Aurora
ENERGY LIMITED

Submission

Input methodologies review: Update paper on the cost of capital topic

5 February 2014

DELTA
THINK.INFRASTRUCTURE

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1 Executive Summary

Aurora Energy recognises that the High Court Merit Appeal decision, and the need for regulatory certainty, count against substantive reform of the cost of capital IMs.

We also recognise, though, that the High Court found in favour of the Commission's narrow application of IRIS, and the Commission subsequently broadened application of IRIS to apply to DPPs, and not just Transpower's IPP and CPPs. Where new evidence comes to hand which suggests changes should be made, then the Commission should be open to them.

1.1 Problems with the 'Prevailing Rate' Approach to Calculating the Risk-free Rate

The single biggest concern Aurora has with the cost of capital IMs is with the 'prevailing rate' approach to the calculation of the risk-free rate.

This approach unambiguously fails against various aspects of the Part 4 rate:

- it scores poorly in terms of measuring 'current' and 'forecast' profitability;
- it means the regulated WACC can be expected to either exceed the actual cost of capital (contrary to the objective of limiting excessive returns), or be less than the actual cost of capital (contrary to reasonable investor expectations and incentive to invest), rather than being a best estimate of WACC;
- it is contrary to replicating workably competitive market outcomes;
- it promotes inefficient behaviour (by regulated suppliers changing their behaviour to reduce exposure to risk that their actual cost of capital will differ from the regulated WACC); and
- where it results in a DPP WACC higher than the CPP WACC (or results in an exaggerated differential), it acts as a barrier to regulated suppliers applying for CPPs).

It is important to highlight that the 'prevailing rate' approach is the underlying (and substantive) cause of the DPP/CPP WACC disparity problem as some of the 'solutions', such as a split WACC or adopting the DPP WACC for the CPP, only deal with the symptom and not the underlying problems.

Aurora considers that the best solution would be to adopt an approach to determining the risk-free rate/WACC that mirrors actual or efficient debt-management strategies. This is most likely to be achieved through adopting a trailing average cost of debt approach.

1.2 Implications of Price cap v Revenue cap for Asset Beta

One of the issues that has arisen in the IMs review consultation is whether EDBs should operate under a price cap or a revenue cap, and what the potential implications are for asset beta.

The Commission considered whether different asset betas should be applied under price and revenue caps, when the IMs were originally established, and concluded it did not have "any robust recent empirical evidence that demonstrates that different regulatory regimes affect or reduce the level of systematic risk in any material way" and "the empirical evidence … did not show a significant difference between the systematic risks associated with different types of regulation".[1]

[1] Commerce Commission. (2010). Input Methodologies: Transpower Draft Reasons Paper, paragraph 6.6.9.

Aurora contends that given no uplift was applied to EDBs to reflect that they were operating under a price cap, and not a revenue cap, the potential for EDBs to be moved to a revenue cap should not impact on asset beta.

1.3 Areas that do not Warrant Further Consideration

Aurora does not support further consideration of:

i.	Black's Simple Discount Rule (BSDR)	The BSDR appears to be fundamentally unsuitable for determining a regulated WACC or setting regulated prices. If the Commission were to further consider this option, it should explain how it would propose to apply the BSDR and what useful information it would produce as a cross-check against the WACC. Our understanding is that the BSDR would provide the Commission with little or no useful information. We are also concerned that the BSDR, despite its name, is anything but simple, and there would be substantial implementation difficulties if the Commission attempted to use it.
ii.	a split WACC	Aurora agrees with the Commission that no further substantive work is required on the split WACC option. The work the Commission has undertaken, and the submissions made on the matter already, are sufficient to conclude that adopting a split WACC does not warrant further consideration. If the Commission were to change its position, and give further consideration to the split WACC option, the analysis and modelling that would be required is highly likely parallel (at least) the work undertaken for the revised energy network WACC percentile decision.
iii.	reconsideration of the WACC percentile for energy	The Commission effectively 'fast-tracked' the WACC percentile component of the IMs review in 2014. Unless the Commission considers that it erred in the decision to reduce the WACC percentile from the 75th percentile to the 67th, and that 67th percentile is too low, that decision should not be revisited at this stage.

2 Introduction

Aurora Energy welcomes the opportunity to submit in response to the Commerce Commission's next steps in the input methodologies (IMs) review for the cost of capital IMs.

If the Commission has any queries regarding Aurora's submissions, please do not hesitate to contact Alec Findlater:

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Aurora appreciates the extension the Commission granted for submissions, and the release of the terms of reference for the work Dr Martin Lally is undertaking for the Commission. Disclosure of the terms of reference for any expert advice helps aid the transparency of the Commission's policy development processes. We would welcome this becoming the norm.

3 The Principle of 'Reasonable Investor Expectations'

Aurora reiterates the views we expressed about "reasonable investor expectations" in our 2015 EDB DPP reset submission[2].

The High Court IMs Merit Appeal decision set an important precedent that reasonable investor expectations include being able to recover the costs of prudent and efficient investments.[3]

In our DPP reset submission, we noted that the Commission had referred to reasonable investor expectations in relation to the Chorus' unbundled copper local loop (UCLL) and unbundled bitstream access (UBA) final pricing principle (FPP) determinations but not in the DPP determination consultation. This was despite the principle originating from Part 4 of the Commerce Act. Aurora is disappointed this has not changed.

Reasonable investor expectations should be at the heart of the Commission's IMs review, and consideration of whether (and how) the cost of capital IMs should be amended.

4 Problems with use of the 'Prevailing' Risk-free Rate

The biggest concern Aurora has with the cost of capital IMs relates to the disparity between the DPP and CPP WACCs.

We would caution against options such as a split WACC, or simply applying the DPP WACC to the CPP. At best, these are 'band-aid' or temporary 'quick-fix' solutions.

These 'solutions' fail to recognise that the disparity between the DPP and CPP WACC is not the problem, but rather is a symptom of a broader underlying problem with the current cost of capital IMs. Using a split WACC to address the DPP/CPP WACC disparity would be like trying to use aspirin to cure cancer because the patient has a headache.

[2] Aurora Energy Ltd. (2014). Submission: Proposed Default Price-Quality Paths for Electricity Distributors from 1 April 2015 and Low Cost Forecasting Approaches for Default Price-Quality Paths. Section 4.

[3] WELLINGTON INTERNATIONAL AIRPORT LTD & ORS v COMMERCE COMMISSION [2013] NZHC [11 December 2013], paragraph [605].

The fundamental underlying problem lies with the 'prevailing rate' approach of determining the WACC, based on the average of the risk-free rate in a single one-month period.

The prevailing rate approach does not accord with efficient debt-management strategies, or the debt management strategies that can be expected in workably competitive markets.

While we make this proposition as an 'assertion', noting the Commission's comments on evidence from the High Court, we would suggest that:

i. it should not be controversial (it should be fairly obvious that it is not a good idea, even if feasible, to try and fund all your debt in a one-month period to apply for 5 years); and

ii. the Commission will need to consider what an efficient debt-management strategy looks like, and what actual regulated supplier practice is, as part of the IMs review.

The prevailing rate approach in the IMs gives rise to a number of problems and inefficiencies (of which the DPP/CPP WACC disparity is but one).

Any variance between the debt-management strategy adopted by a regulated supplier, and that assumed in the IMs, creates a risk for regulated suppliers that the allowed WACC will differ from their actual cost of capital, and it incentivises regulated suppliers to adopt inefficient (and costly) debt management strategies to mitigate the risk exposure.[4]

As the Commission has noted, "Regulated businesses are incentivised to replicate the financing that we use in estimating the WACC, in order to limit the exposure to differences between the compensation they receive for their cost of capital and their real costs.".[5,6]

Similarly, Dr Lally notes that a debt-management strategy "to roll over all debt at the same point, … to align the firm's borrowing with the regulatory cycle" would result in refinancing risk that "would be unacceptably high and therefore this strategy is not viable".[7]

The use of the prevailing rate increases the volatility of the cost of capital IMs' estimate of the risk-free rate and, consequentially, increases the volatility in the WACC estimate.

As Powerco points out, "A WACC that is determined, and locked in for several years, based on spot observations of values that can fluctuate substantially in the short term is unlikely to be representative of the WACC that the business would actually experience over the course of the regulated period.". [8]

The application of the prevailing rate approach, and the ruling volatility, means that any given WACC determination can be predicted (with confidence) to either exceed or fall short of the regulated suppliers actual cost of debt. We consider this to be contrary to both:

i. limiting excessive returns; and

ii. reasonable investor expectations.

We illustrate this with a simple, stylised, example where an EDB adopts a debt-management strategy of refinancing 20% of its debt every year (for simplicity we assume no capex or depreciation).[9]

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[4] Transpower NZ Ltd. (2015). Problem definition and decision-making frameworks, section 5.2.1

[5] Commerce Commission. (2015). Input methodologies review: Update paper on the cost of capital topic, paragraph 3.18.

[6] It may also be useful for the Commission to survey the extent to which the cost of capital IMs have impacted on regulated suppliers' actual debt-management strategies, and the efficiency impacts/costs of this.

[7] Lally. M. (2014). The trailing average cost of debt, page 13.

[8] Powerco Ltd. (2015). Submission on Input methodologies review: Invitation to contribute to problem definition, paragraph 24.3.

[9] While the stylised example is intended to be illustrative, given the Commission's emphasis on evidence-based decision-making, it would be useful if the Commission surveyed regulated suppliers to determine their debt-management strategies to ascertain the differences between the allowed cost of capital, and regulated suppliers' actual cost of capital.

Suppose the refinancing coincided with the DPP and Information Disclosure WACC determinations:

2010-15 DPP (75th): 8.77%

ID April 2011 (75th): 7.94%

ID April 2012 (75th): 7.34%

ID April 2013 (75th): 6.83%

ID April 2014 (75th): 7.60%

The EDB WACC (75th percentile) at the start of the 2015 DPP would be 7.70%, but the DPP 2015-2020 (75th percentile[10]) WACC was only 7.43%. It would be no use for the EDB to apply for a CPP to resolve the mismatch between its (efficient) cost of financing and the regulated WACC as the CPP WACC set at 30 September 2015 was (6.04%) less than the DPP WACC. This can swing the other way, as well, with reductions in the risk-free rate lowering the cost of refinancing post-2014.

Dr Lally makes a similar point with his own example:

> *"… if the DPP were reset five yearly, it was last reset six months ago, the cost of debt embodied within it at that point was 6%, and the current cost of debt is 5%, then adoption of a CPP would cause the cost of debt allowed on the business's existing assets to decline from 6% to 5% for the remaining 4.5 years of the current DPP regulatory cycle. With regulatory assets of $1000m and leverage of 40%, the resulting loss of revenue would be $4m per year for 4.5 years, totalling $18m."*[11]

What can be inferred is, when using the prevailing rate approach that the cost of capital IMs takes to setting the risk-free rate, a risk is created (for both consumers and regulated suppliers) that a mismatch will occur between the regulated cost of capital, and the regulated suppliers' actual financing costs.

In our view the Commission should test the extent of this difference by surveying each regulated supplier.

To illustrate the point, we detail the structure of all Aurora's debt to highlight that we finance on a staggered basis, and the majority (64%) of our debt is for a duration longer than 5 years.

	Original Debt Profile					
Interest Bearing Debt (IBD)	**Pricing date**	**Issue date**	**Original tenor**	**Age of Debt - as at 31 Dec 15**	**Currency**	**NZD Equivalent Book Value of Debt ($m)**
Debt on issue as at the end of the most recently completed financial year - June 2015						
Call	30/06/2015	30/06/2015	30 Days		NZ	30,500,000
Advance	13/11/2006	13/11/2006	15/11/2016	9.1	NZ	50,000,000
Advance	11/10/2007	11/10/2007	15/10/2017	8.2	NZ	30,000,000
Advance	15/10/2008	15/10/2008	92 Days	7.2	NZ	10,000,000
Advance	28/05/2010	25/05/2010	92 Days	5.6	NZ	10,000,000
Advance	27/01/2011	28/01/2011	17/07/2018	4.9	NZ	10,000,000
Advance	20/06/2012	20/06/2012	92 Days	3.5	NZ	15,000,000
					Total	**155,500,000**

[10] 75th percentile WACC was used for convenience as the Commission has not historically determined 67th percentile WACC.

[11] Lally. M. (2015). Complications arising from the option to seek a CPP, pages 7 and 8.

The potential mismatch between regulated suppliers' cost of capital and the regulated WACC cannot be resolved through a CPP application where the risk-free rate is declining (as per the present EDB DPP). Regulated suppliers are either over-incentivised to apply for a CPP (where the risk-free rate is increasing) or the cost of capital IMs acts as a barrier to applying for a CPP (where the risk-free rate is decreasing).[12]

Any regulated supplier that considered applying for a CPP in the 2015-2020 regulatory period would have to take into account a material loss in revenue from the CPP WACC being lower than the DPP WACC.

This could result in a regulated supplier remaining on a DPP even if it is not fit for purpose and/or not adequate to enable the supplier to recover the costs of their past prudent and efficient investments. Regulated suppliers would need to consider alternative strategies to mitigate any such losses, such as deferring operational expenditure and cutting discretionary capital expenditure. These strategies have been well canvassed in past submissions; e.g., in relation to whether the DPP price resets should include an "uplift" to reduce the risk that they will not meet reasonable investor expectations and enable the supplier to recover the costs of their past prudent and efficient investments.[13, 14]

Unison, for example, has commented that "… only in circumstances where the DPP path is substantially incorrect, would an EDB be likely to apply for a CPP. In the interim an EDB is likely to defer capital and operating expenditure until a point is reached that the EDB can no longer sustainably meet the quality targets, placing consumers at risk of a less reliable network"[15] and this would "most likely [be] operating expenditure as this has a more direct short-term impact on returns, whereas a large amount of capital expenditure has to be avoided to increase returns)"[16].

In a similar vein, Vector has commented that "Where a DPP is set too low, Vector is likely to first adopt an approach where operating costs are maintained and capital investment is delayed (rather than apply for a CPP which is risky and costly). This is because maintaining the status quo, where at least operating costs are recovered, carries considerably less risk".[17]

Either situation – the DPP WACC being above or below the CPP WACC – undermines the efficacy of the DPP/CPP split (and similarly the IPP/FPP split under Part 2 of the Telecommunications Act). This problem doesn't arise for Transpower under its IPP.

[12] A similar issue can arise under Part 2 of the Telecommunications Act 2001. The incentives for access providers to apply for a FPP determination will increase (decrease) if the risk-free rate is increasing (decreasing) and/or forecast to increase (decrease) prior to the determination process being completed. Unlike Part 4 of the Commerce Act 1986, access seekers can also apply for FPP determinations and their incentives will work in the opposite direction. Access seekers incentives to apply for a FPP will increase (decrease) if the risk-free rate is decreasing (increasing). Notably, the risk-free rate declined by 0.93 percentage points between the first draft FPP determination and the final, and the decline would have been greater if the FPP determination had been delayed beyond December 2015.

[13] The Commission's assessment of these submissions was based on an incorrect assumption that if a regulated supplier could not fully recover its costs under a DPP, it would apply for a CPP (and would not adopt any alternative response). Refer to Commerce Commission. (2012) Resetting the 2010-15 Default Price-Quality Paths for 16 Electricity Distributors, Attachment H.

[14] Refer, for example, to the submissions on Starting Price Adjustments and Other Amendments - Update Paper, at: http://www.comcom.govt.nz/regulated-industries/electricity/electricity-archive/electricity-default-price-quality-path-archive/2010-2015-default-price-quality-path-before-2012/

[15] Unison Networks Ltd. (2010). Submission on 2010 – 2015 Starting Price Adjustments Update Paper, paragraph 26.

[16] Unison Networks Ltd. (2010). Submission on 2010 – 2015 Starting Price Adjustments Update Paper, paragraph 25a

[17] Vector Ltd. (2011). Submission to Commerce Commission on Draft Decision on Starting Price Adjustments for Electricity Distribution Businesses, paragraph 27.

5 Potential Remedies

Aurora agrees with HoustonKemp that "the current methodology for estimating the cost of debt could usefully be re-examined, since there is potential to improve the incentives on businesses to make efficient and prudent financing decisions as well as to reduce unnecessary volatility in regulated prices" and "As a guiding principle, regulatory frameworks ought to operate so as to do least harm to the incentives that businesses operating in a workably competitive market would otherwise face. In relation to the cost of debt IM, this principle suggests that the regulatory framework should encourage businesses to adopt debt raising strategies as close as possible to those of a prudent and efficient holder of long-lived infrastructure assets".[18]

One option the Commission has raised for addressing the DPP/CPP WACC disparity is MEUG's proposal to apply a two-tier WACC (with refinements proposed by Dr Lally).

Aurora has misgivings about setting different WACCs for investment depending on whether the investment is sunk and forecast capex or CPP specific.[19]

Aurora considers this option to be somewhat of a 'band-aid' solution. At best, it is an option that should be considered as a temporary solution to remove barriers to CPP applications prior to 2020 (noting Lally's concern that other options such as a trailing average cost of debt could not be implemented prior to then20).

The Commission should consider the underlying reasons why there can be a disparity between the DPP and CPP WACCs. This is partly the (inevitable) consequence of timing difference (the risk-free rate varies over-time21). However, the impact of changes in risk-free rate are substantially exaggerated, as the cost of capital IMs effectively assume regulated suppliers refinance in a single one month period prior to the DPP reset. This means that, even though the DPP and CPP periods could be substantially (or entirely) over-lapping, the risk-free rate for the CPP could be entirely different to the DPP22.

Take a hypothetical CPP for 2017-2022. This would include debt financing that over-lapped the 2015-2020 DPP in 3 out of 5 years of the DPP. The only differences in the WACC should reflect:

- the risk-free rate (and WACC) for 2015 and 2016 may differ from that for 2020 and 2021; and
- any increase in capex under the CPP compared to under a DPP.[23]

If this was reflected in the cost of capital IMs the disparity between the DPP and CPP WACCs would be substantially reduced.

Aurora consequently considers the Commission should consider adopting a trailing average cost of debt approach.

[18] HoustonKemp. (2015). Comment on the Commerce Commission's Input Methodology Review, A report for Powerco, page i.

[19] These misgivings are discussed in more detail in relation to MEUG's split WACC proposal.

[20] Lally. M. (2015) Complications arising from the option to seek a CPP, page 9.

[21] As does, potentially, the TAMRP although the cost of capital IMs fixes the TAMRP in perpetuity at 7%.

[22] It should be recognised that an efficient refinancing and debt management strategy, as would be expected in a workably competitive market, would result in staggered refinancing (that can extend well beyond the 5 year regulatory period).

[23] For example, debt funding in 2017 should have a greater impact on the WACC under the CPP if the CPP included an uplift in capex that year.

The trailing average cost of debt has substantive advantages, including:

- the regulatory WACC would be set in a way that is more consistent with efficient (workably competitive market) debt-management strategies. As Lally notes, a strategy "to borrow long-term (say ten years) and stagger the borrowing so that only a small proportion of the debt matured in any one year … would reduce the refinancing risk to a low level. This strategy is viable and generally employed"[24];
- better satisfaction of the 'reasonable investor expectations' principle (where the 'prevailing' risk-free rate is lower than the average risk-free rate over the period the regulated supplier funds its debt)/and the statutory objective of limiting excessive returns (where the 'prevailing' risk-free rate is higher than the average risk-free rate over the period the regulated supplier funds its debt);
- the price risk (to consumers and regulated suppliers) from changes in risk-free rates from regulatory period to regulatory period would be substantially reduced; and
- the problem of the DPP/CPP WACC disparity would be substantially reduced.

Aurora agrees with Transpower that a trailing average cost of debt approach would create a "win-win for regulated suppliers and consumers"[25].

The trailing average cost of debt approach is emerging in other jurisdictions such as Australia (the Queensland Competition Authority decision being the exception) and has been advocated in various submissions on the Initial IM Problem Definition consultation.

6 *Additional Improvement Areas*

There are other potential refinements which could help improve the accuracy of the estimate of WACC.

Aurora agrees the fixed values of WACC components should be revised and updated as part of the IMs review.

Aurora agrees with Orion that "The Brennan-Lally CAPM is not an unreasonable approach provided adjustments are made to fix its known shortcomings; i.e. the understating of the cost of equity for low-beta stocks".[26]

Various submissions have illustrated how the SBL-CAPM can under-estimate WACC, though[27].

The Commission should seek to measure the extent to which this is a problem, and how the cost of capital IMs could potentially be refined to address it.

From our observations of other submissions, this issue could be addressed by retaining the SBL-CAPM, but using other CAPM methods to provide guidance about where in the range of potential SBL-CAPM WACCs the WACC should be set/or whether an uplift is needed. This would avoid the Commission's (reasonable) misgivings about substantive reform of major components of the cost of capital IMs.

[24] Lally. M. (2015). The trailing average cost of debt, page 13.

[25] Transpower NZ Ltd. (2015). Input Methodologies Review: Cross-submission on Problem definition and decision-making frameworks, section 4.

[26] Orion NZ Ltd. (2015). Submission on the IM review, paragraph 56.3.

[27] Refer, for example, to HoustonKemp. (2014). Comment on the Commerce Commission's Proposed WACC Percentile Amendment, page 7.

The Commission, itself, noted that "AER considered that the Black CAPM did have some potential to be used in a limited way to help inform the estimate of the equity beta and in recent determinations it has been used as a secondary consideration to assess the equity return from Australian energy network firms".[28]

7 Implications of Price Cap v Revenue Cap for Asset Beta

One of the issues that has arisen in the IMs review consultation is whether EDBs should operate under a price cap or a revenue cap, and what the potential implications are for the asset beta in the IMs.

The Commission considered whether different asset betas should be applied under price and revenue caps, when the IMs were originally established, given that both price and revenue caps where being applied under Part 4.

The Commission concluded, at the time that, the use of a price or revenue cap should not affect the asset beta. Accordingly, the same asset beta applies to Transpower (revenue cap) and EDBs (price cap):

> *"In principle, the Commission considers that compared with price-cap regulation, revenue-cap regulation may to some extent, reduce both systematic and unsystematic risks associated with unanticipated demand shocks through the "wash-up" mechanism. If it has a lower level of systematic risk then it would have a lower asset beta.*
>
> *The Commission considers that the systematic risk associated with Transpower will to a large extent already be low, because of the low elasticity of demand that is likely to exist for transmission services. The Commission further notes that suppliers subject to weighted-average price-cap regulation can in practice structure their pricing in such a way as to insulate themselves from demand shocks, creating a similar outcome to that which would result under revenue-cap regulation. …*
>
> *The Commission does not consider it has any robust recent empirical evidence that demonstrates that different regulatory regimes affect or reduce the level of systematic risk in any material way. In practice, the empirical evidence assessed in the EDB Draft Reasons Paper did not show a significant difference between the systematic risks associated with different types of regulation.*
>
> *Further, in Australia, whilst electricity transmission has been subject to revenue-cap regulation and electricity distribution subject to either price-cap regulation or revenue-cap regulation, no adjustment has been made to account for regulatory differences between the regimes. In the AER review of the cost of capital an implied asset beta of 0.32 was recommended for electricity distribution and transmission.*
>
> *Based on the above, the Commission considers that if there is any reduction of systematic risk as result of Transpower being subject to revenue cap regulation, it is likely to be small. Therefore, the Commission considers it not appropriate to differentiate the asset beta between regulatory regimes for Transpower and the EDBs."*[29]

[28] Commerce Commission. (2015). Input methodologies review: Update paper on the cost of capital topic, paragraph 4.23.

[29] Commerce Commission. (2010). Input Methodologies: Transpower Draft Reasons Paper, paragraphs 6.6.7 to 6.6.11 [footnotes removed, emphasis added].

Aurora contends that given no uplift was applied to EDBs to reflect that they were operating under a price cap, and not a revenue cap, the potential for EDBs to be moved to a revenue cap should not impact on asset beta.

8 Areas that do not Warrant Further Consideration

Aurora does not support further consideration of:

i. Black's Simple Discount Rule (BSDR);

ii. a split WACC; or

iii. reconsideration of the WACC percentile for energy. [30]

Each of these issues is discussed below. In relation to the BSDR, and the split WACC, we note:

- an objection the Commission has raised in relation to alternatives to the SBL-CAPM is the lack of regulatory precedent in overseas jurisdictions; and
- the Commission emphasised that it considered an "orthodox" approach to applying TSLRIC should be adopted for the UCLL and UBA FPP determinations.

We would expect that these views would count against the Commission adopting either of these two options.

8.1 Black's Simple Discount Rule is not Suitable for use as a Cross-check

The BSDR appears to be fundamentally unsuitable for determining a regulated WACC or setting regulated prices.

If the Commission were to further consider this option it should explain how the BSDR would be applied and what useful information it could produce as a cross-check. Our understanding is that the BSDR would provide the Commission with little or no useful information (even if the Commission was able to sensibly implement it).

We are concerned the BSDR, despite its name, is anything but simple, and there would be substantial implementation difficulties if the Commission attempted to use it.

This is highlighted by Ireland, Wallace & Associates' (IWA) application of the BSDR.

HoustonKemp, for example, has identified that IWA should have discounted the estimated conditional mean by the Commissioner's WACC estimate of 7.19% instead of the tax-adjusted risk-free rate of 2.94%, and the discounted streams of expected and conditional cash flows should have the same NPV, not the undiscounted streams.[31]

By way of example also, the assumptions of a 'pessimistic prediction' that the incoming cashflow would be $100 million less than the median, and this corresponds with the 10th percentile of the cashflow distribution, are entirely arbitrary and not fit for purpose.

A number of the inputs IWA use are also not appropriate for New Zealand and would need to be calculated afresh by the Commission. For example, we understand the S&P 500 index was selected as the benchmark security without testing for correlation against Transpower's cashflows, and US Treasury bills were used for calculating the risk-free rate instead of using New Zealand data.

[30] We recognise the WACC percentile issue has been assessed in relation to energy networks, copper (UCLL and UBA) and will need to be considered in relation to airports.

[31] HoustonKemp. (2015). Comment on Select Submissions to the Commission's Input Methodologies Review: A report for Powerco, section 3.

8.2 A Split WACC is Unprecedented and Should not be Adopted

Aurora agrees that no further substantive work is required on the split WACC option.

The difference between a sunk and new investment is timing. Once an investment is made (or even committed) it becomes sunk. The regulator's treatment of sunk investment sends a signal to asset owners and investors about how new investments could be treated in the future (once they become sunk).

Similarly, HoustonKemp note "… once new expenditure is rolled into the RAB, the two-tier methodology would see the return on those assets being reduced to the lower rate. Businesses would take this future reduction in returns into account when making their investment decisions".[32]

The work the Commission has undertaken, and the submissions made on the matter already, are sufficient to conclude adopting a split WACC does not warrant further consideration.

Aurora also considers it notable the Commission received:

- "no submissions outlining support for a split cost of capital approach";
- "a number of submissions that urged the Commission not to undertake further analysis in this area, unless its benefits could be proven and a clear means of implementation was available"; and
- "... no cross-submissions that challenged the arguments made by those submissions".[33]

There is no need for the Commission to further consider options it has consulted on, but received no support for.

If the Commission were to change its position, and give further consideration to the split WACC option, the analysis and modelling that would be required would parallel (at least) the work undertaken for the revised energy network WACC percentile decision.

One of the difficulties the Commission would face is how to set the WACC percentiles for sunk and new investment.

An obvious example would have been to apply the Dobbs model (or Frontier Economics' adaptation of the Dobbs model) which calculated the optimum WACC percentile for sunk, new non-discretionary investment and new discretionary investment.

This has effectively been ruled out as the Commission, and Dobbs on behalf of the Commission, concluded the Dobbs model (and the Frontier Economics adaptation) was not suitable for determining the optimal WACC percentile(s).

Dobbs commented that "My … concern lies with the extent to which the model can be used as a quantitative guide to the best choice of percentile to set for the allowed rate of return. This kind of model articulates why a significant uplift is warranted, but in my opinion, it is unclear how much quantitative significance should be placed on the model predictions".[34] The Commission concluded "… that there is still considerable uncertainty regarding key assumptions that drive the results of the Dobbs model. Frontier's sensitivity analysis demonstrates that the model is sensitive to input assumptions even under a total welfare objective that disregards wealth transfers".[35]

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[32] HoustonKemp. (2015). Comment on the Commerce Commission's Input Methodology Review: A report for Powerco, page 3.

[33] Commerce Commission. (2015). Input methodologies review: Update paper on the cost of capital topic, paragraph 4.32.

[34] Dobbs. I. (2014). Comments on the Application of the Dobbs [2011].

[35] Commerce Commission. (2014). Amendment to the WACC percentile for price-quality regulation for electricity lines services and gas pipeline services, Reasons paper, paragraph B66.

Since then, CEG have applied their own variant on the Frontier-Dobbs model, in an attempt to advocate a higher WACC percentile for Chorus' UCLL and UBA services. The use of the Dobbs (Frontier-Dobbs) model was again rejected by the Commission, on the basis that it isn't suitable for determining the optimal WACC percentile(s):

> "*When considering models based on the Dobbs framework, we have previously highlighted the difficulties in assessing the appropriate WACC percentile using a static consumer surplus approach. For example, in the July 2015 further draft determinations, we noted that CEG's March 2015 model (based on an amended version of the Dobbs model) directly modelled the benefits to consumers of new services, but failed to address the expropriation of sunk costs when reporting consumer welfare results. This is because the model reported short-term consumer surplus estimates, which did not take into account the possible longer-term detriment to consumers if prices were set too low (given the impact this could have on the level of investment from suppliers etc).*"[36]

8.3 The WACC Percentile Review for Energy has Already been Fast-tracked

While Aurora did not agree reducing the WACC percentile from 75th to 67th was to the long-term benefit of consumers, we do not see merit in revisiting the decision at this stage. There seems to be a general consensus amongst regulated suppliers on these points.

The Commission effectively 'fast-tracked' the WACC percentile component of the IMs review.

Aurora considers that undertaking a review of the WACC percentile shortly after the previous review would create regulatory uncertainty and signal the regulatory regime, including the IMs, should not be assumed to be stable or enduring. This would neither benefit regulated suppliers or consumers.

Unless the Commission considers that it erred in the decision to reduce the WACC percentile from the 75th percentile to the 67th, and that 67th percentile is too low, this decision should not be revisited at this stage.

9 Implications of the UCLL and UBA FPP WACC Decision

It is not clear that the Commission's decision on WACC, in the Chorus' UCLL and UBA FPP determination, has substantive implications for the IMs review. Our ability to comment on its relevance is constrained by the absence of the Commission's views on the matter. We will be able to respond more fully when the Commission provides its own views.

It appears that the Commission, by and large, choose to adopt the cost of capital IMs approach to calculating WACC for UCLL and UBA services, except where industry specific or legislative differences warranted an alternative approach; e.g., WACC percentile and asset beta. Aurora supports this approach to regulatory matters across different network sectors (airports, electricity, gas and telecommunications). The Commission should be as transparent as possible where it intends to adopt a generic approach, and where it considers an industry specific approach would be most suitable. This would make it easier, for example, for energy networks to know when they should engage in Commission consultation on airports and telecommunications (and vice versa).

Aurora has the following observations about the potential implications of the UCLL and UBA FPP determination for the review of the cost of capital IMs:

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[36] Commerce Commission. (2014). Cost of capital for the UCLL and UBA pricing reviews, Final decision, , paragraph 264.1 [footnote removed].

- The Commission should adopt an allowance for interest rate swap costs of eight basis points, based on the cost of executing two swaps, in the cost of capital IMs.

  The December 2014 draft UCLL and UBA FPP determinations included an allowance for swap costs of four basis points, using the approach specified in the cost of capital IMs.

  In the July 2015 draft determinations, the Commission "acknowledged that a supplier who issues fixed rate debt would need to enter into two swaps, with the fixed rate needing to be swapped to a floating rate, and the floating rate then needing to be swapped to a fixed rate. Therefore, based on our understanding that it is more common for New Zealand firms to issue fixed rate debt than floating rate debt, we doubled the allowance for swaps costs to eight basis points"[37]. The rationale the Commission provided was generic, and not Chorus-specific, and therefore should be applied in the cost of capital IMs.

  The Commission also noted "No new evidence has been presented on the costs of an individual swap, so we have continued to assume a cost of four basis points for one swap. This results in an allowance of eight basis points in total on the cost of debt, based on the use of two swaps"[38]. The Commission could consider updating the swap costs estimate based on New Zealand specific evidence regarding observed swap costs.

- The change in risk-free rate from the first draft determination to the final UCLL and UBA determination (and its impact on the TSLRIC prices), highlight problems with the current approach in the cost of capital IMs of setting the WACC based on the risk-free rate in a single month every 5 years.

- Aurora would expect more substantive consideration of whether aspects of the cost of capital IMs should be amended – notably whether a trailing average cost of debt approach should be adopted – in the IMs review.

  We are not aware, for example, of any substantive submissions on the trailing average cost of debt. The Commission expressed the view that "Chorus has not presented compelling evidence to change our approach on this parameter".[39] The Commission's consideration of the trailing average approach was commensurately cursory. From our observation of the TSLRIC decision, it involved substantive and complex modelling, much of which was undertaken for the first time, which may well explain why this issue only received cursory attention.

  In our view, the prevailing rate approach that was retained in the UCLL and UBA FPP determinations would clearly fail the TSLRIC 'hypothetical efficient operator' test. No hypothetical efficient operator would fund their entire debt for a 5-year period in one month.

10 Concluding Remarks

Aurora considers it important the Commission explicitly and transparently addresses the question of whether the current cost of capital IMs adequately satisfies the principle of 'reasonable investor expectations'.

In Aurora's view, the greatest benefits to consumers from the cost of capital IMs review could be achieved by:

[37] Commerce Commission. (2015). Cost of capital for the UCLL and UBA pricing reviews, final decision, paragraph 116.

[38] Commerce Commission. (2015). Cost of capital for the UCLL and UBA pricing reviews, final decision, paragraph 122.

[39] Commerce Commission. (2015). Cost of capital for the UCLL and UBA pricing reviews, final decision, paragraph 61.

- replacing the current approach of calculating WACC on the basis of the risk-free rate in a single one month period with a trailing average cost of debt. Adopting a trailing average cost of debt would have the benefit of helping address the barrier to CPP applications created by the current substantive disparity between the DPP and CPP WACCs; and
- testing whether changes to the cost of capital IMs should be made to address problems with the SBL-CAPM understating WACC in low beta industries.

10.1 Next Steps for the Review of the Cost of Capital IMs

There are specific next steps Aurora would like to see the Commission consider for the review of the cost of capital IMs:

- Explicitly and transparently applying the principle of 'reasonable investor expectations' in its review of the IMs;
- Considering adoption of a trailing average cost of debt:
    - Determining what the Commission considers an efficient (consistent with workably competitive market outcomes) debt-management strategy would look like (that wasn't impacted by Part 4 regulation);
    - Conducting a survey of regulated suppliers to determine their debt-management strategies and ascertain the differences between the allowed WACC, and regulated suppliers' actual cost of capital;
    - As part of the survey, also determining the extent to which the cost of capital IMs have impacted on regulated suppliers actual debt-management strategies, and the efficiency impacts (cost) of this;
- Undertaking a quantified assessment of the extent to which the SBL-CAPM understates the asset beta;
- Detailing the Commission's views on the implications of the WACC decision in the UCLL and UBA FPP determinations, if any, for the cost of capital IMs (and vice versa):
    - Considering adoption an allowance for interest rate swap costs of eight basis points, based on the cost of executing two swaps, in the cost of capital IMs; and
    - Updating the swap costs estimate based on New Zealand specific evidence regarding observed swap costs.