

Memo

To: Jeremy Cain, Transpower New Zealand

From: Stephen Gray, Dinesh Kumareswaran

Date: 3 November 2016

**Subject: Issues arising from the Commerce Commission's
Technical Consultation Update Paper**

1 Overview

1 The Commerce Commission (Commission) released its Input Methodologies Review: Technical consultation update paper (Technical Paper) on 13 October 2016. We have been asked by Transpower to consider the approach to the allowed return on debt that is set out in the Technical Paper and to provide our views on the relative merits of this and other approaches.

2 One of the key issues raised in the Technical Paper (Attachment A) is the approach to setting the allowed debt risk premium (DRP). The allowed return on debt is the sum of a base risk-free rate and the DRP. The Commission has previously followed the “rate on the day” approach, whereby both components are set to the prevailing market rate at the beginning of each regulatory control period (RCP) and held fixed for the duration of the RCP.

3 Attachment A of the Technical Paper indicates that an alternative approach the Commission is considering is the following:

- a. The base risk-free rate is set to the prevailing market rate at the beginning of each RCP and held fixed for the duration of the RCP (i.e., the approach on this component is unchanged from the Commission’s current approach); and
- b. The DRP is set equal to the average of the five most recent annual DRP estimates (i.e., the prevailing estimate and the estimates one, two, three and four years prior) and is held fixed for the duration of the RCP.

4 The implicit debt management approach that underlies this regulatory allowance appears to be one where:

- a. Each year, the regulated entity raises 20% of its debt financing needs in the form of floating rate debt with a 5-year tenor; and
- b. At the beginning of each RCP, the regulated entity uses interest rate swaps to fix rates for the duration of the RCP.

5 The remainder of this note sets out the problems that we have identified in relation to this proposed approach.

2 Problems with the proposed approach

2.1 Consumers are exposed to risks that regulated businesses can hedge

6 The proposed approach to the base risk-free rate is based on the notion that regulated suppliers are able to use interest swaps to create an effective match between the regulatory allowance and their actual efficient debt service costs.

7 The Commission has suggested that potential mismatches between the risk-free rate allowance under the rate on the day approach and the base rate component of the efficient cost of debt (under a staggered debt management approach) is unlikely to be of concern to it because suppliers can use interest rate swaps to eliminate this mismatch.¹

8 As we noted in our Memorandum dated 4 October, the potential for mismatch between the risk-free rate allowance and the base rate component of the cost of debt should be of concern to the Commission as consumers (and, in particular, small consumers) do not have access to the interest rate swaps market and therefore cannot hedge *any* component of this volatility. They remain *fully exposed* to the entirety of movements in the total required return on debt.

9 It is this full exposure to interest rate volatility that has led consumers in Australia to propose that a trailing average approach should be used for the entire allowed return on debt, not just the DRP.²

10 That is, setting the allowance for the base risk-free rate to the rate on the day at the start of each RCP has an asymmetric effect – it creates a risk that may be hedged by suppliers but not by consumers.

11 The solution to this issue would be to apply the trailing average approach to the entire return on debt, not just the DRP component.

2.2 The regulatory allowance will differ from the efficient cost during the RCP

12 Under the proposed approach, the regulatory allowance for both components of the allowed return on debt will be set at the beginning of the RCP and remain fixed for the duration of the RCP. This will result in a mismatch between the allowed

¹ WACC workshop transcript, p.129.

² This point was discussed in: Frontier Economics, Response to cost of capital issues raised in Draft Input Methodologies, August 2016, section 2.2.

return on debt and the efficient cost of debt during the RCP in two respects, as set out below.

Existing debt

- 13 The first source of mismatch occurs in relation to the DRP of existing debt. The implicit efficient debt management strategy is one where the supplier replaces 20% of its debt each year with new 5-year debt. Thus, there will be a match between the regulatory allowance and the efficient cost at the beginning of the RCP. However, after one year the efficient supplier will refinance 20% of its debt and lock in the prevailing DRP at that time, whereas the allowed DRP will remain fixed. The potential mismatch is exacerbated each year as an additional 20% of the existing debt is refinanced locking in the DRP at the time for that tranche of debt.
- 14 It is important to note that there is no way that either consumers or regulated suppliers can manage this sort of mismatch. Any costs associated with such mismatches (which are beyond the control of consumers and suppliers) would be borne by consumers or suppliers (depending on the direction of the mismatch). However, a change in the Commission's proposed approach (i.e., the introduction of annual updating of the allowance) would eliminate such mismatches for consumers and suppliers.
- 15 In our Memorandum of 4 October, we adopted the Lally framework to quantify the extent of mismatches between the allowed return on debt and the efficient cost. There we considered an example (drawn from the Lally Appendix) where the DRP was 3.2% at the beginning of the RCP, the regulator fixed that allowance for the duration of the RCP, and the trailing average DRP (which is the cost that the supplier was actually bearing) at the beginning of the RCP was 1.44%. We showed that the mismatch over the course of the RCP amounted to 1.8% of the value of the RAB.³
- 16 We now consider the same example, but where the allowed DRP is set equal to the trailing average at the beginning of the RCP, as contemplated in Attachment A of the Technical Paper. In that case, the mismatch amounts to -0.34% of the RAB.⁴
- 17 We note that:
- a. The magnitude of the mismatch is lower because under the rate on the day approach there was a large mismatch in the first year of the RCP (allowance of 3.2% vs. efficient cost of 1.44%) but under the

³ This figure assumes that the supplier's staggered debt portfolio would have a 10-year trailing average DRP.

⁴ To allow comparability with the value of 1.8% presented in paragraph 15, we again assume that the supplier's staggered debt portfolio would have a 10-year trailing average DRP. We also assume that the Commission would use a 10-year historical averaging period. The size of the NPV violation would be different under the assumption of a five-year staggered debt portfolio, and a five-year historical averaging period. However, under a five-year assumption, we would still expect the historical average DRP (with no updating) to produce a smaller NPV violation than the rate on the day approach.

proposed approach there is no mismatch at all in the first year of the RCP;

- b. The direction of the mismatch goes in the opposite direction. Under the rate on the day approach the allowance (3.2%) is above the efficient cost (1.44% in the first year, expected to rise towards the long run mean over time), whereas under the proposed approach the allowance starts equal to the efficient cost (1.44%) and, whereas the efficient cost rises each year as the DRP is expected to revert towards the long-run mean, the DRP allowance remains fixed for all years of the RCP; and
- c. The mismatch is still economically significant—i.e., 0.34% of Transpower’s RAB amounts to more than \$16 million.

18 This mismatch can be eliminated easily by simply re-setting the allowed DRP each year during the regulatory period in line with a trailing average.

Additional debt for new capex

19 The second source of mismatch occurs in relation to new debt issued during the regulatory period to fund capital expenditure (i.e., debt that is issued over and above the refinancing of existing debt). In this case, the allowed DRP and risk-free rate components are fixed at the beginning of the RCP, but the actual cost will be incurred when the debt is actually issued.

20 As in our Memorandum of 4 October, we have adopted the approach in the Lally Appendix to quantify the extent of these mismatches.

21 First, we consider the mismatch that occurs when the base rate is set to the rate on the day at the beginning of the RCP and new finance is raised during the RCP. As in our Memorandum of 4 October, we consider a new investment that is required at the end of Year 2 of the regulatory period when base risk-free rates had fallen (or risen) by 2% over that period, as has occurred in recent years. This mismatch would persist until the end of the regulatory period at which point rates would be reset and there would be a match from that point forward. Using the approach of the Lally appendix, the quantum of this mismatch is 1.4% of the new capex.⁵

22 Next, we consider the mismatch that occurs when the DRP is set to the fixed historical average at the beginning of the RCP and new debt is issued during the RCP. For this case, we quantify the effect of a mismatch where the trailing average DRP locked in at the beginning of the RCP is 1.6% and the DRP when the new capex is financed at the end of Year 2 is 3.2%.⁶ Using the approach of the Lally appendix, the quantum of this mismatch is 1.8% of the new capex.⁷

⁵ See Paragraph 34 of our Memorandum of 4 October.

⁶ This figure assumes that the supplier’s staggered debt portfolio would have a 10-year trailing average DRP, and that the Commission would use a 10-year historical averaging period.

⁷ See Paragraph 34 of our Memorandum of 4 October.

23 We note that both of these changes over the first two years of a regulatory period are large by historical standards, so they should be interpreted, not as the expected mismatch, but as an indication of how large the mismatch could be. This mirrors the approach in the Lally Appendix.

24 Our Memorandum of 4 October makes three general points in relation to mismatches pertaining to new capex:

- a. The rate on the day and trailing average approaches both produce a mismatch between the regulatory allowance and the efficient cost of new debt;
- b. The quantum of that mismatch is very small compared to the mismatch in relation to the existing RAB (as set out above). This is because the quantum of new capex each year is small relative to the existing asset base; and
- c. Under plausible assumptions, the mismatch is lower under a trailing average allowance with annual updates than if the rate on the day is fixed for the duration of the RCP.

25 This type of potential mismatch can be reduced by adopting a trailing average for the entire return on debt and by updating the allowance every year during the RCP, as we have shown in our Memorandum of 4 October.

Summary

26 The analysis above shows that, from the perspective of minimising violations of the NPV=0 principle, the historical average DRP approach with no annual updating is preferable to the existing rate on the day approach. The latter is likely to result in smaller violations than the former.

27 However, as our Memorandum of 4 October showed, the trailing average approach with annual updating is NPV neutral in respect of existing investments, because the regulatory allowance always matches the efficient cost of debt.

28 Therefore, a trailing average approach with annual updating is strictly better than an historical average approach that fixes the DRP for the duration of the RCP.

2.3 Annual updating is straightforward and already occurs in other areas

29 The Commission has provided no reasons why it considers an approach that fixes the DRP allowance for the duration of the RCP to be preferable to an approach that updates the DRP allowance annually according to an historical trailing average.

30 It is possible that the Commission does not favour annual updating of the DRP allowance due to a perception that annual updating would be a complex and costly exercise. However, annual updating would not be complex or onerous. Further, the existing regulatory framework already provides for annual updating of maximum allowable revenues (MAR).

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- 31 Annual updating would involve the following steps:
- a. First, the Commission would need to compute a rate on the day DRP for each year. The Commission already does this for Information Disclosure purposes.
 - b. Next, the Commission would need to roll forward the historical trailing average window in each year to obtain the trailing average DRP allowance. This step would be trivially simple.
 - c. Finally, this updated DRP allowance would then be used to re-compute suppliers' MAR.

32 Many Australian regulators follow such a process, and the experience in Australia is that annual updating of the trailing average rate of return and MAR can be performed in a mechanistic and low-cost way.

33 We note that the Commission's regulatory framework for Transpower already provides for annual within-period updating of the MAR.⁸ At the start of each RCP, the Commission forecasts Transpower's MAR for each year of the forthcoming RCP. Transpower is then required to provide the Commission with a proposed forecast MAR update for all remaining pricing years (except the final year) of the RCP, taking account required adjustments to the forecast MAR that reflect factors such as:

- a. Transpower's performance against the original MAR forecast;
- b. Differences between forecast and actual capex (for base and major capex);
- c. Opex and capex incentives; and
- d. Pass-through and recoverable costs (i.e., unavoidable costs such as council rates and regulatory levies).

34 The Commission then considers the forecast MAR proposed and adjust the price-quality path accordingly. The Commission made a determination that amended Transpower's individual price-quality path in this way as recently as 31 October 2016.⁹

35 The process of updating the MAR to reflect updates to the historical trailing average DRP would be no more complex than the MAR update process the Commission already undertakes, as described above. However, annual updating would minimise mismatches between the allowed DRP and the efficient DRP incurred by suppliers, thus avoiding violations of the NPV=0 principle and protecting consumers and suppliers from undue exposure to capital market volatility.

⁸ The DPP regulatory framework that applies to EDBs also allows for within-period adjustments to the MAR (e.g., in relation to the capex wash-up adjustment and service quality incentive mechanisms).

⁹ Commerce Commission, Transpower Individual Price-Quality Path Amendment Determination 2016 (No.2), 31 October 2016.

36 In our view, there is no sound reason why the Commission should not pursue annual updating of the DRP allowance.

2.4 Conclusions

37 We take the view that when determining the return on debt allowance that would best promote the long-term interests of consumers, and also satisfy NPV neutrality, the Commission ought to start by identifying the most efficient financing practice that the benchmark entity would follow in the absence of regulation. What debt management strategy would be adopted by an infrastructure business with long-lived assets, and operating in a workably competitive market, if it were unconstrained by regulation? The efficient return on debt allowance would then be the cost of debt that is consistent with that efficient financing practice. That is, the efficient debt management practice should determine the regulatory allowance, not the other way around.

38 We, and Transpower, have previously presented evidence that businesses with long-lived infrastructure assets tend to adopt an approach of issuing long-term fixed-rate debt on a staggered maturity basis. The cost of this approach would be matched by setting the allowed return on debt to a 10-year trailing average of the total return on debt (i.e., both the risk-free rate and the DRP components), with annual updating. In this case, the regulatory allowance would match the efficient cost of debt in every year of the regulatory period. This would ensure that consumers pay in each year only the efficient cost of debt and not an amount that is either above or below the efficient level.

39 The analysis above shows that the historical average DRP approach with no annual updating is likely to result in smaller violations of the NPV=0 principle than the rate on the day approach. However, as our Memorandum of 4 October showed, the trailing average approach with annual updating is NPV neutral in respect of existing investments, because the regulatory allowance always matches the efficient cost of debt. Therefore, a trailing average approach with annual updating is strictly better than an historical average approach that fixes the DRP for the duration of the RCP.

40 The experience in Australia has been that annual updating of the cost of debt allowance can be performed in a mechanistic and low-cost way. The Commission's existing regulatory framework already allows for annual updating of the forecast MAR. Annual updating of MAR in line with a trailing average cost of debt allowance would be no more complex or burdensome than the process the Commission already follows when updating the MAR under the existing regulatory arrangements.

41 In our view, there is no sound reason for the Commission to not update the cost of debt allowance annually. By contrast, failure to update the allowance annually would give rise to unnecessary/avoidable violations of the NPV=0 principle and potentially create disincentives for efficient investment.