

Cross-submission in response to CEG's application of the "Frontier-Dobbs" model

11 May 2015

Table of Contents

1.	Executive Summary	3
2.	Introduction	4
3.	Chorus is creating delays in the UCLL and UBA FPP determination process	5
4.	The main concerns with the CEG adaption of the Frontier-Dobbs model	5
5.	CEG ignore impact of existing generousities in the TSLRIC price calculation	7
6.	CEG disregard the Dobbs' distinction between sunk, non-deferrable and deferrable investments	8
7.	CEG have ignored Chorus' undertakings to limit investment in copper	10
8.	Application of Dobbs model to determine optimal WACC percentile is rejected by Dobbs and the Commission	11
9.	CEG's distinction between electricity and telecommunications is not relevant	13

1. Executive Summary

- 1.1 Chorus should have submitted any quantified evidence on the appropriate WACC percentile when the Commission consulted on the matter in March 2014. Its failure to do so is causing delays in the Commission's TSLRIC determination process of its own making.
- 1.2 The CEG report highlights that the Commission needs to undertake quantified analysis, as it did on the Part 4 WACC percentile issue, to determine whether any uplift or reduction in prices or WACC is justified. The absence of such analysis has created a vacuum which Chorus has tried to fill by recycling modelling rejected by the Commission in the Part 4 Commerce Act setting.
- 1.3 The Commission should not concern itself with Chorus' incentives to invest, when setting copper prices, particularly given *"the Company's undertakings [to CFH] ... to minimise investment in copper ..."*¹ We were surprised Chorus recycled the Frontier-Dobbs model from the Part 4 WACC percentile review, given it has already been rejected by the Commission and Dobbs himself. It is particularly surprising given the premise of Dobbs' original model is that sunk assets warrant a lower WACC than new deferrable investment. The Dobbs model, and Frontier's application of it, if properly applied, highlight that Chorus' copper network is principally sunk and the optimal WACC percentile is low.
- 1.4 The Dobbs/Frontier-Dobbs models do not support Chorus' contention that an uplift for UCLL and UBA services is warranted. Even under a total surplus test, these models indicate the WACC percentile for UCLL and UBA services should be below mid-point.
- 1.5 This is confirmed by CEG in its statement that *"In our base case scenario we find that ... the optimal cost of capital percentile for existing services is 45%"*² and that *"We note that for some scenarios where only consumer surplus is maximised, the optimal cost of capital percentile for existing investment is 1% - that is, the lowest possible cost of capital"*.³ Lally, while not considering it viable, also notes that *"the allowed WACC that maximises consumer surplus for sunk investment is zero"*.⁴
- 1.6 Proper application of the Frontier-Dobbs model would recognise Chorus has \$2,398 million in category 1 (sunk) copper assets,⁵ with annual copper capital expenditure of \$61 million. It would appear that \$35 million, of the \$61 million capital expenditure, on "Network sustain" would also fit into Dobbs category 1.⁶
- 1.7 Dobbs estimated, based on a total surplus test, that the WACC percentile for category 1 assets should be 45th percentile, category 2 should be 86th

¹ Crown Fibre Holdings, Network Infrastructure Project Agreement, Telecom New Zealand Limited and Crown Fibre Holdings Limited, 24 May 2011, Schedule 11, paragraph 4(g).

² CEG, Welfare effects of UCLL and UBA uplift, March 2015, paragraph 54.

³ CEG, Welfare effects of UCLL and UBA uplift, March 2015, paragraph 84.

⁴ Martin Lally, THE APPROPRIATE PERCENTILE FOR THE WACC ESTIMATE, 19 June 2014, section 6.2.

⁵ Chorus, Chorus Annual Report, 2014, page 52.

⁶ "Network sustain refers to capital expenditure where the network is being upgraded or network elements such as poles, cabinets and cables are replaced. This is typically where there is risk of network failure or degraded service for end-users and network replacement is deemed more cost effective than reactive maintenance." Source: Chorus, Chorus Annual Report, 2014, page 34.

percentile and category 3 should be 97th percentile.⁷ Given virtually all of Chorus' copper investment is sunk/category 1 this would suggest the optimal WACC for UCLL and UBA would be 45th percentile.⁸

- 1.8 This means the draft decision to apply mid-point may be too high and other TSLRIC pricing generosities are inappropriate. At most, the Commission should adopt a genuine central estimate of TSLRIC, with mid-point WACC.
- 1.9 CEG have only managed to use the Frontier-Dobbs model to support a higher WACC percentile than mid-point (or below) by ignoring the distinction between copper and fibre services (and between sunk, deferrable and non-deferrable assets), and other changes to the model that it has not been transparent about. This is a fatal flaw in the CEG analysis and modelling.
- 1.10 As with our other submissions, our observations here are at a high level and do not remove the requirement on the Commission to undertake a sufficiently robust quantitative cost benefit analysis. Following the latter, more detailed analysis and commentary is possible.

2. Introduction

2.1 This cross-submission should be read in conjunction with:

- (a) our cross-submission in response to CEG's report, Welfare effects of UCLL and UBA uplift, dated March 2015, as that addresses CEG's adoption of the Frontier-Dobbs model; and
- (b) our commentary and supplementary submission on the Commission's consultation on "Agenda and topics for the conference on the UCLL and UBA pricing reviews", 2 April 2015.

2.2 In summary, CEG have:

- ignored the commitments Chorus has made to limit investment in copper;
- applied the Frontier-Dobbs model to calculate the optimal WACC even though Dobbs himself and the Commission have rejected this application;
- not been transparent about all the changes they made to the Frontier-Dobbs model;
- disregarded the premise of the Dobbs model that the optimal WACC depends on whether the investment is sunk, non-deferrable or deferrable; and
- effectively calculated the optimal WACC for non-deferrable fibre investment rather than sunk copper investment.

⁷ Dobbs, I., 2011. Modelling Welfare Loss Asymmetries Arising from Uncertainty in the Regulatory Cost of Finance, *Journal of Regulatory Finance* 39, 1-28.

⁸ CEG, Welfare effects of UCLL and UBA uplift, March 2015, paragraph 54.

- 2.3 What can be inferred from the Dobbs/Frontier-Dobbs models is that the WACC percentile for sunk assets (e.g. copper) should be lower than for new investment (e.g. fibre).

3. Chorus is creating delays in the UCLL and UBA FPP determination process

- 3.1 Wigley and Company agrees with the Commission that the CEG uplift report, Welfare effects of UCLL and UBA uplift, "... contains substantive new evidence i.e., it is not properly a cross-submission. It, therefore, should have been submitted a month earlier, as a submission".⁹
- 3.2 Given the Commission consulted on the adoption of mid-point WACC March 2014, we would have expected Chorus to respond with any modelling in March or April last year rather than waiting until March 2015.
- 3.3 The issue of whether WACC should be set at, above or below mid-point has come up repeatedly since March 2014 through the consultation process, yet Chorus has assiduously avoided the issue. Up until now Chorus' engagement has been limited to one brief section of a CEG cross-submission in April 2014, which ignored or did not correctly deal with most submissions,¹⁰ and a submission on what the Chorus' copper WACC should be in response to the Commission's Part 4 WACC percentile review consultation.¹¹ (It is less than clear to us why Chorus' submitted that its WACC percentile should be higher than regulated suppliers under Part 4 of the Commerce Act in response Part 4 consultation, rather than Part 2 Telecommunications Act consultation.)
- 3.4 We agree with the Commission that the timing of the CEG submission for Chorus raises questions about "*whether it is realistic for the Commission to properly review CEG's uplift submission, including testing CEG's modelling, seeking submissions from other parties and considering what impact CEG's uplift submission has on any decisions to apply an uplift or not, prior to locking down our TSLRIC model ahead of the further draft determinations*".¹²
- 3.5 Given Chorus' objections to the Commission's extensions to the time-line for the UCLL and UBA FPP determinations, we would emphasise that Chorus' delay in engaging on the WACC percentile issue by nearly 12 months, and the submission of Analysys Mason UCLL and UBA costing models which are not TSLRIC and are, therefore, unusable in the FPP determinations, only serve to delay the Commission's process.

4. The main concerns with the CEG adaption of the Frontier-Dobbs model

- 4.1 We do not consider the CEG adaption of the Frontier-Dobbs model provides a reliable or suitable basis for determining an uplift to Chorus' WACC above mid-point is warranted, or that an uplift would promote competition for the long-term benefit of end-users. (Our comments against uplift to WACC are

⁹ Commerce Commission, e-mail, UCLL & UBA FPP update, 31 March 2015.

¹⁰ As detailed in: Wigley and Company, Submission on draft pricing review determination for UBA and UCLL services, 20 February 2015, paragraphs 10.9 – 10.10.

¹¹ Chorus, Submission on input methodologies WACC uplift draft decision, 29 August 2014. For a discussion on this submission, refer to: Wigley and Company, Submission on draft pricing review determination for UBA and UCLL services, 20 February 2015, paragraphs 10.11 – 10.41.

¹² Commerce Commission, e-mail, UCLL & UBA FPP update, 31 March 2015.

equally applicable to any generosities or uplift to the TSLRIC prices more generally.)

- 4.2 We are disappointed by the lack of transparency in CEG's modelling. While Chorus eventually provided the Chorus model, following request from Wigley and Company, they have not provided the model documentation, despite repeated requests, which details the changes CEG made to the Frontier-Dobbs model. This means the modelling is well short of being transparent. It also makes it extremely difficult to fully critique the CEG modelling. It is apparent CEG have made more extensive changes to the Frontier-Dobbs model than could be inferred from their report. There are many changes to the code Frontier used which CEG have not detailed or explained.
- 4.3 We were surprised Chorus recycled the Frontier-Dobbs model from the Part 4 WACC percentile review, given both Dobbs himself and the Commission rejected use of the model for calculating the optimum WACC percentile.
- 4.4 This suggests Chorus has struggled to find any legitimate basis or evidence to support uplift.
- 4.5 One of the premises of the original Dobbs model was that different WACC percentiles are appropriate for different types of investment e.g. a higher WACC may be warranted to encourage regulated suppliers to invest in deferrable or discretionary investment, but is not required for sunk investment (e.g. the existing copper network) or "non-deferrable" investment.
- 4.6 Given Chorus is forecast to make only limited further investment in its copper network the Dobbs model/Frontier-Dobbs model, if properly applied, would suggest an optimal WACC percentile for Chorus' copper network less than mid-point (Dobbs and CEG indicate this would be 45%, but it could be less):¹³

... focusing exclusively on the existing network, category 1 investment, the optimal AROR applied to this alone would be below the median WACC.
- 4.7 What CEG has done to get around this fundamental, but for Chorus inconvenient, element of the Dobbs/Frontier-Dobbs models is to ignore the distinction between sunk, non-deferrable and deferrable investments and treat all existing and future investment as deferrable.
- 4.8 The CEG conclusion that the Commission should apply 75th percentile WACC as the lower bound for UCLL and UBA services would result in consumers paying an extra \$58 million per annum¹⁴ to incentivise \$61 million in new copper capital expenditure.¹⁵ (If 95th percentile WACC was applied it would result in consumers paying an additional \$128 million per annum.) Effectively what CEG is suggesting is that end-users should pay a 100% plus mark-up on all Chorus' new copper investment.

¹³ Ian Dobbs, Comments on the Application of the Dobbs [2011] model, 17 September 2014, paragraph 29.

¹⁴ Based on CEG's calculation that 75th percentile would increase the WACC from 6.47% to 7.22 percent, UCLL prices from \$28.22 to \$30.72 per month, and UBA from \$38.4 to \$41.22 per month, and assuming 1.717 million UCLL/UCLF lines, and 1.113 million UBA lines.

¹⁵ Incentives to invest in fibre depend on the return on investment for fibre, not copper.

4.9 We recommend the Commission’s assessment of the CEG modelling includes:

- assessment of the implications of Chorus’ commitments to minimise investment in copper;
- review of the CEG modelling by Dobbs. We note there was general support from stakeholders on the Commission’s decision to engage Professor Dobbs to review the application of his model by Frontier Economics, on behalf of Transpower;¹⁶
- correction of the CEG modelling, consistent with the approach adopted by Frontier Economics, to distinguish between sunk, non-deferrable and deferrable investments; and
- evaluation of the benefits to end-users of new investment in Chorus’ copper network.

5. CEG ignore impact of existing generousities in the TSLRIC price calculation

5.1 We agree with CEG that “*Where we refer to a cost of capital uplift recommended by application of the [Frontier-Dobbs] FD Model we could equivalently express this as a price uplift*”.¹⁷ To the extent any uplift is warranted, which we do not support, it is already provided through generousities such as use of ORC for re-usable assets, zero growth demand assumption in the TSLRIC modelling, and use of an above mid-point asset beta estimate.

5.2 The Commission has been very clear about this in its draft decisions e.g.:¹⁸

We note the expert advice received from Ingo Vogelsang that our modelling decisions imply that an uplift is not required: ... If the Commission sticks to its preliminary decisions to stay with the classical TSLRIC approach and therefore not to consider re-use of civil works and not to make a performance adjustment for the FTTH MEA, then as compared to application of the modified TSLRIC [sic] methodology being advocated by the EU the NZCC classical application results in a higher price. This would likely offset any efficiency argument (Alfred Kahn), investment risk or lumpiness that would go against the classical TSLRIC. It would also take care of any net positive externalities from incentivizing migration to UFB. Thus, there would, in my view, be no case to be made for an uplift to the WACC or for a generous approach to any other cost components.

¹⁶ “For example, Covec commented that “we consider it very useful for the Commission to have asked Professor Dobbs for comment directly” (Covec “Cross submission on Dobbs and NZIER”, 30 September 2014) and Houston Kemp commented that “Professor Dobbs’ report offers a balanced review of Frontier Economics’ implementation of the Dobbs (2011) model (Houston Kemp “Analysis of further evidence in the Commerce Commission’s review of the WACC percentile”, 30 September 2014).” Source: Commerce Commission, Reasons paper, Amendment to the WACC percentile for price-quality regulation for electricity lines services and gas pipeline services, 30 October 2014, footnote 399.

¹⁸ Commerce Commission, draft decision, Cost of capital for the UCLL and UBA pricing reviews, 2 December 2014, paragraph 218.

- 5.3 The Commission's expert, Ingo Vogelsang, has also stated *"the TSLRIC method currently proposed by the NZCC is likely to be substantially more than needed by Chorus for covering the cost of its copper access network. Thus, the copper access network is likely to remain highly profitable"*¹⁹ and *"even if the Commission were to reverse its stand on the re-use of civil works would Chorus be [sic] able to generate substantial profits from its UCLL and UBA offerings"*.²⁰
- 5.4 Our cross-submission also summarised details of the Commission's uplifts and generosities, identified by various submitters.²¹
- 5.5 While these generosities have not yet been quantified by the Commission, and they must be, it would appear reasonable to assume they are well in excess of the 75th percentile proposed by CEG.

6. CEG disregard the Dobbs' distinction between sunk, non-deferrable and deferrable investments

- 6.1 CEG fail to distinguish between copper, which is essentially a sunk cost which Chorus is undertaking minimal further invest in, and fibre services. CEG effectively have produced optimal WACC percentiles for a fibre business only, which ignores Chorus' UFB roll-out obligations, and not for UCLL and UBA copper services.
- 6.2 If CEG were to properly apply the Frontier-Dobbs model it would need to recognise the three categories of investment described by Dobbs:
- Category 1 investment, which are existing (and sunk) assets used to provide existing services;
 - Category 2 investment, which is non-deferrable new investment to provide new and/or enhanced services;
 - Category 3 investment, which is deferrable new investment to provide new services.
- 6.3 Proper application of the Frontier-Dobbs model would recognise Chorus has \$2,398 million in category 1 (sunk) copper assets,²² with annual copper capital expenditure of \$61 million. In 2014, Chorus' noted "Copper capital expenditure was \$61 million for the year, reflecting the ongoing shift in focus to fibre related capital expenditure ..."²³

¹⁹ Ingo Vogelsang, Current academic thinking about how best to implement TSLRIC in pricing telecommunications network services and the implications for pricing UCLL in New Zealand, 25 November 2014, paragraph 24.

²⁰ Ingo Vogelsang, Current academic thinking about how best to implement TSLRIC in pricing telecommunications network services and the implications for pricing UCLL in New Zealand, 25 November 2014, paragraph 18.

²¹ Refer, for example, to Wigley and Company, Cross submissions as to draft UCLL and UBA FPP determinations, 20 March 2015, section 1.

²² Chorus, Chorus Annual Report, 2014, page 52.

²³ Chorus, Chorus Annual Report, 2014, page 34.

- 6.4 It would appear that \$35 million, of the \$61 million capital expenditure, on “Network sustain”²⁴ would also fit into category 1.²⁵
- 6.5 Based on Dobbs estimation that the WACC percentile for category 1 assets is 45th percentile, category 2 is 86th percentile and category 3 is 97th percentile²⁶, and virtually all of Chorus’ UCLL and UBA assets fitting into category 1, this suggests the optimal WACC is 45th percentile.²⁷ (Critically, these percentiles are based on the application of a total surplus test, rather than a consumer surplus test.) This is confirmed by CEG in its statement that “In our base case scenario we find that ... the optimal cost of capital percentile for existing services is 45%”.²⁸
- 6.6 CEG try and get around this fundamental component of the Dobbs model by criticising Dobbs for his proposition that the optimal WACC percentile for sunk and non-deferrable assets should be less than for deferrable assets.
- 6.7 Chorus and CEG have disregarded the High Court’s observations about sunk and future investment. The High Court recognises that sunk and future investment could be valued differently, as the Commission has done in the Regulated Asset Base Input Methodologies under Part 4 of the Commerce Act, without harming incentives to invest (this is broadly equivalent to setting different WACCs for sunk and future investment²⁹). For example, the High Court stated:³⁰

... in unregulated markets the opportunity cost of sunk or specialised assets is far from irrelevant. Since they are specialised, the best that they could probably be sold for is their scrap value. Suppose the market suffers a massive change that reduces the asset owner’s revenue. So long as the revenue stream is sufficient to cover operating costs, the asset owner will stay in business unless the revenue over and above that amount is lower than the return on the scrap value of the assets. If not, the asset owner would be better off selling the assets for scrap and investing the proceeds elsewhere.

Similarly therefore, in a regulated industry, unless the RAB is set at less than the scrap value, the asset owner will rationally keep the assets in operation, and indeed operate them as efficiently as possible.

²⁴ Chorus, Chorus Annual Report, 2014, page 34.

²⁵ “Network sustain refers to capital expenditure where the network is being upgraded or network elements such as poles, cabinets and cables are replaced. This is typically where there is risk of network failure or degraded service for end-users and network replacement is deemed more cost effective than reactive maintenance.” Source: Chorus, Chorus Annual Report, 2014, page 34.

²⁶ Dobbs, I., 2011. Modelling Welfare Loss Asymmetries Arising from Uncertainty in the Regulatory Cost of Finance, *Journal of Regulatory Finance* 39, 1-28.

²⁷ Calculated as: $(2,398-61)*0.45+35*0.86+(61-35)*0.97/2,398 = 0.46$

²⁸ CEG, Welfare effects of UCLL and UBA uplift, March 2015, paragraph 54.

²⁹ By way of illustration (and ignoring depreciation for simplicity) valuing sunk investment at \$10 and new investment at \$5, and providing a WACC of 10% has the same financial impact as valuing sunk investment at \$15, but providing a 7% WACC for sunk investment and 10% for new investment (two-tier WACC).

³⁰ *Wellington International Airport and others v Commerce Commission* [2013] NZHC 3289, paragraphs [597] – [600]. Footnotes removed.

Moreover, 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.

The argument on investment grounds against such a harsh determination of the RAB – setting it just above scrap value – is that, as the Commission says, it “may set a precedent that damages a supplier’s incentives to invest in the future”. No doubt it would cause enormous consternation and call the investment environment into question. But normally that would be more relevant to potential future investors in other industries where initial RABs had not yet been set, e.g. industries not currently regulated but subject to the possibility of regulation. Although s 52A(1) talks of the suppliers of regulated goods or services having incentives to innovate and invest, we agree that the impact on potential future investors in industries other than those currently regulated is a relevant factor.

- 6.8 We note also the Commission’s observation that “... *different types of investment are likely to respond differently to changes in the WACC.*”³¹
- 6.9 CEG also state: “*It may be argued that, as Chorus and other LFCs are contractually bound (subject to liquidated damages) to deploy fibre under the existing UFB contracts, the Commission’s modelling will have no effect on incentives for new investment. In our view, this does not negate the requirement on the Commission to set prices that signal to investors that new investment will be given a return appropriate with the risk faced and the benefits this brings to end-users. We would also note, as discussed below, the Commission’s approach will likely have an effect on incentives for new investment by Chorus and other parties which are not contractually bound.*”³²
- 6.10 This is precisely why Dobbs distinguished between the three categories of investment, and his model suggests deferrable investment warrants a higher WACC percentile than sunk (copper) and non-deferrable (UFB commitments). CEG is effectively trying to blur arguments about deferrable UFB investments to justify a higher WACC for sunk copper assets, contrary to the thesis of the Dobbs model.
- 6.11 In any event, we have submitted that regulated pricing as to one service (here, copper) is irrelevant to regulated pricing in another context e.g. fibre.

7. CEG have ignored Chorus’ undertakings to limit investment in copper

- 7.1 Chorus’ investment in copper is now limited to about \$61m per annum.
- 7.2 Chorus has made commitments limiting the extent to which it will invest in copper.

³¹ Commerce Commission, Reasons paper, Amendment to the WACC percentile for price-quality regulation for electricity lines services and gas pipeline services, 30 October 2014, paragraph B22.

³² CEG, Welfare effects of UCLL and UBA uplift, March 2015, paragraph 35.

7.3 The Network Infrastructure Project Agreement (that is the construction and roll out contract) that Chorus agreed with CFH contains a number of limits on copper investment, including, for example:³³

- ensuring provision of copper services *“does not diminish or inhibit the Company’s performance of, or adherence to, the undertakings in this Schedule or the Company’s commitment to positively assist fibre uptake in accordance with the Commitment Standard, and that End User fibre uptake is not compromised by the Company’s ongoing investment in copper access assets beyond that contemplated by this clause 4”.*
- *“The Company undertakes to prioritise new investment in fibre access and uptake and to minimise ongoing investment in copper access assets in all future investment plans.”*
- *“The Company will offer only fibre access services in greenfield developments over 20 lots. For smaller developments and infill development, fibre only access will be offered wherever the premises are passed or planned to be passed by fibre access in the near future ...”*
- *“Other than as provided for in the preceding paragraph, the Company will not build any new ‘copper to the home’ networks in the Candidate Areas.”*

7.4 It is incongruent to be concerned about Chorus’ incentives to invest in its copper network when Chorus has made commitments to minimise investment in copper.

8. Application of Dobbs model to determine optimal WACC percentile is rejected by Dobbs and the Commission

8.1 Dobbs himself has reviewed the Frontier-Dobbs model already and expressed concern about *“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. For example, there are reasons for considering the uplift should be greater (because there are sources of uncertainty, notably over future demand and technology, that are explicitly ignored in the model), and reasons for why it should be smaller (because there are other ways in which reliability and investment can be influenced by the regulator, because decision makers do not necessarily behave as Neoclassical economic theory predicts etc.).”*³⁴

8.2 Likewise, *“The original model assumes that new investment is in a new service for which there is independent demand – that is, demand that is independent from that for the existing service(s).”*³⁵

8.3 Dobbs also details various assumptions of the model which are not applicable to Chorus’ UCLL and UBA services, such as that the firm supplies the final

³³ Crown Fibre Holdings, Network Infrastructure Project Agreement, Telecom New Zealand Limited and Crown Fibre Holdings Limited, 24 May 2011, Schedule 11, paragraph 4.

³⁴ Ian Dobbs, Comments on the Application of the Dobbs [2011] model, 17 September 2014, paragraph 4.

³⁵ Ian Dobbs, Comments on the Application of the Dobbs [2011] model, 17 September 2014, paragraph 4.

retail service, and the deferrable investments are completely independent of the sunk and non-deferrable investments (zero cross-elasticity) e.g. *“The original model assumes that new investment is in a new service for which there is independent demand – that is, demand that is independent from that for the existing service(s)”*.³⁶

8.4 CEG has not addressed why it considers Dobbs’ view on the limitations of his own model should be put aside by the Commission.

8.5 The Commission’s views on the Dobbs model are also directly relevant e.g.:

We do not consider the Dobbs model a ‘good fit’ for determining an appropriate WACC percentile ...

... The Dobbs model does not address the risk of misestimating the WACC. It addresses the risk created by fixing the allowed WACC over the regulatory period.

... The Dobbs model does not model investments to maintain the existing network. Instead it focuses on investments in new innovative services.

We also note that currently the Dobbs model cannot robustly take into account wealth transfers and therefore does not adequately accommodate our ‘long-term interests of consumers’ objective. The Dobbs model also assumes optional and deferrable investment decisions depend only on the allowed WACC. By ignoring other influences, the model is likely to overstate the relative influence of the WACC uplift.

We are also concerned that the model’s output is highly sensitive to input parameters.

In light of our view that the Dobbs model is not a good fit for our current purpose, and our concerns with the sensitivity of the model to changes in input parameters, we have decided to not rely on the Dobbs model in setting the WACC percentile.³⁷

Dr Lally noted several limitations of the Dobbs model and suggested that these limitations made it difficult to be definite about the appropriate WACC margin.³⁸

The Dobbs model was designed to maximise a total economic welfare objective. 408 That is, it was designed to maximise the sum of consumer surplus and producer profits in the context of new investments that may or may not occur. This total welfare objective does not consider the distribution of welfare between consumers and

³⁶ Ian Dobbs, Comments on the Application of the Dobbs [2011] model, 17 September 2014, paragraph 5.

³⁷ Commerce Commission, Reasons paper, Amendment to the WACC percentile for price-quality regulation for electricity lines services and gas pipeline services, 30 October 2014, paragraphs B3 – B6.

³⁸ Commerce Commission, Reasons paper, Amendment to the WACC percentile for price-quality regulation for electricity lines services and gas pipeline services, 30 October 2014, paragraph B14.

producers and therefore does not consider wealth transfers generated when prices are lifted above the efficient market level.

... we do not consider a total welfare standard is consistent with the purpose statement of Part 4.³⁹

We consider a cost-benefit analysis approach, such as that undertaken by Oxera, is much better suited to weighing up the long-term costs and benefits of the WACC uplift to consumers of the regulated services.⁴⁰

The Dobbs model assumes that optional and deferrable investment decisions depend on one regulatory lever, the allowed WACC.

In practice however, we note that there are a range of factors that influence regulated utilities' investment decisions. ... the WACC percentile is not the only tool to address the risk of under-investment. For example, service quality standards help ensure utilities maintain the quality of their services. In order to do this, utilities must invest to maintain their infrastructure. The Dobbs model does not address this.

We consider that investment decisions are influenced by a range of factors, one of which is likely to be the allowed WACC. By focusing on the allowed WACC, we consider the Dobbs model over emphasises the influence of the allowed WACC on investment decisions and consequently overstates the role of the WACC uplift.⁴¹

We consider that there is ... 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.⁴²

- 8.6 Dr Martin Lally also details limitations of the Dobbs model which we do not discuss here.⁴³

9. CEG's distinction between electricity and telecommunications is not relevant

- 9.1 While CEG has noted the Frontier-Dobbs model "*was developed as an application and extension of the model described in Dobbs (2011) to the electricity sector in New Zealand*", but "*The Dobbs (2011) model ... according*

³⁹ Commerce Commission, Reasons paper, Amendment to the WACC percentile for price-quality regulation for electricity lines services and gas pipeline services, 30 October 2014, paragraphs B36 - B37.

⁴⁰ Commerce Commission, Reasons paper, Amendment to the WACC percentile for price-quality regulation for electricity lines services and gas pipeline services, 30 October 2014, paragraph B40.

⁴¹ Commerce Commission, Reasons paper, Amendment to the WACC percentile for price-quality regulation for electricity lines services and gas pipeline services, 30 October 2014, paragraphs B41 – B43 [footnote removed].

⁴² Commerce Commission, Reasons paper, Amendment to the WACC percentile for price-quality regulation for electricity lines services and gas pipeline services, 30 October 2014, paragraph B66.

⁴³ Martin Lally, THE APPROPRIATE PERCENTILE FOR THE WACC ESTIMATE, 19 June 2014.

to Professor Dobbs, was originally developed with a telecoms application in mind”, this distinction is sophistry.

- 9.2 As is clear from Dobbs’ comments and the Commission’s assessment of the Frontier-Dobbs model, as highlighted above, the Commission rejected use of the Frontier-Dobbs model for determining WACC percentiles for reasons that were not industry specific, and went much further than whether the original Dobbs model was developed for telecommunications.
- 9.3 Ultimately, if the Commission were to accept application of the Frontier-Dobbs model for setting the WACC percentile for UCLL and UBA services, the Commission would also need to re-open its decision to lower the WACC percentile for electricity and gas networks from 75th percentile to 67th, to ensure regulatory consistency and predictability.