



5 October 2016

Keston Ruxton
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Commerce Commission
Wellington

By email: regulation.branch@comcom.govt.nz

Dear Keston

Input methodologies review – post WACC workshop documents

We appreciate the opportunity to comment on Oxera's debt beta note and Powerco's data analysis, following on from the WACC IMs workshop.

We also appreciate visibility of the Commission's exchange with the Electricity Networks Association and the opportunity to comment on these matters. We were expecting some follow-up from the Commission after the WACC workshop in relation to Dr Lally's NPV=0 analysis and the debt determination window issue covered in Powerco's note. We comment on these matters in this submission.

Determination windows under rate on the day approach [ref transcription pages 137-138]

The potential for elevated swap volumes during the debt determination window to move the market to the detriment of consumers was discussed at the September WACC workshop. This is a matter we have commented on previously¹ and that we consider to be a very real and material risk for consumers.

We recognise it is difficult to attribute movements in the risk-free rate to individual events. However, we have looked closely at the three month window in 2014 during which we hedged our portfolio² and, within that, the 30 day determination window.³

We estimate that, across all electricity lines businesses, this increased costs to consumers by more than \$40m per annum in the current control period. In our view, this cost would have been larger if: (i) Transpower hedged solely to the determination window, and (ii) financial markets had a full appreciation of regulatory settings (which they will have for future reset periods).

For the next control period, assuming current regulatory settings, our conservative estimate is that volume pressure will increase the cost of debt by 30-50 basis, which equates to approximately \$42-72m per annum in unnecessary costs to consumers or \$210-360m over the control period.

¹ E.g. Transpower, IM review: Submission on suite of draft decision papers, 4 August 2016.

² Out of concern we would move the market over the 30 day determination window we utilised a wider window. This elevated Transpower's risk, but reduced the risk to consumers of a substantial market uplift during the window.

³ Appendix A provides a summary of our analysis – the key conclusion of which is that, in contrast to market trends which were generally down (influenced by falling milk prices and US Federal Reserve decisions), 5 year swap rates increased by approximately 30 basis points (bps) over the period.

Broadening the determination to three months as suggested by the Commission could reduce, but not remove, this cost.⁴

The Lally Appendix [ref transcript pages 110-120 and in various other places]

At the conference, Commissioner Begg noted stakeholders had not submitted on the analysis in Appendix 1 of Dr Lally's report "Review of further WACC issues", 22 May 2016 (the "Lally Appendix") analysis of the rate on the day approach (ROTD) versus the trailing average cost of debt approach (TACD).

Although we did submit on the issue of TACD versus ROTD⁵ and Frontier Economics (Frontier) commented in some detail⁶, the significance of the Lally Appendix to the Commission's thinking was not apparent to us from the IMs review draft decision (we addressed each of the points against TACD raised in the most recent consultation paper).

After the workshop, and in light of Commissioner Begg's and Dr Lally's comments, we revisited Dr Lally's analysis. We also sought Frontier's views on the matter.⁷ The conclusions of our own and Frontier's review are, in summary:

1. We agree with Dr Lally that both ROTD and the TACD approaches will, to some extent, violate the NPV=0 principle in relation to new investments, but the magnitude of the violations arising from both approaches are very small.
2. There are three key flaws that compromise Dr Lally's analysis and invalidate its conclusions; the analysis:
 - (i) focuses exclusively on the debt premium. This ignores changes in the risk free rate between the determination window and the end of the control period. These changes represent a substantial proportion of regulated supplier exposure, and in the context of uncertain future investments, cannot be cost-effectively hedged.⁸

Further, Frontier's analysis demonstrates that when the scope for violation of the NPV=0 principle, in respect of the risk-free rate is taken into account, the TACD results in smaller violations in relation to new investments than does ROTD. As such, TACD provides more efficient investment incentives to invest than ROTD.⁹

- (ii) assumes 100% of every investment is known and debt costs can be hedged during the debt determination window (so the actual cost of debt for the investment will align with the allowed cost of debt for the investment) which is simply not a valid assumption.

It is not a valid assumption because the timing of large investments and the expenditure profile of these projects cannot be forecast with any level of accuracy, in part because they require separate ex ante regulatory approval but also because these investments are increasingly often triggered by market shocks such as the entry or exit of large generation

⁴ Given Transpower's 2014 hedging practice we consider observed outcomes provide a reasonable proxy for what might eventuate under a 3 months determination window.

⁵ Transpower, IM review: Submission on suite of draft decision papers, 4 August 2016.

⁶ Frontier Economics, IM review: Response to cost of capital issues raised in Draft Input Methodologies, August 2016

⁷ Frontier Economics report is included as Appendix B to this letter.

⁸ This exposure cannot be cost effectively hedged due to timing and cost uncertainty and the cost of long dated forward start swaps. For example, putting aside the forecastability of investment need date and spend phasing, we estimate the cost of 'forward start swaps' for an investment required 4 years after the determination window, in the current benign conditions, to be approximately 70bps (for a 5 year swap starting in 4 years). These matters are discussed in Appendix A and in Frontier's report.

⁹ ROTD deters efficient investment when interest rates rise during a control period and may over-stimulate investment when interest rates rise during a control period.

or loads.¹⁰ The consequence is that debt costs (debt premium or interest rates) cannot be hedged during the determination window.¹¹ Note: for the avoidance of doubt, Dr Lally's assumed hedging approach has not been Transpower's practice to date (including in relation to funding the approximately \$2bn recent major capex programme), is not our current policy and in our view is not realistic.

- (iii) only examines the mismatch for forward looking investments in a control period. This excludes the mismatch between the incurred debt premium and the allowed debt premium for the entire RAB.

Frontier's analysis shows that ROTD gives rise to very large violations of the NPV=0 principle in respect of existing assets, while TACD is NPV neutral in respect of existing assets (because the regulatory allowance will always align with the efficient cost of debt). The value of mismatches caused by ROTD in respect of existing assets dwarfs any violations caused by TACD in respect of new investments. This is ignored by Dr Lally's analysis and, therefore, the conclusions that flow from that analysis provide a distorted picture of the true cost of ROTD. Recognition of this point favours TACD over ROTD.

We do not consider Dr Lally's conclusions could or should be relied on by the Commission in relation to any assessment of NPV=0 violations and how different debt approaches affect incentives to invest.

If the Commission is minded to take account of Dr Lally's analysis, we consider that it should recognise the key shortcomings discussed above, and that correction of these weaknesses would result in TACD being favoured over ROTD.

Other matters

Debt issuance costs

We note conflicting views on the estimation of debt issuance costs. In our view the current allowance for debt issuance cost is reasonable for regulated corporates managing large debt portfolios.

WACC workshop

We have previously commented on the effectiveness of Commission's overall IM review process.

Further to those comments, we found the WACC workshop helpful and a valuable addition to the process for a high value and contentious topic. It was particularly helpful in providing us with a better understanding of the Commission's thinking on the TACD versus ROTD debate (and has informed the content of this submission).

Price volatility

In relation to price volatility and impacts on consumers, we note that Professor Yarrow has recently provided useful discussion in a New Zealand context on the impact of price volatility on consumers. We appreciate that this is not a topic of consultation but consider it relevant as one of the drivers for adoption of a TACD is to reduce price volatility.

¹⁰ For example, two of the largest grid investments in the foreseeable future could be triggered by one off decisions by third parties (NZAS to reduce demand or close the Tiwai smelter and Genesis Energy's decisions with the Huntly Rankine units).

¹¹ Appendix C provides details of Transpower's actual capital expenditure for our four largest recent major projects. What it shows is that the capital expenditure for any given project can occur over a number of years, and can periods longer than the 5-year regulatory period. Appendix C shows, for example, HVDC Pole 3 capex spread over 8-years (with the majority spread over a 5-year period).

In his August 2016 affidavit to the New Zealand High Court Professor Yarrow outlined his views on the respective preferences of consumers and suppliers for price stability. He stated:¹²

...it can be noted that there is a longstanding acceptance in regulation that electricity consumers value stable prices, as well, of course, as low prices. Consumers tend to be averse to what is called "rate shock". More generally, it can be said that market participants tend to value "insurance" against major price movements, and failure to provide an appropriate level of insurance or 'smoothing' of price changes is one of the sources of loss of legitimacy for regulatory institutions.

As a market participant we accord with Professor Yarrow's views. Our experience is that our customers also value stability over volatility and this accords with the position of consumer groups who have supported adoption of a TACD in Australia (including where this has resulted in higher, but more stable and predictable prices relative to the status quo¹³).

In closing, I reiterate Transpower's view that a TACD is a win-win for consumers and regulated suppliers. Our motivation is to avoid unnecessary costs, to remove a large and real interest rate risk to consumers and to substantially reduce price (and price path) volatility.

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

Yours sincerely

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

Jeremy Cain
Regulatory Affairs & Pricing Manager

¹² Affidavit of Professor George Keith Yarrow in reply, 26 August 2016, paragraphs 6 and 7.

¹³ Refer Appendix B, section 3.2.

Appendix A: Cost of market movement due to narrow window

It is difficult to quantify the impact of additional 5 year tenor swap volume through the determination window.

Transpower hedged to the RCP2 WACC reset over the one month determination window in August 2014 using a period including the two shoulder months (July and September) in order to mitigate the market impact of what we estimate as double the usual market volume for 5 year risk with our activity alone. Powerco and Wellington Electricity also hedged their debt portfolios interest rate risk during this period which placed additional pressure on the market.

Coincidentally, interest rate market movements over the determination window period were moving with a downward trend, meaning market appetite for additional fixed rate pay risk was higher than would have been the case if rates were on an upwards trend.

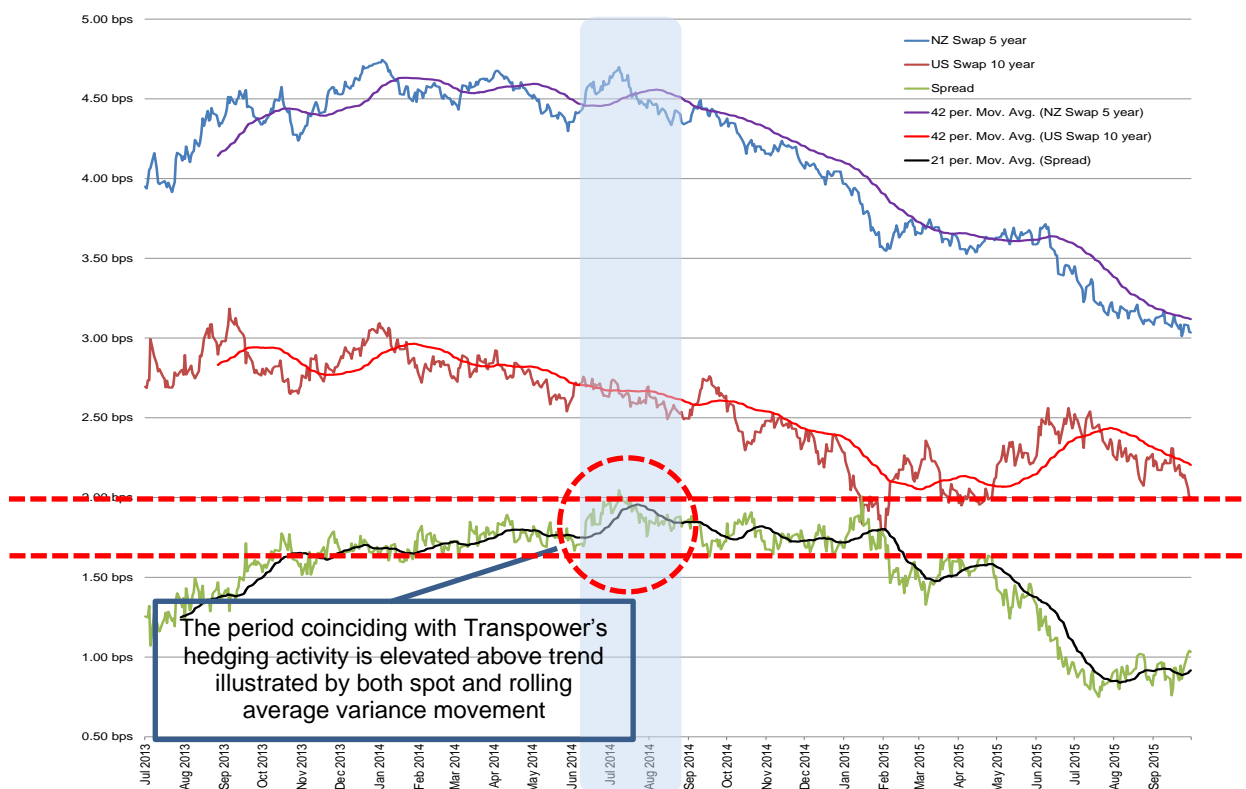
Both declining interest rates in the United States, which have a strong influence over New Zealand interest rates and concern over lower wholesale milk prices contributed to the downward trend in interest rates in New Zealand. New Zealand longer term interest rates are highly correlated with United States term interest rates, usually exhibiting correlation of greater than 0.92, meaning the correlation is very high.

New Zealand rates moved higher over the window, both outright (as noted by Powerco at the Commerce Commission's WACC workshop) and relative to United States term rates.

We consider the movement against United States term rates as the better measure of the market impact of regulated entities hedging volume. The two term rates are very highly correlated, usually divergence in mutual trends and declining correlation is caused by significant changes in economic forecasts, or short term volatility driven by discrete market events.

Figure 1 illustrates the New Zealand 5 year swap rate and the United States 10 year swap rate and spread between the two. These rates are very highly correlated, particularly in times of benign markets or persuasive trends. The curves plotted in Figure 1 are: **Blue** - New Zealand 5 year swap rate, with 42 day moving average overlaid; **Red** - United States 10 year swap rate, with 42 day moving average overlaid; and **Green** - Daily spread between the two market swap rates, with 21 day¹⁴ moving average overlaid.

Figure 1: New Zealand and United States daily term swap rates



¹⁴ The determination window was 21 working days.

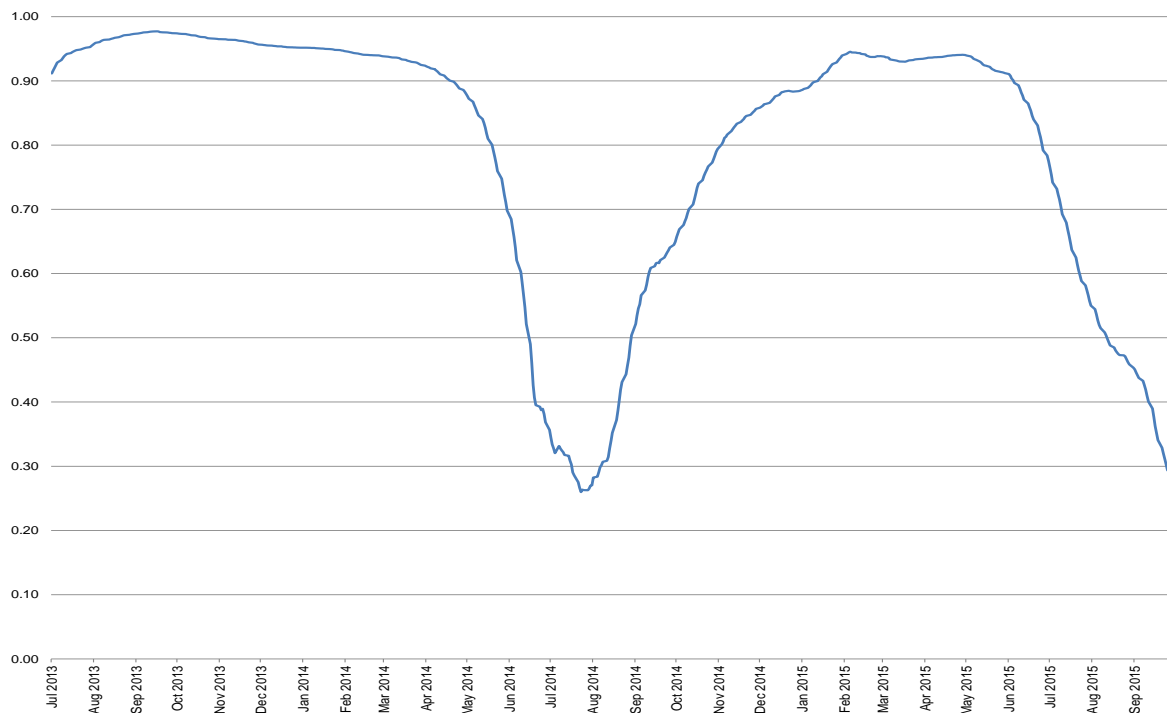
Source: Bloomberg

Figure 2 illustrates the strong correlation between the New Zealand and United States swap rates (over the same period) and demonstrates a marked weakening of the correlation over the determination window period.¹⁵ The rapid improvement in the correlation to a long term normal level immediately following the determination window period supports the proposition that regulated supplier hedging over the determination window caused the profound deterioration in correlation.¹⁶

Intuitively, we would expect New Zealand rates would narrow due to the weakening milk prices and deteriorating economic outlook for New Zealand. However, these moved wider by ca. 30 bps. It is important to note, the financial markets were less informed on the determination window in 2014. They are fully aware of the regulation and August 2019 determination now.

This cost of this unfavourable movement is borne by consumers through an elevated WACC.

Figure 2: Weakening of correlation between New Zealand and United States daily swap during determination period



The three month window adopted by Transpower in 2014 reduced the problem to some extent. However, even with a three month window, the average daily volume were (and will remain) significant in context to the size of the New Zealand swap market.

This is demonstrated by Figure 3, taken from the International Swaps and Derivatives Association (ISDA)¹⁷ website. We consider that ISDA collated market data provides a relatively accurate and independent measure of the daily notional volume of transactions for interest New Zealand dollar interest rate swaps with tenor of 5 years.

¹⁵ Anticipating market pressure and front running by market participants, Transpower commenced hedging wider than the determination window at the end of June 2014 and concluded end of September 2014. However, the greatest volume of hedging, by Transpower and other regulated suppliers was undertaken during the determination window.

¹⁶ The weakening in the correlation in the later period (June 2015 onwards) reflects the divergence in economic outlook between the countries, with the United States Federal Reserve considering rate hikes and the New Zealand RBNZ considering rate cuts to stimulate the economy suffering from lower milk prices and other local economic pressure.

¹⁷ ISDA has over 850 member institutions from 67 countries, including corporations, investment managers, government and supranational entities, insurance companies, energy and commodities firms, and international and regional banks. ISDA's work in three key areas – reducing counterparty credit risk, increasing transparency, and improving the industry's operational infrastructure – show the strong commitment of the Association toward its primary goals; to build robust, stable financial markets and a strong financial regulatory framework.

Figure 3: ISDA swaps volumes



Source: ISDA.

http://www.swapsinfo.org/charts/derivatives/price-transaction?date_start=2015-09-01&date_end=2016-09-01¤cy=NZD&products=139%2C140&term=y5&statuses=C&venues=ON%2COFF&type=&submit=Update+Data

The daily notional volume transacted is an average of under \$200 million daily.

If large regulated distribution and transmission entities place their risk through 21 days (one month window) or 63 days (three month window) the volume will be ca. \$330 million or \$110 million consistently over consecutive days. It is highly unlikely this volume and activity will not have some impact on the relatively small New Zealand market.

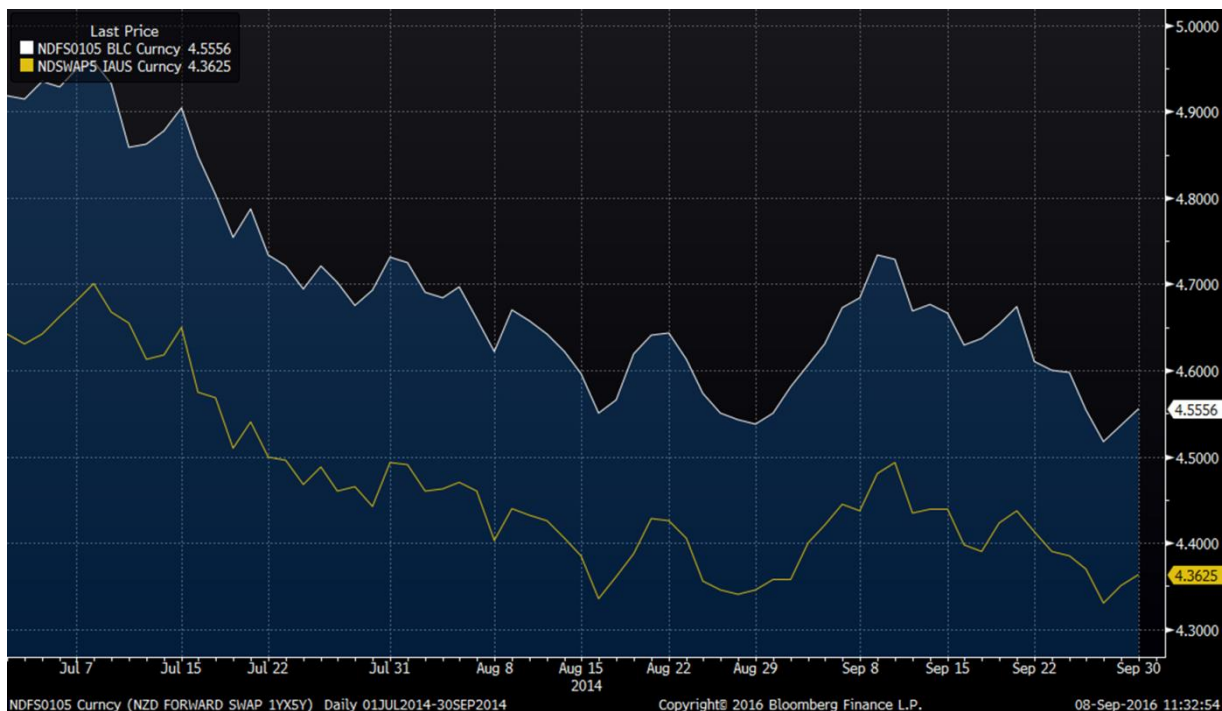
Cost of forward starting swaps

The current approach to setting WACC during a determination window that precedes the commencement of the RCP by between eight and seven months creates significant risk and cost for regulated entities.

Hedging with forward starting swaps is more expensive than standard or vanilla swaps. The cost is dependent upon the steepness of the swap curve. The steeper the swap curve, the greater the cost and conversely, the flatter the swap curve the lower the cost.

An entity may avoid the forward starting costs by entering into vanilla swaps starting at the time of transaction. However, this approach creates a mismatch between the interest cost on debt and the risk free rate explicit in the WACC allowance for the first eight months of the RCP and the last eight months of the RCP, i.e.: 16 months of the 60 or 26% of the RCP term.

During the determination window for RCP2 in August 2014, the cost of forward starting swaps, commencing at the start of RCP2 on 1 April 2015 for five years was in excess of ca. 18 bps. The chart attached below illustrates the variance between the vanilla swap and the forward starting swap during August 2014.



Source: Bloomberg

These forward starting costs could be avoided if the trailing average approach was adopted and applied using an annual determination window aligned with the Commerce Commissions current annual Information Disclosure process with the rate set rolled into the trailing average WACC for the relevant portion (one tenth or one fifth) dependent upon the trailing average term used.

Appendix B: Frontier Economics report

[Please refer to the separate memo from Frontier Economics entitled: Issues arising from Commerce Commission WACC Workshop]

Appendix C: Major project capex timing

	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16
HVDC Upgrade	14.1	74.8	97.8	184.6	99.6	109.1	14.3	2.9
NAaN	1.4	10.0	75.9	120.5	87.8	47.3	9.4	0.6
North Island Grid Upgrade Project (NIGUP)	140.2	144.3	277.5	248.0	81.9	-5.1	2.7	1.9
WRK-WKM C (Wairakei Ring)	0.6	1.5	3.2	11.5	76.5	40.0	2.7	0.1