk-free rate and the debt premium, the Commission applies a very short averaging period of historical rates (i.e. one calendar month). The risk-free rate and debt premium are then 'locked in' for the duration of the regulatory control period.

The trailing average approach mimics this pattern of debt management as it assumes implicitly that only a portion of a regulated supplier's debt portfolio is refinanced each year rather than the entire portfolio all at once.

## **2. Inability of prudent and efficient suppliers to match actual cost of debt to the return on debt allowance.**

A supplier that seeks to manage its debt portfolio in an efficient and prudent manner, through staggered refinancing, cannot match its actual cost of debt to the regulatory allowance under the rate-on-the-day approach. This is because under a staggered refinancing policy, the supplier's actual cost of debt will be a mix of the costs of debt raised today and debt raised in the past. By contrast, an allowed return under the rate-on-the-day approach would be commensurate with the cost of all the debt being refinanced in line with regulatory resets.

In principle, regulated suppliers may be able to eliminate the mismatch between the base rate paid by the supplier and the risk-free rate component of the return on debt allowance using interest rate swap contracts. These swap contracts involve costs, which are ultimately borne by customers.

By contrast, there is no practical or effective means to hedge the debt risk premium component of the return on debt allowance. This means that no supplier could actually achieve a cost of debt that matches the allowance provided by the rate-on-the-day approach. Mismatches of this kind can lead to either large windfall gains (when prevailing borrowing rates are very high over the determination window) or windfall losses (when prevailing borrowing rates are very low over the determination window). The outcome is a lottery.

The cost of debt faced by a supplier that manages its debt portfolio using a staggered refinancing strategy will closely match the allowed return on debt under a trailing average approach. For instance, the cost of debt of a supplier that refinances 10% of its debt portfolio each year by issuing a new tranche of ten year debt will simply be the average of the rates at which each tranche of debt was issued over the past ten years. That cost would coincide very closely with a cost of debt allowance calculated using a ten year trailing average debt assuming ten year tenor debt.

## **3. Volatility in allowed returns and regulated prices over time.**

Under the current cost of capital IM, the entirety of the cost of debt allowance set at the start of a regulatory period depends on corporate borrowing rates prevailing at that time. As a consequence, the return on debt allowance under the Commission's current approach will tend to move closely in line with fluctuations in corporate bond yields. These variations can be quite pronounced during periods of high debt market volatility. Furthermore, changes in corporate borrowing rates over a full RCP (e.g. of five years) tend to be larger than over individual years. Updating of the allowed return at the start of each review period using the rate-on-the-day approach can therefore introduce significant variability in regulated prices from one review period to the next.

By contrast, changes in the return on debt allowance under a trailing average approach tend to be quite small from one year to the next. For instance, under a ten year trailing average, nine out of the ten years that make up the return on debt allowance would be the same as in the previous year. This would tend to smooth out both the allowed cost of debt and the revenue path, when compared with the rate-on-the-day approach.



## Refinancing risk

Transpower and other debt issuers' key objective in prudently managing a debt portfolio is minimising debt financing costs while mitigating refinancing risks. These refinancing risks are due to interest rate volatility arising from:

1. Low liquidity in debt markets, which would push up the cost of borrowing; and
2. High demand for corporate credit at the time refinancing needs to occur (e.g. because of other borrowers, including regulate suppliers, refinancing at the same time and crowding the debt market).

In addition, a prudent debt strategy will seek to minimise the mismatch between asset and liabilities where possible. This is because a mismatch between assets and liabilities can result in pressure on cash flows, and the ability of the supplier to meet its debt obligations. In turn, such a situation can degrade the creditworthiness of the supplier and push up its cost of borrowing (if lenders perceive the supplier to have become riskier).

Higher borrowing costs for the industry will feed through to higher costs to consumers (because under the Commission's current approach, the cost of debt allowance is based on the average cost of borrowing for the industry).

In addition, pressure on the cash flow position of the business may inhibit its ability fund efficient investments that consumer's value.

## Debt portfolios of infrastructure businesses

Infrastructure businesses, including suppliers regulated by the Commission are usually highly geared. The high gearing is a consequence of the long-term asset investments and relatively low, but stable returns earned by infrastructure businesses (which typically provide essential services to the economy) compared with other less capital intensive businesses.

Average gearing levels of Transpower's international transmission peers is ca. 63% (Transpower: 71%) against ca. 40% for distribution and generation entities.<sup>5,6</sup>

Furthermore, their capital-intensive nature means that infrastructure businesses typically have very large asset bases, and these asset bases require large quantities of debt. For instance, Transpower currently has total outstanding debt of ca. \$3.3 billion.

## Prudent debt management

### *Staggered refinancing*

The high level of gearing, large volume of debt, relatively low returns and long life of assets investments, mean the financing decisions and debt portfolio management can have profound impacts on the organisations financial health. It is imperative that infrastructure businesses such as Transpower manage financing risks arising from interest rate volatility.

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<sup>5</sup> Appendix A illustrates Transpower's international transmission peers gearing. Average gearing across the 13 selected close peers is ca. 63%.

Appendix B illustrates a sample of domestic debt issuer's gearing, including Transpower.

<sup>6</sup> While the gearing may appear high, it is important to recognise the relatively stable and consistent revenues and cost base of infrastructure utilities allow these issuers to maintain good credit ratings and rating agencies and investors consider transmission utilities as relatively safe, conservative investments.

Using Transpower's \$3.3 billion debt portfolio as an example, the difference in the cost of debt of just 50 bps against the determination window Debt Risk Premium at the time the debt is issued translates into additional debt service costs of ca. \$17 million p.a. Clearly, the larger the quantity of total debt, the larger will be the supplier's exposure to refinancing risk.

As suppliers' revenues are fixed by regulation (and demand for their services typically fairly stable), it is generally not possible to meet shortfalls of this kind by raising revenues. Furthermore, severe market disruption at the time of large refinancing can result in catastrophic outcomes for an organisation and result in bankruptcy.<sup>7</sup>

In order to avoid such outcomes, it is essential that it manages the risk of fluctuations in debt service costs. The most prudent way for a supplier to manage such risks is to stagger the issuance of debt such that only a small proportion of the debt portfolio matures and requires refinancing at any point in time. Such a strategy may be implemented as follows:

- Year 1, the supplier issues 10% of its debt requirements as ten year fixed-rate debt
- Year 2, the supplier issues another 10% of its debt requirements as ten year fixed-rate debt
- ...and so on.

By Year 10, the supplier would have a mixed-maturity debt portfolio with the following composition:

- 10% of the portfolio will be due to mature in 1 year (i.e. 1-year term-to-maturity debt)
- 10% of the portfolio will be due to mature in 2 years (i.e. 2-year term-to-maturity debt)
- ... and so on.

As each tranche of debt matures, it is replaced with a new issue of ten year fixed-rate debt.

This mixed maturity profile of the debt portfolio limits the supplier's exposure to refinancing risk because in any given year, only a small proportion (i.e. 10%) of the overall portfolio would need to be refinanced at prevailing rates.

The Commission has previously acknowledged that a staggered maturity approach to refinancing is common amongst regulated suppliers in New Zealand:<sup>8</sup>

*Firms have a mix of debt maturities to manage re-financing risk, including issuing long-term debt. This spreads a firm's re-financing requirements over a longer period and reduces the amount of debt that needs to be re-financed in any one year. Reducing re-financing risks has benefits for consumers, but long-term debt typically has a greater cost than medium or short-term debt.*

Transpower has historically managed its debt portfolio using staggered maturities.<sup>9</sup>

### Long tenor of debt

The current cost of capital IM assumes a term of debt equivalent to the length of the regulatory period, i.e. five years. However, this assumed term typically does not match the term of debt that infrastructure business would normally issue.

In determining issue tenors, organisations consider:

<sup>7</sup> Two Australian infrastructure investment organisations "Babcock and Brown" and "Allco Finance" folded following the 2008 credit crises as they had funded a significant part of their debt short term and were unable to refinance when credit markets closed at the peak of the crisis.

<sup>8</sup> Input Methodologies Reasons Paper, December 2010, para. 6.3.12

<sup>9</sup> The Commission has requested details of Transpower's debt portfolio and will have access to this information by mid-February 2016.

- Assets lives and asset/liability mismatches
- Availability and cost of funds (domestically and overseas) and
- Availability of short term liquidity and committed facilities.

The assets of regulated suppliers tend to be relatively long. For example the operational life of a transmission line is 40 to 70 years. Prudent debt management practice requires long-lived assets to be funded by long-term debt to minimise refinancing risk over the life of the assets. The Commission has acknowledged this point in the existing cost of capital IM:<sup>10</sup>

*Some regulated suppliers issue debt with an original period to maturity greater than five years to manage their exposure to re-financing risk. At the same time such suppliers may also enter into an interest rate swap to shorten the interest rate repricing period.*

*Prudent management of re-financing risk by issuing debt with a long period to maturity is in the long term interests of consumers. Therefore, where a regulated supplier actually issues debt with an original period to maturity greater than five years, and the weighted average original period to maturity of its debt portfolio is also greater than five years, the IM proposes that an allowance for the additional debt premium is appropriate. The allowance relates only to debt issues with an original period to maturity greater than the regulatory period.*

Issuers are also incentivised to issue for longer tenors to reduce incremental refinancing costs, such as arranging fees, rating agency fees, legal fees and other associated costs. In other words, long-term issuance of debt is an efficient way of minimising debt issuance costs.

Although infrastructure businesses often have assets with lives of 40 to 50 years, it is not easy, or feasible to source debt with these maturities. Consequently, suppliers such as Transpower fund themselves with debt that is expected to be refinanced several times over the life of the underlying assets.

Practice in New Zealand and Australia is to maintain longer tenor issuance, with staggered maturities to mitigate the identified risks. As Appendix B shows, the average issue tenor for larger issuers in both New Zealand and Australia is ca. 10 years and access and use of international debt capital markets is maintained. The chart includes regulated and unregulated issuers and a range of industries. Most issuers target an average tenor of between eight and twelve years. There are several departures, which are due to hybrid debt instruments (Genesis Energy and Mighty River Power) and dependence upon bank funding, or working capital funding (Z Energy).

Widening out the sample size to include Australian entities, the practice observed is a preference to issue longer term debt.<sup>11</sup>

### **The rate-on-the-day allowance cannot be matched by a prudent and efficient supplier**

Under the existing cost of capital IM, the cost of debt allowance is computed as the sum of:

1. The risk-free rate
2. The debt premium and
3. An allowance for debt issuance costs.

<sup>10</sup> Input Methodologies Reasons Paper, December 2010, paras. 5.19 and 5.20.

<sup>11</sup> Appendix C illustrates the weighted average issue tenors of Australasian corporate issuers.

As explained above, the Commission's approach is to assume a five-year term of borrowing, and to compute the risk-free rate and debt premium using a one-month average of historical government bond yields and corporate debt spreads observed in the market. Further, as explained above, in order to minimise refinancing risk, efficient and prudent suppliers such as Transpower typically issue ten year debt, on a staggered basis.

As a consequence, there can be large mismatches between the actual cost of debt incurred by efficient and prudent suppliers and the cost of debt allowed by the Commission. As explained above, such mismatches can adversely affect the cash flow position of the business, reduce its creditworthiness (thereby increasing future borrowing costs) and deter efficient investment.

Suppliers can reduce these mismatches only partially using interest rate swaps to align the base rate component of their actual cost of debt to the risk-free rate assumed by the Commission.<sup>12</sup> There is no financial product that allows suppliers to hedge the DRP component of the allowed return on debt.

As the Commission has acknowledged, these hedging arrangements give rise to some additional debt management costs:<sup>13</sup>

*Regulated suppliers who issue long term debt may also incur costs entering into interest rate swaps to reduce their initial interest rate re-pricing period from the length of the bond, to a shorter period.*

While the existing cost of capital IM does provide some allowance for these costs through the Term Credit Spread Differential (TCSD), it is important to recognise that these costs (and the ad hoc "fix") arise purely because of the rate-on-the-day approach presently used by the Commission. This is because the only reason for suppliers such as Transpower to employ this hedging strategy is to minimise the gap between the regulatory allowance and actual debt service costs. Unregulated infrastructure businesses that stagger their refinancing as Transpower does need not issue swaps in this way, and can avoid these hedging costs altogether. Moreover, because these hedging costs are compensated to some extent through the TCSD, consumers bear these swap issuance costs, and do so solely because of the present regulatory arrangements.

While it is possible in principle for suppliers to match the base rate component of their cost of debt to the risk-free rate allowed by the Commission, there is presently no feasible way for suppliers to match the debt premium they actually pay to the premium allowed by the Commission, unless they refinance their entire debt portfolios at the start of the regulatory period. Credit and refinancing risks are unable to be matched due to the lack of available financial derivative instruments to hedge these risks and the significant refinancing risks associated with refinancing 100% of a debt portfolio evenly over one month determination window every five years.

Consequently, the cost of debt allowance produced by the existing cost of capital IM cannot be implemented by any supplier, including those following an efficient and prudent debt management strategy.<sup>14</sup>

The size of the mismatch can be demonstrated through a movement in rates.<sup>15</sup> Using bank Credit Default Swap (CDS) curves as a proxy for debt premium trend over time, we can observe that debt premiums reached recent lows in August 2014 (the current RCP determination window).<sup>16</sup>

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<sup>12</sup> Specifically, the supplier would issue floating rate debt of their preferred tenor (say, 10 years) and then use interest rate swaps to match the base rate component to the risk-free rate assumed.

<sup>13</sup> Input Methodologies Reasons Paper, December 2010, para. 6.2.

<sup>14</sup> As discussed below, regulators in Australia, such as the AER, ESCOSA and the ERA have recognised this as a major weakness of the rate-on-the-day approach, as well as a key reason to adopt the trailing average approach.

Over the five year period illustrated (and wider if we recognise the ten year average issue tenor of issuers), regulated supplier's debt issuance costs consistently exceed the debt premium allowance under the current regulatory framework. For Transpower, the costs of issuing outside the determination window, with rates on average ca. 40 to 50 bps higher than during the determination window<sup>17</sup> incurs costs of ca. \$15 to \$17 million per annum.<sup>18</sup>

### The trailing average cost of debt solution

As described above, a trailing average approach (with annual updating) would produce a cost of debt allowance that mirrors the cost of debt faced by suppliers that follow a prudent and efficient staggered refinancing strategy.<sup>19</sup> This would incentivise prudent and efficient debt management practices and, in addition, the adoption of the trailing average approach would:

1. Provide suppliers with incentives for efficient investment and
2. Lower significantly the volatility in the cost of capital allowance over time (thereby reducing the volatility for consumers and suppliers).

### Suppliers' incentives for efficient investment

If a supplier cannot closely replicate the benchmark allowance in their cost structure, the resultant uncertainty and risk will act as a disincentive for the supplier to invest additional capital.

When the supplier is appraising a potential investment, that investment must satisfy a business case before it can proceed. The standard investment rule is for the investment to proceed if its expected return at least equals the hurdle rate for the investment. The hurdle rate must factor in the risk and uncertainty associated with the investment. The potential for large mismatches between the costs associated with the investment (i.e. the cost of debt) and revenues from the investment (i.e. the allowed cost of debt) will result in greater uncertainty and risk. This, in turn, would be expected to push up the hurdle rates for investments, thereby reducing the chances of otherwise efficient and welfare-enhancing investments from proceeding.

In other words, the Commission's current approach has the potential to distort investment decisions to the detriment of consumers. These distortions may be avoided by reducing the potential for large mismatches between the costs and allowed revenues (i.e. through adoption of the trailing average approach).

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<sup>15</sup> This is illustrated in Appendix E.

<sup>16</sup> Banks' CDS prices are used to demonstrate a trend in credit costs as a CDS for regulated utilities, or individual utilities, such as Transpower are not quoted by the market.

<sup>17</sup> Illustrated using the bank (as a proxy for credit market trends) debt premium/credit margin trends evident in Appendix E.

<sup>18</sup> Assumes credit margins averaged 45 bps higher over the five year period in comparison to the determination window illustrated in Appendix E on \$3.3 bn of debt (45 bps x \$3.3 bn = \$15 million).

<sup>19</sup> For instance, the cost of debt allowance derived using a ten year trailing average approach would be computed by placing: 10% weight on the average rate for the present year; 10% weight on the average rate for Year -1; 10% weight on the average rate for Year -2;...; and 10% weight on the average rate for Year -9. This would correspond very closely to the actual debt costs incurred by a supplier that refinances 10% of its debt portfolio every year using ten year fixed-rate debt.

## Regulated cost of capital volatility over time

Historical rate movements illustrate considerable volatility.<sup>20</sup> The volatility translates into the actual and implied (estimated on rates in arrears and forecast based upon the current regulatory framework) RCP rate sets.

Included in the rate trend charts of Appendix F are two trends for a ten year rolling average determined using daily rates and a ten year rolling average using rates determined over an annual one month determination window. Both these trend series demonstrate considerably less volatility under both of the reversed historical trend and the considerably more benign recent yield curve (used to predict future rates at a point in time).

For regulated suppliers, the trailing average approach provides an achievable benchmark to manage to as opposed to the current rate-on-the-day approach. For consumers, the trailing average provides a less volatile cost basis as opposed to the current rate-on-the-day approach.

## Conclusions reached by regulators overseas

### *Virtually all regulators that have considered the trailing average approach have adopted it*

As the Commission has itself recognised,<sup>21</sup> a number of regulators overseas (including Ofgem, the AER, ESCOSA and the ERA) have adopted the trailing average approach. Importantly, the rationale given by those regulators when adopting the trailing average approach agrees completely with the rationale that Transpower has advanced for the trailing average approach.

For example, the AER stated:<sup>22</sup>

*We propose to apply a trailing average portfolio approach to estimate the return on debt. This approach means that the allowed return on debt more closely aligns with the efficient debt financing practices of regulated suppliers and means that prices are likely to be less volatile over time. The trailing average would be calculated over a ten year period. The annual updating of the trailing average should also reduce the potential for a mismatch between the allowed return on debt and the return on debt for a benchmark efficient entity. This should reduce cash flow volatility over the longer term.*

ESCOSA stated the following in relation to its recent proposal to adopt the trailing average approach when setting the cost of debt allowance for SA Water:<sup>23</sup>

*The proposed approach involves setting a ten-year trailing average cost of debt, updated annually during the regulatory period to reflect prevailing rates. This recognises the historic costs of debt incurred over a ten year period, while also encouraging efficient new investment through the annual update, consistent with the “new entrant” approach.*

*It explicitly recognises that it is prudent and efficient for a large water and sewerage business, such as SA Water, to enter into long-term debt financing*

<sup>20</sup> Appendix F illustrates the interest rate volatility over the past 20 years and forecast rates for the next 15 years (based upon both the current (11 January 2016 yield curve and upon a reversal of rate movements over the past 15 year history).

<sup>21</sup> Update Paper, para. 3.23.

<sup>22</sup> AER Rate of Return Guideline – Explanatory Statement, December 2013, p.12.

<sup>23</sup> ESCOSA, SA Water Regulatory Rate of Return 2016 – 2020: Final Report to the Treasurer, March 2015, pp.3-4.

*arrangements given the long-term supply obligations and long asset lives that the business must invest in.*

*The approach is expected to reduce risk and therefore costs to consumers in the long-term, bearing in mind the nature and scale of the regulatory obligations and the regulated supplier.*

*The proposed approach is also increasingly becoming standard regulatory practice within Australia for application in industries such as energy and water, where the regulated suppliers generally have significant debt requirements, long-term supply obligations and long asset lives. It has been adopted or endorsed by other jurisdictional and national regulatory and policy bodies over the past three years.*

*It is also consistent with observed financing practices of large infrastructure businesses and with the requirements of the National Water Initiative (Principle 1 of the NWI Principles for the recovery of capital expenditure) and the overarching statutory framework under the Water Industry Act 2012.*

*Under this approach, SA Water is incentivised to finance any new investments at or below the prevailing efficient market rates, meaning that consumers ultimately pay only the efficient cost of those investments. For legacy investments, the approach recognises only efficient past financing practices (not rewarding inefficient practices), encourages efficient management of the re-financing costs of those investments over time. In that way it reduces the volatility inherent in a shorter-term approach, which assumes all legacy financing costs will be re-financed at the start of each new regulatory period.*

*Importantly, the proposed approach is based on an assessment of the actions of a benchmark prudent and efficient utility with the same obligations as SA Water. It does not look to the actual actions, costs or legal structure of SA Water itself.*

*The approach proposed will:*

- *protect consumers from any possible costs of poor financing decisions made by SA Water by providing a benchmark rate of return*
- *provide SA Water with a reasonable opportunity to earn sufficient revenue to attract equity and debt needed to finance regulated services, and*
- *incentivise SA Water to outperform the benchmark rate of return.*

The ERA stated the following when it adopted the trailing average approach to determining the allowed debt premium:<sup>24</sup>

*...the hybrid trailing average approach can be replicated exactly by the firm, whereas the Authority's current [rate-on-the-day] approach cannot. Under the Authority's current approach, the firm is required to manage the ups and downs of prevailing rates, with its cost of debt sometimes exceeding the regulated return on debt, and sometimes undercutting it. Over time, on average, there are likely to be limited differences between the two approaches.*

<sup>24</sup> ERA, ATCO Gas Final Decision, June 2015; ERA Discussion paper on estimating the return on debt, March 2015, para. 113.

## The QCA and Dr Lally's conclusions

The Update Paper notes that, whilst a number of Australian regulators have moved towards a trailing average approach, the QCA has taken an alternative decision and rejected it.

Transpower notes that at present the QCA is the only Australian regulator that has considered the trailing average approach in detail and not yet adopted it; every other Australian regulator that has undertaken a detailed assessment of the trailing average approach has adopted it in some form. In that sense, the QCA is an outlier amongst Australian regulators, so is not representative of regulatory thinking in Australia on this issue.

The QCA's rationale for rejection of the trailing average approach, considered with the assistance of Dr Martin Lally, is primarily on the basis of claims that:

1. The on the day approach provides more accurate investment signals
2. There are transition and compensation issues which involves additional complexity
3. The use of the 10 year average is likely to overstate the cost of debt and firms will be incentivised to trade off risk and return to obtain a shorter term of debt
4. It is consistent with the broader WACC approach and regulatory certainty
5. It is more costly as it requires annual updates
6. The NPV = 0 violation is minimal and may be symmetric; and
7. The disadvantages of the trailing average approach outweigh the advantages and there being insufficient advantages to merit a change in methodology.

In addition to the above points, the advice of Dr Martin Lally included the further conclusions:

8. There is no inconsistency in the use of prevailing rates for cost of equity and trailing rates for the cost of debt
9. There is no evidence that mismatches in the regulatory allowance and the debt raising practices results in an increased risk of bankruptcy
10. There is no evidence of lower price volatility over time from the trailing average approach;
11. Changing the base risk free rate from the government bond to swap rates is not supported as the variability and cost is small in absolute terms
12. If the trailing average is adopted, annual updating should be used and
13. The regulator should not allow discretion for regulated suppliers to choose alternate regimes.

Transpower considers that a move to the trailing average methodology would produce improved signals and outcomes for suppliers and consumers. A summary of our views by item is listed below:

1. Investment signals

We do not agree the rate-on-the-day approach provides more accurate investment signals. The five year term for revenue allowance increases uncertainty when considering the pay back on 40 to 50 year investments, both in terms of the margin or return earned and the refinancing risk associated with mismatched asset and liability funding. This uncertainty is compounded by the inability to match the debt risk premium, given the observed debt portfolio management behaviour of both unregulated and regulated entities. Furthermore, the five year regulatory period and narrow determination window both under compensate the regulated supplier and increase the risk of market disruption during the rate setting process within the narrow window.



## 2. Complexity

We consider the transition and compensation issues to be overstated. Procedures for implementing the trailing average approach and annual updates have been set out and implemented by UK and Australian regulators. For New Zealand regulated suppliers, we suggest a transition from the rate-on-the-day approach to the trailing average approach aligned to the commencement of RCP3, in April 2020. The alignment with the commencement of RCP3 would avoid the issue of compensation for previous hedging commitments entered into to align with RCP2. Adopting a 10 year trailing average could be achieved in a consistent manner to those adopted in the Australian states of Victoria and New South Wales.<sup>25</sup>

## 3. Ten year term

Industry debt portfolio management practice for infrastructure utilities and other debt issuers has been demonstrated earlier in this paper to be longer term, averaging ten year issue tenors even for regulated suppliers with the significant incentive to reduce tenor to match the regulatory period and allowance. There is no over-compensation – infrastructure companies tend to issue long-term debt and the allowed revenues would simply reflect that standard efficient and prudent practice).

## 4. The broader WACC approach and regulatory certainty

While there is consistency with the broader WACC approach (five year periods and NPV = 0 at the commencement of the RCP [based upon the current framework]), Transpower considers the five year period to be arbitrarily determined and demonstrably short in the context of infrastructure utilities. Subsequent adjustment to the regulation in Australia and the UK has amended the five year term for WACC benchmark rates to ten year across the majority of regulators. Furthermore, the NPV = 0 will only be true if the discount factors are determined based upon the same regulatory methodology, rather than if the discount factors were determined using life of assets, or a ten year period. Transpower also considers the issue of reduction in regulatory certainty to be overstated. A change to refine and improve the methodology must surely be better than an adherence to an existing but flawed methodology.

## 5. Cost of annual updates

We consider the incremental cost of annual updates to be relatively small. The Commerce Commission already annually calculates an updated WACC for regulated suppliers and an extension to a rolling average determined off an index measured and updated annually is neither onerous, nor costly. Furthermore, the risks and costs associated with the narrow determination window potential market disruption are considerable, well into the tens of millions in potential cost which will fall on both the regulated supplier and the electricity customer.

## 6. NPV=0 violation is minimal and symmetric

As noted in 4, above, we do not consider this measure to be accurate, unless the discount factors are determined on same methodology as used to determine the regulatory allowance. The five year period is arbitrary and inaccurate when considering the investment decisions of infrastructure utilities, typically up to 50 years in length. In any event, Dr Lally considers any violation to be minimal and symmetric.

## 7. Disadvantages outweigh advantages

We do not agree that the disadvantages exceed the advantages. In addition, the regulatory changes implemented by other Australian and UK regulators indicate the consensus is that in fact there are considerable advantages in changing to the trailing average approach from the rate-on-the-day approach.

8. No inconsistency between allowed returns on equity and debt

We agree that there is no inconsistency in setting a forward-looking allowed return on equity commensurate with the prevailing conditions in the market and using a trailing average approach for the allowed return on debt – as is done in many other regulatory jurisdictions.

9. Risk of bankruptcy

We consider that it would be wrong for a regulator to approach reform and refinement of its approach on the basis that it will make no change unless there is evidence of its approach causing bankruptcies. Bankruptcy is an extreme end of the consequences of under compensation or under investment. Thankfully, there are few instances of regulated suppliers ending in bankruptcy. However, there are other less extreme consequences which will occur well before bankruptcy eventuates. These include running additional unplanned outage risks, erosion in service quality, under maintaining assets, under investing, unduly sweating assets, etc in order to maintain returns. Uncertainty and risk inherent in the current WACC methodology encourages regulated suppliers to examine and utilise these levers to manage returns. The behaviour is not consistent with the desire of electricity consumers who would likely prefer a consistent and continuous supply.

10. Lower price volatility

We do not agree with the volatility assessment. Whilst the current regulation delivers certain pricing for the five year periods of the RCP, there is likely to be a significant step change between regulatory periods.<sup>26</sup> The trailing average with annual indexation results in a gradual incremental step change and avoids the potentially significant price changes which result from the five year rate-on-the-day approach. Transpower considers electricity consumers would prefer more frequent incremental adjustments as opposed to significant step changes between RCPs.

11. Annual updating

We agree with the adoption of annual indexation or updating. The updating should be closely aligned to the agreed annual determination window in order to reduce determination lag and cost associated with incurring forward starting hedging.

12. No discretion for suppliers

We agree with reducing discretion over the regulatory framework. The adoption of a simple methodology consistently across regulated suppliers would make the regulation simpler to manage, monitor and maintain.

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<sup>26</sup> Such as those observed in the historical data included in Appendix F.

### 3. Annual updating of the cost of debt allowance

The Update Paper has separated issues to do with the trailing average approach and the question of whether the cost of debt allowance should be indexed through the regulatory period. Transpower views these as closely linked issues that should be considered together for the following reasons:

- The main rationale for the trailing average approach is to ensure that the regulatory allowance mirrors the manner in which an efficient and prudent infrastructure business manages its debt finance (i.e., through staggered refinancing). Annual updating of an allowance set on a trailing average basis achieves this.
- There would be no good reason to implement indexation of the return on debt without also applying a trailing average. This would introduce significant volatility into regulated prices because the cost of capital would be reset in each year according to the prevailing rate, which can vary significantly from year to year. Neither increased volatility nor increased costs is in the interests of consumers or suppliers and is likely to result in suppliers entering more expensive hedging arrangements.

Transpower supports the use of an annual updating approach for the trailing average. We consider the annual indexation to be superior to a single update every five years as it permits the allowed return and financing costs to remain aligned.

Australian regulators — including the AER, the ERA and ECOS — have adopted the annual updating approach in conjunction with the trailing average approach.

Transpower considers the costs of the risks associated with allowing a mismatch in allowed return and financing costs to the regulated supplier and to electricity consumers (in aggregate) to be significant, as noted earlier in this document. Annual administration costs to perform some simple mechanical measures, calculations and updates, on the other hand should not be significant by comparison. On this basis, Transpower considers the administration effort to be reasonable and reduces potentially significant risks and costs.

#### Mechanical updating

The mechanical update on an annual basis presents some challenges. Transpower considers a simple and pragmatic approach to dealing with the methodological issues, agreed between regulator and regulated suppliers, will be appropriate.

Australian regulators who have moved to the annual trailing average use a defined date and defined determination window annually to determine the index update. The 40 day determination window in determining the annual update is the predominant update period adopted.

This annual determination window approach would provide a reasonable and practical mechanism for determining the annual indexation increment. If New Zealand regulated suppliers selected separate respective dates, the current issue of market crowding through a mutual and short determination window in which to rate set 100% of regulated supplier's debt would be avoided. Regulated suppliers have the 40 day annual determination window to rate set one tenth of their debt portfolio, via debt issuance and interest rate swap transactions. There is considerably less volume crowding given the widened window, only one tenth of the portfolio volume is transacted and a long term averaging approach is achieved. We consider that this is a reasonable approach.

Alternative approaches include running a simple daily trailing average over the length of the selected tenor, such as ten years, or other variants. However, when considering the practical application adopted by regulated suppliers, it is highly unlikely regulated suppliers would match the one/ 3,650<sup>th</sup> of the portfolio on a daily basis due to the transactional costs. Behaviour would more likely continue as current, with debt refinanced on an even and periodic basis over a ten year tenor, but there will

be considerably more value at risk than the annual 40 day determination window approach as rates could diverge significantly through the year, from the date the regulated supplier issued debt, for example at the start, middle or end of the entities financial year.<sup>27</sup>

In addition, a tightly confined annual determination window in close proximity to the date the pricing is adjusted for the annual allowed return would reduce the cost of entering forward starting swaps. These swaps normally incur additional cost over vanilla swaps with a normal upward sloping yield curve. For example, under the current regulatory framework the delay between the determination window (when regulated suppliers seek to hedge rates and the start of the RCP, from when the Commerce Commission adjusts the allowed return) is between eight and seven months. For the RCP2 determination window, the average forward points, or costs of entering into these forward starting swaps over vanilla swaps was ca. 20 bps. This represents an annual cost to Transpower of ca. \$ 6-7 million.

With regard to the indexes used to determine the allowed return, we consider that the current base rates could be improved upon. In particular the selection of a narrow population of small size and illiquid bonds in the New Zealand market is particularly prone to error and possibly manipulation. In addition, the lack of transparency over weighting for the different bonds forming part of the selection is undesirable from the regulated supplier's perspective.

We consider the selection of a benchmark for the debt premium requires further analysis. Possible alternatives include the Bloomberg BVAL curves, or FMA rate data. These are likely to be an improvement over the current methodology. However, further consideration and assessment is required to validate the selection of a benchmark. Furthermore, the information providers themselves recognise current state of development and issues with the data and are working to improve these.

A BBB curve, or similar to be considered and agreed is appropriate as the benchmark rate as the normal credit rating for transmission and distribution entities. Transpower is also considered by rating agencies and the market as a BBB credit quality on a standalone basis. In Transpower's case, the government ownership, the nature of our business (a core strategic asset) and assumed significant government support results in uplift in Transpower's standalone rating from BBB to its corporate rating of AA-. Transpower considers it inappropriate to select a benchmark referencing the higher corporate rating as there are subsidy issues between the tax payer and the electricity consumer that result from the government ownership structure and an assumed level of extraordinary support in the event of financial distress.

With regard to the underlying risk free rate benchmark, Transpower considers the swap rate (BKBM) to be the better benchmark, as this is the industry benchmark for interest rates and base rates for corporate bond issuance. The use of the government bond rates, which are difficult and costly to hedge to in New Zealand, gives rise to basis risk between rates, which the regulated suppliers incur, but are not compensated for. Arguably, the debt risk premium, calculated as the difference between the corporate bond rate and the government bond rate compensates regulated suppliers for this risk. The assumed compensation would be correct if the respective rates, government bond, swap and corporate bond rates were perfectly correlated. However, historically, this is not the case. In the event the government bond to corporate bond spread narrows and the government bond to swap remains constant, or narrows to a less extent, there is a uncompensated loss to the regulated supplier. Conversely, the opposite widening of spreads may result in gains to the regulated supplier. For example, during 2011 the government bond spread to swap narrowed due to perceived

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<sup>27</sup> The rate information in Appendices E and F illustrate the significant volatility that can affect markets over relatively short time periods.

heightened sovereign risks globally. However, swap and corporate bond spreads remained relatively consistent.

On a similar basis to other rate movements not accurately measured and factored into the WACC determination, the common defence to remaining with the status quo is that the risks are symmetrical and even out. Transpower does not believe this is a credible defence, as the assumed averaging and “swings in roundabouts” is not supported by fact, or experience.

### Perceived complexity

The Commission appears to be of the view that annual updating of the return on debt allowance (i.e., indexing) would be a “complex and costly” exercise; it implies that annual updating may be less suitable for a default price-quality path, which is intended to be low-cost.<sup>28</sup> The Commission breaks the concern into two parts:

- Annual determination of the cost of capital, and
- Amending the price path to take into account the revised cost of capital.

The Commission notes that the first task is relatively straightforward (particularly if done in a mechanistic way), given that the Commission already determines the cost of capital annually for the purposes of information disclosure. Transpower agrees with this.

The Commission seems to have some reservations about the process for updating the mechanism annually for EDBs, but notes that the task could potentially be achieved for Transpower through the current annual adjustment to the MAR under the individual price-quality path. Once again, we agree that updating Transpower’s cost of capital through the MAR update process would be straight forward.

In our view, the Commission’s residual concerns about complexity are overstated. The practicalities of applying annual updates of the cost of capital allowance and regulated revenues (or prices) to accommodate the trailing average approach has been investigated and addressed by regulators overseas in a number of jurisdictions. The consensus amongst these regulators is that the key to making annual updating workable is to make the process of updating as mechanistic as possible. Regulators such as the AER and Ofgem are already making annual updates of the cost of debt allowance for the businesses they regulate. This demonstrates that annual updating is feasible.

On the issues of complexity and price volatility, ESCOSA explained recently that annual updates of the return on debt should be viewed in the same way as annual updates to regulated prices for inflation, which most regulatory frameworks, including the Commission’s, provide for:<sup>29</sup>

*The implication of annual updating is that the regulator cannot determine in advance what the exact revenue allowed will be in the outer years of the regulatory period. Therefore, just as allowed revenue is adjusted each year for actual inflation, adjustments could also be made to reflect changes in the cost of debt. These annual adjustments would not be substantial as nine out of ten years which make up the cost of debt calculation would be the same as the previous year, thus smoothing out the revenue path when compared with resets that coincide with regulatory terms.*

Given that a number of regulators have considered in depth, and resolved, the implementation issues related to annual updating of the cost of debt allowance, to accommodate the trailing average approach, the Commission need not start from first principles. The Commission has the benefit of

<sup>28</sup> Update Paper, para 3.48.

<sup>29</sup> ESCOSA, SA Water Regulatory Rate of Return 2016 – 2020: Final Report to the Treasurer, March 2015, p.59.

learning from the deliberations of the regulators that have gone before it. The Commission's main task will be to resolve how the implementation solutions devised by other regulators may be adapted appropriately for New Zealand.

### Alternative options such as expanding and or differentiating the reference period

The Update Paper seeks views on alternate approaches that could potentially mitigate the problems associated with the rate-on-the-day approach:

1. Widening the reference period; and/or
2. Differentiating the determination window dates of regulated suppliers.

These two alternative approaches would certainly assist in addressing some of the issues with the narrow determination window, particularly in New Zealand where regulated suppliers form a large part of a small and relatively illiquid market. However, while wider and differentiated determination windows might mitigate the volume risks, they do not mitigate refinancing risk, nor are they consistent with the debt and refinancing management behaviour of unregulated or regulated suppliers and therefore would not adequately address the risks associated with refinancing at rates outside the determination window.

The key benefit of widening and differentiating the determination windows for suppliers is the reduction in volume of interest rate hedging activity by suppliers occurring through the 20 to 21 working days of the determination window. The debt of regulated suppliers currently reset through the same determination window is in excess of \$7 billion.<sup>30</sup> This exposure translates into ca. \$350<sup>31</sup> million in refinancing and interest rate risk to clear through consecutive days of the determination window. For Transpower alone the refinancing and interest rate risk to clear through the determination window is ca. \$150 million per day<sup>32</sup>.

By comparison to the size of the interest rate swap market in New Zealand, which is estimated by Westpac to be ca. \$150 million per day for five year tenor based upon observed average volumes, the volume to be reset during the determination window significantly exceeds average daily market volumes. Further, in order to match the regulatory allowance and minimise refinancing risk requires the volume to be moved evenly and consistently over each of the determination window days. This presents a significant economic equilibrium problem where supply exceeding demand and consequently price<sup>33</sup> will invariably move upwards.

We estimate the move could be ca. 50 bps on interest rates, based upon guidance from market intermediaries and assuming markets do not become disrupted, or ca. \$25 million p.a.<sup>34</sup> (based upon Transpower's current RAB), the cost of which is borne by electricity consumers. However, while market intermediaries (banks) have estimated considerably more, the actual experience will depend on market circumstances over the determination window. The market experience over August 2014 is described below.

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<sup>30</sup> The aggregate debt of Transpower and the regulated electricity distribution suppliers (Vector, Powerco, Wellington Electricity, Trustpower, etc) is assumed to be ca. \$7 - \$9 billion, based upon recent available financial statements.

<sup>31</sup> ca. \$7 billion debt / 20 days.

<sup>32</sup> ca. \$3.3 billion debt / 20 days.

<sup>33</sup> Interest rate and/or credit margins to the extent regulated entities concentrate issuance in the determination window to reduce mismatch risk.

<sup>34</sup> ca. 50 bps x \$5 billion RAB.

A paper produced by UBS for TransGrid in Australia identifies the risk in the Australian context and market size<sup>35</sup>. The paper identifies the market size and constraint issues for TransGrid in Australia with the same concerns as Transpower raises. However, the New Zealand swap market is smaller and the relative size of the debt portfolios of regulated suppliers larger, compounding the challenges faced by Transpower in New Zealand.

The RCP2 determination window in August 2014 resulted in a relatively benign outcome on interest rates due to two factors:

1. The relatively lower volume as regulated suppliers either chose not to adhere to the determination window, and/or those that did hedged cautiously over the determination window and on the shoulder months prior to and following the window, as was Transpower's approach<sup>36</sup>; and
2. US term rates moved lower and were followed by international markets including New Zealand. In addition, falling dairy prices forced rates down in New Zealand. These movements coinciding with the determination window delivered the demand side for the fixed interest rate risk supplied by regulated suppliers.

Even with these two market movements, the New Zealand interest rate swap curve moved slightly less than the US benchmark, indicating some upwards pressure on rates in New Zealand due to the volume of activity by regulated suppliers<sup>37</sup>. Furthermore, the narrow determination window and hedging behaviour of regulated suppliers presents a significant "front running" risk for speculators, who will position themselves in advance of the determination window, moving market rates up, with the view to realising a profit over the determination window, when anticipated volume is transacted. In this event, speculators' profits will be delivered at the expense of electricity consumers.

It is unlikely the same dynamic will repeat in the next determination window, likely August 2019, and Transpower considers it prudent to at least widen and diversify regulated suppliers' determination windows if the trailing average approach is not adopted.

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<sup>35</sup> "UBS response to the Transgrid request for interest rate risk analysis following the AER Draft Decision of November 2014".

<sup>36</sup> While avoiding issues of market disruption, entities not hedging to the determination window run more risk of rates moving against the regulatory allowance determined over the window.

<sup>37</sup> While it is difficult to attribute rate movements to any single market or economic factor, the high correlation between US term swap rates and NZ term swap rates means we can observe diverging trends. In the period immediately prior to the August 2014 determination window (as Transpower and at least one distribution company commenced hedging to the window the spread between US and NZ rates widened ca. 28 bps, from ca. 2.65% spread between the NZ and US 5 year swap rates to a spread of 2.93%.

## 4. Implementation issues

The Commission has expressed some concerns that the trailing average approach with indexation may be complex to implement in New Zealand (particularly in relation to EDBs). It has sought comment on some of the practical issues that would need to be resolved before the approach can be implemented. These issues include:

- The tenor of debt to be assumed
- The length of the trailing average period that should be applied
- Whether there would be a need for any transitional arrangements; and
- The mechanics involved in conducting annual updates.

### Tenor of debt

In respect of the tenor of debt to be assumed, the evidence (presented above) suggests that regulated and unregulated suppliers in New Zealand and Australia typically raise ten year debt (consistent with the long-lived nature of infrastructure assets). We consider that the Commission should adopt a ten year tenor assumption.

### Length of trailing average period

If a ten year tenor is adopted, and it is accepted that suppliers follow a staggered refinancing policy such that 10% of the portfolio is refinanced annually, a ten year trailing average period would deliver a completely staggered debt portfolio. Transpower notes that all the Australian regulators that have adopted the trailing average approach have employed a ten year averaging period.

### Transition arrangements

We suggest the transition to a trailing average occur at the conclusion of RCP2 and commencement of RCP3. This would avoid any issues of compensation for risk free rate hedging commitments entered into aligned to the current regulation, such as interest rate swap contracts.

There are considerations over how the trailing average should be implemented for both the risk free rate and the debt premium components of the WACC methodology documented below.

For the risk free rate, at the commencement of the RCP there would be no historical trailing average that can be hedged to, or rate that can be achieved via financial derivatives. We propose a transition via a stepped approach whereby an even ten year profile of interest rate risk is hedged to rates determined from the prevailing swap or government bond yield curve. The setting of the initial rates could be undertaken during a 40 day determination window.

For example, one tenth of the risk free rate will be determined from the prevailing one year rate, one tenth will be determined from the prevailing two year rate, etc..., to the tenth year when the final one tenth will be determined from the prevailing ten year rate. In this manner a trailing average profile can be implemented from the commencement of the RCP on prevailing rates. In subsequent years, one tenth of the portfolio will be rolled for a tenor of ten years and the trailing average approach is achieved going forward.

For the debt premium rate, we consider transition arrangements that recognise debt issued on a trailing average over the preceding ten years is reasonable, given the prudent debt financing practices of large debt issuers in New Zealand (and Australia and elsewhere). Contractual commitments on existing debt means there is an existing ten year rolling average benchmark which regulated suppliers have committed to.



An alternate approach, similar to the interest rate forward curve transition methodology would be inappropriate as there will be windfall gains or losses as a result of setting a price based upon forward rates for existing debt already committed to under historic rates.

In Australia, a significant consideration for transition arrangements was the redistribution or reclaiming of perceived windfall gains delivered on the debt premium for entities with a determination window in 2008. In this period, immediately post the 2008 credit crises, debt premiums spiked over 300 bps, or 3%. Regulated suppliers with financing and refinancing completed prior to and following this elevated period of debt premiums received windfall gains when they were rewarded a revenue allowance determined incorporating the 3% debt premium, but had financed at rates as low as 0.2% to 1%. Appendix G illustrates credit margin, or debt premium trends from this period using bank CDS prices as a proxy for changes in the credit costs. The volatility in the chart demonstrates the “lottery” outcome implicit with the rate-on-the-day approach.

New Zealand did not have a similar experience as the determination window for RCP1 followed this period of rates spike in 2008. Rather the New Zealand experience was that rates reached post credit crises lows over the New Zealand determination window and became elevated due to the Greek sovereign crises immediately following. More recently, credit margins again reached post crises lows in the determination window for RCP2 in August 2014, followed by retracing upwards immediately post the determination window to the current date. For New Zealand regulated suppliers, there has been significant under compensation and windfall losses over the regulatory periods due to the rate-on-the-day approach or regulatory methodology.

In any event, the rate-on-the-day outcome which gave rise to the 300 bps illustrates the significant problem with the rate-on-the-day approach. For the Australian regulated suppliers reset in 2008, significant windfall gains resulted, It is highly possible the opposite result, or a result similar to the New Zealand regulated suppliers rate set will result in the future under this regulatory framework.

## 5. Compensating for efficiently incurred longer-term debt

We consider that regulated suppliers should be compensated for efficiently incurred longer-term debt.<sup>38</sup>

The argument for shorter tenor and only compensating regulated suppliers for shorter tenors are not supported by industry practice, either by unregulated or regulated suppliers. The argument for even longer dated debt is more compelling as asset lives for electricity transmission and distribution can be 40 years or more and a reasonable investment decision would incorporate the asset lives into the funding consideration.

On a simple basis, in order to remove financing risk an entity would seek to fund assets with matched term debt. This reduces the risks associated with refinancing multiple times over the life of the asset. The financing certainty of matched term funding has higher cost (40 year debt is more expensive than five or ten year debt), particularly in markets where investor appetite for tenor is relatively short such as in New Zealand and Australia where there are very few investors prepared to invest over ten years.

Longer tenor debt incurs higher debt premium and interest costs in order to compensate investors for additional time and uncertainty. Therefore, there is a trade-off between tenor and cost managed by the issuing entity. To mitigate the financing costs of debt funding longer dated assets, prudent debt issuing entities fund shorter, with a tenor considered by the entity to reasonably mitigate the risk at a reasonable cost.

The approach to funding with debt tenor shorter than asset lives exposes the entity to risk that market disruption, or issuer distress, will periodically make refinancing more challenging. In the normal course of business, entities accept and manage some kind of refinancing risk, balancing the risk of mismatched asset and liabilities against the cost of eliminating the risk through matched funding.

The behaviour is beneficial for both the entity and the customer, as costs to the entity and prices to the consumer are kept lower than otherwise under the matched term funding approach.

The current five year tenor undercompensates entities for the mismatch risk. We consider a ten year tenor more reasonable, based upon market practise and observations.

We do not consider that arguments for shorter tenor are robust. For example, the argument previously put forward by Dr Lally, that regulated suppliers are incentivised to shorten up tenor in order to deliver better returns are not supported by practice of either unregulated or regulated suppliers. In any event, if entities shorten issue tenors to achieve reduced costs, the cost saving is only realised through additional risk, ie: additional refinancing risk exposures. Therefore, it is unreasonable to propose an entity should not keep the benefit of the avoided costs associated with the additional risk exposure.

### Issues with the TCSD

We note that by adopting the trailing average approach with a ten year bond characteristic, the requirement for the annual TCSD adjustment is removed. We consider this to be preferable to modifying the TCSD. In the event the rate-on-the-day approach is retained, Transpower considers the move to a 10 year bond characteristic is desirable and would eliminate the requirement for the annual TCSD calculation.

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<sup>38</sup> The analysis earlier in this document, illustrated in Appendix B and C and the tenor's adopted more recently by the regulators listed in Appendix G support the longer tenor, of ca. ten years and compensation for the costs associated with the longer tenors.

However, in the event the current methodology, including the five year bond characteristic is retained there are several issues that require addressing:

1. The caps implicit in the TCSD calculation, and
2. The “A” curve used instead of the BBB curve.

The TCSD calculation is not a simple adjustment for the variance between the ten and five year tenor at issue date. The calculation is unnecessarily complex and results in the capping of the spread difference between the five and ten year rates.

The use of the 10 year “A” curve also undercompensates the supplier, against the BBB curve allowed for in the determination of the DRP in the WACC calculation. To be consistent, a BBB rate should be adopted.

## 6. Compensation for foreign debt issuance costs

The New Zealand and Australian debt capital markets are small relative to offshore and international debt capital markets. This means that large issuers in Australasia are sometimes unable to source all of their debt requirements domestically (or at a reasonable cost).<sup>39</sup> Appendix D illustrates the issuance bias of a sample of Australasian corporate issuers to both their own domestic and foreign debt capital markets. As evident from the chart in Appendix D, larger issuers are more reliant on foreign markets given their debt portfolio size relative to the local debt capital markets.<sup>40</sup>

Local domestic investors, both wholesale and retail favour shorter term debt investments of five to seven years. This preference is illustrated by average issue tenors in New Zealand and Australia. In addition, Transpower's debt issue experience is that investor appetite for tenors over seven years is limited to three local investors.

Domestic investors preferring longer tenors are limited and the funds available to deploy at longer tenors even more limited. These factors make it difficult for larger infrastructure issuers to manage their refinancing risks, or issue debt at reasonable costs. The cost of selling debt to additional marginal investors increases significantly over prevailing secondary market rates.

Some suppliers use international debt capital markets to.<sup>41</sup> Transpower's practice has been to issue debt overseas in order to diversify investors and tenors, and to source the volume of debt they require.

Overseas issuance entails cost such as:

1. compensating investors for the uncertainty of foreign debt investment and longer tenor through higher debt premiums
2. cross currency hedging costs (execution and cross currency basis), and
3. costs associated with issuing.<sup>42</sup>

An issuer such as Transpower would typically incur ca. 50 bps higher financing costs when issuing foreign debt<sup>43</sup>. This translates to foreign debt financing costs of ca. \$8 million p.a.

The existing cost of capital IM does not provide any compensation for the costs associated with overseas debt issuance. As these costs support an efficient and prudent debt management strategy, Transpower submits that explicit compensation for these costs should be provided for in the cost of capital IM for those qualifying issuers (in a manner similar to the TCSD allowance the Commission makes presently for qualifying issuers of long-term debt).

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<sup>39</sup> The size of the Australasian market is also a problem for bank issuers with Australasian banks reliant on international debt capital markets for a significant portion of their wholesale funding.

<sup>40</sup> North American, European, Asian and United Kingdom issuers do not have similar difficulties, as their domestic debt capital markets are deeper, more liquid and have appetite for longer tenors than the Australasian markets.

<sup>41</sup> For example, Vector, Powerco, Wellington Electricity, Transpower and other issuers adopt this strategy.

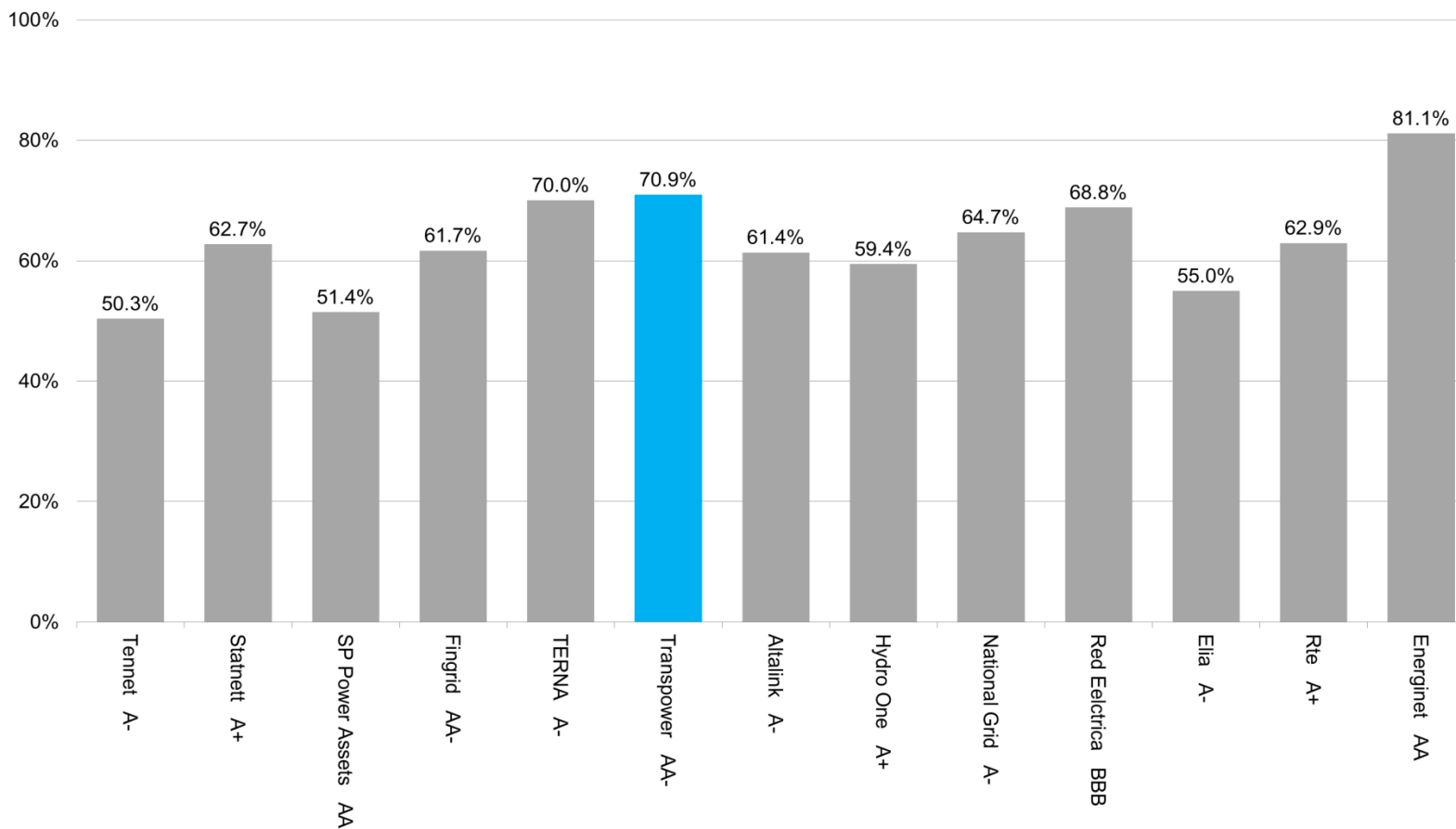
<sup>42</sup> These costs typically include the cost of brokers and intermediaries (i.e. banks), rating agency fees and legal fees.

<sup>43</sup> This estimate is based upon Transpower's debt portfolio. The premium is not static and depends upon foreign debt capital market and tenor.

## 7. Appendices

# Appendix A

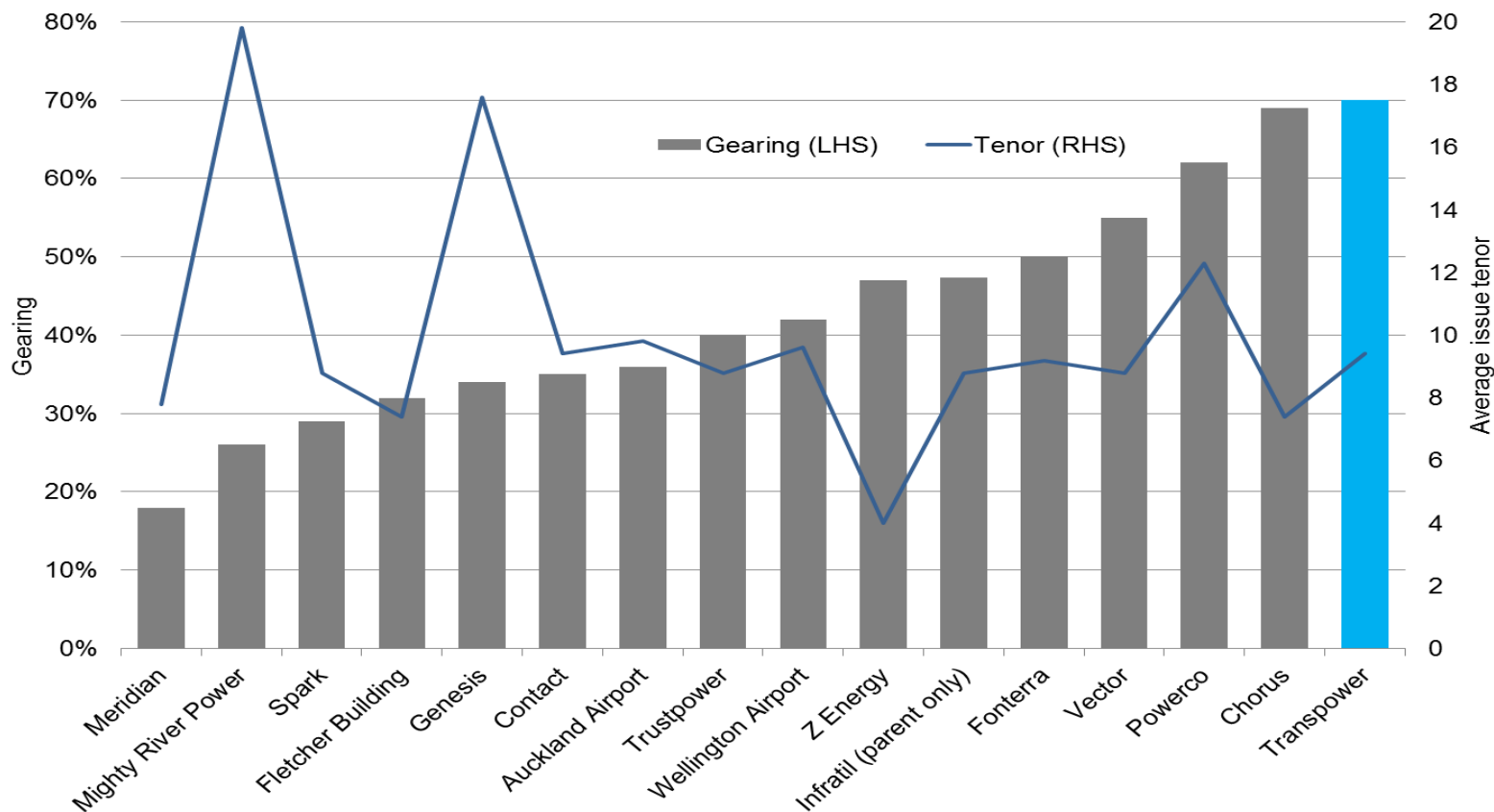
## Gearing - international transmission peers



**Source:** Standard & Poor's, rated issuer Key Statistics, December 2015

# Appendix B

## Gearing and tenor– New Zealand large debt capital market issuers

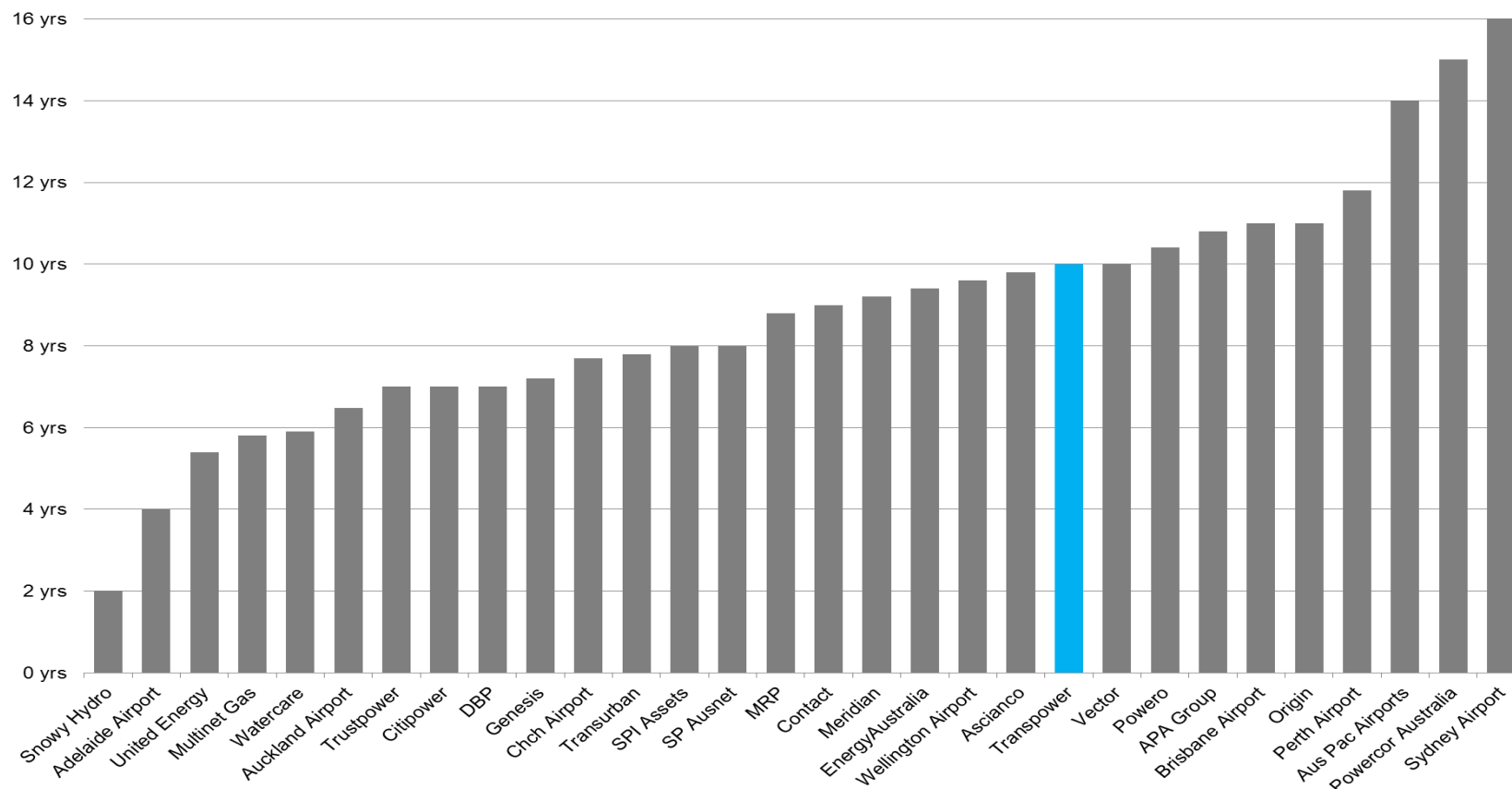


Average issue tenor is determined from debt portfolio durations

**Source:** Annual reports of respective issuers (most recent as at December 2015)

# Appendix C

## Tenor – New Zealand and Australian large debt capital market issuers



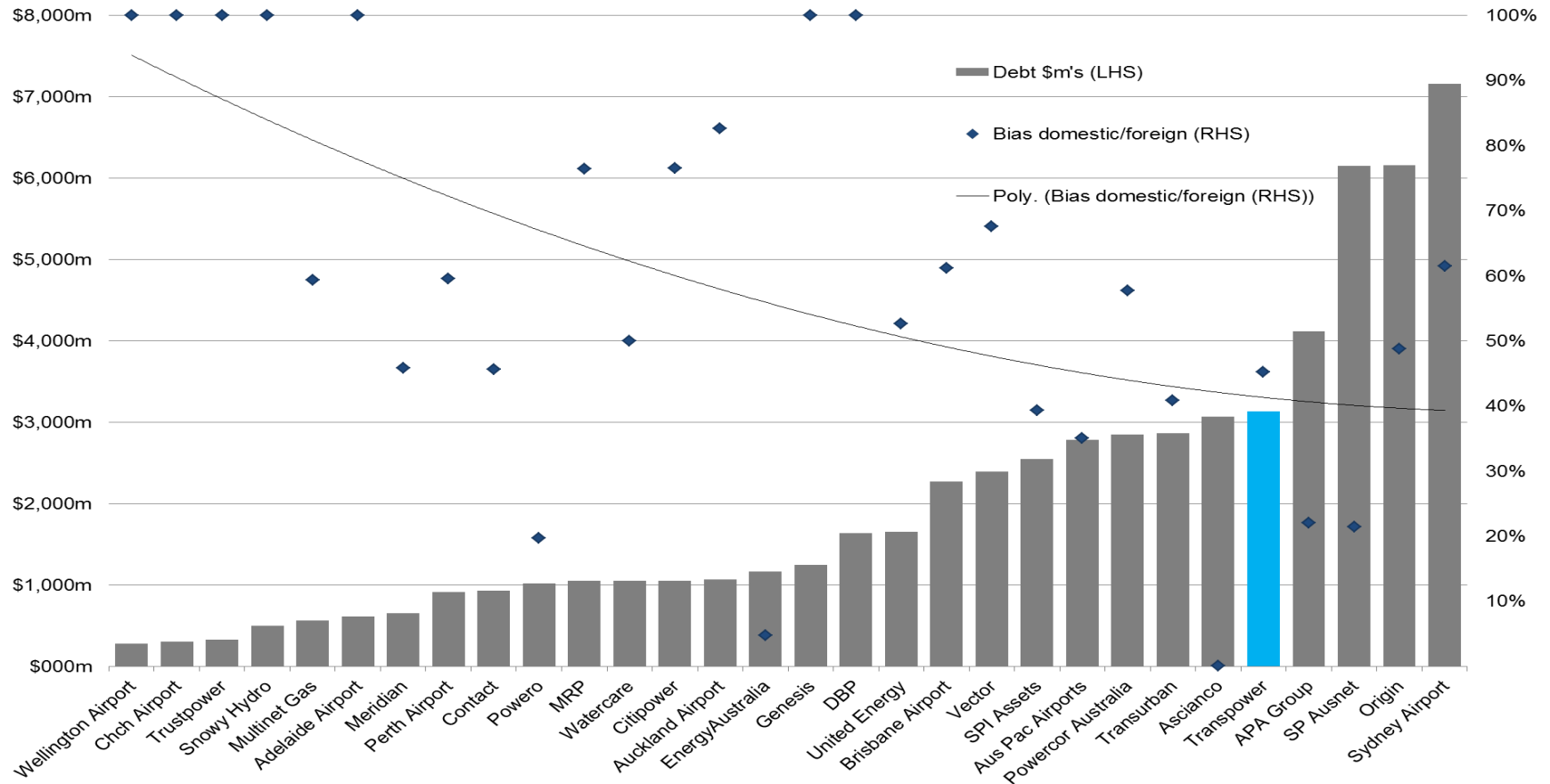
Average issue tenor is determined from debt portfolio durations

**Source:** Kanganews Australasian Corporate Year Book 2014



# Appendix D

## Issue bias domestic/foreign – Australasian large debt capital market issuers



**Source:** Kanganews Australasian Corporate Year Book 2014

# Appendix E

## Credit Default swaps of Australasian banks

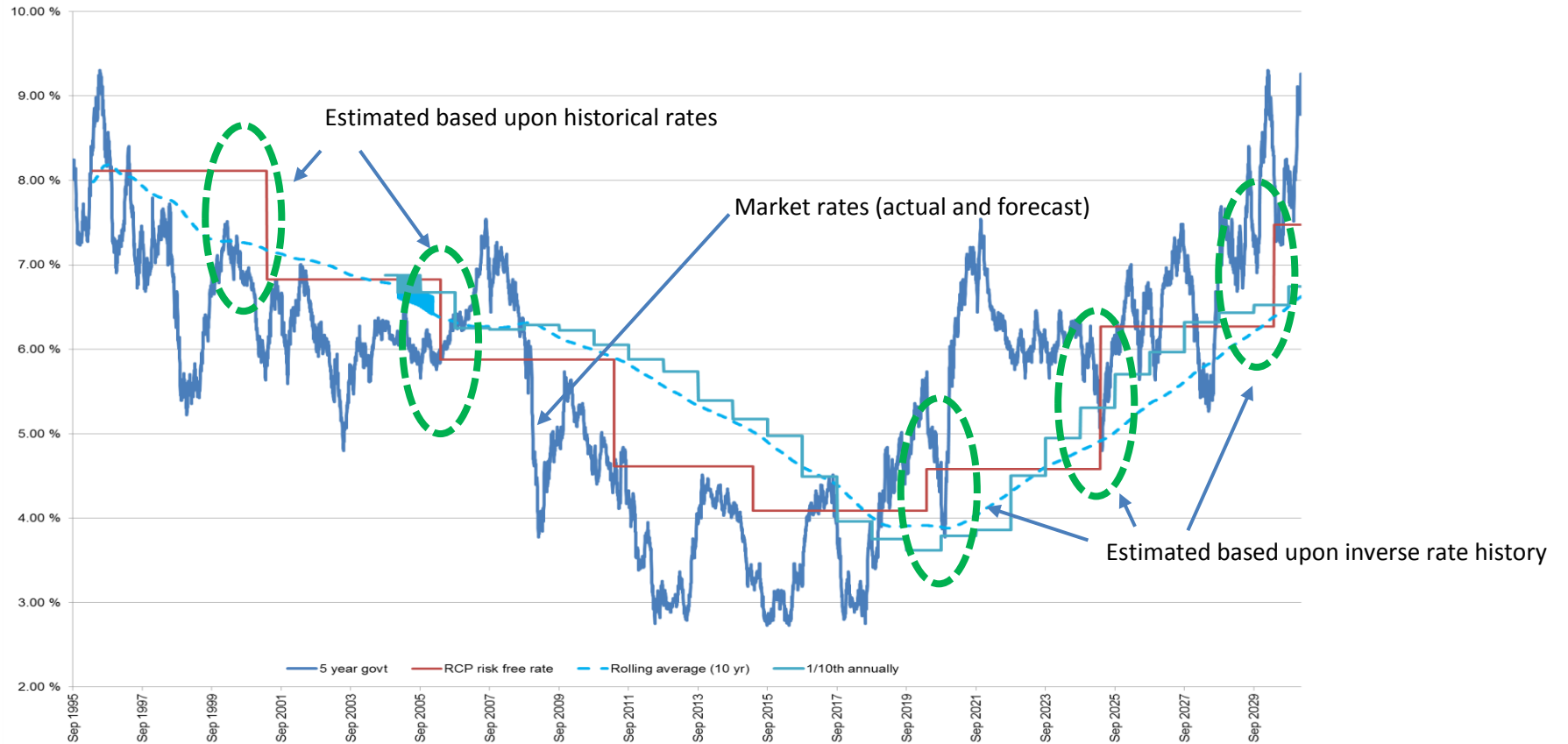


Source: Bloomberg

Note; using bank CDS spreads as an observable proxy for debt premium, regulated supplier funding efficiently is under compensated by the regulatory allowance for debt premium through RCP2 as illustrated by average rates over five years versus the determination window rate

# Appendix F

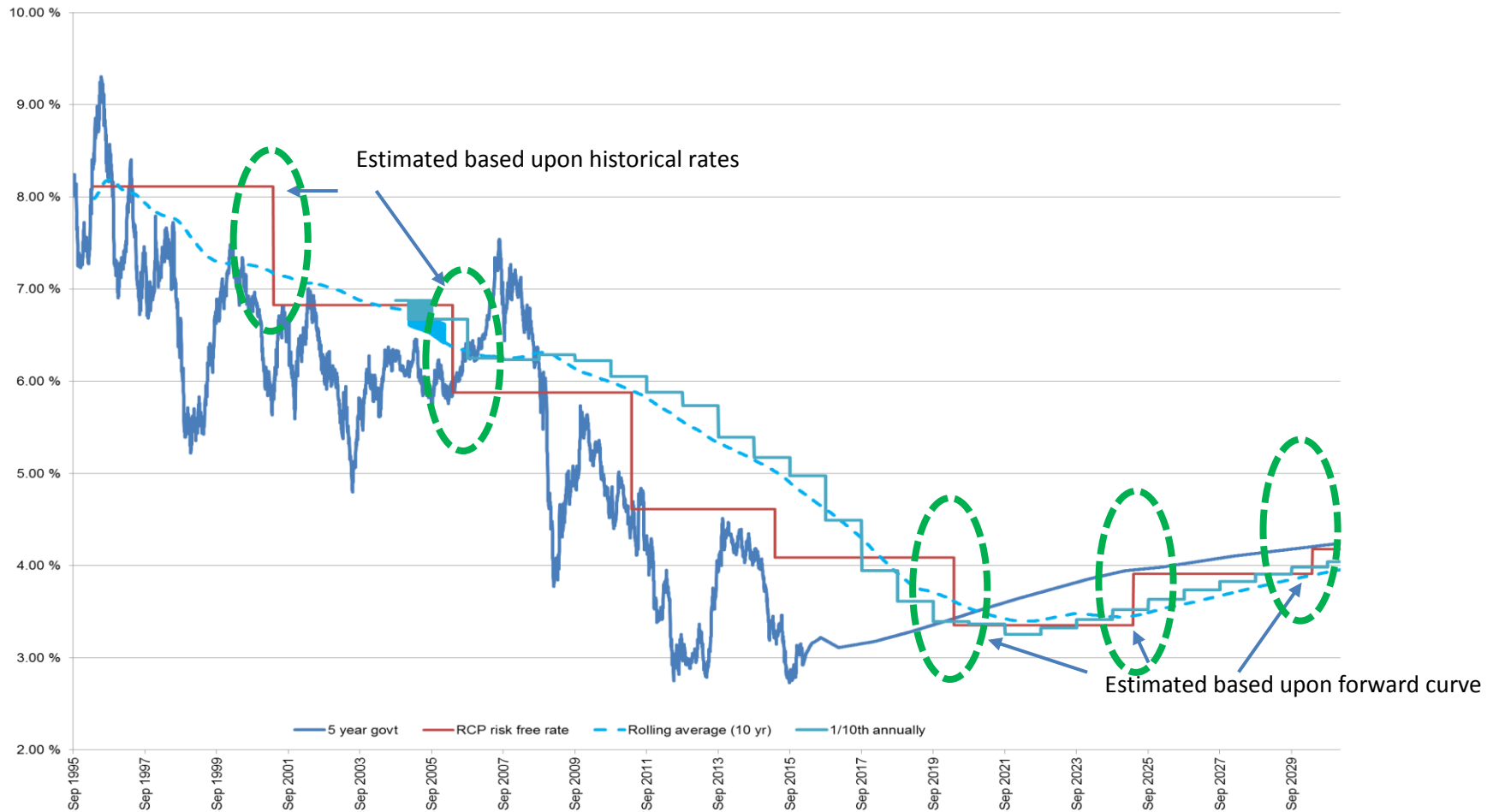
## 1 – Interest rate history and forecast based upon historical trend reversal



**Source:** Bloomberg

*Note the RCP risk free determinations are estimated for the five year periods preceding the RCP1 determination to demonstrate step changes*

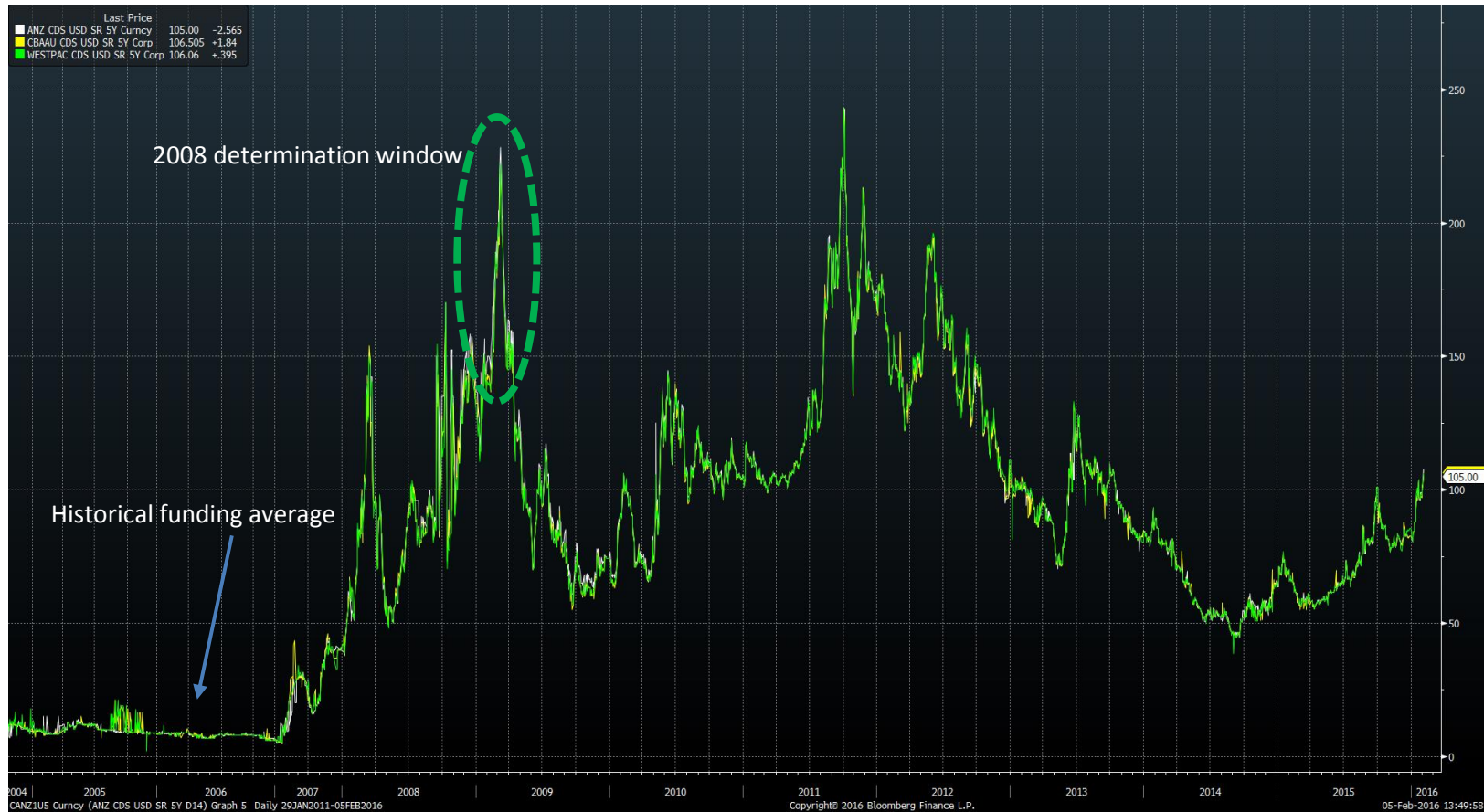
## 2 – Interest rate history and forecast based upon 11 January 2016 yield curve



Source: Bloomberg

# Appendix G

## Credit Default swaps of Australasian banks – 12 year history



Source: Bloomberg