

VODAFONE NEW ZEALAND LIMITED
SUBMISSION TO THE NEW ZEALAND COMMERCE COMMISSION



**COMMENTS ON CONSULTATION PAPER OUTLINING
COMMISSION'S PROPOSED VIEW ON REGULATORY FRAMEWORK
AND MODELLING APPROACH FOR UBA AND UCLL SERVICES**

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A Executive Summary

- A1 Vodafone welcomes the opportunity to comment on the consultation paper outlining the Commission's proposed view on the regulatory framework and modelling approach for UBA and UCLL services, and the supporting papers from TERA consultants and Professor Ingo Vogelsang.
- A2 This submission should be read alongside the expert reports prepared by WIK-Consult and Network Strategies, included with this submission.¹

The Commission's process

- A3 The TSLRIC model must be robust, comprehensive and rigorously tested. The current consultation paper does not provide sufficient detail on key modelling parameters to allow all parties to fully address methodology before TERA starts its modelling. Leaving this opportunity until after the Commission issues its draft decision risks irreversible modelling decisions being made. We recommend that further consultation on the detailed model specification is undertaken before the release of a draft decision. In our view, this further consultation step would not alter the current timetable.

Regulatory framework

- A4 Section 18 provides wide discretion to the Commission, but must be guided by the promotion of competition for the long term benefit of end-users. This points towards modelling a hypothetical efficient network. The promotion of dynamic efficiency benefits must be central to the Commission's UBA and UCLL price review determinations. We do not agree with the proposed application of a "reasonable investor expectation test" by the Commission. The consultation paper does not define the proposed test or provide evidence for its application in reaching its draft views.
- A5 The Commission must ensure that the TSLRIC model, however constructed, does not unduly restrict its discretion to apply TSLRIC in accordance with s 18, because of any shortcuts or shortcomings. To support this, the Commission should release and consult on a model reference paper.

Modelling considerations

- A6 Vodafone recommends that the Commission adopts a single, integrated MEA of the UCLL and UBA services. To achieve this, a single FTTH and FWA MEA for UCLL and UBA remains the most appropriate starting point. The Commission must take an approach to optimisation that delivers efficient outcomes that a hypothetical efficient operator would be expected to achieve.
- A7 The Commission should make no specific relativity adjustment absent compelling evidence that further unbundling would encourage efficient investment, when assessed against the Commission's preference for promoting dynamic efficiency benefits.
- A8 The Commission should consider re-use of Chorus assets as consistent with the objectives of section 18 recognising that a dual-asset valuation approach is considered an orthodox

¹ WIK-Consult *Submission in response to the Commission's "Consultation paper outlining our proposed view on regulatory framework and modelling approach for UBA and UCLL services (9 July 2014)"* (6 August 2014) and Network Strategies *Report for Telecom New Zealand and Vodafone New Zealand: Key issues in modelling UBA and UCLL services* (6 August 2014).

component of LRIC modelling by European regulators as it supports the outcomes which TSLRIC is intended to deliver, and a hypothetical efficient operator deploying an MEA network in New Zealand would engage in considerable asset sharing.

- A9 The Commission should use the cost model to determine the relevant coverage area for FWA in the hypothetical, because a TSLIRC FWA MEA should reflect the areas in which it is more efficient for the hypothetical network to be deployed using FWA as opposed to a FTTH or another fixed line solution.
- A10 The Commission must ensure an appropriate level of infrastructure sharing in the MEA, including internal sharing with Chorus network and use of third party infrastructure which reflects international best practice.

B Introduction

- B1.1 Vodafone welcomes the opportunity to comment on the consultation paper outlining the Commission's proposed view on regulatory framework and modelling approach for UBA and UCLL services (**Proposed Views Paper**), as well as the supporting papers from TERA Consultants (**TERA Report**) and Professor Ingo Vogelsang (**Vogelsang Report**).
- B1.2 This submission should be read along with the expert reports prepared by WIK-Consult (**WIK Report**) and Network Strategies (**NWS Report**), which are included with this submission.²

C The Commission's process

C1 Combining the processes for UCLL and UBA

- C1.1 Vodafone agrees with the Commission's assessment that it can conduct the UCLL and UBA FPP processes in tandem. In addition, we agree with the Commission's assessment that (subject to consistency with s 18 and TSLRIC price modelling), the Commission may also utilise the same cost model for both services.³

C2 Consultation on Modelling

- C2.1 The Proposed Views Paper expressly seeks the views of interested parties on the Commission's "proposed regulatory framework and key modelling decisions and inputs" prior the commencement of modelling by TERA.⁴ However, consultation to date has remained relatively high-level. The "key modelling decisions and inputs" are not fully transparent.
- C2.2 While Vodafone expressed concerns about the earlier timeline proposed for conducting the UCLL and UBA FPP process, we are broadly supportive of the key steps reflected in the Commission's early indicative guide to the UCLL FPP process, which indicated a first stage of '*Development of the model*' (including consultation).⁵ In our view, "Development of the model" indicates a greater level of detail than the '*proposed regulatory framework and modelling approach*' currently presented for consultation. That is, while we consider this consultation phase to be a valuable step in the process, we consider further detail is required to support a robust decision.
- C2.3 We note that this approach was also reflected in the section 18 discussion set out in the UCLL Process and Issues Paper (which alludes to a three stage approach as follows):⁶
- (a) model design and approach;

² WIK-Consult *Submission in response to the Commission's "Consultation paper outlining our proposed view on regulatory framework and modelling approach for UBA and UCLL services (9 July 2014)"* (5 August 2014) and Network Strategies *Report for Telecom New Zealand and Vodafone New Zealand: Key issues in modelling UBA and UCLL services* (6 August 2014).

³ Proposed Views Paper at [190].

⁴ Proposed Views Paper at [7].

⁵ Commerce Commission *Process and issues paper for determining a TSLRIC price for Chorus' unbundled copper local loop service in accordance with the Final Pricing Principle* (6 December 2013) at [22] (**UCLL Process and Issues Paper**).

⁶ UCLL Process and Issues Paper at [52].

- (b) the determination or selection of individual parameters in the cost modelling exercise; and
- (c) selecting a price within any relevant range provided by the modelling

C2.4 Vodafone believes following this three-stage approach would be consistent with best modelling practice. A transparently documented and consulted modelling exercise is the appropriate process for the Commission to achieve an accurate model.

The current consultation is not sufficiently detailed to ensure regulatory transparency and so risks inaccurate modelling

C2.5 Vodafone agrees with the Commission that the '*TSLRIC cost model is complex, with a multitude of decision-points that feed into its construction.*'⁷ The detailed assumptions, parameter ranges and decisions made in any modelling exercise are critical to the outputs of the model.

C2.6 However, the documents that the Commission has released in its current consultation exercise, the Proposed Views Paper and accompanying expert reports, set out the Commission's proposed regulatory framework and key modelling decisions at a high level only. The documents do not present the model at a level of detail sufficient to enable stakeholders to comment on the options considered and methodology the Commission proposes to follow at each of the multitude of decision-points. Detail of the assumptions and parameter ranges or decisions made around modelling demand, the network and technology advances and costs inputs are not presented and so are not open to robustness checks via testing through industry consultation.

Documents containing sufficient detail for robust consultation, including Model Reference Paper(s) and Model Specification(s), are contracted deliverables by TERA

C2.7 Information released by the Commission in response to our request under the Official Information Act confirms that TERA are producing first versions, and publishable versions, of TSLRIC models for UCLL and UBA, Model Documentation for each model, a Model User Manual for each model, Model Reference Paper(s) and Model Specification(s). We have not been advised of any change to the requirement for TERA to produce these documents (although we understand that the deadline for delivering them has changed).

C2.8 The modelling deliverables (and purpose of those deliverables) set out in the Commission's terms of engagement with TERA contains the following purpose descriptions:⁸

Model Reference paper(s) document(s) that discuss the methodology, used to construct the TSLRIC model(s), along with the choices relating to these parameters, data to be used in the models and reasoning for those choices

Model Specification(s) – [...] to set out all modelling parameters and inputs for the TSLRIC models.

Model documentation – detailing how the models work, including the model algorithm, the explanation of the code, the engineering rules modelled, the assumptions, the different inputs and reasons for choosing them, the source of inputs

⁷ UCLL Process and Issues Paper at [18]. See also Vodafone New Zealand *Comments on the process and issues paper for the UCLL Final Pricing Principle* (14 February 2014) at [C1] (**Vodafone Submission on UCLL Process and Issues Paper**).

⁸ Commerce Commission letter to Tom Thursby, Vodafone, 16 April 2014, in response to Official Information Act request. Page 3

Model User Manual(s) – to explain the purpose of each spreadsheet making up the TSLRIC models and how the models can be maintained.

C2.9 Furthermore, Model Specifications are 'to be prepared for consultation with interested parties', and 'attendance of [TERA staff] in Wellington for presentation of models and associated documents to industry' is specified in the contracted deliverables to occur prior to final modelling and the Commission's Draft Determination. This clearly demonstrates that the Commission intended for an open, transparent consultation round on the modelling, **prior** to consulting on its draft determination.

Disclosure and consultation on modelling is the accepted best practice overseas

C2.10 The Danish Business Authority (**DBA**) has commissioned TERA to modify and develop the LRAIC model for fixed networks in Denmark for the period 2012-2014. This project is built along 4 main phases: 1) preparation of a Model reference paper, 2) Revision and development of LRAIC model, 3) Model circulation and 4) Setting of maximum prices.⁹

C2.11 We note the DBA's issuance of a Model reference paper, subsequent revision and development of the model, followed by model circulation, **prior** to the DBA setting prices. Given the DBA have engaged the same consultants we can be confident that such a process is feasible for TERA. Indeed, similar process was followed by the DBA in 2011 (with the DBA releasing its model reference paper as part of the consultation process for its 2011/2012 mobile LRAIC cost model).¹⁰

C2.12 Similarly, the Spanish regulator released its detailed Reference Document for the 'Bottom-up cost model for the fixed access network in Spain'.¹¹ This document was provided by the regulator's modellers, WIK, and includes detailed information on the modelling assumptions and parameter decisions covering:

- (a) access network architectures;
- (b) general modelling – eg cost approaches;
- (c) input data – demand modelling and supply constraints
- (d) cost modelling – including network topology, network element quantities, investment calculations, cost calculations (OPEX, annualisation, WACC, CAPEX, Wholesale costs, Common costs, and finally costs per access line)
- (e) model evolution – to account for evolution of FTTH Services out to the year 2030.

Model Reference Paper(s) and Model Specification(s) should be consulted on prior to draft decisions

C2.13 Vodafone previously requested first versions of the Model Reference Paper(s) and Model Specification(s) which the Commission's external expert cost modellers TERA initially indicated

⁹ TERA Consultants *Modification and development of the LRAIC model for fixed networks 2012-2014 in Denmark MEA Assessment* (report for DBA, May 2013), available at <http://erhvervsstyrelsen.dk/file/370080/meaassessment.pdf>.

¹⁰ Analysys Mason *Report for the Danish Business Authority (DBA), 2011/2012 upgraded cost model – final version, Model Documentation* (17 July 2012), available at <http://erhvervsstyrelsen.dk/file/257081/modeldokumentation.pdf>.

¹¹ WIK-Consult, Bottom-up cost model for the fixed access network in Spain, Reference document. 15 March 2012.

they would complete by May 2014.¹² In June 2014 we were advised that these documents had not been prepared and that the Commission had no definite date by which it expected TERA to deliver them.

- C2.14 We indicated that we were content for the Commission to make these documents available through its next consultation exercise, rather than through a separate disclosure process. We did however anticipate that any further consultation exercise would result in parties being provided with documents as described in the 'project deliverables' agreed between the Commission and TERA.¹³
- C2.15 We have previously submitted that parties should have the opportunity to fully and properly be consulted before the Commission makes irrevocable choices as to the methodology it will apply when determining TSLRICs for the UCLL and UBA service. The specific modelling choices that the Commission intends to make are not transparent in the Proposed Views Paper and accompanying document as we anticipate they would be in Model Reference Paper(s) and Model Specification(s).
- C2.16 The Commission's explanation of its general principles of approach is not an acceptable substitute for disclosure of the Model Reference Paper(s) and Model Specification(s). The latter documents provide an insight into the Commission's use of model inputs and interrelationship between inputs, for example, that is absent from the documents that have been released. For this reason, we renew our request for the Commission to disclose any Model Reference Paper(s) and Model Specification(s) now prepared by TERA.
- C2.17 Unless the Commission does disclose these documents, then the process concerns expressed in paragraphs C29 and C32 of Vodafone's 11 April 2014 submission continue to apply.¹⁴ Moreover as discussed above, there are in addition, a number of pragmatic and best practice considerations that favour the Commission providing parties with these documents.
- C2.18 Vodafone requests that the Commission seek additional input from parties into its modelling via release of the model, and publication and consultation on all of the modelling documents specified as deliverables from TERA, well in advance of TERA finalising its model and the Commission's arriving at its Draft Determination. Consultation on modelling design would include detailed information on the treatment, assumptions made and where already feasible, the specification of parameters. We refer the Commission to the Danish and Spanish regulators' model reference documentation (as detailed in paragraphs C2.10 to C2.12) as examples.
- C2.19 Given the Commission's current timeline, we would suggest that a model reference paper and the model be released in September, and a modelling workshop be held in October.

¹² Vodafone *Email to Commission* (8 May 2014).

¹³ As reflected in the Commission's letter to Vodafone (6 June 2014).

¹⁴ Vodafone *Comments on further consultation papers on issues relating to determining a price for Chorus' UCLL and UBA services under the final pricing principle* (11 April 2014) at [C29] and [C32].

Recommendation 1 The Commission should release its model and modelling documentation for consultation, prior to finalising the model design and parameter inputs necessary for its Draft Determination. Consultation on modelling detail is consistent with the Commission's original process intent and best practice transparency in regulation.

D Regulatory framework

D1 The Commission's objective (Section 18)

- D1.1 The Commission's primary duty, as expressed in the 'dominant provision' of s 18(1) of the Act, is to promote competition in telecommunications markets for the long term benefit of end-users of telecommunications services.¹⁵ As Vodafone set out in its first submission on the UCLL Process and Issues Paper, this is the purpose that the Commission must give best effect to when determining prices for UCLL and UBA services pursuant to the relevant FPP determinations.¹⁶
- D1.2 While the additional factors in ss 18(2) and 18(2A) must be considered when deciding how best to discharge this primary duty, these factors are specified for the purpose of assisting analysis under s 18(1).¹⁷ They do not alter or displace the primary duty. The same analysis applies to the Commission's requirement to consider relativity between the UBA service and the UCLL service (to the extent that terms and conditions have been determined for that service).
- D1.3 Indeed, as the Commission has made clear, s 19 of the Act requires the Commission to make decisions that best give, or are likely to best give, effect to the s 18 purpose.¹⁸
- D1.4 In previous decisions, the Commission has indicated that its assessment of impact on dynamic efficiencies will determine how best to discharge its primary duty in s 18(1).¹⁹ Vodafone agrees that the promotion of dynamic efficiency benefits must be central to the Commission's UBA and UCLL FPP determinations.

The Commission has a wide discretion in determining the TSLRIC parameters

- D1.5 In the case of this FPP determination process, as Vodafone has previously submitted, the definition of TSLRIC in the Act is very broad.²⁰ It provides no real guidance on the various choices that need to be taken in undertaking the cost modelling exercise. Without a clear statutory direction as to the formula that must be used, the Commission is necessarily afforded discretion as to how it should set a price that equates to the TSLRICs of the UCLL and UBA services.²¹ The

¹⁵ Telecommunications Act 2001, s 18(1).

¹⁶ Vodafone Submission on UCLL Process and Issues Paper at [C2.4].

¹⁷ Vodafone Submission on UCLL Process and Issues Paper at [C2.5].

¹⁸ UCLL Process and Issues Paper at [47].

¹⁹ UCLL Process and Issues Paper at [48].

²⁰ See, for example, Vodafone Submission on UCLL Process and Issues Paper at [C2].

²¹ See also the commentary in the Proposed Views Paper at [60] – [61], where the Commission refers to the confirmation of its wide discretion on the applicability of s 18 set out by Kós J in the High Court.

Commission's choices in how to apply TSLRIC methodology must be guided by s 18 and informed by the outcomes that a TSLRIC price may promote.²²

- D1.6 The application of s 18 will differ depending on whether the function that the Commission is performing is relatively mechanical and evidence based, or whether a broader, more discretionary function is being discharged. The nature and extent of the judgement faced by the Commission in each case is key.
- D1.7 As we have submitted previously, where discretion is available the Commission must ensure, in order of priority:²³
- (a) That all judgements it makes promote and are consistent, individually and collectively, with the statutory function that it is discharging (i.e. determining the TSLRIC for UCLL and UBA services). This necessarily requires the Commission to ensure that the formula it uses falls squarely within an orthodox understanding of TSLRIC methodology. Where a question can be answered with reference to analysis of objective evidence and analysis, s 18 may not have a separate observable effect.
 - (b) Subject to this, all judgements that the Commission makes must be consistent with s 18 of the Act. Where it faces a genuine choice as to how to proceed (for example, where it has several options each of which could equally well promote determination of the TSLRIC for the UCLL service), the Commission must consider its primary duty under s 18(1) to promote competition in telecommunications markets for the long term benefit of end-users of telecommunications services. However, s 18 considerations cannot displace a proper analytical approach to determining TSLRIC.

The exercise of discretion under s 18

- D1.8 The Commission observes in the Proposed Views Paper that:²⁴

Section 18 assists us with our overall assessment of the determination. However, we also consider that section 18 may provide guidance at a number of decision points during the TSLRIC cost modelling exercise, including:

65.1 our choices on model design and approach;

65.2 the determination or selection of individual parameters in the cost modelling exercise; and

65.3 selecting a price within any relevant range provided by the modelling.

- D1.9 We do not disagree that s 18 *may* provide guidance as to how discretion should be exercised at each of these decision points (and potentially others). The discretionary area of judgment that is available will depend on the nature of the evidence that is before it. Section 18 clearly comes into

²² As the Commission acknowledges, "section 18 will influence a number of aspects of the UCLL FPP cost modelling process": UCLL Process and Issues Paper at [53].

²³ See, for example Vodafone Submission on UCLL Process and Issues Paper at [C2.7] – [C2.13]. See also Telecom New Zealand *Cross-submission on process and issues paper for the UCLL Final Pricing Principle* (28 February 2014) at [17]; and James Every-Palmer *FPP Determination: Issues re service description and the modern equivalent asset* (12 March 2014) at [16(e)].

²⁴ Proposed Views Paper at [65].

play where the Commission faces a genuine choice that cannot be determined purely with reference to the evidence before it.

- D1.10 As such, we are concerned that the Commission appears to consider that, where it is determining prices for UBA and UCLL services pursuant to the relevant FPPs, any exercise of discretion pursuant to s 18 should be consistent with the Commission's view of 'reasonable investor expectations':²⁵

*Section 18 will guide us in our decision making in carrying out the FPPs. As discussed earlier, we have decided that to help build predictability in regulation, we will respect **what we see as reasonable investor expectations** in relation to major telecommunications infrastructure. The link to section 18 is **that predictability supports investment, and investment promotes competition for the long-term benefit of end-users.** (Emphasis added.)*

- D1.11 It is clear that the Commission regards consistency with its understanding of reasonable investor expectations, together with a belief that positive externalities and migration efficiencies will accrue (see discussion at [E2.1] – [E2.8] below), as determinative of whether its primary duty in s 18(1) is met:²⁶

*Our preliminary view is that **our intention to respect reasonable investor expectations** to avoid the risk of chilling investment, when combined with the **associated positive externalities and migration efficiencies** from the generally higher prices that may result (from our decisions on the performance adjustment, and reuse of Chorus' assets), **will best give effect to the section 18 purpose** – without directly raising prices further. (Emphasis added.)*

- D1.12 The Commission apparently considers that its assessment of reasonable investor expectations should guide its interpretation of TSLRIC²⁷ on the basis that "[t]he choices we make in deciding how to implement TSLRIC in setting price caps for UCLL, SLU and UBA could affect investment and therefore competition for the long-term benefit of end-users."²⁸ Respect for reasonable investor expectations will affect the Commission's consideration of any adjustments to modelled prices (either upward or downward)²⁹. It has (for example) made a preliminary decision that assets should be valued at ORC when applying a TSLRIC model.³⁰

- D1.13 We have considerable difficulty with the Commission using a concept of reasonable investor expectations as, effectively, an analogue to its primary duty as expressed s 18(1) of the Act. We do not disagree with the proposition that a decision that undermines incentives to invest may undermine competition over the long run, as it would deter future investment, and consequently may not be in the long-term benefit of end-users. However, it cannot simply be recited as a mantra.

- D1.14 The incentives analysis set out in s 18(2A) is, as we have set out above, a secondary limb of s 18. This is underscored by the operative words of s 18(2A), which requires "consideration" to "be given to" by the Commission to innovation and investment incentives. That is, the language in

²⁵ Proposed Views Paper at [80].

²⁶ Proposed Views Paper at [86].

²⁷ Proposed Views Paper at [80].

²⁸ Proposed Views Paper at [109].

²⁹ Proposed Views Paper at [127].

³⁰ Proposed Views Paper at [147]: "Our view is that there would have been a reasonable expectation that assets would be valued at ORC under a TSLRIC model."

sub-section 2A clearly requires that such incentives be taken into account, but as a matter of ordinary language it does not require innovation and investment incentives to be treated as 'trump' factors, or analysed without reference back to the overriding purpose of promoting competition in telecommunications markets for the long-term benefit of end-users. Investors' expectations are a relevant consideration, but investors are at most a subset of the end-user group and respect for their expectation cannot be decisive.

D1.15 Accordingly, even to the extent that reasonable (and well founded) investor expectations may be a relevant consideration that the Commission should have regard to for the UCLL and UBA FPP process, this consideration is not specified in statute and, where the Commission does have regard to it, it must identify with some precision based on evidence:

- (a) the specific investor expectations that it is accounting for;
- (b) how these expectations have been created; and
- (c) whether they are in fact reasonable.

The relevance of 'reasonable investor expectations'

D1.16 The concept of reasonable investor expectations is referred to nowhere in the Act. Rather, it appears to have been imported by the Commission from decision making frameworks that apply to other regulated sectors.

D1.17 In particular, the concept of investor expectations was considered relevant in the High Court's judgment in *Wellington International Airport and others v. Commerce Commission* (the **IMs Decision**).³¹ These proceedings concerned the Commission's determination of input methodologies pursuant to s 52T of the Commerce Act 1986, which set the rules under which the Commission determines and assesses elements that are central to price regulation under Part 4 of the Commerce Act. Section 52R explains that the purpose of input methodologies is to promote certainty for suppliers and consumers in relation to the rules, requirements, and processes applying to the regulation, or proposed regulation, of goods or services under Part 4.³² Certainty and predictability are therefore express goals of Part 4 legislation.³³

D1.18 In contrast, the single purpose that the Commission must advance when determining prices for the UCLL and UBA services pursuant to the relevant FPPs is the promotion of competition for the long term benefit of end-users. Certainty is not expressed as a goal of Part 2 of the Act: s 18 does not require the Commission to have specific regard to this factor. Instead, it requires consideration to be given to matters specified in ss 18(2) and 18(2A). If legislative intention had been that the Commission should specifically promote certainty and predictability as goals in its FPP determinations, we would expect to see this objective expressed as it is for Part 4 regulation

³¹ [2013] NZHC 3289.

³² Legislative history also makes clear that the purpose of setting input methodologies is to give greater certainty, transparency, and predictability to businesses (including businesses not subject to regulation) and their customers, and that such certainty is expected to help improve the climate for investment in infrastructure: Commerce Amendment Bill 2008 (201–1) (explanatory note).

³³ However, the High Court notes that "*the s 52R purpose of certainty is conceptually subordinate to the s 52A purpose of the long-term benefit of consumers. We say that because promoting the long-term benefits of consumers in accordance with s 52A is the central purpose of Part 4 as a whole.*"³³

under s 54R of the Commerce Act. Promoting competition as required by s 18(1) may or may not be consonant with the promotion of certainty or reasonable investor expectations, but this is not what the legislation requires.

D1.19 We note the High Court's observation in the IM Decision that certain decisions by the Commission relating to Part 4 regulation may have:³⁴

...an impact on the general investment environment for regulated industries and industries subject to the possibility of regulation. It sends signals about the behaviour of the regulator. This is a question of reasonable investor expectations. In our view, reasonable investor expectations should be met by following a carefully considered approach when setting a RAB, subject to there being no evidence that suppliers would be unable to recover the costs of their past prudent and efficient investments.

D1.20 At most, this observation is authority for the proposition that consistency with reasonable investor expectations may be a relevant consideration for regulatory decisions. It does not suggest that respecting reasonable investor expectations is an end in itself, or that statutory purposes that prioritise other considerations should in any sense be subordinated the Commission's assessment of investors' expectations. The point is simply that, where this consideration is relevant, a 'carefully considered approach' to regulatory decision making should be taken.³⁵ Moreover, as the High Court noted at [749], the certainty that is necessary to incentivise investment is provided over time and may only exist after the Commission has first applied a regulatory regime and this application has been tested in any subsequent review. This observation is salient in a context where TSLRIC pricing is being used for the first time to set UCLL and UBA prices (see [D1.39] below).

D1.21 Vodafone submits that the Proposed Views Paper has essentially 'read in' a duty to prioritise certainty and predictability notwithstanding the very different statutory framework applicable to FPP determinations and without adequately explaining how this is consistent with the Commission's primary duty in s 18(1).

D1.22 A link with s 18 (1) is drawn in the Proposed Views Paper at [80] on the basis that predictability supports investment, and investment promotes competition for the long-term benefit of end-users. This link is elaborated elsewhere follows:³⁶

Regulatory predictability supports investment, and therefore promotes competition for the long-term benefit of end-users. Predictability of price over time can encourage efficient entry in dependent markets and enable firms to make appropriate investment decisions. [...]

Where there are choices that aid or detract from predictability, our approach will be to give some weight to predictability. We believe this is reinforced by section 18(2A).³⁷

[...] by respecting what we see as reasonable investor expectations, we should avoid any chilling effect on investment leading to a reduction in competition and a reduction in the long-term benefit to end-users.

³⁴ IMs Decision at [605].

³⁵ IMs Decision at [759].

³⁶ Proposed Views Paper at [118]. [124] – [125].

³⁷ We understand the reference to 'give some weight' in this paragraph to mean, in practice, 'give greatest weight'.

D1.23 As the Commission's own drafting tends to confirm (e.g. "can encourage", "should avoid"), this connection is tenuous, and is not supported with any:

- (a) identification of the types of investment envisaged;
- (b) explanation of why predictability is a prerequisite for these types of investment (i.e. evidence showing that investment would not occur or would be materially reduced absent predictability); or
- (c) explanation of how the types of investment envisaged in fact promote competition.

D1.24 Given these significant gaps in its reasoning, we consider it inappropriate for the Commission for to prioritise certainty and predictability to the extent that respect for reasonable investor expectations is deemed to discharge the s 18 purpose (see Proposed Views Paper at [86]). The effect of this is to rank what is, at best, a relevant consideration read in via s 18(2A) over the Commission's primary duty in s 18(1) – without any clear statutory, evidential or logical basis for doing so.

D1.25 The following paragraphs set out in further detail Vodafone's reasons for concern arising from the Commission's reliance on the concept of reasonable investor expectations, which it has indicated will be decisive when considering any adjustments to modelled prices.

'Investors' and 'expectations' are not properly identified

D1.26 First, the Commission does not identify with any precision the investment expectations that it is referring to. 'Investment expectations' is not a static concept. If the Commission is to give effect to s 18 of the Act based on its assessment of reasonable investor expectations then it must address the following questions as a minimum:

- (a) What types of investment are relevant to the FPP determinations?
- (b) For each type, who is the notional 'reasonable investor'?³⁸
- (c) What backward-looking expectations are appropriately attributed to the notional 'reasonable investor'? in respect each type of investment?

D1.27 The Commission cannot simply assert *ex hypothesi* that a decision would be inconsistent with investors' expectations; we note that courts have previously expressed doubt where phenomena are, without supporting evidence, claimed to derive from investment with any regard to the actual nature of the investment at issue.³⁹

D1.28 Absent clarity on these points, we make the following general comments:

- (a) We assume that the Commission is not, and there is no basis upon which it could properly, have regard to the expectations of investors as a general class in relation to all investments in regulated sectors (or more widely). The FPP determinations are directed specifically as the price of two wholesale services: UCLL and UBA. The Commission's approach to these determinations has no relevance for investors in any undertaking that is not either a buyer or seller of these services (i.e., the expectations of investors outside

³⁸ See NWS Report at [2.3].

³⁹ IM Decisions at [1462] *et seq.*

this class are unaffected by FPP determinations). For the purpose of the Commission's FPP determinations, there is no possible connection between this class of investors and any reduction for the long-term benefit of end-users. The very specific application of TSLRIC decisions means that they provide no real indication of the Commission's approach, and certainly not one that could affect investment incentives generally.

- (b) There is no reason for taking account of reasonable investor expectations in relation to historical investments that have already been made. The application of TSLRIC in the current case will not affect the extent of past investment or its impact on competition for the long term benefit of end users. To the extent that the Commission prioritises respect for expectations relating to historical investment, it operates purely in favour of these investors as a class rather than end users.
- (c) The Proposed Views Paper suggests (at [110.1]) that the Commission is concerned with expectations in respect of future copper investment as follows: i) unbundling investment by RSPs; and ii) Chorus' continuing investment in the copper network as a competitive alternative.⁴⁰ However, future unbundling investment will be determined primarily by any relativity between UBA and UCLL prices set under relevant FPPs, a factor that the Commission accounts for separately. We do not see that RSPs can have any extant reasonable expectation as to the relativity between these prices given that the Commission has never previously implemented a TSLRIC model for the UCLL and UBA services and relativity is a specific matter for determination (and is expressly as risk of change).⁴¹ To the extent that there are any investor expectations relating to Chorus' continuing investment in the copper network as a competitive alternative, these will be little influenced by the Commission's choice of how to implement TSLRIC and much more influenced by i) the Commission's treatment of new commercial products offered by Chorus (e.g. Boost HD and Boost VDSL services); and ii) by Chorus' agreements with the Crown in relation to fibre deployment, factors that are not referred to in the Proposed Views Paper.⁴²
- (d) The Proposed Views Paper further suggests that the Commission is concerned with expectations in respect of major telecommunications infrastructure generally, which would include future fibre investment.⁴³ The implication here is that UCLL and SLU prices should account for reasonable investor expectations (i.e. the expectations of investors in Chorus and LFCs) as regards their impact on fibre (i.e. UFB) pricing and uptake. We disagree with this suggestion:
- Investment in UFB is already committed in the sense that both Chorus and LFCs are required by agreements with the Crown to deploy UFB infrastructure. The Commission's decisions regarding UCLL and SLU prices will not alter this investment

⁴⁰ Proposed Views Paper at [110.1]

⁴¹ Relativity between UCLL and UBA prices is expressly subject to change and investors cannot have had any reasonable expectation that existing relativity between these prices would endure.

⁴² See Chorus' Network Infrastructure Project Agreement, Clause 4(c) in Schedule 2: "*The Company undertakes to prioritise new investment in fibre access and uptake and to minimise ongoing investment in copper access assets in all future business plans*" and the discussion in the NWS Report at section 2.2.

⁴³ Proposed Views Paper at [80].

and commitment to deploy fibre. Accordingly, there appears no scope for risk to long-term benefit of end-users via reduced investment.

- Investors' expectations are in any event attuned to the possibility of reductions in UBA and UCLL prices, and the impact of price reductions on fibre uptake. It was clear from the outset of the UFB initiative that the future copper input prices were uncertain: "*[i]t is impossible for anyone to determine at this point the exact UBA price, or pricing structure (including whether prices will go up or down)*".⁴⁴ No investor in Chorus or LFCs had any reasonable expectation for believing that transition to cost based pricing would leave existing copper input prices unchanged, particularly as retail-minus pricing typically results in higher access charges than cost based pricing.⁴⁵

No objective evidence relating to reasonable investor expectations

D1.29 Second, the Commission does not offer any contemporaneous evidence that support its assessment of investor expectations. The Proposed Views Paper refers to investor expectations as a static concept with no further explanation as to what these are. Without objective evidence of investor expectations, and explanation of how these expectations are affected by decisions on UCLL and SLU prices, the Commission is relying on nothing more than an assumption. Reliance on a theoretical assumption unsupported by evidence is not a permissible approach for a statutory decision maker. If reasonable investor expectations are to be central to the decisions on UCLL and UBA prices their existence must be supported by evidence.

D1.30 As it stands, we are doubtful that investors held any expectations in respect of, or even considered, how the Commission might implement TSLRIC in setting UCLL and SLU prices. We are not aware of any contemporaneous research or commentary that addressed how the Commission might approach this exercise. The absence of such evidence places the Commission at risk of simply assuming what investor expectations were or might have been.

No assessment of reasonableness

D1.31 Third, the Commission makes no assessment of whether investor expectations are or were objectively reasonable. By definition, it cannot do this without having identified the expectations referred to in the Proposed Views Paper. Were it to do so, it would still be required to examine the reasonableness of expectations held by investors.

D1.32 It is not sufficient for the Commission's analysis of innovation and investment incentives to start and end with the proposition that 'reasonable investor expectations' need to be given weight when it is exercising judgment in, ultimately, setting an FPP price. Administrative law and

⁴⁴ Officials' Report on the Telecommunication (TSO, Broadband, and Other Matters) Amendment Bill – Specific Amendments that will be made if Telecom becomes a partner in the Ultra-Fast Broadband Initiative (11 April 2011), page 16.

⁴⁵ Indeed, reduced UBA prices were expressly contemplated in disclosure documents prepared by Telecom Corporation of New Zealand Limited ('Telecom') in connection with the demerger of Chorus Limited. See Telecom Booklet "*Share in two journeys – Your opportunity to own interests in two leading New Zealand telecommunications companies*", paragraph 9.25: "*In addition, if the prices that the regulator sets for copper-based products and services are significantly below the prices for comparable fibre-based services, fibre uptake may be negatively affected...it is possible that either the Commerce Commission or the Government may nevertheless elect to impose additional regulation, including requiring lower pricing*" (emphasis added).

international investment law principles suggest that expectations of a return on investment need to be contextually reasonable.

D1.33 In administrative law, this can be seen in *Comptroller of Customs*, where the Court of Appeal stressed that where legitimate expectations are raised it is important:⁴⁶

*...to determine whether the plaintiff's reliance on the promise or practice in question is legitimate. This involves an **inquiry as to whether any such reliance was reasonable in the context in which it was given**....* (Emphasis added)

D1.34 And further that:⁴⁷

*Legitimate expectation is to be distinguished from a mere hope that a cause of action will be pursued or a particular outcome gained. **To amount to a legitimate expectation, it must, in the circumstances (including the nature of the decision-making power and of the affected interest) be reasonable for the affected person to rely on the expectation.*** (Emphasis added)

D1.35 These administrative law principles can also be seen in international investment law. There it is well established that not every governmental adjustment of the normative framework or change in the application of this framework that adversely affects the economies where a foreign investment is made constitutes an expropriatory act (or a violation of treatment standards).⁴⁸ This in turn means that an investor challenging State regulatory action has to prove that his, her or its investment was based on a state of affairs that did not include the challenged regulatory regime and that the claim is objectively reasonable and not based entirely upon the investor's subjective expectations.⁴⁹

D1.36 These legal principles underscore that the Commission can only give appropriate weight to investor expectations, and decide whether they are reasonable, if it has addressed and resolved the issues discussed in the preceding paragraphs.

The relationship between predictability and investment is not explained

D1.37 Fourth, there is no examination of nexus between predictability and investment. This nexus is expressed simply as a matter of belief, and is again unsupported by reference to any objective evidence:

*[...] we **believe** our best contribution to building predictability will be by respecting what we see as reasonable investor expectations.*⁵⁰ (Emphasis added.)

⁴⁶ *Comptroller of Customs v Terminals (NZ)* [2012] NZCA 598; [2014] 2 NZLR 137, [126].

⁴⁷ *Comptroller of Customs v Terminals (NZ)*, at [124] (internal citations omitted).

⁴⁸ See eg Ian Brownlie *Principles of Public International Law* (7ed, 2008) at p532 ("State measures, prima facie a lawful exercise of powers of government, may affect foreign interests considerably without amounting to expropriation").

⁴⁹ Hence the NAFTA Tribunal observations in *Marvin Roy Feldman Karpa (CEMSA) v United Mexican States* (ICSID Case No. ARB(AF)/99/1 (16 December 2002), at p42, [112]: ... "[N]ot all government regulatory activity that makes it difficult or impossible for an investor to carry out a particular business, change in the law or change in the application of existing laws that makes it uneconomical to continue a particular business, is an expropriation under Article 1110. Governments, in their exercise of regulatory power, frequently change their laws and regulations in response to changing economic circumstances or changing political, economic or social considerations. Those changes may well make certain activities less profitable or even uneconomical to continue." (Copy available online at <http://www.state.gov/documents/organization/16639.pdf>)

⁵⁰ Proposed Views Paper at [123].

*[...] we should respect **what we see** as reasonable investor expectations, so as to promote investment, hence competition for long-term benefit of end-users.⁵¹ (Emphasis added.)*

D1.38 A causal connection between respecting reasonable investor expectations, however these are ultimately described, and investment for the long term benefit of end users cannot simply be assumed. Evidence is required to show a relationship between these elements. The Proposed Views Paper offers no such evidence. As such, the connection between s 18 and investor expectations is extremely tenuous, as the Proposed Views Paper itself tends to imply:⁵²

*The choices we make in deciding how to implement TSLRIC in setting price caps for UCLL, SLU and UBA **could** affect investment and therefore competition for the long-term benefit of end-users. (Emphasis added.)*

D1.39 In addition, as the Commission notes, the current process represents its first implementation of a TSLRIC model for the UCLL and UBA services, so there is no baseline against which the effect on predictability of this process can be compared.⁵³ Moreover, it correctly concedes that “...predictability of price may be difficult to achieve in the TSLRIC context given it is the hypothetical efficient operator’s costs that are being modelled, rather than Chorus’ actual costs.”⁵⁴ Both factors serve to weaken the nexus between predictability and the long term benefit of end users in the context of the pricing decisions before the Commission.

D1.40 Finally, we agree with the assessment of reasonable or rational investor expectations set out in the NWS Report:⁵⁵

With the difficulties in characterising the expectations of a ‘reasonable investor’ we conclude that the use of this concept to direct modelling choices introduces considerable uncertainty into multiple aspects of the FPP process. As such it would not serve the purpose of fostering predictability.

D1.41 That is, the difficulty inherent in a “reasonable investor” test is, in fact, more likely to undermine predictability in regulation. A better approach is for the Commission to exercise the discretion it is afforded under the Act, to determine an approach to TSLRIC which is consistent with its application both in New Zealand and internationally, while promoting the primary purpose set out clearly in s 18 of the Act.

Recommendation 2	The Commission should precisely identify the reasonable investor expectations that will be decisive to its exercise of discretion under s 18.
Recommendation 3	The Commission should provide evidence of the basis for these expectations and whether they can be considered reasonable in light of this evidence.
Recommendation 4	The Commission should provide further explanation of the connection between these evidenced expectations and its statutory objectives under s 18.

⁵¹ Proposed Views Paper at [110.2].

⁵² Proposed Views Paper at [109].

⁵³ Proposed Views Paper at [119].

⁵⁴ Proposed Views Paper at [121].

⁵⁵ NWS Report at section 2.3.

D2 Choice of Regulatory Period

- D2.1 Vodafone supports the Commission’s view that five years is an appropriate regulatory period for its TSLRIC modelling and that the same period should apply for both the UCLL and UBA service.⁵⁶
- D2.2 This period is (as described in the Proposed Views Paper) appropriate given the current horizon for New Zealand’s telecommunications market.⁵⁷ We note the Commission’s observation that overseas practice is to adopt shorter regulatory periods (such as three years).⁵⁸ We consider this to be an appropriate “starting point” for the regulatory period, but for the factors identified by submitters and summarised in the Proposed Views Paper, the five year period is the most appropriate in this particular case.
- D2.3 Finally, we agree with the Commission that the length of the regulatory period is “likely to be a trade-off between regulatory certainty and maintaining flexibility”.⁵⁹ In our view, a five year period strikes the right balance in this case, and the statutory framework (which enables the Commission to review STDs where necessary) provides a sufficient backstop flexibility should it be required.

Recommendation 5 The Commission should confirm a five year regulatory period for its TSLRIC modelling and that the same period should apply for both the UCLL and UBA service.

E Modelling considerations

E1 Relativity

- E1.1 The Commission’s UBA IPP determination found that relativity would be maintained if UCLL and UBA prices were to be set in accordance with similar TSLRIC-based forward-looking cost-based price methodologies.⁶⁰ It did so because it had no evidence to suggest that an adjustment to any difference between UCLL and UBA prices would promote competition for the long-term benefit of end-users.
- E1.2 The Proposed Views Paper alters this position as follows:⁶¹

Relativity is a mandatory consideration in its own right under the Act; it is not enough simply for us to adopt TSLRIC pricing. For example, we agree that, if the SLU and UCLL prices continue to differ as a result of the pricing review determinations, we will need to consider the different relativities that result, in terms of our application of section 18.

⁵⁶ Proposed Views Paper at [314].

⁵⁷ Proposed Views Paper at [315] – [320].

⁵⁸ Proposed Views Paper at [321].

⁵⁹ Proposed Views Paper at [304].

⁶⁰ Proposed Views Paper at [67].

⁶¹ Proposed Views Paper at [74].

E1.3 We are encouraged, however, by the Commission's recognition that it:⁶²

...cannot be sure that any incentives we attempt to introduce through these pricing reviews in favour of unbundling will in fact lead to unbundling, or will instead simply result in end-users paying more.

E1.4 As the Commission properly notes, its primary duty under s 18(1) is to promote competition in telecommunications markets for the long term benefit of end-users. As such, it is appropriate that it should not act to incentivise unbundling unless it is clear that this will promote efficient investment decisions likely to benefit end-users. We note that the Commission is not currently persuaded that these objectives would be achieved.

E1.5 Vodafone supports the Commission's preliminary view that its relativity consideration should promote the efficiency aspect of s 18 rather than further investment in the form of unbundling.⁶³ To the extent that a decision not to make a specific relativity adjustment would cause significant detriment to any single operator, the Commission may give consideration to transitional pricing arrangements or grandfathering.

Recommendation 6 The Commission should make no specific relativity adjustment absent compelling evidence that further unbundling would encourage investment that can be considered efficient, when assessed against the Commission's preference for promoting dynamic efficiency benefits.

E2 Positive externalities and migration efficiencies

E2.1 The Commission says that positive externalities and migration efficiencies arising from higher UCLL and UBA will, together with respect for reasonable investor expectations, give effect to the s 18 purpose.⁶⁴ These factors will, in combination, determine how the Commission exercises discretion where available.

E2.2 We find this reliance on positive externalities troubling where, as the Commission recognises, these are no more than potential effects.⁶⁵

E2.3 The Commission's reference to positive externalities draws from Professor Vogelsang's July 2014 report.⁶⁶ Professor Vogelsang notes that:

- (a) An increase in the UCLL service price increase could result in positive welfare effects including "...*innovation effects on UFB and potential spillovers on other markets and the whole economy and conventional network externalities from migration to new services.*"⁶⁷ Professor Vogelsang suggests that these innovation effects are at best "likely to occur" but, if they did occur, are "also likely to be small".

⁶² Proposed Views Paper at [77]

⁶³ Proposed Views Paper at [79]

⁶⁴ Proposed Views Paper at [86].

⁶⁵ Proposed Views Paper at [84.2]

⁶⁶ Professor Ingo Vogelsang *The effects of the UCLL contribution to the UBA aggregate on competition for the long-term benefit of end-users in New Zealand telecommunications markets* (2 July 2014) (**Vogelsang Report**).

⁶⁷ Vogelsang Report at [5].

- (b) Increased migration from copper access services to UFB access services could generate positive externalities, which can for example take the form of spill-over effects on other markets and the economy generally.⁶⁸
- (c) There could be conventional network externalities from having more subscribers on a particular technology over which they can communicate.⁶⁹

E2.4 These views regarding positive externalities are, correctly in Vodafone's submission, expressed tentatively. This is wholly appropriate given that the nature and operation of the positive externalities he refers to is theoretical. In particular, Professor Vogelsang does not assert that positive externalities will, as a matter of fact, result from an increased UCLL service price. He simply notes that they might but offers no view on the economic value of positive externalities that might result from an increased price.

E2.5 It is therefore of concern that the Proposed Views Paper adopts a highly selective and partial reading of Professor Vogelsang's advice:⁷⁰

Innovation benefits will come from the financial benefits for other networks and for content providers serving these networks. Additional externalities will accrue to the pre-existing subscribers of these services, who benefit from the additional or cheaper content made available to them."

E2.6 This unequivocal position is not consistent with Professor Vogelsang's advice, when read as a whole.

E2.7 As WIK observes, whether positive externalities would result from forced migration to UFB is an empirical question.⁷¹ The Commission presents no quantitative analysis supporting its assessment. Even if this relationship cannot be proved in a quantitative sense, it is not acceptable for the Commission to assume that it operates. If the Commission's view reflects a qualitative judgement, it should explain the basis for it. Equivocal statements, even where made by recognised experts, are insufficient.⁷² As such, Vodafone submits that the weight assigned to positive externalities, as a guiding principle for the application of s 18 when setting UCLL and SLU prices, is inappropriate. A theoretical possibility of a price increase delivering positive externality effects does not justify the weight placed on this factor. Any increase to UCLL and SLU prices will impose a real and significant cost on RSPs and consumers. Unless the Commission can be certain that this will result in actual positive welfare effects that exceed this cost, no adjustment should be made.

E2.8 Finally, as WIK observes, artificially weighting an increase to UCLL and UBA prices so as to incentivise migration to UFB *is not* an objective of the statutory framework that the Commission is working under. Vodafone submits that the Commission cannot import a goal of promoting UFB migration *per se* into its statutory objectives. It can only account for UFB migration in terms of its broader consideration of efficiency objectives, and such consideration must be reasonable in the context of the decisions that it is making: determination of the TSLRICs for UCLL and UBA *copper* services. This principle requires that, where the Commission does account for any efficiencies

⁶⁸ Vogelsang Report at [26].

⁶⁹ Vogelsang Report at [27].

⁷⁰ Proposed Views Paper at [84.2], citing Vogelsang Report at [27].

⁷¹ WIK Report at [43].

⁷² See WIK Report at [47].

inherent in UFB migration, it must specify the form of these efficiencies and explain how they arise.

Recommendation 7 The Commission should not give weight to positive network externalities arising from migration to UFB without explaining both the basis on which it has accepted that they will result and how they are weighed within the broader consideration of efficiencies that is required by s 18.

E3 Forward-looking costs and asset sharing

- E3.1 The Proposed Views Paper expressly acknowledges that there is an “international trend” to include asset re-use in cost models.⁷³ This reflects an acknowledgement that included asset re-use in TSLRIC models supports efficient outcomes.⁷⁴ Despite this, the Commission has apparently rejected a modelling approach which assumes re-use of certain Chorus assets because “there would have been a reasonable expectation that assets would be valued at ORC under a TSLRIC model”.⁷⁵
- E3.2 As set out above, Vodafone does not accept that the Act imposes a “reasonable expectation” or “reasonable investor expectations” test that supersedes or qualifies the Commission’s primary s 18 purpose in conducting this cost modelling exercise. However, whether or not investor expectations has a role in the Commission’s decision-making process, our view is that the discretion afforded to the Commission in setting a TSLRIC price for the UCLL and UBA services permits the Commission to consider re-use of Chorus assets, and that the purpose of s 18 supports such an approach.
- E3.3 In our view there is no evidence, in any case, that suggests that any “reasonable investor expectation” that TSLRIC modelling permitted only valuation at ORC existed in relation to Chorus’ copper access services. Instead, we consider that a reasonable investor would be alive to the flexibility and discretion afforded to the Commission in applying TSLRIC, as well as the “international trend” toward different treatment of certain re-usable assets. As such, when the Commission’s task is to apply a broadly-defined (and clearly evolving) methodology (which is similarly applied by a range of international regulators) a reasonable investor could not conclude that the Commission is rigidly constrained to any past approach.⁷⁶
- E3.4 More importantly, we consider that the reason a dual-asset valuation approach is considered an orthodox component of LRIC modelling by European regulators, is because it supports the outcomes which TSLRIC is intended to deliver. Because re-usable legacy civil engineering assets are unlikely to be replicated (but are often, in practice, re-used for NGA deployment), there is a significant risk that valuing those assets at ORC would risk over-recovery (especially on assets that are likely fully depreciated).⁷⁷

⁷³ Proposed Views Paper at [145].

⁷⁴ Proposed Views Paper at [146].

⁷⁵ Proposed Views Paper at [147].

⁷⁶ See also the analysis in the NWS Report at section 2.4.

⁷⁷ See WIK Report at section 2.1.

E3.5 We agree with Network Strategies' conclusion that a hypothetical efficient operator deploying an MEA network in New Zealand would engage in considerable sharing:

- (a) Infrastructure sharing delivers considerable benefits to both the infrastructure owner, access seeker and ultimately end-users (due to, for example, reduced capital and operating costs, faster deployment timelines, reduced environmental impact, and reductions in any local planning complexity).⁷⁸
- (b) deployments which share existing civil infrastructure are plainly the most cost efficient solution (according to both local and international observations);⁷⁹
- (c) in New Zealand, there is clearly significant scope for infrastructure sharing between telecommunications operators (including Chorus' existing asset base); electricity lines companies and other utility providers (such as water and wastewater companies).⁸⁰

E3.6 In summary, as Network Strategies observe:⁸¹

In New Zealand it is clear that infrastructure sharing is already occurring in UFB deployment, primarily using the existing assets of lines companies. We would expect a hypothetical efficient operator in New Zealand to seek access to the civil infrastructure of the lines companies and possibly other utilities in order to avoid inefficient asset duplication.

E3.7 As such, in our view, a TSLRIC cost model that did not assume a high level of infrastructure sharing (internally within Chorus' existing sunk asset base and/or with third parties) would not be consistent with an orthodox understanding of TSLRIC, or in the long term interest of end-users of telecommunications services in New Zealand. As Frontier Economics observed, an approach which takes the age and stage of Chorus' re-usable assets into account:⁸²

- (a) "provides a better reflection of the expenditures made by the access provider, and so provides some protection against the access provider being compensated for incurring costs which they in fact never did, and never will, incur"; and
- (b) "facilitates the rolling in of future capital expenditures at their forecast efficient levels, which will be the actual costs so long as those costs are shown to be prudent".

E3.8 As set out in our earlier submissions, we consider that the European approach to reusable civil engineering assets (such as ducts and trenches) should be adopted as the Commission's starting point for this TSLRIC exercise.⁸³

⁷⁸ See NWS Report at section 4.1.

⁷⁹ See NWS Report at section 2.5 and 4.1 respectively.

⁸⁰ NWS Report at section 4.2 – 4.3.

⁸¹ NWS Report at section 4.4.

⁸² Frontier Economics *Determining a TSLRIC price for Chorus' UCLL service: A report prepared for Vodafone New Zealand, Telecom New Zealand and CallPlus* (February 2014) at p 35. See also discussion in Vodafone Submission on the UCLL Process and Issues

⁸³ Vodafone Submission on the UCLL Process and Issues Paper at [D4.6].

Recommendation 8 The Commission should consider re-use of Chorus assets as consistent with the objectives of s 18 recognising that a dual-asset valuation approach is considered an orthodox component of LRIC modelling by European regulators as it supports the outcomes which TSLRIC is intended to deliver, and a hypothetical efficient operator deploying an MEA network in New Zealand would engage in considerable asset sharing.

E4 Backdating

- E4.1 Vodafone agrees with the Commission's preliminary approach on backdating, in particular that:
- (a) the Commission is not required to backdate any pricing decision, but has the discretion to do so;
 - (b) any decision to backdate should be consistent with s 18 and will need to be demonstrably efficient; and
 - (c) the Commission's discretion includes flexibility to smooth any backdated sum.
- E4.2 We agree that the Commission cannot reach a firmer view on backdating until the implication of any price change that might result from the FPP process is known. As such, we consider it is appropriate for the Commission to provide a preliminary decision on backdating (if any) in its draft determination.

Recommendation 9 The Commission should proceed with its proposed view provide a preliminary decision on backdating (if any) in its draft determination.

E5 Geographically averaged price

- E5.1 Vodafone supports geographically averaged prices, because they enable RSPs to efficiently construct and deliver retail broadband services for end-users.

E6 Double recovery of costs

- E6.1 We endorse the Commission's conclusion that Chorus should not be permitted to double-recover on any costs, as required by Clause 4B of Schedule 1 of the Act.
- E6.2 However, we note that the Commission's preliminary view that a dual MEA approach should be applied is likely to make it relatively more difficult to ensure that double recovery does not occur (see below at section G, for more detail).
- E6.3 We agree that a review of the routing table (which underpins cost allocation) is appropriate during the regulatory reset process.

Recommendation 10 The Commission should, as it suggests, review the routing table (which underpins cost allocation) during the regulatory reset process.

F Modelling demand

- F1.1 As WIK observe, the correct starting point for a hypothetical efficient operator (in a TSLRIC context) is 100% of all fixed-line access connections.⁸⁴ The Commission cannot limit itself to the “current connection volume of Chorus lines”.⁸⁵ In our view, this approach does not take into account the reality that migration of lines to alternative operators that is already taking place. The Commission must also consider migrated lines in its assessment of total demand.
- F1.2 Moreover, when considering ‘current connections’, the Commission must not limit demand estimations to solely those access lines used for UCLL, UBA and UCLF services. Instead, relevant demand should include all access lines (including those supporting services such as leased lines, bounded lines and special data access lines). We recommend, therefore, that the Commission provide greater specification around its use of the term ‘active lines’.
- F1.3 Vodafone supports WIK’s views on the shortcomings in the Commission’s approach to demand estimation.⁸⁶ Fundamentally, we submit that the number (and structure) of access lines which inform the dimensioning of the access network should equate to the access lines that bear cost allocations.

Recommendation 11 The Commission should ensure that the number (and structure) of access lines which inform the dimensioning of the access network should equate to the access lines that bear cost allocations.

G Modelling a network built by a hypothetically efficient operator

G1 TSLRIC and optimisation

- G1.1 The Proposed Views Paper does not provide a clear position on whether the Commission intends to apply a scorched node or modified scorched node approach to modelling the network. TERA proposes to adopt a scorched node approach, using the MDF nodes of the current copper network and the boundaries of each MDF area as the boundaries the ODF areas of a fibre MEA network.⁸⁷

⁸⁴ WIK *Submission* at [54].

⁸⁵ Commerce Commission *Regulatory Framework and Modelling Issues Paper* at [229].

⁸⁶ See WIK *Submission* at section 4.1.

⁸⁷ TERA Report at p 48.

G1.2 As WIK observe, this may be a pragmatic approach, but it risks delivering on the efficiency standard which an appropriately optimised MEA should deliver.⁸⁸ We agree with WIK where they observe:⁸⁹

Many regulators modify the scorched node assumptions for certain network elements improving the efficiency of the network and service provision. We propose that the model to be developed provides the flexibility to allow for efficiency improvements due to incrementally changing the number of ODFs, the efficient placement of cabinets in the case of the reference copper network architecture and for efficient local access areas at a given number of ODF nodes.

G1.3 The “modifications” expected in a modified scorched node approach reflect the typical network and cost improvements an efficient operator would implement in a new roll-out of an access network.⁹⁰

G1.4 Finally, we refer the Commission to the observations of Network Strategies in terms of ensuring sufficient flexibility in the model to enable it to effectively model an appropriately optimised MEA.⁹¹

The Commission’s stated intention that it will not be constrained by Chorus’ historical technology decisions suggests that it should permit a reasonable degree of flexibility in scorching assumptions, but on the other hand it might equally consider that Chorus’ existing nodes constitute an intransigent local factor which must be accommodated by the hypothetical operator. Such an approach may severely compromise the ability of the model to deliver efficient forward-looking costs. The key concern is that the definition of scorched node that the Commission applies must deliver efficient outcomes that would occur in practice. Only then will the model provide results that do not distort build or buy decisions.

Recommendation 12 The Commission should take an approach to optimisation that delivers efficient outcomes that a hypothetical efficient operator would be expected to achieve. Only then will the model provide results that do not distort build or buy decisions.

Recommendation 13 The Commission must ensure that the model provides sufficient flexibility to allow for efficiency improvements due to incrementally changing the number of ODFs, the efficient placement of cabinets in the case of the reference copper network architecture and for efficient local access areas at a given number of ODF nodes.

G1.5 Choosing the MEA – a single, integrated MEA

G1.6 The statutory framework gives the Commission wide discretion to determine the MEA that should be used in modelling each service. The Act offers no guidance on the point. Provided that the Commission acts consistently with general principles of administrative law, there is nothing that

⁸⁸ WIK Report at [27].

⁸⁹ WIK Report at [27].

⁹⁰ WIK Report at [28].

⁹¹ NWS Report at section 2.5.

constrains its discretion to determine an appropriate MEA(s).⁹² Indeed, the Commission has itself indicated that it concurs that this is the correct legal position.⁹³

G1.7 However, the Commission has chosen to use different MEAs to model each service:

- (a) for UCLL, the Commission proposes modelling FTTH and FWA at the edges of the network as the MEA,⁹⁴ and
- (b) for UBA, the Commission proposes modelling based on Chorus' copper based inputs.⁹⁵

G1.8 Vodafone has previously argued that a single, integrated MEA should be used to model TSLRICs of the UCLL and UBA services.⁹⁶ This remains our view. Our summary reasons for this position are as follows:

- (a) The appropriate MEA to be used when determining the TSLRICs of the relevant services is a question of fact. The Commission accepts that its task when addressing this question is to decide what network a hypothetical new network builder would deploy to deliver the service in question.⁹⁷ This question must be answered by reference to facts and evidence, and inferences arising from those facts, albeit in circumstances where judgment is being made.
- (b) In the current process, the Commission must identify the appropriate MEA for two services. Its approach to identifying the MEA in each case must be analytically consistent.⁹⁸ It cannot use different MEAs where doing so would result in inconsistent logic and analysis between its final determinations for each service. Contemporaneously drawing different conclusions in relation to MEA from the same evidence within a close proximity of time is unlikely to be consistent with general principles of administrative law. The Proposed Views Paper notes that each FPP determination must be self-standing.⁹⁹ This reflects the first March 2014 preliminary advice of the Commission's external legal counsel that the MEA and FPP price that apply for a particular service should not be affected by the time at which the application was made or what other FPP applications were live at the time.¹⁰⁰ We do not disagree with this as a general principle. If the Commission is determining an MEA for one service at the same time as determining an MEA for another, it cannot simply treat the analysis completed in one exercise as

⁹² See Webb Henderson *Memorandum of Advice to Vodafone* (29 April 2014).

⁹³ Consultation Document (9 July 2014) at [190].

⁹⁴ Proposed Views Paper at [164].

⁹⁵ Proposed Views Paper at [174].

⁹⁶ Vodafone *Comments on further consultation papers on issues relating to determining a price for Chorus' UCLL and UBA services under the final pricing principle* (11 April 2014) at [C9] *et seq.*; Vodafone *Cross-submission on further consultation papers on issues relating to determining a price for Chorus' UCLL and UBA services under the final pricing principle* (30 April 2014) at [C1] *et seq.*

⁹⁷ Proposed Views Paper at [158]

⁹⁸ In particular, an MEA selected for the purpose of determining TSLRIC for any one service is a highly relevant consideration that must be taken into account when selecting MEA used to determine TSLRIC of the other service.

⁹⁹ Proposed Views Paper at [225]: "...our overall approach for the UCLL pricing review determination must be able to stand on its own, independently of the approach we are taking for the UBA pricing review."

¹⁰⁰ James Every-Palmer *FPP determination: Issues re service description and the modern equivalent asset, Advice to the Commerce Commission* (12 March 2014) at [38(b)].

irrelevant to the other, or rely on the argument that determinations must be self-standing as justification for making contemporaneous findings that are logically inconsistent with each other.

- (c) As WIK observe, modelling two networks is not consistent with the rational business decisions that should be expected of a hypothetical efficient operator.¹⁰¹ The Commission's preliminary views on MEA selection are inconsistent with this principle. Deriving TSLRIC prices from a single uniform model, applied in a coherent and consistent way, will generate UBA prices that support input selection decisions that fit best with efficiency considerations and long term benefits for end users of telecommunications services.¹⁰² In our view, promoting the types of efficiency outcomes which are consistent with the purpose set out in s 18 of the Act should lead the Commission to a hypothetical network designed to pragmatically deliver both the required layer 1 and layer 2 services (i.e., a single FTTH and FWA network).
- (d) Modelling different MEAs for each service imports significant complexity to the FPP process. The problems associated with this approach are noted by the Commission's external legal counsel in his first March 2014 preliminary advice, in which Dr Every-Palmer notes that: "...using different MEAs in respect of different service may create problems in terms of the allocation of common costs since the different services will be based on different network assumptions..."¹⁰³ As WIK observe, modelling two hypothetical networks introduces particular difficulties in identifying and avoiding any double-recovery of costs between the two regulated services.¹⁰⁴ WIK also suggest that the some of the complexity that the Commission seeks to avoid (e.g., avoiding the need to account for FWA areas in modelling Chorus' UBA service) would anyway need to be confronted if the Commission wishes to sustain any consistent view on the network and service scope of a hypothetical efficient operator.¹⁰⁵
- (e) Adopting Chorus' existing copper network as the UBA MEA has potential to impose unjustified costs on RSPs and consumers, where this results in prices being set with reference to a network that a hypothetical new network builder would not use to deliver the service in question.¹⁰⁶

G1.9 The Commission considers that the option of adopting a single MEA for both UCLL and UBA services is not "*open to us under the Act*."¹⁰⁷ Its reasons for this view are elaborated as follows:¹⁰⁸

*We agree that we should limit our consideration of the UBA MEA to Chorus' existing copper network, rather than adding RBI fixed wireless, as this is the network presupposed by the service description in the Act. **Accordingly**, MEA principles are only relevant to the "additional costs" component of providing the UBA service. In other words, for the UBA service, the existing copper network must be*

¹⁰¹ WIK Report at [30].

¹⁰² WIK Report at section 2.4.

¹⁰³ James Every-Palmer FPP determination: *Issues re service description and the modern equivalent asset, Advice to the Commerce Commission* (12 March 2014) at [29].

¹⁰⁴ WIK Report at [33].

¹⁰⁵ WIK Report at [30]-[31] and section 2.3.

¹⁰⁶ See Frontier Economics report *Determining a TSLRIC price for Chorus' UCLL service* (February 2014) at [2.4.4].

¹⁰⁷ Proposed Views Paper at [171].

¹⁰⁸ Proposed Views Paper at [168], [173].

taken as a given, and the TSLRIC and MEA principles only be applied in relation to the facilities associated with the “additional costs”. (Emphasis added.)

*We also note that for unbundlers, the decision of whether to unbundle is based on the costs of Chorus’ existing copper network, not a fibre network. **For that reason**, we consider that a copper based MEA for UBA is likely to best give effect to the purpose set out in section 18. The use of copper based inputs and Ethernet also meets the forward-looking requirement in the TSLRIC definition in the Act.* (Emphasis added.)

- G1.10 The Commission’s conclusion that the Act denies it the option of selecting a single, integrated MEA that does not utilise Chorus’ copper local loop strikes us as odd. First because it conflicts with the principle that the Commission has broad discretion when determining the network that a hypothetical efficient operator where no statutory guidance on this point exists.¹⁰⁹ Second, this view is not reflected in the preliminary advice of the Commission’s external legal counsel, who says only that there is ‘some merit’ in an argument that the UBA FPP requires the Commission to take Chorus’ copper local loop as a given.¹¹⁰ If, as the Commission asserts, the single MEA option is denied by the Act we expect that would be reflected in counsel’s advice and excluded by him. Instead, counsel acknowledges this option as valid but subject to certain risks.
- G1.11 In addition, the reasoning offered in support of the Commission’s position (at G1.9 above) appears doubtful:
- (a) The Proposed Views Paper implies a pure choice by the Commission that consideration of the UBA MEA should be limited to Chorus’ existing copper network. The requirement for TSLRIC and MEA principles to be applied only the “additional costs” component of providing the UBA service simply records the task before the Commission. It does not imply a legal constraint in terms of MEA selection.¹¹¹
 - (b) The Proposed Views Paper does not explain with any clarity how a copper based MEA for UBA is likely to best give effect to the purpose set out in section 18.¹¹² The reasoning in the paper appears to be based on a view that unbundling should be encouraged because this alone gives best effect to s 18. If so, it operates to prioritise unbundling as an end in itself over the Commission’s primary duty in s 18(1) to promote competition for the long term benefit of end users. In addition, this reasoning sits unhappily with the view expressed later in the Proposed Views Paper that it should “...hesitate before attempting to incentivise unbundling unless it was clear that, by doing so, we would be promoting efficient investment decisions in a way that is likely to benefit end-users.”¹¹³ Absent clear evidence that unbundling is synonymous with efficient investment decision, we suggest the reasoning expressed in at [173] of the Proposed Views Paper (described above) cannot stand.¹¹⁴

¹⁰⁹ See paragraph G1.6 above.

¹¹⁰ James Every- Palmer *FPP determination: Issues re service description and the modern equivalent asset, Advice to the Commerce Commission* (12 March 2014) at [29].

¹¹¹ Proposed Views Paper at [168].

¹¹² Proposed Views Paper at [173].

¹¹³ Proposed Views Paper at [77].

¹¹⁴ Also see paragraph E1 above.

G1.12 Having regard to the above, our view remains that the Commission should use a single, integrated MEA to model both the UCLL and UBA services.

Recommendation 14 The Commission should model a single, integrated MEA to determine TSLRICs of the UCLL and UBA services, because there is no legal constraint from it doing so and such a network would reflect what a hypothetical efficient operator would deploy.

G2 Broader use of FWA required

G2.1 Vodafone strongly endorses the Commission's current view that, at least for the UCLL network, it should model a FTTH network with FWA at the edge of the network. However, we do not agree that the Commission should arbitrarily confine the "edges" to the current and projected RBI fixed wireless footprint. This is because the RBI fixed wireless footprint reflects the specific tender requirements agreed between Vodafone and the Crown (taking into account the actual network infrastructure already in place in New Zealand).

G2.2 In its report for the Commission, TERA observe:

The very rural areas where Chorus is not deploying FTTH will be covered by Vodafone deploying FWA. In these areas, the cost of rolling out fibre is so high that an efficient operator would not build an FTTH network there. Therefore, the definition of the MEA suggests that FTTH is not the MEA in these areas where FWA is being deployed, even though it is a superior technology in terms of broadband speed because it is not economically rational.

The areas where FWA is the MEA should correspond to the planned footprint of this technology. It therefore includes the RBI areas where Vodafone is building its FWA network, based on the operator strategy factor.

G2.3 This approach is not consistent with the TSLRIC methodology the Commission has indicated its intention to apply. The reason that the FWA footprint does not expand further inward (i.e., to areas of greater density) is not because FWA is not an efficient technology with which to serve those end-users. Instead, it is because (generally speaking) it is more efficient to make use of Chorus' existing, sunk assets in those areas.

G2.4 In our view, TERA's later comments reveal the correct approach to determining which areas should be served by FWA:¹¹⁵

However, in remote areas, where the network cost is very high and therefore the cost factor becomes the main one, FWA should be preferred to FTTH. This technology, compared to FTTH, copper/FTTN or HFC, leads to reasonable cost levels

G2.5 That is, the relevant coverage area for FWA in the hypothetical TSLRIC MEA should be the area in which it is more efficient for the hypothetical network to be deployed using FWA as opposed to a FTTH or another fixed line solution:

- (a) As WIK observe, the cost model itself should be the tool for determining the least cost type of provision.¹¹⁶ The areas served by FWA should be those areas where it is

¹¹⁵ TERA Report at p 40.

¹¹⁶ WIK Report at [22].

determined to be less cost than a fixed-line solution, and not an assumption taken up front. To give proper effect to this, it is critical that the model retains sufficient flexibility to enable the Commission and parties to test which solution is least cost, as well as what optimisation profile is appropriate.

- (b) However, even prior to commencing modelling it is clear that the relevant footprint for a FWA MEA is likely to be wider than the RBI footprint. As a starting point, Network Strategies experience in FWA and mobile solutions for delivering broadband and other services to rural users suggests that delivery using FWA to all areas in Zone 3 (which are not covered by UFB, at least) are also likely candidates for more efficient service delivery via FWA (as opposed to a wireline solution).¹¹⁷
- (c) Just as the Commission should not constrain itself to the RBI footprint, it should not constrain itself to RBI technology choices. As WIK suggest, the Commission must also consider the impact of new technologies (such as LTE, especially given the now available 700MHz spectrum which is especially effective at delivering mobile broadband solutions in rural areas) as efficient alternatives to fixed-line broadband access services.¹¹⁸
- (d) There are numerous, workable solutions to effectively incorporating a FWA component into a TSLRIC cost-model.¹¹⁹ These enable the Commission to determine the appropriate coverage area for FWA, based on what the most efficient deployment would anticipate.

G2.6 Finally, we note that Vodafone's view remains that there is no legal requirement constraining the Commission to a copper-based MEA for the UBA service. Accordingly, our view is that the same approach recommended above for incorporating FWA into the UCLL MEA should be applied in respect of the UBA service. As WIK observe, bitstream services can be produced in New Zealand over FWA technology.¹²⁰

Recommendation 15 The Commission should not arbitrarily confine the "edges" of the modelled network to the current and projected RBI fixed wireless footprint.

Recommendation 16 The Commission should use the cost model to determine the relevant coverage area for FWA in the hypothetical, because a TSLRIC FWA MEA should reflect the area in which it is more efficient for the hypothetical network to be deployed using FWA as opposed to a FTTH or another fixed line solution. The Commission must ensure that the model ensures sufficient flexibility to test this.

G3 Mapping the local loop costs to services

G3.1 Vodafone broadly supports the Commission's approach to mapping the local loop costs to services, subject to clarifications and comments set out in the WIK Report.¹²¹ In particular:

¹¹⁷ NWS Report at section 3.2.

¹¹⁸ See WIK Report at [23]. See also NWS Report at Annex A.

¹¹⁹ See NWS Report at section 3.1.

¹²⁰ WIK Report at [31].

¹²¹ WIK Report at section 3.

- (a) we support an aggregated approach (including as between cabinetised and non-cabinetised lines);
- (b) we agree that the Commission should take into account that SLU-based competition in New Zealand is highly unlikely, especially given the transition towards fibre-based services in the future; and
- (c) the Commission will need to address how to adjust for SLU prices if the FTTN MEA proves, on modelling, to be less costly than the FTTH MEA.

Recommendation 17 The Commission should take an aggregated approach to mapping the local loop costs to services, taking into account that SLU-based competition in New Zealand is highly unlikely.

Recommendation 18 The Commission must address how to adjust for SLU prices if the FTTN MEA proves, on modelling, to be less costly than the FTTH MEA .

G4 Trenching costs

G4.1 Trenching costs represent a significant proportion of costs for a fixed access network. As explained by Network Strategies:¹²²

'Key drivers of trenching costs are labour, the type of trenching (for example duct or direct buried) and the nature of the terrain. Trenching in hard rocky ground is more expensive than through sandy soil. Thus we observe in many regulatory cost models the use of a variety of trenching costs associated with different types of terrain, ensuring that the model results are a more accurate representation of the costs of the hypothetical operator.'

G4.2 Chorus state that " *The requirement for forward-looking costs means that the unit costs of building the network which are incorporated into the model should reflect the current costs of that deployment. That is, the costs that would be incurred today in digging the trenches, and the current cost of purchasing and laying copper cable.*"¹²³

G4.3 Estimating the current cost of trenching requires detailed datasets on the key cost drivers, namely labour, the type of trenching and the nature of the terrain. We understand from discussions with the Commission that no new data on terrain has been gathered, and so we expect that trenching data feeding into TERA's modelling may be the same datasets as previously utilised in the Commission's TSO modelling. There are significant problems with this data:¹²⁴

'Telecom has acknowledged [in the Commerce Commission terrain workshop conducted on 5 May 2004] that this dataset may not be reliable, and geophysical expert, David Bell, has previously argued that the data tends to overstate trenching difficulty in New

¹²² NWS Report at section 5.

¹²³ Chorus Submission in response to the Commerce Commission's Process and issues paper for determining a TSLRIC price for Chorus' unbundled copper local loop service in accordance with the Final Pricing Principle (February 2014) at [187-196].

¹²⁴ Network Strategies, *ESA field study results*, public version (August 2004).

Zealand – that is, it is skewed towards the medium to hard end, whereas in reality the easy end is the more appropriate for rural New Zealand.’

- G4.4 Network Strategies conducted detailed field studies in 2004 that illustrated significant discrepancies with the data used by the Commission: see **NWS Report** at section 5.3 for further detail.
- G4.5 Vodafone’s view is that the Commission must no longer rely on Telecom’s information datasets for trenching costs. Far better quality geophysical datasets are now available, including Landcare Research’s environmental databases for New Zealand. For example, S-Map is a recently available soil spatial information system that may have suitable data to derive terrain information for fixed access modelling.
- G4.6 Using detailed terrain data is consistent with international best practice. The Swedish fixed access model has twelve different types of terrain for street trenching and poles for the purposes of costing. The associated costs vary by geotype (so trenching in asphalt/tarmac is more expensive in geotype 1 than in geotype 5). The mix of terrain types by geotype is input to the model, and so the resultant costs reflect the nature of the terrain in each geotype. The Swedish example shows that including this detail in a TSLRIC model is feasible.
- G4.7 Our recommendation is for the Commission to utilise an independent and consistently defined data source to assist in the derivation of trenching costs. The Commission is no longer restricted to using solely datasets previously provided by Telecom.

Recommendation 19 The Commission should consider improved sources of geological and geographic data, including Landcare’s datasets, to estimate trenching costs.

G5 Asset sharing by a hypothetically efficient network operator

- G5.1 Access sharing is now commonplace in infrastructure roll outs.¹²⁵ The costs savings that can be realised by sharing physical infrastructure when deploying fibre access networks are significant (for example, they have been estimated by Fujitsu as being up to 80-90%).¹²⁶ This achieved by sharing a wide-range of assets, which can include sites, buildings, poles, trenches, towers, ducts and cables.
- G5.2 Network Strategies provided an analysis of a number of specific examples, including:¹²⁷
- (a) BT Openreach which permits Physical Infrastructure Access (PIA) to share its duct and poles;
 - (b) Both locally and internationally, existing electricity distribution, gas and drinking water utility infrastructure is often shared by broadband and mobile providers.

¹²⁵ See, above at section E3 (Forward-looking costs and asset sharing).

¹²⁶ NWS Report at section 4.1.

¹²⁷ See NWS Report at section 4.2.

G5.3 This approach is sufficiently commonplace that, as Network Strategies observe, there are many countries, including Portugal and the United States, *'which have a well-defined regulatory framework for infrastructure sharing on a non-discriminatory basis.'*¹²⁸

G5.4 Network Strategies list the benefits of infrastructure sharing as:

(a) reduces capital investments and operating expenditure of re-building/deploying existing infrastructure

(b) facilitates market entry for new operators, enabling a faster deployment timetable

(c) optimises the use of resources and has a lower environmental impact than new build

(d) overcomes local planning issues to encourage network expansion and increase coverage in underserved areas or areas with site access restrictions.

G5.5 Moreover, these benefits accrue to both the infrastructure owner (through access payments) and to consumers (through faster access to new services and increased competition), as well as to the new entrant achieving deployment at lower cost. The concept is widely accepted in New Zealand. In practice, for example, Northpower has stated that it has saved more than 50% of roll out costs for its UFB Fibre network due to sharing with its electricity distribution infrastructure.¹²⁹ It is not surprising then that Chorus announced late last year that it had partnered with a local electricity lines company in Greymouth to deliver UFB on existing power poles.¹³⁰ In the context of RBI, sharing and open access has been mandated into Vodafone's required specification for masts and sites.

G5.6 Moreover, administrative efforts have been made to facilitate further sharing. We recognise that the Resource Management Act's requirement for compliance with local district plans may add administrative challenges and costs. However the efforts by stakeholders (such as the New Zealand Utilities Advisory Group) to facilitate access sharing via a National Code of Practice for Utility Operators' Access to Transport Corridors are important steps to facilitate better sharing.

G5.7 Vodafone strongly believes that the Commission should consider network sharing to be a reality, and require TERA to produce information on the overseas experience of infrastructure sharing, and to factor this practice into estimating infrastructure deployment costs when carrying out network cost modelling. As Network Strategies observe:¹³¹

'We would expect a hypothetical efficient operator in New Zealand to seek access to the civil infrastructure of the lines companies and possibly other utilities in order to avoid inefficient asset duplication.'

G5.8 Finally, we refer the Commission to our submission on ensuring the Commission has access to the right information to assess opportunities for sharing in New Zealand.¹³² While we are encouraged by the Commission's decision to issue s 98 notices to the other LFCs, we consider

¹²⁸ NWS Report at section 4.2.

¹²⁹ Northpower *Our Next Generation Fibre Optic Network* (accessed 5 August 2014), available at http://northpower.com/network/fibre_optics/our_fibre_network.

¹³⁰ Chorus *Ultra-fast broadband on the horizon for Greymouth* (media release, 17 December 2013).

¹³¹ NWS Report at section 4.4.

¹³² Vodafone *Cross-submission on further consultation papers on issues relating to determining a price for Chorus' UCLL and UBA services under the Final Pricing Principle* (30 April 2014) at section E.

that there may be opportunity to understand further information through engagement with other utility service providers.

Recommendation 20 The Commission must ensure an appropriate level of infrastructure sharing in the MEA, including internal sharing with Chorus network and use of third party infrastructure which reflects international best practice.

G6 Cost allocation - principles

- G6.1 The Commission's high level aim for cost allocation of shared and common costs relevant to UCLL is that the costs allocated lie in the range between stand-alone and incremental costs. Whilst Vodafone supports this general approach, we share WIK's concern that the Commission appears to be interpreting 'incremental' as 'directly attributable'.¹³³ Costs for which drivers cannot be identified would under this interpretation be considered shared and so allocated as common costs.
- G6.2 However this could be inconsistent with the TSLRIC concept of determining the cost for a *total service increment* as a function of the capacity of the increment, treating all production factors as variable. As WIK notes, the Commission's approach as "*in part adheres to such a view, nevertheless it also appears to consider that a substantial part of network cost is shared in the sense that cost allocation rules not based on identifiable cost drivers are required.*"¹³⁴
- G6.3 The Commission could be more specific on when cost drivers are considered 'identifiable'. As drafted, it appears that specific hardware must be visible as directly used and exclusively for a particular service.
- G6.4 This is in contrast to the approach to identifying cost drivers in other jurisdictions, in which the total service increment is considered, along with how that increment drives the total size of the network. As WIK observe:¹³⁵
- With bottom-up modelling one is then in a position to show the causal relationships between variations in the size of the total service increment and variations in the size of the network, these relationships expressing the effect of concretely identifiable drivers of the cost of that network. Since in general any particular service segment contributes to the size of the total service increment the same as any of the other service segments, each and all of these service segments are equally drivers of that costs so that they have to bear that costs in an equal fashion.*
- G6.5 Further, in contrast to the analysis in at [261] – [273] of the Proposed Views Paper, the actual approach set out by the Commission to network cost sharing for UBA and partially also for UCLL appear consistent with the more common interpretation of identifying cost drivers for cost allocations under TSLRIC, using input and output-based indicators, which is in line with international best practice.¹³⁶
- G6.6 The proposed cost allocation approach that does not however appear in line with best practice is use of the Shapley/Shubik game theory method to determine network costs that are not directly

¹³³ WIK Report at [75].

¹³⁴ WIK Report at [75].

¹³⁵ WIK Report at [77].

¹³⁶ Proposed Views Paper at [274] – [281] and tables 2 and 3.

attributable to the UCLL and other network services. For a more detailed exposition of the shortcomings of this approach, please see WIK section 4.5.3, that:

- (a) Includes a ('*simplified and overdrawn*', in order to illustrate their point) worked example of how under certain circumstances, the Shapley/Shubik method can result in a total cost that is a substantial underestimate compared to the sum of stand-alone costs, and so would obviously be favoured by incumbent operators seeking to achieve a higher regulated price for regulated unbundled service. In contrast, WIK demonstrate how using the relative intensity of use of services as a cost driver leads to a more appropriate cost allocation.
- (b) explains that the Shapley/Shubik approach is not compatible with the accepted competitive standard of an efficient new network operator entering under competitive conditions and configuring a network to optimise service provision across all services to be offered and across all areas – as a single optimisation, rather than as multiple discrete decision steps.

G6.7 This latter drawback is a reason the Shapley/Shubik method was rejected by for example the Danish telecoms regulator.

G6.8 In summary, we suggest that the Commission could be more specific in stating its preferred theoretical approach to cost allocation of shared and common costs, and ensure the approach as stated then clearly informs each applied cost allocation exercise.

Recommendation 21 The Commission should be more specific in stating its preferred theoretical approach to cost allocation of shared and common costs, and ensure the approach as stated then clearly informs each applied cost allocation exercise.

G7 Adjustments – modelling both a FTTH/FWA as well as a copper network for UCLL

G7.1 The Commission has indicated that it intends to a model both FTTH/FWA as well as a copper network for UCLL.¹³⁷ We support this approach, subject to the following recommendations:

- (a) the Commission should be explicit that it will adopt the least cost solution (which is required under an orthodox approach to TSLRIC pricing);
- (b) the Commission should ensure that the copper network is modelled with the same optimisation and efficiency considerations that apply to the fibre and FWA model more generally (as well as including sufficient flexibility in the copper model to enable testing the efficiency improvements of a modified scorched node approach);
- (c) the Commission should include a FWA component in the copper network it models also (if, for example, a copper and FWA solution is the lowest cost approach to delivering the UCLL service, then this reflects the appropriate TSLRIC price).

¹³⁷ Proposed Views Paper at [180].

G7.2 We refer the Commission to the analysis of WIK at section 2.3 of their expert report for further detail on this point.

Recommendation 22 When modelling both FTTH/FWA as well as a copper network for UCLL, the Commission should be explicit that it will adopt the least cost solution, should ensure that the copper network is modelled with the same optimisation and efficiency considerations that apply to the fibre and FWA model more generally and should include a FWA component in the copper network it models.

G8 Depreciation

G8.1 The Proposed Views Paper suggests that the Commission's current preference is to apply a tilted annuity approach to determining both depreciation and the cost of capital. While we support this approach, we request that the Commission extends the accuracy of its approach by including an adjustment factor for expected price, as well as for demand changes.

G8.2 Static demand is not required for proper application of the tilted annuity approach. Instead, including a tilt for demand changes requires a stable demand profile. The volume of services provided by an asset must be estimated using forecasts, where the demand total increases (or decreases or remains static) for each of the time periods modelled. Similarly, the price of services can be expected to change over time. As such, Vodafone support's WIK's recommendation that the Commission adopt a constant average expected price change.¹³⁸ A tilt that takes into account expected future price changes will backload amortisation if the expected average price change is positive, and will frontload amortisation if the expected average price change is negative.

G8.3 In summary, we submit that the tilted annuity approach is appropriate, but should be improved upon by including an adjustment factor to take account of reasonably expected future price and demand variations.¹³⁹

Recommendation 23 The Commission should improve the tilted annuity approach it proposes by including an adjustment factor to take account of reasonably expected future price and demand variations.

G9 Taxation

G9.1 Using a tax-adjusted TSLRIC formula is an accepted necessity given NZ tax law treatment of asset valuations. Tax adjustments should be made within the WACC formula, as corporate taxes impinge on the return on equity capital.

G9.2 Vodafone supports WIK's questioning of the Commission's treatment of asset values, and thus requests that the Commission supply greater clarity on this point.¹⁴⁰

¹³⁸ WIK Report at section 4.2.

¹³⁹ See WIK Report at section 4.2 for further information.

¹⁴⁰ WIK Report at section 4.3.

Recommendation 24 The Commission should provide greater clarity on its treatment of tax adjustments within the WACC.

G10 TSLRIC profile for UCLL and UBA services

G10.1 As noted above with reference to depreciation, depreciation varies from period to period based on expected changes in the prices of the network elements. As set out in the WIK Report, it follows that prices based on the related cost components will therefore vary across time periods.¹⁴¹

Recommendation 25 The Commission should allow TSLRIC price profiles for UCLL and UBA services to vary across time periods.

¹⁴¹ WIK Report at section 4.4.

H Summary of Vodafone's recommendations

H1.1 Vodafone makes the following recommendations:

Recommendation 1	The Commission should release its model and modelling documentation for consultation, prior to finalising the model design and parameter inputs necessary for its Draft Determination. Consultation on modelling detail is consistent with the Commission's original process intent and best practice transparency in regulation.
Recommendation 2	The Commission should precisely identify the reasonable investor expectations that will be decisive to its exercise of discretion under s 18.
Recommendation 3	The Commission should provide evidence of the basis for these expectations and whether they can be considered reasonable in light of this evidence.
Recommendation 4	The Commission should provide further explanation of the connection between these evidenced expectations and its statutory objectives under s 18.
Recommendation 5	The Commission should confirm a five year regulatory period for its TSLRIC modelling and that the same period should apply for both the UCLL and UBA service.
Recommendation 6	The Commission should make no specific relativity adjustment absent compelling evidence that further unbundling would encourage investment that can be considered efficient, when assessed against the Commission's preference for promoting dynamic efficiency benefits.
Recommendation 7	The Commission should not give weight to positive network externalities arising from migration to UFB without explaining both the basis on which it has accepted that they will result and how they are weighed within the broader consideration of efficiencies that is required by s 18.
Recommendation 8	The Commission should consider re-use of Chorus assets as consistent with the objectives of s 18 recognising that a dual-asset valuation approach is considered an orthodox component of LRIC modelling by European regulators as it supports the outcomes which TSLRIC is intended to deliver, and a hypothetical efficient operator deploying an MEA network in New Zealand would engage in considerable asset sharing.
Recommendation 9	The Commission should proceed with its proposed view provide a preliminary decision on backdating (if any) in its draft determination.
Recommendation 10	The Commission should, as it suggests, review the routing table (which underpins cost allocation) during the regulatory reset process.
Recommendation 11	The Commission should ensure that the number (and structure) of access lines which inform the dimensioning of the access network should equate to the access lines that bear cost allocations.

- Recommendation 12** The Commission should take an approach to optimisation that delivers efficient outcomes that a hypothetical efficient operator would be expected to achieve. Only then will the model provide results that do not distort build or buy decisions.
- Recommendation 13** The Commission must ensure that the model provides sufficient flexibility to allow for efficiency improvements due to incrementally changing the number of ODFs, the efficient placement of cabinets in the case of the reference copper network architecture and for efficient local access areas at a given number of ODF nodes.
- Recommendation 14** The Commission should model a single, integrated MEA to determine TSLRICs of the UCLL and UBA services, because there is no legal constraint from it doing so and such a network would reflect what a hypothetical efficient operator would deploy.
- Recommendation 15** The Commission should not arbitrarily confine the "edges" of the modelled network to the current and projected RBI fixed wireless footprint.
- Recommendation 16** The Commission should use the cost model to determine the relevant coverage area for FWA in the hypothetical, because a TSLRIC FWA MEA should reflect the area in which it is more efficient for the hypothetical network to be deployed using FWA as opposed to a FTTH or another fixed line solution. The Commission must ensure that the model ensures sufficient flexibility to test this.
- Recommendation 17** The Commission should take an aggregated approach to mapping the local loop costs to services, taking into account that SLU-based competition in New Zealand is highly unlikely.
- Recommendation 18** The Commission must address how to adjust for SLU prices if the FTTH MEA proves, on modelling, to be less costly than the FTTH MEA .
- Recommendation 19** The Commission should consider improved sources of geological and geographic data, including Landcare's datasets, to estimate trenching costs.
- Recommendation 20** The Commission must ensure an appropriate level of infrastructure sharing in the MEA, including internal sharing with Chorus network and use of third party infrastructure which reflects international best practice.

- Recommendation 21** The Commission should be more specific in stating its preferred theoretical approach to cost allocation of shared and common costs, and ensure the approach as stated then clearly informs each applied cost allocation exercise.
- Recommendation 22** When modelling both FTTH/FWA as well as a copper network for UCLL, the Commission should be explicit that it will adopt the least cost solution, should ensure that the copper network is modelled with the same optimisation and efficiency considerations that apply to the fibre and FWA model more generally and should include a FWA component in the copper network it models.
- Recommendation 23** The Commission should improve the tilted annuity approach it proposes by including an adjustment factor to take account of reasonably expected future price and demand variations.
- Recommendation 24** The Commission should provide greater clarity on its treatment of tax adjustments within the WACC.
- Recommendation 25** The Commission should allow TSLRIC price profiles for UCLL and UBA services to vary across time periods.