

**VODAFONE NEW ZEALAND LIMITED**



**vodafone**

**Submission to the Commerce Commission**

**on**

**Commission paper: Analytical Frameworks for  
considering an uplift to the TSLRIC price and/or WACC**

**Public**

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## **Executive Summary**

- i) The Commission should not make an upwards adjustment to central estimate of TSLRIC-based prices or WACC.
- ii) Delivering prices which promote competition and investment are at the core of the TSLRIC methodology the Commission is applying. As a result, any additional (and artificial) inflation of prices above TSLRIC costs - such as through the uplifts the Commission is considering - would translate simply to a wealth transfer, through higher retail prices, from end-users of telecommunications to Chorus.
- iii) This is plainly inconsistent with the Commission's central task under s 18 of the Telecommunications Act 2001 (the Act): the promotion of competition for the long-term benefits of end users.

### **Uplift to TSLRIC prices for UCLL: a migration tax**

- iv) The Commission proposes an upward adjustment to the central estimate of TSLRIC for UCLL, in order to prioritise fibre migration. This course would convert wholesale copper prices into a policy lever, attempting to incentivise migration to fibre broadband.
- v) This 'migration tax' would be both inappropriate and ineffective: investment in fibre is committed in New Zealand, and we know that the single most important factor driving migration to NGA networks is time and not price: customers simply take time to adopt new technologies. It also overlooks technological developments that are expected to allow faster copper connections, ignores that segment of the broadband market that is not copper or fibre, and importantly, overlooks the potentially significant negative welfare effects of higher copper prices.
- vi) We strongly oppose any uplift to the central estimate of TSLRIC price for UCLL on this basis.

### **Uplift to the WACC: investment already secured**

- vii) The Commission proposes an upward adjustment to the central estimate of the WACC for both UCLL and UBA to reduce the risk that investment in new technology is not delayed (or does not occur) due to mis-estimation of the WACC.
- viii) We reject this approach for two reasons. First, there is no such risk: the core plank of investment - NGA infrastructure - is committed in New Zealand through the UFB Initiative. Second, TSLRIC methodology (including the calculation of WACC) is inclusive of dynamic efficiency considerations.
- ix) Increasing the WACC will translate directly into higher prices for customers, without a clear justification that they will see further investment in exchange. Chorus has no incentive as a monopolist, or ability given its fibre contracts with the government, to invest further in the copper network, except in the areas where it is competing with LFCs. This will either lead to a re-distribution of wealth from end users to Chorus shareholders or have a detrimental effect on other LFCs, neither of which will lead to a net welfare gain.
- x) We strongly oppose any uplift to the WACC on this basis.

### **Improving the Commission's framework**

- xi) While we do not accept that an uplift is required to either TSLRIC prices or WACC, we agree that it is appropriate for the Commission to consider consumer welfare as the focus point for its analysis of whether it is discharging its obligations under s 18(1) of the Act.
- xii) If the Commission nonetheless chooses to apply an uplift framework, it must make the following improvements:
  - a. using inputs that are appropriate for the New Zealand environment over the forecast period;
  - b. correcting errors in the expression of welfare effects, and the underlying calculations; and
  - c. including relevant welfare effects that are currently omitted.
- xiii) With respect to the framework for WACC, we again maintain our view that no uplift is required. However, if the Commission is to attempt a welfare analysis of proposed uplifts in WACC, then the Oxera approach should be adopted.
- xiv) In our view, the Commission should focus on ensuring that the main TSLRIC modelling is based on sound assumptions and inputs. A TSLRIC price that reflects the 'true' TSLRIC, and without an additional uplift, will result in prices which best promote competition and so be consistent with realising long-term benefits to New Zealand's households and businesses: the end users.

## A Introduction

A1.1 Vodafone welcomes the opportunity to comment on the Commission's discussion of whether an adjustment should be considered to either:

- (a) the central estimate of the TSLRIC-based price for UCLL; or
- (b) the central estimate of the WACC for UCLL and UBA.

A1.2 We have reviewed and provide specific recommendations on uplifts contained in the Commission's *Agenda and topics for the conference on the UCLL and UBA Pricing Reviews* dated 2 April 2015 (**Commission Uplift paper**).

A1.3 In commenting on the Commission Uplift paper we reference in particular:

- (a) The Commission's Draft pricing review determinations for Chorus' unbundled copper local loop (**Draft UCLL Determination**) and unbundled bitstream access service (**Draft UBA Determination**);
- (b) The advice on uplifts provided to the Commission by Professor Cambini (**Cambini paper**);<sup>1</sup> and
- (c) Ingo Vogelsang's TSLRIC implementation report (**Vogelsang paper**).<sup>2</sup>

A1.4 In this document, we also reference:

- (a) Professory Hausman's Response to the Commission's draft determination on uplift (**Hausman Uplift paper**).<sup>3</sup>

## A2 Independent expert reports

A2.1 This submission should be read along with the expert reports on Uplift prepared by WIK-Consult (**WIK Uplift Submission**)<sup>4</sup> and Network Strategies': Submission on the Commission's Uplift paper (**NWS Uplift Submission**)<sup>5</sup> and Cross Submission responding to CEG's Uplift Submission (**NWS Uplift CEG Cross Submission**).<sup>6</sup>

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<sup>1</sup> Professor Cambini, Economics aspects of migration to fibre and potential welfare gains and losses from an uplift to copper prices, 16 March 2015.

<sup>2</sup> Ingo Vogelsang, *Current academic thinking about how best to implement TSLRIC n pricing telecommunication network services and the implications for pricing UCL in New Zealand*, 25 November 2014.

<sup>3</sup> Professor Hausman, *Response to the Commerce Commission's draft determination on uplift*, February 2015.

<sup>4</sup> WIK-Consult, *Submission on the Commerce Commission's analytical frameworks for considering an uplift to the TSLRIC price and/or WACC*. 8 May 2015.

<sup>5</sup> Network Strategies, *Analytical frameworks for an uplift to the TSLRIC price and WACC. UCLL and UBA final pricing principle*, 10 May 2015.

<sup>6</sup> Network Strategies, *Examining welfare effects of UCLL and UBA uplift. A review of the CEG submission dated March 2015*, 10 May 2015.

### **A3 Monte Carlo simulations**

- A3.1 We do not address the Commission's question of whether Monte Carlo simulation should be considered within the context of the FPP, and instead reply on NWS's independent submission on this matter.<sup>7</sup> We agree with NWS's recommendation that if Monte Carlo techniques are employed, assumptions and inputs relevant to the New Zealand telecommunications environment must be developed. We also agree with NWS's overall conclusion that due to difficulties in developing these parameters, Monte Carlo analysis is likely to be of limited value.

### **A4 Confidentiality**

- A4.1 This submission does not contain confidential information.

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<sup>7</sup> NWS Uplift Submission, s 4.

## **B The Commission’s analytical framework for assessing uplifts**

### **B1 The Commission’s proposals**

- B1.1 The Commission is considering whether an uplift should be applied to the TSLRIC price and/or to the WACC, and proposes a welfare analysis to test whether an uplift would be in the long term benefit of end users.
- B1.2 The welfare effect of a higher copper price leading to migration off copper, and any investment effects, are identified separately. We support the Commission’s aim to separate out the effects, and to avoid double-counting across both categories. However, we agree with WIK’s finding that it is not clear that the framework achieves this objective.<sup>8</sup>
- B1.3 We also share WIK’s concern that as an increase in WACC itself creates an increase in the TSLRIC price, it is not clear that the welfare impacts of the two proposed uplifts are separable:<sup>9</sup>

*The migration target intends to incentivise a certain behaviour of users. The investment target aims at incentivising a certain investment behaviour of operators. These major conceptual differences can and for efficiency reasons should require different implementation frameworks to become effective and efficient.*

**Recommendation 1** Recognise that even without applying a specific TSLRIC uplift, a WACC uplift will itself increase the overall TSLRIC price: the welfare impacts of the two proposed uplifts may not be separable.

## **C Required approach**

### **C1 Legal framework**

- C1.1 The Commission notes that:<sup>10</sup>

*In considering whether the use of our central estimate gives best effect to section 18, we examine whether any departure from that central estimate should be made in order to promote competition for the long-term benefit of end-users of telecommunications services in New Zealand.*

- C1.2 Section 18 of the Act is best served by the Commission setting UCLL and UBA prices at the Commission’s central estimate of TSLRICs of providing each service, i.e. central estimate derived from the application of current best practice TSLRIC methodology.
- C1.3 Section 18 applies in principle to all statutory functions performed by the Commission. But its practical application will vary according to the function being performed. The extent to which section 18 has separate, observable effect will depend on the nature of the function being performed. Where the Commission can make all decisions necessary to perform a function based on evidence and analysis, i.e. there is a quantitative answer to the issues in question, section 18

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<sup>8</sup> WIK Uplift Submission, s 2.2.

<sup>9</sup> WIK Uplift Submission, s 2.2.

<sup>10</sup> Commission Uplift paper, [28].

should not affect that function. In this case, proper performance of the function as defined in the Act can be assumed to deliver an outcome that is consistent with section 18.

- C1.4 Conversely, where evidence and analysis cannot determine the issues in question - where the Commission faces two or more equally valid analytical choices and subjective judgement is required - section 18 is engaged. But here, the Commission is making subjective judgement on the statutory function that it is performing. Any judgement made in the context of setting FPP prices must remain grounded and consistent with the function that is being performed: establishing the best central estimate of TSLRICs for UCLL and UBA services according to current best practice. Section 18 cannot be relied on to advance an objective that is unrelated to the specific statutory function being performed.
- C1.5 We address the Commission's proposed approach to adjusting the TSLRIC price for the UCLL service below. Our comments regarding adjustment to the central estimate of WACC (for UCLL and UBA) are set out Section E below.
- C1.6 Under the Commission's proposed approach, any adjustment to the central estimate of the TSLRIC for the UCLL service is contingent on its analysis of incremental benefits and costs faced by end-users of telecommunications services that could reasonably be attributable to any decision to apply an uplift to the UCLL TSLRIC price.<sup>11</sup>
- C1.7 As the Commission correctly notes, because the deployment of the UFB is contractually committed, the majority of consumer welfare benefits arising from a fibre network are likely to emerge irrespective of whether an uplift is applied to the UCLL TSLRIC price.<sup>12</sup>
- C1.8 Where the Commission has determined a central estimate using a best practice approach to TSLRIC, there is no requirement in the Act, and no justification for the Commission, to make an adjustment to the central estimate of TSLRICs of providing each service. This is particularly so where, in applying the TSLRIC methodology in respect of both UCLL and UBA services, the Commission has made modelling choices that operate in favour of Chorus.<sup>13</sup>
- C1.9 In the context of the statutory function that is being performed, adjusting the central estimate of TSLRIC price for the UCLL service could only be justified if the Commission had strong and compelling evidence that adjustment to its central estimate is necessary to give best effect to s18. This requires the Commission to have strong and compelling evidence that adopting the unadjusted central estimate service will result in an outcome that does not promote competition for the long-term benefit of end-users.
- C1.10 Adjusting the central estimate of TSLRIC for the UCLL service without such evidence is unnecessary and unreasonable. Further, an adjustment in these circumstances fundamentally alters the nature of the statutory function that is being performed: the exercise of discretion pursuant to section 18 must be grounded in the statutory function being performed.

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<sup>11</sup> Commission Uplift paper, [42]

<sup>12</sup> Commission Uplift paper, [42]

<sup>13</sup> Vodafone submission (20 February 2015) (**Vodafone February Submission**), [B2.19]



**Recommendation 2**

**For an uplift to be applied, the Commission must have strong and compelling evidence that adopting the unadjusted central estimate service will result in an outcome that does not promote competition for the long-term benefit of end-users.**

- C1.11 The Commission states that “*in considering the potential consequences of an uplift, we have focused on the benefits and costs to end-users of telecommunications services within New Zealand, as per section 18(1).*”<sup>14</sup> While the Commission is also required to consider additional factors, including those specified in sections 18(2) and 18(2A), these additional considerations are specified in the Act simply “*...for the purpose of assisting analysis under s 18(1).*”<sup>15</sup> The Commission’s primary duty in section 18(1) is the promotion of competition for the long-term benefit of end-users, and an adjustment to TSLRIC for the UCLL service cannot be based only on these additional considerations. Put simply, discretion where available to the Commission must be exercised solely with the objective of promoting competition for the benefit to end-users.
- C1.12 However, it is apparent that the Commission’s proposed adjustment to the TSLRIC for UCLL is grounded in an assessment of additional considerations alone. For example, the Commission gives weight to consideration of whether faster migration from copper to fibre would “*induce higher levels of innovation and investment in new applications, which would benefit not only the marginal UFB subscriber but also existing UFB subscribers.*”<sup>16</sup> This is not a valid stand-alone consideration: any adjustment to TSLRIC price must be founded on strong and compelling evidence that:
- (a) adjustment is necessary to promote competition for the long term benefit of end users; and
  - (b) the magnitude of adjustment made will achieve this outcome.
- C1.13 Unless a clear account can be given of how i) a proposed adjustment promotes competition; and ii) the benefits of this competition accrue to end users, then it should not be made. Adjustment cannot be justified only with reference to additional factors specified in sections 18(2) and (2A).
- C1.14 As it stands, the Commission has not exhibited any evidence, let alone strong and compelling evidence, to show that the unadjusted central estimate of the UCLL TSLRIC will result in outcome that does not promote competition for end-users.

**Recommendation 3**

**Unless a clear account can be given of how i) a proposed adjustment promotes competition; and ii) the benefits of this competition accrue to end users, then it should not be made.**

**Recommendation 4**

**An adjustment cannot be justified only with reference to additional factors specified in sections 18(2) and (2A).**

- C1.15 In any event, we consider that an adjustment to the UCLL TSLRIC is entirely unnecessary in light of the modelling approach applied by the Commission which anyway operates to overestimate

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<sup>14</sup> Commission Uplift paper, [46]

<sup>15</sup> High Court judgment *Chorus v. Commerce Commission and others* [2014] NZMC 690 at [34].

<sup>16</sup> Commission Uplift paper, [53]

the central estimate. The Commission recognised this in the Draft UCLL Determination as follows:<sup>17</sup>

*[...] we do not consider a section 18 uplift is appropriate in the current circumstances given the cumulative impact of a number of our TSLRIC modelling decisions have provided a central estimate which naturally mitigates asymmetric cost concerns.*

We have seen no new information that justifies a change to this position.

**Recommendation 5**      **No new evidence, since the December draft determination, has been provided to justify a change to the Commission's decision that a section 18 uplift is not appropriate.**

## **C2 Migration incentives have no place in the legal framework**

C2.1 As noted above, any judgement that the Commission makes in determining the UCLL TSLRIC must remain grounded and consistent with the function being performed: establishing the best central estimate of this TSLRIC according to current best practice. Section 18 cannot be used as a vehicle for departing from the function that the Commission is performing. Section 18 provides guidance as to how a statutory function should be performed where the Act does not provide complete direction, but it cannot be used by the Commission to introduce extraneous considerations into the proper performance of a statutory function, such that the essence of the function being performed is altered. Section 18 is, retaining the metaphor used at conference, a compass assisting navigation of a specific chart – it is not a tool that enables the drawing of a different chart.

C2.2 In determining TSLRICs for UCLL and UBA services, there is no place for the Commission to exercise discretion with reference to extraneous considerations – including consideration of the speed and scale of migration from copper to fibre access services. As the Commission has previously noted:<sup>18</sup>

*The purpose of the Act is to promote competition in telecommunications markets, not to promote take-up of a particular technology over another.*

C2.3 To the extent that there is a policy gap concerning migration from copper to fibre access, the FPP process cannot be used to fill this gap. Migration policy is solely a matter of Government policy. Even if greater and earlier migration may be desirable, this is not an objective that the Commission can pursue within the proper scope of the statutory function it is performing: determining the central estimate of TSLRIC for UCLL (and UBA) according to current best practice methodology.

C2.4 The Commission has previously rejected arguments made by Chorus that s 18(2A) of the Act requires it to “*prioritise the successful migration to the UFB over short term price gains on the legacy copper network, where there is a conflict.*”<sup>19</sup> The Commission’s response to this argument was that Chorus had overemphasised the scope of section 18(2A) within the context of the

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<sup>17</sup> Draft UCLL Determination, [426]

<sup>18</sup> Commerce Commission Draft UCLL Benchmarking Determination (4 May 2012), [249].

<sup>19</sup> Chorus Submission on Draft UBA Benchmarking Determination (1 February 2013), [158].

statutory function being performed.<sup>20</sup> Vodafone submits that the current position is identical – nothing in the FPP pricing function now being performed requires fibre migration to be prioritised as an objective.

**Recommendation 6** In determining TSLRICs for UCLL and UBA services, there is no place for the Commission to exercise discretion with reference to extraneous considerations – including consideration of the speed and scale of migration from copper to fibre access services. Migration policy is solely a matter of Government policy.

C2.5 The WIK Uplift Submission confirms that consideration of migration incentives and externality effects play no role in applying current best practice TSLRIC:<sup>21</sup>

*First of all, it has to be stated that spillover effects on other markets and the economy at large and externality effects are definitely not part of a correctly measured TSLRIC. Ingo Vogelsang expresses concerns whether such considerations are being in the LTBEU for benefits that do not directly accrue to consumers when he argues: "It becomes somewhat of a stretch for spillovers to the economy in general such as productivity effects from the internet. Such spillovers should therefore be the concern of explicit subsidies or other policies than the TSLRIC determination."<sup>22</sup> One may argue that the governmental interventions in New Zealand in favour of the UFB including the public capital contributions reflect the value of these macroeconomic spillover effects. This would at least represent rational political choice and justification of the (relatively strong) intervention. From that perspective Ingo Vogelsang concludes: "A decision not to consider such spillover effects therefore has good justification."<sup>23</sup> We fully share this view.*

[...]

*the Commission's uplift framework in any case leaves the orthodox under-standing of implementing TSLRIC and goes beyond that. Regulators usually do not use TSLRIC pricing to follow public policy objectives other than efficient pricing.*

[...]

*What brings the Commission to the judgement that a faster track to fibre networks is more to the long-term benefit of end-users than the path which users decide by their day-to-day subscription decisions themselves? Which indications does the Commission have that the principle of consumer sovereignty fails in this particular case? Normally a market failure has to be identified before intervention and deviations from basic economic principles is justified. If consumers are not informed enough to make the right choices then the intervention first of all should be to provide appropriate information to improve the quality of consumers' decision making before more far reaching interventions might be envisioned or even justified.*

<sup>20</sup> Commerce Commission *Unbundled Bitstream Access Service Price Review Decision* [2013] NZCC 20 (5 November 2013), [70].

<sup>21</sup> WIK Uplift Submission, s 2.3.

<sup>22</sup> 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, para. 18.

<sup>23</sup> Vogelsang, *What effect would different price point choices have on achieving the objectives mentioned in s.18, the promotion of competition for the long-term benefit of end-users, the efficiencies in the sector, and incentives to innovate that exist for, and the risks faced by investors in new telecommunications services that involve significant capital investment and that offer capabilities not available from established services?*, 5 July 2013, para. 46.

C2.6 More fundamentally, the Commission’s proposed adjustment to the central estimate of TSLRIC for UCLL in order to prioritise fibre migration would be inherently speculative, not least given the absence of strong and compelling evidence to determine either the case for or the appropriate quantum of adjustment. The Commission’s 2012 conclusion remains sound:<sup>24</sup>

*While the UFB initiative is intended to accelerate migration to fibre, the actual pace of migration remains speculative. Therefore, it is unclear what, if any, adjustment would be appropriate. Because of the substantial uncertainty around competition from fibre services, any adjustment is unlikely to give a more reliable estimate than the unadjusted approach.*

C2.7 Any adjustment as proposed in the Commission Uplift paper will operate simply to skew a proper analytical approach to determining the UCLL TSLRIC and introduce significant scope for error.

C2.8 Vodafone submits that the adjustment to TSLRIC for UCLL proposed by the Commission is highly speculative and unsound. The externality effects identified in the Commission Uplift paper are not effects that we recognise as attributable to fibre. In addition, the Commission provides no clear explanation as to how the externality effects it has identified in fact promote competition for the long term benefit of end users – the yardstick by which any exercise of discretion by the Commission must be measured.

**Recommendation 7** Section 18 makes no direction to rank dynamic efficiency over other benefits. Absent clear legislative direction to do so, favouring one variety of efficiency over others as a matter of policy would be to abrogate the proper exercise of discretion by the Commission.

### **C3 Assessment criteria: welfare and efficiency standards**

#### **Efficiency and welfare standards**

C3.1 The Commission’s analysis of whether an uplift is justified focusses on the benefits and costs to end-users of telecommunications services. The welfare standard used as an assessment criteria is consumer welfare, rather than total welfare.<sup>25</sup> We agree that consumer welfare is the appropriate focus for this regulatory review of wholesale copper prices.

C3.2 The Commission’s approach is supported by Professor Hausman, on behalf of Chorus: *“Economists have determined that consumer welfare should be the goal of regulation.”*<sup>26</sup>

**Recommendation 8** Retain the current approach, namely that a consumer welfare standard is the appropriate focus for this regulatory review of wholesale copper prices.

#### **Regulatory certainty: consistency in interpretation**

C3.3 The Commission’s approach is also consistent with its decision on the appropriate welfare standard in setting the WACC for electricity lines and gas pipeline businesses. As noted in the

<sup>24</sup> Commerce Commission *Unbundled Bitstream Access Service Price Review Decision* [2013] NZCC 20 (5 November 2013), [188].

<sup>25</sup> Commission Uplift paper, [34].

<sup>26</sup> Hausman Uplift paper, page 9,

Commerce Commission's *Amendment to the WACC percentile for price-quality regulation: Reasons Paper* (Reasons Paper):<sup>27</sup>

*In our draft decision, we highlighted that the outcome of a loss analysis will differ depending on whether a 'total welfare' or 'consumer welfare' standard is used. Some mix of the two approaches could also be applied—i.e., where some weighting is assigned to the results of both approaches.*

*A total welfare standard is consistent with an objective of maximising economic efficiency benefits for both consumers and producers, where any distributional benefits (or costs) associated with transfers of wealth between consumers and producers due to price changes are ignored.*

*A consumer welfare standard is consistent with maximising benefits to consumers only, from both an efficiency and distributional standpoint. In particular, any financial benefit consumers might receive due to avoiding wealth transfers associated with producers setting higher prices in future will be taken into account.*

- C3.4 As the Commission also explains in the Reasons Paper: in static analyses, total welfare is represented by the combination of 'consumer surplus' and 'producer surplus'. Consumer surplus reflects the difference between the demand curve (willingness to pay) and actual price. Producer surplus reflects supplier profits: the margin between price and production cost. Total welfare is maximised when total efficiency is maximised, meaning the distribution of surplus between consumers and producers is ignored. In other words, the balance between consumers and producers within an income distribution is irrelevant to the question of whether a total distribution is efficient.
- C3.5 In contrast, a consumer welfare approach (with a focus on maximising consumer surplus), requires that both the distributional and efficiency effects on consumers of higher prices are taken into account.
- C3.6 The overriding purpose of Part 4 of the Commerce Act 1986 is 'long term benefit to consumers'. As the Commission notes,<sup>28</sup> the High Court (in *Wellington International Airport Ltd & Ors v Commerce Commission* [2013] NZHC 3289) made clear that:

*the 'overall', 'central' or 'overriding' purpose of Part 4 is the long-term benefit to consumers in markets where there is little or no competition;*

*that purpose is to be achieved by promoting outcomes that are consistent with outcomes in workably competitive markets;*

*[.]*

*those outcomes are expressed by reference to the way in which suppliers are affected by Part 4 regulation—i.e., it is suppliers of regulated services who are to have incentives to innovate and to invest (s 52A(1)(a)), who are to have incentives to improve efficiency and to provide services at a quality that reflects consumer demands (s 52A(1)(b)), who are to share efficiency gains with consumers (s 52A(1)(c)), and who are to be limited in their ability to extract excessive profits (s 52A(1)(d)).*

*[...]*

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<sup>27</sup> 3 October 2014.

<sup>28</sup> Reasons Paper, page 121-122.

*the High Court has made it clear that the Commission's justification of a WACC uplift, which involves balancing 'limiting the ability of suppliers to extract excessive profits' in s 52A(1)(d) with the s 52A(1)(a) outcome of providing regulated suppliers with incentives to invest and operate, "is to be decided within the context of what best promotes the long-term benefit of consumers, the overriding purpose of Part 4."*

**Recommendation 9      Retain consistency with other, similar, regulatory proceedings by retaining a consumer welfare standard.**

**Impacts on consumers and suppliers must be balanced**

C3.7 Also with respect to the WACC uplift consideration for Electricity Distribution Businesses (EDBs), the Commission states that:

- (a) the responsibility to ensure regulated suppliers have incentives to innovate and invest, including in replacement, upgraded, and new assets, is not without limitation;
- (b) if consumers are to pay higher prices to safeguard beneficial investments, those investments will only be consistent with the purpose of Part 4 'if the benefits to consumers from those investments exceed the associated costs to consumers from higher prices, where all relevant benefits and costs are taken into account over the long term.'<sup>29</sup>

**In the context of regulated prices, suppliers' interests are protected**

C3.8 In the context of EDBs, the High Court agreed with the Commission that the interests of suppliers and investors is protected by the application of ex ante fixed capital maintenance. In this review of copper pricing, the interests of suppliers and investors are covered already within the calculation of a 'true' TSLRIC, allowing a reasonable return on capital invested.

C3.9 Part 4 of the Commerce Act states that the long term benefit of end users is promoted by prices consistent with workably competitive markets. Theoretically, workably competitive markets will display prices that reflect the marginal cost of production. Setting the price of a service according to TSLRIC already provides for an uplift on marginal cost: by allowing for an apportionment of 'total service' costs. Thus TSLRIC already allows for a reasonable rate of return above marginal cost of providing a service, to the regulated entity, and by extension, its shareholders.

C3.10 Dynamic efficiency, as a relevant factor in maximising overall efficiency and overall welfare, is a relevant consideration when both upstream and downstream markets are competitive. Dynamic efficiency is less of a relevant factor in maximising long term benefits of end users when the upstream market comprises a single regulated monopoly utility supplier in this instance because:

- (a) TSLRIC already ensures adequate return on capital is received by the regulated supplier. This allowed return should be sufficient to ensure returns that allow investment.
- (b) Furthermore, in the context of this copper pricing review, investment plans for fibre are already contractually agreed with the Crown, and subsidised by Crown – indirectly paid

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<sup>29</sup> Reasons Paper.

for by all taxpayers. So an extra uplift charge to consumers is unnecessary because it would amount to double taxation.

**Recommendation 10**      **Recognise that TSLRIC inherently provides suppliers with a rate of return on capital and sets prices above marginal cost. Thus a central estimate of TSLRIC allows firms to recover the cost of production.**

C3.11 We do not agree that dynamic efficiency must in all circumstances be favoured over static efficiency as Chorus suggests. Whether it is appropriate to prioritise dynamic efficiency depends on the facts of each case and the nature of the decision being made. Section 18 makes no direction to rank dynamic efficiency over other benefits. Absent clear legislative direction to do so, favouring one variety of efficiency over others as a matter of policy would be to abrogate the proper exercise of discretion by the Commission. The availability of discretion means that, in each case, the Commission must assess the likelihood and magnitude of efficiency gains before deciding how they should be prioritised.

C3.12 In doing so, we suggest that it would not be sensible to favour, for example, a remote and uncertain dynamic efficiency benefit over an immediate and certain static efficiency benefit. None of the Commission's previous decisions referenced by Chorus disagree with this as a principle of analysis.<sup>30</sup>

**Conclusion: Consumer welfare is the appropriate standard for this copper pricing review, and any weight placed on dynamic efficiency incentives must be clearly justified.**

C3.13 A consumer welfare analysis has to be most appropriate within the context of a regulatory pricing review setting prices that cover production costs (via TSLRIC) and that must be in the long term benefit of end users of regulated services.

C3.14 NWS make a similar recommendation:<sup>31</sup>

*Although the Telecommunications Act is not explicit on this matter, it seems clear that its primary emphasis on the long-term benefits of end-users is consistent with a consumer welfare standard.*

and highlights that the results of the Frontier-Dobbs model are highly sensitive to the assumed welfare standard. In relation to existing investment, a consumer welfare standard indicates that maximum welfare is achieved at the minimum WACC.

C3.15 We reject CEG's assertion that a total welfare standard would better serve consumer interests:

*A static welfare analysis would potentially indicate that prices should be reduced to marginal cost, and the loss to producers or pricing below cost would ignored [sic]. However, as the Commission itself recognises this would not be in the LTBEU [long term benefit for end-users]. This is because any firm that fails to recover its costs of production, including a normal risk-adjusted return on capital, will exit the market over the longer term by redeploying its capital elsewhere.<sup>32</sup>*

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<sup>30</sup> Vodafone UBA Cross-submission, 4 March 2013 at [13].

<sup>31</sup> NWS CEG Uplift Paper s 2.2

<sup>32</sup> CEG Uplift Submission, paragraph 98.

- C3.16 In the context of a TSLRIC price setting exercise, this argument cannot be substantiated. As explained above, TSLRIC will achieve a price level above marginal cost as it includes a mark-up for common costs. And so no firm will fail to cover its cost of production.
- C3.17 We have previously submitted that the Commission cannot assume that the certain and substantial direct effects of higher prices will be offset by dynamic efficiency benefits, which are not clearly identified and are not accompanied by any clear explanation of how they accrue to end-users.<sup>33</sup> And so we also support NWS's recommendation that:

*In view of the Act's emphasis on the long term benefits of end-users, if the Commission chooses to give weight to producer profits the rationale for the extent of the weighting should be clearly justified.*

**Recommendation 11**      **Consumer welfare is the appropriate standard for this copper pricing review, and any weight placed on dynamic efficiency incentives must be clearly justified.**

**The Commission's assessment framework is one-sided: it does not include testing the impact of a 'down-lift' on TSLRIC prices**

- C3.18 The Commission has chosen not to test the welfare impacts of a 'down-lift' to the TSLRIC price, as to reduce the price would risk suppliers not covering their costs. In theory, we agree with this statement.
- C3.19 However, Vodafone's February submission and March cross-submission present detailed explanations how the Draft UCLL and Draft UBA Determinations represent a series of conservative judgements, and so significantly overestimate the central estimate of TSLRICs for UCLL and UBA services.
- C3.20 Given the inflated TSLRICs, the Commission cannot reject the concept that customer welfare gains from a 'down-lift' on TSLRIC prices might in fact be justified due to the risk (and evidence) of over-estimation, and be significant. Given the distance between the Commission's draft prices and the prices arising from our limited sensitivity analyses, we believe it is unlikely that a 'down-lift' would result in Chorus not covering its total supply costs.

**Recommendation 12**      **Ensure the assessment framework is not one-sided: if it is to be applied, the framework should also allow for testing the impact of a 'down-lift' on TSLRIC prices.**

## **D      The Commission's framework for an uplift to the TSLRIC price**

### **D1      Migration effects: an uplift on TSLRIC as a 'migration tax'**

- D1.1 In considering an uplift to the central estimate of TSLRIC, the Commission is examining the potential benefits that might arise from faster migration of customers from copper to fibre, and the increased costs arising from higher prices for those consumers who remain on copper-based services.

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<sup>33</sup> Vodafone February submission, section B2.



D1.2 The Commission has designed an analytical framework for estimating the effect on consumer welfare of an uplift in the TSLRIC price.

### **Drivers of fibre migration**

D1.3 WIK provide evidence on fibre uptake:<sup>34</sup> ranging in Europe from 5.2% in Finland to 63% in Norway, and find the relative price of copper and fibre has very little impact on fibre demand. Instead, time is shown to be one of the most important factors driving take up – consumers simply take time to adopt new technologies. It is important also to note that adoption speed is not necessarily correlated with usage.

D1.4 WIK conclude that evidence from overseas studies on fibre migration and usage, including from Australia, indicate a broad range of drivers of fibre uptake and a broad range of demand reactions. WIK therefore recommend:

*it is of limited benefit and reliability to deduce price and cross-price demand elasticities from trying to adopt findings in other jurisdictions to the New Zealand environment. The findings are simply not coherent, sharp and stable enough. There is no other way than to derive a clear view on demand reactions with New Zealand specific data. In its cross-submission on behalf of Chorus, HoustonKemp highly stress the limited data available on the switching behaviour of users to the UFB.*

D1.5 The Commission's own survey evidence shows that New Zealanders' migration to fibre is impacted by non-standard connection and equipment costs, the availability of video content, and issues relating to data caps, backhaul capacity and IP interconnection. Willingness to pay for a broadband connection was relatively low, with 77% of customers willing to pay up to \$10 extra per month. WIK highlight that whilst the most important benefit identified for super-fast broadband is high-definition video, most copper based ADSL and VDSL customers already receive high-definition video, thus negating the 'main reason' for migration to fibre.

**Recommendation 13** Recognise domestic and overseas evidence on the drivers of fibre migration, including that *time* is shown to be one of the most important factors driving take up – consumers simply take time to adopt new technologies.

### **Fibre demand projections**

D1.6 The Commission's framework projects fibre demand. Household projections are created by applying the historic growth rate in dwellings to future years. A better approach would be to simply adopt Statistics New Zealand's population projections and so take into account expected future demographic influences such as migration.

D1.7 The Commission is assuming that all households within the UFB footprint, so 80% of its dwellings projection, will have a fibre broadband connection by 2029. Assuming that all households passed by fibre will have chosen to subscribe to a fibre service must be an over estimate. Some will be mobile only, and some will have cable service. We support NWS's suggestion that if applying this framework, the Commission consider a range of fibre market shares.

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<sup>34</sup> WIK Uplift Submission, s 4.1.

- D1.8 WIK also caution that the Commission's demand projections seem optimistic and do not reflect the range of different estimates regarding fibre uptake.<sup>35</sup>
- D1.9 Overestimating the proportion of households connected will then lead to a second overestimate: the welfare effect of migration.

**Recommendation 14 Base fibre demand projections on Statistics New Zealand's population projections.**

**Cross-price elasticity of demand for fibre with respect to copper prices**

D1.10 For copper prices to impact on the speed of migration to fibre, one has to assume that copper and fibre products are considered substitutes by some customers. The change in demand for fibre arising from a change in price for copper is termed the 'cross-price elasticity of demand for fibre with respect to copper'. The Commission assumes a cross-price elasticity of 1.2 and so assumes a 1% increase in retail copper price will increase fibre demand by 1.2%.

D1.11 We agree with Vogelsang that the value of 1.2 appears too high.<sup>36</sup> We note also WIK's concern:<sup>37</sup>

*Despite [Vogelsang's] arguments and warnings the Commission has used this relative high value of the cross-elasticity. This is astonishing also insofar as another advisor of the Commission, Professor Cambini, also argues in favour of a much lower cross-price elasticity.*

D1.12 The Commission presents a range of cross elasticity values, based on an overview provided by Cambini.<sup>38</sup> Whilst a cross price elasticity of 1.2 may represent the midpoint in the range presented in the various studies, we believe a median average would be more appropriate, to negate the impact of the obvious outlier result: 3.3. NWS highlight that the authors of the study resulting in 3.3 (on the Swedish broadband market) later revised their findings and produced much lower cross-price elasticities.

D1.13 NWS warn:<sup>39</sup>

*In our experience it is notoriously difficult to find suitable price elasticities for telecommunications services. Deriving elasticities generally requires extensive data over a period of time, and the dynamic nature of the telecommunications industry and markets means that elasticities are not constant over time. Elasticities will be affected by the level of market maturity, the availability of substitutes and changing needs of the market.*

D1.14 The Commission must also take into account the transaction costs for customers switching from copper to fibre services. These transaction costs can be significant, and migration complex, for multi-dwelling units and consenting required to gain access to rights of way.

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<sup>35</sup> WIK Uplift Paper s 4.2.1.

<sup>36</sup> Professor I. Vogelsang (2013), *What effect would different price point choices have on achieving the objectives mentioned in s 18, the promotion of competition for the long-term benefit of end-users, the efficiencies in the sector, and incentives to innovate that exist for, and the risks faced by investors in new telecommunications services that involve significant capital investment and that offer capabilities not available from established services?*, 5 July 2013, paragraph 45.

<sup>37</sup> WIK Uplift paper s 4.2.2.

<sup>38</sup> Cambini paper

<sup>39</sup> NWS Uplift Submission, s 2.1.

D1.15 And so if the Commission is to estimate cross-price elasticities, caution must be taken. We agree with NWS's recommendation that the Commission focusses on the range 0.6 to 1.0, which is consistent with studies using the most recent data.<sup>40</sup> Further, we agree with NWS that the Commission must assess the welfare impact by applying the cross-price elasticities tested to the appropriate starting price: namely, the average across all RSP DSL broadband plans, rather than exclusively the entry level plans offered by Spark and Vodafone, also omitting other providers.

**Recommendation 15** Adopt a median average across studies cited on cross-price elasticity (of demand for fibre with respect to copper prices), to negate the impact of an obvious outlier result.

### Discount rate

D1.16 The Commission has assumed a 10% discount rate, and claims 'results and conclusions are not materially affected by alternative discount rates'.<sup>41</sup> The Commission's worked example contains only two welfare effects. For these alone the discount rate does affect the welfare analysis. Further, if the full set of potential welfare effects were included then changing the discount rate would have a more significant impact.

D1.17 We support NWS's suggestion that the Commission adopt the 9% discount rate, as suggested by The Treasury.<sup>42</sup>

**Recommendation 16** Adopt a 9% discount rate.

## D2 Consumer welfare analysis of migration

D2.1 The Commission's framework includes only two welfare effects: losses due to higher copper prices and benefits from faster migration to fibre. The Commission's framework overlooks technological developments that are expected to allow faster copper connections, ignores that segment of the broadband market that is not copper or fibre, and importantly, overlooks potentially significant negative welfare effects of higher copper prices.

### Higher copper prices lead to losses for those on copper connections

D2.2 As described in our February submission and cross submission, we believe the series of 'conservative' assumptions made by the Commission results in an over-estimation of the 'true' TSLRIC price level. Wholesale prices above the true TSLRIC, passed through to copper customers, will result in a welfare loss.

D2.3 If the Commission applies a discretionary uplift to the TSLRIC prices, then those with copper connections will face a further direct welfare loss.

D2.4 NWS highlight shortcomings in the Commission's framework:

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<sup>40</sup> NWS Uplift Submission, s 2.1.

<sup>41</sup> Commission Uplift paper, footnote 23.

<sup>42</sup> The Treasury (2015), *Current discount rates*, 15 March 2015.

- (a) Annual spend is calculated on the basis of end-of-year connections. The Commission should use average connections over the year. The discrepancy results in a marginal change in welfare loss of \$4.7 million.
- (b) Assumptions on copper market share are flawed. The Commission assumes that by 2029 within the UFB footprint no customers will remain on copper, and outside the footprint all will be on copper. The Commission is not considering customers might remain on or move to cable or FWA, and ignores fixed-mobile substitution.

**Recommendation 17**      **Recognise that a copper price increase will create a direct welfare loss to those customers who remain on copper.**

**Higher copper prices speed migration to fibre and so create network externality effects for fibre customers**

- D2.5 The Commission assumes customers migrating to fibre will result in network externality effects: those on the fibre network will benefit from the ever growing total number of fibre subscribers. This might be with improved service offerings or due to the ability to communicate with more users over data-hungry applications.
- D2.6 WIK caution that “[i]t is questionable whether some or even many of the externality effects which the Commission associates with fibre migration depend or even are generated by the migration of users to the UFB.”<sup>43</sup> High-definition video is the sole example given of an actual service that would generate customer ‘benefit’ given faster fibre migration. However as discussed above, ADSL and VDSL already facilitate high-definition video.
- D2.7 The Commission identifies a number of potential benefits of fibre migration, however it remains very unclear whether these potential benefits will practically occur:
- Video conferencing using copper occurs today – including high definition services. Fibre end users’ ability to communicate using high definition video conferencing is not limited to other fibre users. i.e. an end user of copper services can do this now with another end user of copper or fibre services. So attaining this benefit is not wholly contingent on fibre migration. The expansion of this benefit does not depend on additional consumers joining the fibre network.
  - Development of innovative applications and content over fibre is not an activity that is stimulated by the wholesale copper price. In most cases, applications exist anyway they are international applications, the development of which is not driven by local New Zealand wholesale service pricing.
  - Content is also largely international, and is anyway developed for a range of mediums (e.g. linear TV, satellite). Content is not developed specifically for fibre. To the extent that there is domestic innovation that may affect local pricing, it is innovation undertaken by access seekers, not access providers.

<sup>43</sup> WIK Uplift Submission, s 4.2.3.

**Recommendation 18** Accept WIK's caution that it is questionable whether some or even many of the externality effects which the Commission associates with fibre migration depend or even are generated by the migration of users to the UFB.

D2.8 Two fibre demand scenarios are considered. Firstly, a base case of the Commission's UFB connections, and secondly 'uplifted' where a \$1 increase in the copper price leads to an increase in fibre connections (assuming a 1% copper price increase leads to a 1.2% fibre demand increase). The externality value is an assumed percentage of customer spend on fibre, and the welfare impact of an uplift is the difference in welfare between the base case and the uplift scenario.

D2.9 There is almost no literature available to assist in the selection of the assumed percentage of customer spend that is the network externality: only one study ('Briglaue') who estimated 0.7%.<sup>44</sup> In contrast to 0.7%, the Commission trials three potential network externality values: 2%, 25% and 50%. These estimates are concerning:

- (a) The 2% is derived from a network externality surcharge used by Ofcom in the context of growing mobile markets back in 2004. Yet mobile network externalities are likely to be rather different to those applicable to fibre broadband.

Moreover, the UK Competition Commission rejected the inclusion of a network externality surcharge in mobile termination rates. WIK highlights: "*Ofcom was rather lonely as a regulator in following a network externality surcharge approach for mobile termination rates. To our knowledge only the regulator in Israel followed a similar approach. All other regulators in Europe and around the world (including the Commerce Commission in New Zealand) rejected the NES approach.*"<sup>45</sup>

- (b) The values of 25% and 50% are unjustified and moreover, are vastly inflated compared to the Briglaue study's 0.7%, and so must be rejected.

D2.10 Lastly, the Commission's fibre connection totals are based on end-of-year connections. The Commission should use average connections over the year.

**Recommendation 19** Reject the potential network externality values of 25% and 50 as being too high.

### Further concerns on the assessment of benefits of migration to fibre

#### *Customer behaviour is over-simplified*

D2.11 The Commission's framework ignores the potential that faced with an increase in copper prices, customers might chose (instead of migrating to fibre), to:

- (a) Remain on copper but switch to a lower priced broadband plan;

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<sup>44</sup> Cambini paper, page 10. Cambini cites Briglaue, W. 'The Impact of Regulation and Competition on the Adoption of Fibre-Based Broadband Services: Recent Evidence from the European Union Member States', *Journal of Regulatory Economics*, 46(1), pages 51-79.

<sup>45</sup> WIK Uplift Submission, s 4.2.3.

- (b) Disconnect the dwelling's copper connection and
- connect instead via (ever more generous) mobile data plans or via fixed wireless broadband;
  - connect via a cable provider (in HFC areas); and/or
  - make use of shared internet connections – for example free Wi-Fi in cafes or libraries, or use the internet only at work.

**Recommendation 20**      **Recognise the complexity in consumer behaviour: consumers connected via copper and faced with a price increase might chose to do nothing, switch to a lower priced copper plan, or make other decisions.**

*Potentially important welfare effects are omitted*

D2.12 Welfare effects that the Commission itself notes might reduce the net benefit of an uplift are not included within its framework. The Commission acknowledges:<sup>46</sup>

*We have not attempted to quantify these factors, although these are generally likely to reduce the net benefits from applying an uplift to the UCLL price.*

D2.13 Omitted (and likely negative) welfare effects may arise from:

- (a) Fibre prices rising in response to copper price increases. As highlighted by WIK: “[b]oth the copper retail and the fibre retail markets are competitive. Therefore, it has to be expected that RSPs react to the relative change of willingness to pay and will increase fibre retail prices if copper retail prices increase following a wholesale price increase to achieve the previous equilibrium.”<sup>47 48</sup>
- (b) Negative externalities for the subscribers remaining on copper-based services;
- (c) Supply-side constraints in connecting UFB customers - New Zealand’s deployment of fibre will take until 2020 to complete. Yet the Commission’s quantitative welfare analysis assumes full conversion to fibre. Externality effect calculations are therefore over-estimated: by incorrectly including the migration externalities generated by customers who do not yet have fibre as an option;
- (d) Losses incurred by individuals who migrate to fibre – these customers might be better off on fibre than on the higher cost copper, but would have been better off on copper had prices not been uplifted;
- (e) Chorus is able to invest in its copper network in LFC areas, and can price below the cap set by the Commission, thus potentially slowing migration to fibre in those areas.<sup>49</sup>

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<sup>46</sup> Commission Uplift paper, paragraph 70.

<sup>47</sup> WIK Uplift Submission, s 4.2.5.1.

<sup>48</sup> Vogelsang paper, para. 20.

<sup>49</sup> NWS Uplift Submission, s 2.5.

- (f) We share NWS's concern regarding the impact of an uplift on low income customers.<sup>50</sup>

*We have previously noted growth options in the New Zealand broadband market are limited to market segments with low income. Increasing the copper price will effectively put fixed broadband further out of reach for these segments, and indeed may result in an increasing digital divide if low income customers are forced to relinquish fixed broadband services due to affordability constraints. This is not a welfare effect considered by the Commission.*

Similarly, WIK caution that existing copper customers may disconnect from broadband: prices does have an effect on penetration, and the marginal subscriber groups (for whom a price increase represents the largest portion of overall household expenditure) usually show higher price elasticities than the average customers.<sup>51</sup>

- D2.14 Lack of data is not a sufficient reason for the Commission to ignore such factors; factors that could reasonably be expected to significantly reduce the welfare benefits of an uplift to TSLRIC price.

**Recommendation 21** Recognise all welfare effects, including those that might reduce the net benefit of an uplift.

*Time period of the welfare impact analysis*

- D2.15 We agree with WIK's concern that, while the period a regulated copper price will apply is only five years, the Commission's welfare analysis projects forward for 15 years.<sup>52</sup> A regulatory reset may take place at the end of this regulatory period. Furthermore, the Government is currently reviewing the Act and therefore there is little certainty that a regulated copper price set during 2015 will be relevant from 2019 to 2029.

**Recommendation 22** Recognise the current uncertainty in the design of the overall regulatory framework relevant to the telecommunications industry post 2020.

*Switching costs are ignored*

- D2.16 Switching costs, for customers who, for example, require a non-standard installation (which can be as simple as a long driveway) or re-wiring within the house, are not included. Such costs are a barrier to migration to fibre.

**Recommendation 23** Recognise switching costs as a potential barrier to fibre migration.

### **D3 The impact of an uplift on copper prices on producer surplus**

- D3.1 Given competitive retail markets, an uplift in the wholesale copper price can reasonably be assumed to be passed (in part or whole) through to the retail customer, thus no additional profit (producer surplus) would be realised by RSPs. If retail pass through is not the full level of the

<sup>50</sup> NWS Uplift Submission s 2.4.

<sup>51</sup> WIK Uplift Submission, s 4.2.5.1.

<sup>52</sup> WIK Uplift Submission, s 4.2.5.1.

uplift, then RSPs can be expected to see a decline in producer surplus. In contrast, Chorus would be the single recipient of increased producer surplus.

D3.2 Chorus' investment in copper can be expected to be limited. NWS describe how the terms of the 2011 Network Infrastructure Project Agreement (NIPA) between Crown Fibre Holdings and Telecom specifically limits further copper deployment by Chorus:

*In particular Chorus must:*

- *not build any new copper to the home networks in Chorus' UFB areas*
- *not deploy any further copper-based cabinets beyond those in the existing cabinetisation programme*
- *restrict VDSL deployment to sites that exist as at 31 December 2011.*

*In larger greenfields developments (over 20 lots) Chorus is only to offer fibre access services. The only exceptions to this are:*

- *in smaller developments where premises will not be passed by fibre for some considerable time*
- *where fibre access only would deprive a residential end-user of satisfactory fixed line services for a lengthy period.*

D3.3 Chorus is likely to develop its copper network only in areas where a LFC offers the fibre connections.

**Recommendation 24** Recognise that retail pass through is not the full level of the uplift, RSPs can be expected to see a decline in producer surplus. In contrast, Chorus would be the single recipient of increased producer surplus.

**Recommendation 25** Recognise that Chorus is likely to develop its copper network only in areas where a LFC offers the fibre connections.

#### **D4 Conclusion on the Commission's framework for assessing the welfare impact of an uplift to TSLRIC**

D4.1 The Commission's 'migration tax' intends to use wholesale copper prices as a policy lever to incentivise migration to fibre broadband. However the price of copper will have limited impact on fibre migration, studies have shown that the single most important factor driving migration takes time: it simply takes time for households to move to newer technologies.

D4.2 We agree with WIK's warning:<sup>53</sup>

*The intended migration tax does not only seem to be an ineffective measure. The welfare framework provided by the Commission also indicates that the TSLRIC uplift will also generate a net welfare loss because of its collateral damages*

D4.3 and NWS's warning:<sup>54</sup>

*Would faster migration to fibre deliver greater benefits?*

<sup>53</sup> WIK Uplift Submission, s 4.4.

<sup>54</sup> NWS Uplift Submission, s 2.4.



*Faster migration to fibre would certainly be stimulated by a larger increase in the copper price. This would however also result in an increased loss, which would more than offset the welfare gain due to faster migration.*

## **D5 If it is to be applied, the Commission's framework requires further development**

- D5.1 The Commission's initial welfare assessment results should be discounted for the reasons discussed in this section D.
- D5.2 NWS highlights that:
- (a) New Zealand specific inputs must be developed for cross-price elasticities, average retail price, market shares for fibre, copper and other technologies, fibre demand, the discount rate and any network externality;
  - (b) Calculation errors must be addressed; and
  - (c) Potentially important welfare impacts must be included in the framework.
- D5.3 Potential losses in consumer welfare felt by those facing higher copper prices will be substantial, and unlikely to be offset by any externalities arising from faster migration to fibre. The Commission's own advisor, Vogelsang<sup>55</sup> commented (in regard to the Shinohara study) that migration to fibre could be better incentivised by reducing the fibre price than by increasing the copper price.

**Recommendation 26** The Commission's initial welfare assessment results should be discounted for the reasons discussed in this section D. Potential losses in consumer welfare felt by those facing higher copper prices will be substantial, and unlikely to be offset by any externalities arising from faster migration to fibre.

## **E The Commission's framework for an uplift to the WACC**

### **E1 The Commission's framework**

- E1.1 In considering an uplift to the central estimate of WACC, the Commission is examining the potential benefits from reducing the risk that investment in new innovative technologies are delayed or not occur because the allowed WACC is too low due to mis-estimation.
- E1.2 CEG submission to the Commission has stated:<sup>56</sup>
- under-estimating the UCLL price would weaken incentives for Chorus to maintain and invest in its copper network (and for Chorus and LFCs to invest in their ultra-fast broadband (UFB) networks.*
- E1.3 Chorus' fibre investments are contractually committed, so we question this statement. Moreover the UFB contract includes restrictions on Chorus' development of fibre networks.

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<sup>55</sup> Vogelsang paper

<sup>56</sup> CEG Uplift Submission

E1.4 We agree with the Commission's statement that:<sup>57</sup>

*the most important effect in New Zealand will be the effect of the wholesale copper access price on the migration of customers from copper to fibre, given that the UFB is contractually committed and subsidised by the government.*

and highlight the advice provided by Cambini:<sup>58</sup>

*[that] the Ultra-Fast Broadband (UFB) network is contractually committed and subsidized by the government [...] implies that the key issue to consider when assessing a regulatory policy in the New Zealand scenario is not the impact of copper prices on the incentives to invest in fibre, but rather the effect of copper prices on migration of customers from copper to fibre services. (emphasis added)*

E1.5 Nonetheless, the Commission has created a framework for assessing potential uplifts to the WACC, to assess whether there is justification to depart from the 'best' (mid-point 50<sup>th</sup> percentile) estimate of the WACC, and if so, the most appropriate percentile.

E1.6 The Commission's framework is based on an approach developed by OXERA for EDBs in the Commission's input methodologies process.<sup>59</sup> We agree with the Commission's rejection of the Frontier-Dobbs model. For further comment on the Frontier-Dobbs model please see Part 2 of this document: our Cross submission on CEG's application of the model.

E1.7 Uplifting the WACC above the mid-point estimate will cause increased costs to customers via higher retail prices. This cost may *potentially* be offset by benefits to customers *if* the WACC uplift serves to reduce the risk that greater innovation and investment in technologies are delayed by the WACC being under-estimated. This latter cost requires both: a) that the WACC has been under-estimated, and b) that innovation and investment are delayed as a result.

**Recommendation 27 Continue to reject the Frontier-Dobbs model.**

## **E2 The framework does not perform the task intended**

E2.1 WIK highlight that any framework assessing the impact of an uplift on the WACC must properly state the costs and benefits an uplift is expected to cause. However WIK warn that the Commission's framework is 'quite abstract', and 'fails to express the proper relationships'.<sup>60</sup> WIK develop the Commission's approach into one in which 'the relevant relationships are clearly presented'.<sup>61</sup> In comparing their expression of the Commission's equation to the original, WIK highlight:

- (a) the expression would normally aim to maximise net consumer surplus, rather than minimise cost, from a decreased risk of under-investment;

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<sup>57</sup> Commission Uplift paper, para 43.

<sup>58</sup> Cambini paper, page 5.

<sup>59</sup> Oxera, *Input Methodologies: Review of the '75<sup>th</sup> percentile' approach*, 23 June 2014.

<sup>60</sup> WIK Uplift Submission, s 3.1.

<sup>61</sup> *ibid.*

- (b) the simplification of the expression compared to the problem it aims to address, means all costs other than reduction in capital cost caused by the WACC uplift are excluded;
- (c) total pass through of a WACC uplift from wholesale to retail level is assumed;
- (d) a significant error in the Commission's expression: the cost to consumers due to underinvestment is multiplied by the cumulative distribution function of the WACC. Instead, WIK recommend the expression be amended to ensure the regulatory asset base depends positively on the WACC uplift.

**Recommendation 28** Recognise that any uplift to WACC must properly state the costs and benefits an uplift is expected to cause. Therefore heed WIK's caution that the Commission's framework is 'quite abstract', and 'fails to express the proper relationships'.

E2.2 Given these concerns, WIK present a corrected revision of the Commission's model expression that considers the impact of under-investment via 1) the direct cost to consumers of higher prices and 2) the cost to consumers of slower network investment.

E2.3 Using this exposition, WIK demonstrate that:

*the cost of the regulatory asset base will steadily increase when  $w$  [the allowed WACC] gets larger and larger, as then both the old and the additional RAB are causing additional cost. The cost to consumers resulting from under-investment, however, will decrease when  $w$  gets larger, as then this very under-investment is diminished. [...] Adding the two costs gives the total cost curve that first decreases due to the impact of diminishing under-investment and then increases as the benefits from more investment become less and the cost of the regulatory asset base becomes larger.*

E2.4 WIK highlight that the Commission must show that there are innovation investments that would not be delayed if a WACC uplift occurs, and also must show that the resulting benefits to consumers are higher than the costs caused by them, notably the additional cost caused by an uplifted WACC applied to the legacy network. WIK agree with Vogelsang that "there is no empirical analysis to draw on and that any such analysis would be difficult and subject to considerable uncertainty".<sup>62</sup>

**Recommendation 29** Adopt WIK's corrected revision of the Commission's model expression that considers the impact of under-investment via 1) the direct cost to consumers of higher prices and 2) the cost to consumers of slower network investment.

### **E3 It is unclear which investments a mid-point WACC estimate might cause to be delayed**

E3.1 The Commission does not clarify which investments are considered to be at risk if the TSLRIC price includes a mid-point WACC. WIK provides a detailed submission of the investments that might be relevant to the Commission's consideration,<sup>63</sup> summarised in Table 1 below.

**Table 1: Potential investments in innovation that might not be delayed by a WACC uplift.**

<sup>62</sup> WIK Uplift Submission, s 3.1. See also Vogelsang paper, para 44.

<sup>63</sup> WIK Uplift Submission, s 3.2.

<b><i>Further investment in the legacy copper access network.</i></b>	<p>Upgrading VDSL to VDSL/Vectoring will significantly increase the capability of VDSL both in speed and in quality.</p> <p>G.fast technology, commercially available later in 2015, will increase speeds to up to 1 Gbps (sum bandwidth for up- and download) for distances of up to 250 m remaining length of the copper cable.</p> <p>However Chorus upgrading the copper network would jeopardise its own fibre investment. Investment incentives for the copper network can therefore not be intended by the Commission's framework.</p>
<b><i>Investment in Chorus' UFB network.</i></b>	<p>European studies – usually relevant to a vertically integrated wholesale and retail incumbent – find that under certain conditions increasing copper access prices may generate positive investment incentives for fibre networks.</p> <p>However findings relevant to vertically integrated incumbents is not relevant to Chorus: New Zealand has implemented vertical separation. Furthermore, fibre investments are contractually agreed with the Crown and so the investment gap observed in many European countries does not exist in New Zealand.</p>
<b><i>Investments of the other LFCs in UFB.</i></b>	<p>Similar to Chorus' UFB programme, fibre investment by the LFCs are committed and contractually settled. A WACC uplift will have no impact on those decisions.</p>
<b><i>Investment in UFB 2.</i></b>	<p>Bidders for UFB 2 will make investment decisions based on the subsidies available and not on the WACC calculation for the legacy infrastructure. Only Chorus, and not other bidders, would benefit from a WACC uplift.</p>
<b><i>Bypass investment in duplicative fibre infrastructure.</i></b>	<p>Economies of scale and Governmental subsidies for UFB do not allow for efficiently replicating a fibre network in New Zealand. Incentives to invest in bypass infrastructure are therefore irrelevant in the New Zealand context.</p>
<b><i>Investments by cable TV networks.</i></b>	<p>Any uplift of the UCLL price would not generate additional investment in cable networks.</p>
<b><i>Investments in LTE networks.</i></b>	<p>New Zealand consumers display limited substitution between mobile broadband and fixed line access, so the cross-elasticity of demand for LTE products will be small in case of retail price increases of ADSL/VDSL-based broadband products. A potential effect of incentivising further investment due to UCLL price increases will be rather limited and small.</p>
<b><i>Investments of RSPs in innovative services and applications.</i></b>	<p>Section 18 (2A) specifies that the considerations of Section 18 apply to incentives to innovate in new telecommunications services that involve significant investment and that offer capabilities which are not available from established services. This statutory language seems focussed on investment in innovative services. The network infrastructure may be regarded as a prerequisite for innovation in services, but innovation is definitively not limited to or even concentrated in the network infrastructure.</p> <p>Most service innovation (making fibre networks attractive to users) are not conducted by Chorus or the LFCs but instead by RSPs and OTT players. Therefore any Section 18 consideration has to take this New Zealand reality into account. Increasing UCLL prices does not improve the ability of RSPs to invest in innovative services. In contrast, insofar as RSPs are unable to pass-through the wholesale price increase in total to their retail prices, their margins will be negatively affected and as a consequence their ability to invest in innovative services and applications.</p> <p>The investments of RSPs in ADSL and VDSL are sunk. If demand decreases due to artificial price increases they directly face a compression of margins.</p>

E3.2 We agree with WIK's recommendation for caution, especially the creation of distortions in competitive markets.<sup>64</sup>

*We have shown in the previous section that the Commission's WACC uplift approach may affect various types of investments in the complex system of telecommunications networks and services. Furthermore, an uplift might generate positive incentives for some type of investments and negative incentives for other types of investments. Therefore, the analysis of investment incentives is complex and the results are not as easy and obvious as often assumed. Some investment incentives might even be counterproductive in fostering migration to fibre networks. It can also not be excluded that uplifting the WACC does not induce further investments at all because the drivers of the relevant investment decisions are others than the WACC. On the other hand, the negative consumer welfare effects occur anyhow in the same way as in the case of the migration tax of uplifting the TSLRIC price [as WIK discuss in Section 4 of their Uplift Submission].*

*This complex system of effects does not exclude the scenario that a WACC uplift will generate negative consumer welfare effects. We draw from such collateral implications of regulatory interventions the very clear message which we recommend to regulators as a general philosophy: It is not the job of regulators to promote certain investments, certain market players, certain business strategies and business models. Such discretionary interventions distort competitive market outcomes and are usually not consistent with and do not support economic efficiency. Regulators should be neutral with regard to type of investments in the sector and business models.*

E3.3 Artificial interventions in the market will benefit Chorus, and not RSPs (and further market players). WIK provide a clear warning:<sup>65</sup>

*The Commission analysis – as well as Chorus' arguments in this context – seem to suggest that increasing the financial capability of an operator by increasing regulated wholesale prices will automatically increase the investment level of that operator. Why should that be the case? Chorus is lucky to face a quasi-monopolistic market position in more than 80% of its business. Any uplift of the WACC and the resulting wholesale price increase will increase profits of the company. Increased profits may increase investment incentives. There is, however, no control by market forces that this will actually be the outcome. There is also no regulatory control mechanism in place which guarantees or controls that the market behaviour intended by the regulatory intervention actually occurs. The monopolistic market position of Chorus enables Chorus' management to discretionary decide how to spend additional profits from increased wholesale prices. The management can foster investment – as the regulator intends. The management can also foster the investment in the copper network in those areas where other LFCs than Chorus are active, thus enforcing the copper versus fibre competition to the detriment of the other LFCs. The management may, however, also decide to pay such windfall profits as dividends (or other benefits) to its shareholders. In that case any uplift only becomes a redistribution of wealth from end-user to Chorus' shareholders with no positive efficiency implications.*

[...]

*RSPs are in a different position compared to Chorus. They operate in a competitive market environment. If RSPs receive more financial flexibility from regulatory decisions than they had before,*

<sup>64</sup> WIK Uplift Submission, s 3.3.

<sup>65</sup> WIK Uplift Submission, s 3.3.

competition guarantees users to receive the benefits of this financial flexibility. This can be in the form of lower retail prices. Or it can be in the form of investments in innovative services and applications. The competitive process decides in which form such benefits are passed-through to end-users. The competitive process also guarantees that increased financial flexibility of RSPs cannot be simply passed-through to their shareholders as in the case of Chorus.

The Commission should be aware of this asymmetry between Chorus and the RSPs when it decides on its parameters to determine TSLRIC and on any uplift.

The Commission should be aware of this asymmetry between Chorus and the RSPs when it decides on its parameters to determine TSLRIC and on any uplift. If RSPs get more financial flexibility competition assures that such benefits are used in the LTBEU. If the Commission provides more financial flexibility to Chorus, the Commission has no such guarantee. It fully depends on whether or not Chorus' management itself acts in the LTBEU or in the interest of its shareholders.

- E3.4 The asymmetry between Chorus and downstream RSPs acting in a competitive market are very real, and thus an uplift in wholesale prices is unlikely to be in the longer term benefit of end users.

**Recommendation 31** Consider the one-sided risk of a WACC uplift creating distortions in competitive markets.

#### **E4 Information challenges**

- E4.1 The Commission's framework requires information on the benefit-cost ratio of any investments in major innovative new technology (that a WACC under-estimate would directly cause to be deferred). It is also necessary to estimate the combined probability of such technology investments occurring, when it might occur and whether it would be regulated. The 'tipping point' must also be known, namely: the maximum margin by which the WACC could be under-estimated and yet the investment would still (just) go ahead.

- E4.2 We agree with NWS that such data is challenging to obtain, and that EDB data is not suitable for use in considering a telecommunications WACC:<sup>66</sup>

*We believe it will be a significant challenge for the Commission to obtain information relevant to the telecommunications industry on these three parameters. It is likely that the parameters will need to be based on expert judgement, as past data may not prove to be a suitable guide for future technology, even if assuming it was possible to isolate the effects of WACC on investment in new technology.*

*It should also be noted that we do not believe that it is appropriate to use information derived from electricity lines businesses for estimates of the statistical parameters associated with the WACC or WACC inputs (that is, means and standard errors).*

- E4.3 The Commission suggests that the new technology and network could have the same asset value as the legacy technology and network. This seems overly simplistic: a new (and unspecified) technology could have a greater or lower asset value.

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<sup>66</sup> NWS Uplift Submission, s 3.

E4.4 As the new WACC would apply to both legacy and new networks, the Commission's framework must also include welfare losses due to a WACC uplift worn by ongoing legacy network customers.

<b>Recommendation 32</b>	<b>Recognise that information on the benefit-cost ratio of any investments in major innovative new technology (that a WACC under-estimate would directly cause to be deferred) is essential.</b>
<b>Recommendation 33</b>	<b>Recognise that is necessary to estimate the combined probability of such technology investments occurring, when it might occur and whether it would be regulated. Thus the 'tipping point' must be known: the maximum margin by which the WACC could be under-estimated and yet the investment would still (just) go ahead.</b>
<b>Recommendation 34</b>	<b>The Commission's framework must also include welfare losses due to a WACC uplift worn by ongoing legacy network customers.</b>