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## Update paper on the cost of capital

We welcome the opportunity to submit on the Commerce Commission's Input Methodologies Review *Update paper on the cost of capital topic* (WACC Update Paper), published 30 November 2015, and related material.

### Summary of our views

Regulatory certainty and predictability help reduce risk for both regulated suppliers and consumers and helps increase suppliers' willingness to invest to sustain and improve services.

That certainty and predictability is particularly critical for investors in long lived assets, such as those regulated under Part 4 of the Commerce Act 1986, and particularly in relation to asset valuation and cost of capital.

We consider that the Cost of Capital IM is broadly fit for purpose but requires specific attention to the following:

1. The "rate on the day" approach does not reflect efficient debt management practice and exposes consumers and suppliers to significant unnecessary cost and risk.<sup>1</sup>
2. A trailing average approach better reflects efficient debt management practices and would substantially address problems with the "rate on the day" approach (this would, we estimate, reduce costs to consumers and regulated suppliers by more than \$100m per annum).
3. Adoption of a more explicit and structured approach to estimating the market risk premium (MRP) would improve the transparency and robustness of MRP estimates.
4. The SBL-CAPM should be retained, but the accuracy of cost of equity estimates derived using this model may be improved by using the Black-CAPM to correct the well-known low-beta bias in the SBL-CAPM (placing some weight on both the adjusted and unadjusted SBL-CAPMs).
5. The Commission is right not to give further consideration to a two-tier WACC or the energy WACC percentile in this review. We see no value pursuing Black's SBDR which can only produce risk-neutral cashflow estimates (and therefore cannot provide a useful cross check) and has a number of substantive problems with its implementation.

We support the Commission's development of an IM decision-making framework (DMF) and the draft DMF has been factored into our thinking as we prepared this submission. We consider the DMF should be applied to any potential changes to the cost of capital IM.

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<sup>1</sup> We estimate this cost to be \$25m and \$11m respectively for Transpower alone.

In the rest of the submission we present introductory discussion of contextual factors relevant to this WACC review then expand on the points above. We end with commentary on related aspects of the overall regulatory framework, and risk allocation between suppliers and consumers.

## Introduction

This submission should be read in conjunction with our previous submissions, and associated expert reports, on the current IM review and on the recent WACC percentile review.

We support the Commission's approach to this consultation, specifically early engagement with stakeholders but also its decision to publish the terms of reference for Dr Martin Lally's work in this area (which aids the transparency of the Commission's process).

We welcome the one week extension to this consultation however consider the consultation window remains tight for this wide ranging and important consultation, especially given the Commission's emphasis on new evidence. Coincidence with related Commission and Electricity Authority consultations and the holiday period exacerbates this concern.

Our submission includes two companion reports:

- **Transpower, Trailing average cost of debt and efficient debt management**, February 2016. This report details our views on efficient debt management, the additional costs that the current regulatory settings impose on our debt management, and why a trailing average cost of debt approach should be adopted.
- **Frontier Economics, Cost of equity issues related to Input Methodologies review**, February 2016. This report provides Frontier's views on: (i) the Commission's approach to estimating the TAMRP; (ii) the Commission's approach to beta estimation; (iii) the use of alternative models to the SBL-CAPM; (iv) MEUG's proposal that the Commission should apply the Black's Simple Discount Rule (BSDR).

We recognise that our submission, in particular the Transpower report above, contains significant new evidence. The authors of the two companion reports are available should the Commission wish to clarify or discuss any of the analysis or conclusions within.

### *Objective for the WACC IM review*

The main objective of the WACC IM review should be to ensure WACC is estimated as accurately as possible, also that it reflects and promotes efficient debt management practice (as observable by comparable firms and in "workably competitive markets").

We support the founding principle that "The cost of capital IM seeks to ensure expectations are for a normal rate of return are similar to that expected in workably competitive markets for activities of comparable risk, such that the Part 4 Purpose is met".<sup>2</sup>

We consider the most obvious gap between the WACC IM and the type of debt management practices that would be expected in a workably competitive market is the current approach of assuming all debt for the 5-year regulatory cycle is funded in a single month. This is both unrealistic and inefficient and imposes significant costs on consumers and regulated suppliers. We estimate those costs, in relation to Transpower alone, to be in excess of \$15m and \$11m per annum respectively.

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<sup>2</sup> Commerce Commission, Input methodologies (electricity distribution and gas pipeline services) reasons paper, 22 December 2010, paragraph 6.2.1.

We believe that adopting a trailing average cost of debt approach would bring the WACC IM closer into line with debt management practices in workably competitive markets and substantially or entirely eliminate these inefficiencies.

We consider the accuracy of the WACC estimates further could be improved by:

- (i) estimating the asset betas using every possible reference day (and then averaging the resulting estimates to smooth out as much of the sampling error as possible)<sup>3</sup>
- (ii) adopting alternative liquidity filters, such as the Amihud method, to identify thinly-traded stock; and
- (iii) retaining the SBL WACC methodology but, consistent with other practitioners, making adjustments consistent with evidence from alternative models.

In relation to point (iii) we note Frontier's recommendation that the Commission continue to use the SBL-CAPM to estimate the cost of equity, but use estimates from the Black CAPM to correct for the well-recognised low-beta bias associated with the SBL-CAPM. This would only require minor changes to the WACC IM.

### *Regulatory certainty and the decision-making framework*

Regulatory certainty and predictability helps reduce risk for suppliers and consumers and helps increase their willingness to invest. Regulatory certainty and predictability is particularly critical for investors in long lived assets, such as those regulated under Part 4 of the Commerce Act 1986.

Consistent with this, we agree with the Commission that it doesn't need to revisit last year's WACC percentile decision (the Commission was quite clear it was bringing forward the review of the WACC percentile<sup>4</sup>), and there is no merit in giving significant further consideration of MEUG's two-tier WACC proposal.

We also welcome the Commission's position that the "starting point for estimating individual parameters is the current approach",<sup>5</sup> particularly given supplier unease with the Commission's stance, in the WACC percentile review, on the status of the 75<sup>th</sup> percentile setting.

The extent to which the IMs achieve their objective of providing certainty and predictability hinges, in a large part, on the circumstances under which the IMs would or may be amended. This is a function of both legislative requirements, and also of the approach the Commission takes to reviewing the IMs, including the thresholds (implicit or explicit) for amending the IMs.

As is clear from the High Court IMs Merit Appeal decision, parties proposing changes to the IMs – be it the Commission or submitters – should be able to demonstrate, with evidence, that change would be to the long-term benefit of consumers. This appears to underpin the Commission's strong emphasis on the need for evidence in the WACC Update Paper which should, in our view, assist in defining appropriate thresholds for amendment of the IMs.

Also, as contemplated in the Commission's draft IM decision making framework, the thresholds for

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<sup>3</sup> The Commission could derive quite a different beta estimate if it were to choose Mondays as the reference day rather than any other day in the week. The way to overcome this problem is to estimate the betas using every possible reference day, and then average the resulting estimates (to smooth out as much of the sampling error as possible).

<sup>4</sup> When the Commission first consulted on timing of the review of the cost of capital IMs/WACC percentile it was explicit that it was considering undertaken the review "early". Refer to: Commerce Commission, Invitation to have your say on whether the Commerce Commission should review or amend the cost of capital Input methodologies, 20 February 2014.

<sup>5</sup> Commerce Commission, Input methodologies review: Update paper on the cost of capital topic, 30 November 2015, paragraph 2.3.

change and level of evidence required should range from relatively low, for error correction and non-contentious changes, to very high for contentious changes that would fundamentally change the IMs and/or cause material wealth transfers between consumers and regulated suppliers.<sup>6</sup>

The application of high thresholds (and, implicitly, a high burden of proof) for amendment of fundamental components of the IMs or Part 4 regime, would help provide greater certainty for regulated suppliers (that they will be able to recover the prudent and efficient cost of their investments) and for consumers (that they will be safeguarded against excessive prices).

### *UCLL and UBA FPP determination decisions on WACC*

The Commission has directed that “Stakeholders should also be aware of, and consider, our decisions on the Cost of Capital for the Unbundled Copper Local Loop (UCLL) and Unbundled Bitstream Access (UBA) services Final Pricing Principle (FPP) in the telecommunications sector”.<sup>7</sup>

There are a number of aspects of the FPP determinations we have not had time to fully consider in the consultation time-frame (noting release of the determinations part way through the consultation window). For example, the Commission has stated that the focus of calculating the TSLRIC prices is on establishing an efficient price, rather than on recovery of Chorus’ actual costs (this is quite a fundamental difference). There are a number of aspects of the decision that may have implications for the returns Chorus receives, not just the decision on WACC.

The approach the Commission adopted appears to be (generally, but not entirely) consistent with effectively treating the WACC IM as a de facto IM under Part 2 of the Telecommunications Act 2001. This was recognised by the Commission in the UCLL and UBA FPP determinations.<sup>8</sup> However, we note that there were some minor variations from the WACC IM in the FPP determinations. For example, the determinations granted Chorus an allowance for interest rate swap costs of eight basis points, based on the cost of executing two swaps, in contrast to the WACC IM which provides an allowance of four basis points only. We would expect this change to be reflected in the amendments to the WACC IM.

The other main exceptions were for the determination of asset beta and WACC percentile, which reflected legislative and industry-specific factors.

We support the Commission adopting a consistent approach across different sectors, and different jurisdictions, except where there are clear industry-specific or legislative differences which justify a different approach. For example, recognising the inherent differences between a TSLRIC model and a historic-cost based building blocks model.

We comment on how the use of a single month for the UCLL and UBA determinations created a price “lottery” for Chorus, access seekers and consumers, below<sup>9</sup>, and also on the implications of the approach the Commission took to Chorus’ debt age for application of a Term Credit Spread Differential (TCSD).<sup>10</sup>

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<sup>6</sup> Our views on the thresholds that should be incorporated into the decision-making framework are discussed in more detail in Transpower, Input Methodologies Review: Problem definition and decision-making frameworks, August 2015, section 3.2.

<sup>7</sup> Commerce Commission, Input methodologies review: Update paper on the cost of capital topic, 30 November 2015, paragraph 1.8.

<sup>8</sup> Commerce Commission, Cost of capital for the UCLL and UBA pricing reviews, 15 December 2015, paragraph 74.

<sup>9</sup> Refer to the section: “Trailing average cost of debt”.

<sup>10</sup> Refer to the section “Term Credit Spread Differential”.

### *Risk of circularity*

Care needs to be taken to avoid circular justifications to change, or not change, the IMs. For example, justifying retention of the approach in the WACC IM on the basis that it is consistent with the approach taken in the UCLL and UBA FPP determinations (which, itself, was justified on the basis of consistency with the WACC IM).

Of particular interest to us, the Commission rejected the use of a trailing approach for the UCLL and UBA FPP determinations but the consideration of the option (both in submissions and in the determinations) was relatively limited and cursory (principally four paragraphs in the final determination<sup>11</sup>).

We would expect options like the trailing average cost of debt to be given comprehensive consideration in the WACC IM review, both by the Commission and submitters. The outcome of the statutory review may feed through into any future Part 2 Telecommunications Act FPP TSLRIC determinations.

### **Rate on day v. trailing average cost of debt**

We refer the reader to the companion report *Trailing average cost of debt and efficient debt management*. In our view, the most pressing need for change to the cost of capital IM is in relation to how the cost of debt allowance is determined.

We welcome the Commission's consideration of a trailing average cost of debt approach, similar to that adopted by Australian and UK regulators, and recommend this is adopted. 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
4. Volatility in transmission prices between Regulatory Control Periods (RCPs).

In a Transpower context, we need to service \$3.3 billion of debt and ca. \$1.4 billion of equity. It would not be prudent to attempt to refinance our entire debt book within a one month period. Nor to leave our debt costs exposed to market movements when our revenue is fixed. This draws us, and other regulated suppliers, toward a strategy of hedging our interest costs closer to the rates prevailing during the determination window, even though the cost of capital methodology does not compensate us for the cost of this. In particular:

- We cannot hedge directly to the government bond rate, so we are exposed to basis risk relating to the spread between the government bond rates and the swap rates. This spread averages ca. 50 bps but can, and has recently, exceeded 100 bps
- The time lag between the determination window and the start of the RCP creates a further uncompensated cost. Transacting forward starting swaps to account for this lag can add as much as 40 bps
- Transpower's hedging task is large relative to activity in the relevant derivative markets in New Zealand, such that our activity (and that of other suppliers) risks disruption and pushing these

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<sup>11</sup> Commerce Commission, Cost of capital for the UCLL and UBA pricing reviews, 15 December 2015, paragraphs 73 – 76.

spreads wider during the determination window. We can mitigate this by spreading our activity over a longer timeframe than the one-month window, but this increases the risk of a mismatch between our hedged rates and the rates used to set the regulatory cost of debt.

In the Transpower companion report we expand on these issues and 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 ca. \$25 million p.a.<sup>12</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>13</sup> (ca. 6-7% of Transpower's annual net profit after tax (NPAT)).
3. Debt Risk Premium (DRP) not aligned to the determination window. We estimate this to be ca. \$15 million p.a.<sup>14</sup> (ca. 8-9% of Transpower's NPAT).

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

#### *Other cost of debt issues*

In addition to the above, there are a number of issues with the parameters or benchmark rates that are used to estimate the allowed return on debt. Those issues are considered in the Transpower companion report and the relevant parameters are estimated using market evidence. In summary:

1. Five year tenor used for risk-free rate and debt premium. The report 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. Additional costs of raising debt in foreign markets. The report describes the additional costs of accessing foreign debt capital markets to fulfil funding and market diversity requirements.
3. Debt capital market issue costs. Debt issuance and hedging costs are undercompensated under the current regulation. The report discusses the cost associated with offsetting risk through hedging to the narrow determination window.
4. 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. 7 – 8 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.

We also note leverage of ca. 40% as opposed to Transpower's actual leverage of 70% (the report illustrates typical leverage of ca. 60% to 80% for Transpower and international transmission peers).

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<sup>12</sup> Assuming market volume over the narrow determination window results in elevated rates of ca. 50bps on ca. \$5 bn Regulated Asset Base (50 bps x \$5 bn = \$25 million) – advice from market intermediaries indicate the elevated rates could be significantly higher.

<sup>13</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>14</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)

### *Potential for extreme price volatility*

The current arrangements also create extreme volatility for consumers and regulated suppliers. This can be seen from the UCLL and UBA FPP determination. The risk free rate declined by 145 bps between the scheduled decision (December 2014) and the actual decision (December 2015). We have estimated that if the risk-free rate had increased by this amount rather than reduced the final TSLRIC price would have been approximately \$6.70 (or 16%) higher – c.a. \$48 per month rather than c.a. \$41 per month.<sup>15</sup>

In our view the rate on the day approach results in excessive and unnecessary volatility that is highly unlikely to occur in a workably competitive market (and would not occur under a trailing average approach).

### *Term Spread Credit Differential*

We welcome the Commission's intention to "consider the effectiveness of the TCSD when considering the appropriate compensation for longer-term debt, bearing in mind the situation in New Zealand in which most suppliers do not in fact issue such debt".<sup>16</sup>

We note that by adopting the trailing average approach with a ten year bond tenor, 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 tenor is desirable and would eliminate the requirement for the annual TCSD calculation.

However, in the event the current methodology, including the five year bond tenor is retained we consider the following issue need to be addressed:

1. The caps implicit in the TCSD calculation; and
2. The "A" curve used instead of the BBB curve.

Please refer to the Transpower companion report for further explanation.

More generally, we recognise the Commission adopted a TCSD because of the wide range of debt management strategies amongst regulated suppliers, and not all adopt debt with lives longer than 5 years. While this is relevant to regulated suppliers operating under DPPs It is not relevant to Transpower, which operates under an IPP, or regulated suppliers operating under CPPs as the CPP can be tailored to the individual supplier's specific circumstances.

In this context our circumstances more directly reflect those of Chorus, where the Commission adopted a 7 year average debt tenor in the UCLL and UBA FPP determinations. In that context the Commission noted:<sup>17</sup>

Unlike under Part 4, where regulated suppliers had a wide divergence of debt management practices, when setting UCLL and UBA prices under the Telecommunications Act we only need to estimate WACC for a single hypothetical efficient operator. For a single firm we can estimate a debt premium with a term reflecting the assumed term of its debt, and therefore there is no need for a TCSD in the current decision.

We consider that it would have been more accurate to have stated "Unlike regulated suppliers operating within DPPs under Part 4 ..." In relation to Transpower, and the IPP we operate under, the Commission only needs to estimate a single WACC and "For a single firm we can estimate a debt

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<sup>15</sup> The Commerce Commission stated that the 52bps percentage reduction in the risk-free rate resulted in a decrease in TSLRIC price of \$1.20. The \$6.70 estimate was calculated by proportionately scaling the 52bps reduction to translate to a 145bps reduction and compared this with a proportionate 145bps increase.

<sup>16</sup> Commerce Commission, Input methodologies review: Update paper on the cost of capital topic, 30 November 2015, paragraph 4.27.

<sup>17</sup> Commerce Commission, Cost of capital for the UCLL and UBA pricing reviews, 15 December 2015, paragraph 82.

premium with a term reflecting the assumed term of its debt, and therefore there is no need for a TCSD in the current decision”.

## Update of parameter estimates

We support the Commission’s intention to update the estimates of the parameters set in the IMs, and to review whether the approach to estimating them should be changed. We refer the reader to the companion report by Frontier Economics, *Cost of equity issues related to input methodologies review*.

### Asset Beta

In relation to the asset beta the choice of reference day is a form of sampling which can introduce sampling errors. When deriving beta estimates using weekly returns, the Commission could derive quite a different beta estimate if it were to choose Mondays as the reference day rather than any other day in the week. This problem can be overcome simply by estimating the betas using every possible reference day, and then averaging the resulting estimates to smooth out as much of the sampling error as possible.

We note that the Commission currently uses a 5-year estimation window, but has available data from 1995 with which to estimate betas. We consider that the Commission should derive an estimate using all the data from 1995 onwards.

Frontier Economic’s August 2015 report identified that the filters for liquidity the Commission applies are very crude. The presence of illiquid stocks in the sample will tend to bias beta estimates downward. Frontier recommended the Commission apply alternative, established liquidity metrics, such as the Amihud method, to identify thinly-traded stocks.<sup>18</sup>

### TAMRP

We also reiterate that it is important to derive estimates of the TAMRP by reference to evidence from a range of models.

We agree with Frontier that:<sup>19</sup>

The Commission did not reach a **definitive conclusion** on what the MRP could be if it relied entirely on historical returns, what the MRP would be if it relied entirely on timely signals of market returns, and what are the relative merits of these two estimation approaches. It is reasonable to say that the Commission considers a range of estimates of the MRP. But there remains ambiguity over what the Commission’s view is on the relative merits of these estimates. We consider that this ambiguity impedes the Commission’s ability to make an estimate of the MRP that is an appropriate trade-off between the signals from past returns data and signals from the equity market at a point in time.

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... we have two estimates of the MRP that are based entirely upon long-run historical excess returns. Depending upon how much confidence the Commission places in the adjustment for unexpected inflation, and how much the Commission relies upon the relevance of New Zealand evidence, versus the merits of looking at more (but less relevant) data from other countries, the MRP could lie anywhere from **6.40% to 7.67%**.

We also agree with Frontier Economics that

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<sup>18</sup> Frontier Economics, Recommendations on priorities for review of cost of capital input methodology, August 2015, page 45.

<sup>19</sup> Frontier Economics, Recommendations on priorities for review of cost of capital input methodology, August 2015, page 19.



There is sound evidence that the risk premium demanded by equity investors varies over time. However, since 2004 the Commission has consistently (except for a brief period between 2010 and 2011) determined a fixed number for the TAMRP of 7.0%.

and

The Commission's policy of holding the TAMRP fixed has not produced sensible outcomes. The Commission's CAPM estimates of the cost of equity have effectively tracked movements in the government bond yields, which have declined to all-time lows since 2009. As a result, the approach codified in the existing Cost of Capital IM would have implied, during the worst financial crisis since the Great Depression, that equity capital has never been cheaper.<sup>20</sup>

We would welcome the Commission revisiting the justification in the IMs Reasons Paper for how the TAMRP is calculated. We consider the Commission should be explicit about how evidence from different approaches are weighted, and implement a more transparent approach to assessing the evidence available to estimate the MRP than is currently set out in the WACC IM.

We also agree with Frontier Economics' recommendations for how TAMRP could be estimated, and that

The Commission should not lock in a TAMRP figure into the Cost of Capital IM. Rather, the Commission should re-estimate the TAMRP, according to a methodology set out in the Cost of Capital IM, each time such an estimate is required. Doing so will increase the chances of the TAMRP estimate reflecting prevailing market conditions — particularly if the recommendations we have outlined above are implemented.<sup>21</sup>

## SBL CAPM

The notion that there should be high thresholds for contentious or fundamental changes appears implicit in the Commission's stance on alternatives to the SBL-CAPM,<sup>22</sup> with the Commission's reference to our comment that it should "refrain from destabilising change to the WACC methodology at this time"<sup>23</sup> and, more broadly, to "submissions on the problem definition paper that encourage as much stability as possible in the calculation of the WACC under the IMs".<sup>24</sup>

While we agree with the inference a high threshold and evidence should be required before the Commission considered a move away from the SBL-CAPM we support consideration of options to improve accuracy (and address acknowledged weaknesses). In this context we note that the Commission has also suggested it will consider adopting Black's Simple Discount Rule (BDR) as a "cross-check".

Although we do not consider the BDR can offer any value as a cross check (see below)<sup>25</sup> we see more benefit in following Frontier's recommendation to use the Black CAPM to cross-check by helping test the extent of any downward bias in the SBL-CAPM.<sup>26</sup> Frontier recommend that the Commission:

quantify the extent of the bias, and then use that quantum to correct the SBL-CAPM cost of equity estimates. It is essential to recognise that the Commission would still be using the SBL-CAPM as its model for estimating the cost

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<sup>20</sup> Frontier Economics, Cost of equity issues related to Input Methodologies review, February 2016.

<sup>21</sup> Frontier Economics, Cost of equity issues related to Input Methodologies review, February 2016.

<sup>22</sup> Refer to the section "Decision-making framework".

<sup>23</sup> Commerce Commission, Input methodologies review: Update paper on the cost of capital topic, 30 November 2015, paragraph 4.1.5.

<sup>24</sup> Commerce Commission, Input methodologies review: Update paper on the cost of capital topic, 30 November 2015, paragraph 4.1.6.

<sup>25</sup> Refer to the section "Reasonableness checks".

<sup>26</sup> As discussed in Frontier Economics, Recommendations for priorities on cost of capital input methodology", August 2015. The Fama-French model addresses the result that the realised returns on stocks with high book-to-market ratios are systematically higher than the expected returns from the SLM CAPM, and the Black CAPM addresses the result that the realised returns on stocks with low beta estimates are higher than the expected returns from the SLM CAPM.

of equity. The only difference is that it would be using the Black CAPM to correct for a known bias in the SBL-CAPM. This would require only a minor change to the Commission's existing approach.<sup>27</sup>

While the Commission is, understandably, reluctant to deviate from the SBL CAPM, the Commission could use the alternative models to determine whether adjustment (up or down) should be made to the SBL CAPM estimate. We note Frontier's advice that it is common practice for firms and regulators to apply some form of CAPM, but they then make adjustments to address known weaknesses or biases.

### *Reasonableness checks*

As noted above, we do not consider that the BDR is not well-suited as a cross check. Specifically, we agree with Frontier's comments on the subject that -

In our view, the BSDR has no useful role to play within the regulatory framework for the following reasons:

- The BSDR could only produce risk-neutral cash flow estimates, which would serve no useful purpose in the regulatory process anyway;
- The implementation of the BSDR would be complex and inevitably controversial; and
- The outcomes produced by implementing the BSDR would likely be volatile and unstable over time.

We recommend that the BSDR play no part in the Cost of Capital IM.

## Two-tier WACC and energy network percentile

### *Two-tier WACC*

We agree the Commission should not undertake further substantive work on two-tier WACC. No regulator has adopted the two-tier approach even though the issue has been considered extensively overseas. This is backed up by the Commission's analysis of a two-tier WACC, plus that of submitters, details that there are substantive problems with the two-tier WACC option.

We consider that the Commission's discussion of the drawbacks of a two-tier WACC, while reflecting that it would be undesirable to adopt, understate the problems with the option. One of the main reasons we believe the High Court gave credence to the two-tier WACC option is that it ignored that economic regulation is a multi-period, repeat game, not a one-off game.<sup>28</sup>

The High Court failed to adequately recognise new investments become sunk after the investment has been made and, as noted by the Commission, "may set a precedent that damages a supplier's incentives to invest in future".<sup>29</sup> We agree with Vector that "MEUG's two-tier approach would be seen by suppliers as opportunistic and result in suppliers being concerned that the Commission would be willing to apply different rules once an investment was sunk".<sup>30</sup> The way the Commission treats current sunk investment will impact on regulated suppliers' expectations about how new investments will be treated after they become sunk. To think otherwise would be naïve.

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<sup>27</sup> Frontier Economics, Cost of equity issues related to Input Methodologies review, February 2016.

<sup>28</sup> This was clear from the High Court's consideration of the appropriate RAB valuation methodology where it expressed the view sunk costs could potentially be valued as low as scrap value, as long as the valuation (and return) for new investments was sufficient to allow (at least) a normal return on new investments: "... the asset owner will still have just the same incentives to invest in new assets and asset replacement (so long as those new investments are taken into the RAB at cost) because the regulatory environment provides for new investments to return the regulated cost of capital" [Wellington International Airport Ltd & Ors v Commerce Commission [2013] NZHC, 11 December 2013, paragraph [599]].

<sup>29</sup> Commerce Commission, EDBs-GPBs Reasons Paper at [4.3.6], 3/7/1001082 and [X21], 3/7/000978; Airports Reasons Paper at [4.3.9], 2/6/000676 and [X20], 2/6/000599.

<sup>30</sup> Wellington International Airport Ltd & Ors v Commerce Commission [2013] NZHC, 11 December 2013, paragraph [1441].

We also agree with Houston Kemp that “... the underlying proposition that, once in place, electricity and gas businesses’ assets involve much lower risks is incapable of withstanding close scrutiny. The proposition that investors are willing to accept a significantly lower return on capital once it becomes sunk and incorporated into the RAB has no merit, either in principle or by way or empirical evidence”.<sup>31</sup>

### *Percentile for energy networks*

We agree with the Commission that there is no need to further revisit the decision on the WACC percentile for energy networks.

The Commission was clear when it commenced the WACC percentile review in 2014 that it was bringing forward aspects of the (statutory) review of the cost of capital IM.<sup>32</sup> This enabled the decision to be reflected in the 2015 DPP and IPP resets (with resulting lower prices for 2015-2020). The percentile review was ‘fast-tracked’.

There is no new evidence, or suggestion of a material change in circumstance, that would warrant the Commission undertaking duplicate reviews in the space of less than two years. If the Commission were to re-review the WACC percentile it would have the potential to harm the regulatory certainty (and stability) that the IMs are intended to help achieve.

We recognise though that the Commission has previously committed to considering the Airports WACC percentile.

## **Other areas for consideration**

### *Risk sharing between regulated suppliers and consumers*

In designing regulatory frameworks and setting prices there is a trade-off between how the risk is allocated and compensation for risk in regulated prices. The protection currently afforded to regulated suppliers is reflected in the asset beta and WACC and translates into lower prices for consumers.<sup>33</sup>

Much of the discussion on emerging technology through the IM review has been around whether regulated suppliers or consumers should bear the risk of emerging technology on asset stranding (etc).

The current approach to risk sharing guarantees lower (than otherwise) prices for consumers now. If the risk that regulated suppliers are exposed to increases we would expect this to result in higher upfront prices (through a higher WACC or via a more generous price methodology, as applies under Part 2 of the Telecommunications Act), with the potential for lower future prices should market conditions result in assets stranding.

We are concerned that the debate over risk allocation is occurring in a vacuum. If the Commission gives further consideration to changing the risk sharing between regulated suppliers and consumers we encourage it to be explicit about how this would impact on asset beta and WACC so the trade-off between risk and price is clear. The outcome of that exercise will be affected by its timing – if a

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<sup>31</sup> Houston Kemp, Comment on the Commerce Commission’s Input Methodology Review, A report for Powerco, 20 August 2015, section 2.1.3.

<sup>32</sup> When the Commission first consulted on timing of the review of the cost of capital IMs/WACC percentile it was explicit that it was considering undertaken the review “early”. Refer to: Commerce Commission, Invitation to have your say on whether the Commerce Commission should review or amend the cost of capital Input methodologies, 20 February 2014.

<sup>33</sup> The Electricity Authority has been clear though that, even with protection of regulated suppliers’ RABs they could still be put in the position where emerging technology forces them to lower their prices in order to compete.

change in the allocation of risk occurs once the probability of occurrence is high then the compensation for accepting that risk would need to be correspondingly high.

This would allow regulated suppliers and consumers to make better informed judgements about how risk should be allocated. For example, regulated suppliers may be more comfortable taking on greater risk if they are satisfied with how they would be compensated, and the regulatory settings enabled them to manage that risk. Consumers may support that or may prefer the status quo depending on the impact a change in risk would have on current prices.

### *Revenue v price cap*

In principle, theoretically at least, there is a difference in risk between a price cap and a revenue cap. Regulated suppliers operating under a price cap are subject to volume or demand risk.

In comparing a price cap and revenue cap, the key difference is the presence of volume or demand risk within the price cap regime. The degree of this will vary by both sector and company. The mechanisms contained within the regulatory regime also make a key difference here, as without mitigation mechanisms volume risk can be substantial.

In its report for the Commission, Cambridge Economic Policy Associates point out “The impact of volume risk also depends on whether there are any biases in the forecasting approach. An example of this is the AER noting a persistent bias in forecasts and over-recovery of revenues. An example is given for the 2006-10 Victorian electricity distributors over-recovering revenue relative to the forecast by \$568m”.<sup>34</sup> It could be useful for the Commission to test forecasts of demand growth used in electricity distribution network price setting against actual demand growth to determine whether there is a systematic bias/risk electricity distributors should be compensated for if they remain on a price cap. We understand electricity distributors have made similar suggestions to review the reliability of the Commission’s forecasting.

Cambridge Economic Policy Associates also point out that while “Theoretical research does suggest that the specific form of regulation can affect profit variability and hence the risk faced by regulated companies”, there is a lack of empirical evidence or “lack of quantification of the impact of using different regulatory regimes”.<sup>35</sup> This accords with ENA’s observation that they “have not seen any evidential basis for adjusting beta to account for changes to the form of control”.<sup>36</sup> Likewise, the Commission has previously noted it “does not have any robust evidence that demonstrates that these differences in regulatory regimes affect or reduce the level of systematic risk in any material way. In practice, the empirical evidence has not shown a significant difference between the systematic risks associated with different types of regulation”.<sup>37</sup>

Cambridge Economic Policy Associates go on to note that “Placing an exact value in beta terms on the form of control is difficult and requires decomposing observed betas. With the exception of the Colombian energy regulator, CREG, we are unaware of other regulators outside of New Zealand who apply an explicit adjustment”.<sup>38</sup>

It is clear the empirical evidence is limited and very difficult to interpret reliably.

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<sup>34</sup> Cambridge Economic Policy Associates, International comparison of regulatory precedent on the weighted average cost of capital, December 2015, page 12 [footnote removed].

<sup>35</sup> Cambridge Economic Policy Associates, International comparison of regulatory precedent on the weighted average cost of capital, December 2015, section 2.3.

<sup>36</sup> ENA, Response to the Commerce Commission’s Input Methodologies review paper, 21 August 2015, paragraph 10.

<sup>37</sup> Commerce Commission, IM Reasons Paper, paragraphs H8.149-H8.150.

<sup>38</sup> Cambridge Economic Policy Associates, International comparison of regulatory precedent on the weighted average cost of capital, December 2015, page 12 [footnote removed].

It may, consequently, be understandable that while there is could be a theoretical difference in risk profile between a price cap and a revenue cap that the Commission has not provided electricity distribution networks a higher asset beta to reflect this risk.

Given electricity distribution networks weren't provided with a higher asset beta to reflect the risk of operating under a price cap there is no premium to take away if the Commission subsequently decides they should be moved to a revenue cap. Also, given there is no premium included in the WACC for theoretical higher risk of price cap, MEUG's argument that the WACC applied to Transpower is too high because the asset beta is the same as that for electricity distribution networks, even though Transpower is operating under a revenue cap, has no merit.

Please do not hesitate to contact me if you have any queries or would like to discuss the content of this submission.

Yours sincerely,

A handwritten signature in black ink, appearing to be 'JK' followed by a long horizontal line.

Jeremy Cain  
**Regulatory Affairs & Pricing Manager**