Spark New Zealand

Further draft pricing review determination for Chorus' UBA and UCLL services

Submission | Commerce Commission

13 August 2015

Contents

Executive Summary

1. The Commission's further draft determination updates the Commission's previous views on monthly recurring charges for the UCLL and UBA services and backdating, and provides draft prices for non-recurring UCLL and UBA the first time.

Monthly recurring charges for UCLL and UBA continue to be higher than in comparable countries

2. The Commission proposes monthly recurring charges for Chorus' UCLL service that are, on average, materially similar to those proposed in its December 2014 draft determination. It proposes monthly recurring charges for Chorus' UBA service that are, on average, higher than those proposed in its December 2014 draft determination.

3. In our submissions on those previous draft determinations, we observed that the Commission's proposed UCLL charge was 80% higher than the median of charges observed in other countries. We challenged the Commission to explain to New Zealanders why we should pay more for broadband and voice services than in other countries. 52,000 New Zealanders agreed with us that the proposed prices were not on, and made individual submissions to the Commission.

4. That's a powerful reminder of how important this process is to New Zealanders, and to New Zealand, and makes it even more disappointing that the Commission's further draft UCLL and UBA recurring charges have not come down in any appreciable way to improve the competitive outcomes this process seeks to achieve.

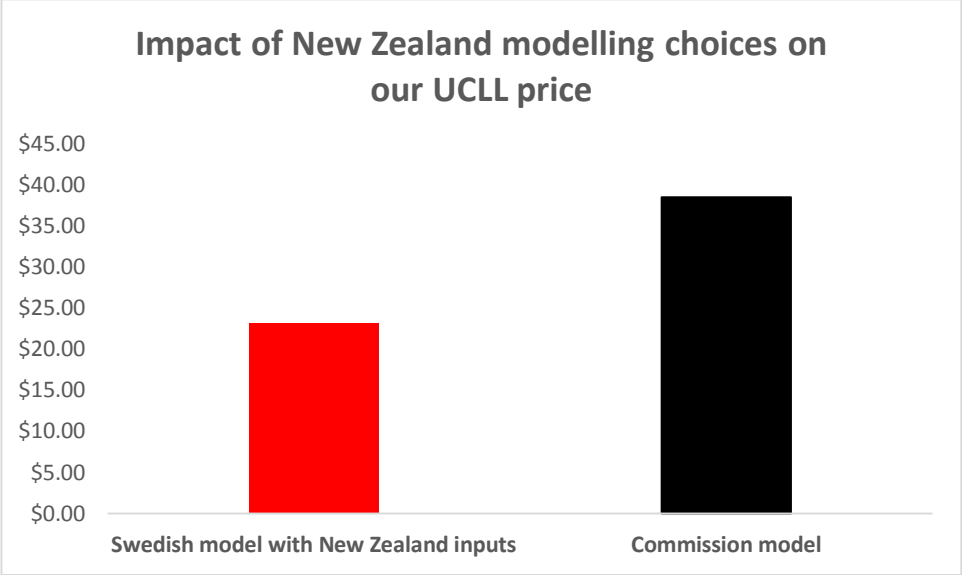
5. The New Zealand Government is funding the replacement of Chorus' copper access network. As a result Chorus' investment in the copper access network is reducing rapidly, and its share of investment in replacement fibre infrastructure is committed. The copper access network is in wind-down. These factors should tend towards lower, not higher prices for that copper access network, maximising usage of that network. Instead the Commission is asking broadband and voice customers to pay more than they do now for this infrastructure.

6. Broadband connectivity is critical to our country's economic and productivity growth. It is critical to our social cohesion and connectivity, and it is a key tool in addressing social and economic inequality. Higher broadband prices will result in fewer New Zealanders having access to broadband, and it will result in lower utilisation of broadband. If we are to regulate for higher prices, we need to pretty darn sure of ourselves that this is absolutely necessary.

We are not convinced the Commission is correct in claiming New Zealand specific factors explain these higher charges

7. The Commission has commissioned TERA to report on the key causes of this disparity, and has concluded that it is New Zealand's spatial dispersion and higher trenching costs that explain the Commission's higher charges. This is a surprising conclusion, given TERA was unable to provide any clear evidence as to spatial dispersion levels in any of the countries considered. We consider the more likely explanation is the modelling choices made by the Commission.

8. Of the four other countries considered by TERA, the Commission has identified Sweden as the most comparable country to New Zealand for UCLL benchmarking purposes. We asked independent experts WIK to adjust the Swedish UCLL model for the New Zealand-specific trenching cost and lengths in order to test the Commission's conclusion that it is these factors which explain our high costs. WIK found, despite taking care to make a conservative estimate, that the cost from the Commission's model is some 65% higher than the cost estimate based on the Swedish model adjusted for New Zealand-specific inputs.



9. This reinforces our conclusion that the main factors driving the higher costs in New Zealand are modelling choices the Commission has made.

The Commission's conventional TSLRIC model is not supported by the Act

10. Throughout the process, the Commission has adopted specific objectives that are not supported by the Act and used these to determine its key modelling choices. In July 2014 it was "reasonable investor expectations". In December 2014 it was "predictability". At each stage, submitters advised that these were not lawful objectives under our Act. Each time the Commission resiled from them. Despite these significant changes in its guiding objective, the Commission's key modelling choices have not changed through this process.

11. In this further draft determination, the Commission relies on "conventionality" as the key determinant of its modelling choices. Again, its key modelling decisions have not materially changed. This reliance on conventionality repeats the same error, because conventionality is no more an objective of our Act than investor expectations or predictability were.

12. Section 18 of the Act and the TSLRIC definition in the Act work together to establish a clear efficiency objective. Competition for the long-term benefit of end-users is promoted by ensuring the prices for these monopoly services are based on the recovery only of forward-looking efficient costs. Prices based on efficient costs provides all the right competitive market signals and incentives. This is the objective the Commission should use to make its modelling choices, and this time it must show how a shift in its decision-making framework affects its key modelling choices.

This will change key modelling choices made by the Commission

13. The Courts have considered section 18's efficiency focus several times already, and have concluded that:

    a. It is an error not to reflect the capability of new mobile technologies where it is efficient to do so, or to limit their application to an arbitrary extent; and

    b. It is an error of law to use a model or methodology that artificially inflates costs above their efficient value or that includes costs that would not in reality be incurred in providing the service.

14. We are concerned that a number of the Commission's modelling choices are inconsistent with these directions. We believe that applying an efficiency focus as required by the Courts will have a significant effect on key modelling choices made in the further draft determination:

    a. **Only Chorus' efficient costs will be recovered**: "conventionality" is the only explanation for the Commission's choice of ORC for Chorus' re-useable assets. Allowing Chorus the benefit of revaluing these assets as if they were new is unsupportable where it can be shown that Chorus will not in fact replace them;

    b. **Greater use of fixed wireless:** an efficient operator would apply a commercial cost/performance trade-off in determining which network architecture it uses to supply particular geographic areas. It would not support multiple architectures in the same geographic areas as the Commission proposes and it would not ignore material cost savings in order to provide an "unbundleability" capability that was never going to be used by its customers;

    c. **No recovery of costs that third parties have already covered**: UFB and RBI subsidies received by Chorus have and will pay for replacement of much of Chorus' network. Compensating Chorus as if it had replaced those assets itself asks end-users to pay for those same assets twice;

    d. **Reduction in corporate overheads:** "non-network costs" have doubled in size in the Commission's revised UCLL draft determination, to a level that no efficient operator would accept, and with no explanation whatsoever by the Commission or TERA.

The majority view on backdating is supported by economic theory and empirical evidence

15. The Commission is not required to backdate *ex ante* FPP decisions under our Act. In fact, backdating is conceptually incompatible with *ex ante* regulation. The Act is equally clear that in exercising its discretion, any decision to backdate must only be made where it can show that decision would lead to net efficiencies that benefit end-users.

16. The only possible efficiencies arising from backdating come from the *expectation* of backdating. Even if an FPP price is more accurate than an IPP price, retrospective application of that FPP price cannot "correct" decisions made before that FPP price is struck. And for the expectation of backdating to lead to efficiency benefits, parties need to have been able to:

    a. Correctly predict that backdating will take place; and

    b. Correctly predict the point in time at which backdating would apply; and

    c. Correctly predict the price that will be backdated; and

    d. Be in a position to act, and make decisions, as if that price was in place.

17. These conditions do not exist in this process. Whether to backdate remains a live and controversial issue – so much so the Commissioners remain split on whether to backdate or not. This revised draft determination represents the first draft determination on the question of backdating. The backdating dates considered are two years apart. The FPP prices remain the subject of considerable disagreement and debate. In fact, this will be the first time the Commission has ever set FPP prices for any service. No party has been able to confidently predict the backdating outcome, and no party will be able to before the conclusion of this process.

Non-recurring charges perpetuate Chorus inefficiencies

18. The Commission's draft non-recurring charges are based on a top-down modelling approach, with an efficiency adjustment applied to only one of the seven cost components identified by TERA.

19. This approach assumes a high degree of efficiency in Chorus' delivery of connection and fault restoration services today, and its service company model.

20. While we can agree that Chorus' use of independent and competing service companies to perform field service activities will result in a competitive (and therefore efficient) price for those activities overall, it tells us, and the Commission, nothing about whether:

    a. Chorus' individual non-recurring charges are efficient; or

    b. The overall quantum and volume of field service work required by Chorus is efficient.

21. In fact, we assume the opposite – the nature of the agreements Chorus has with its service companies makes it inevitable that the prices for some field service activities will cross-subsidise the prices for others. We have seen in the last few years, for example, Chorus reporting significant efficiencies in service company costs for fibre-related activities. In the same time, service company costs for copper-related services have increased. The Act does not permit the Commission to import these cross-subsidies into TSLRIC prices.

22. Similarly, we assume that the aggregate of the field service activities carried out by Chorus and its service companies is inefficient. We know the level of faults in Chorus' aging copper access network is not efficient. While the Commission has attempted to adjust for this, it has done so in a way that does not make logical sense. We also know that poor network records and capacity management practices mean that retail service providers (**RSP**s) routinely pay Chorus for service company cabinet/exchange visits or customer site visits which are entirely unnecessary.

23. To demonstrate this efficiency, we worked with Vodafone and M2 to review 450 instances of new UBA orders the three of us had submitted to Chorus over the last month. We found that:

    a. At least one in four visits by service company technicians to a cabinet/exchange should not have happened; and

    b. At least one in seven visits by service company technicians to a customer's premises should not have happened.

24. In each of these instances Chorus charged the gaining RSP for a cabinet/exchange visit, or a customer premises visit, to connect a UBA service even though one of the other RSPs had a working UBA service on that same line in the past 5 months. The only reasons we can identify to explain these charges are that:

    a. Chorus' records did not correctly record the fact the line already had a working UBA service on it (which would be a clear inefficiency); or

    b. Chorus had disconnected the line or DSL port to address insufficient network capacity, in which case Chorus is using non-recurring charges paid for by RSPs and our end-users to pay for a network management activity that it should pay for using the monthly recurring charges it receives for the UCLL and UBA services (which would be a double recovery).

    A top-down modelling approach to NRCs requires extra vigilance and rigour. Our independent experts advice is that this rigour and vigilance isn't always applied in the Commission's modelling.

Introduction

1. Thank you for the opportunity to comment on the Commerce Commission's (**Commission**) further draft pricing review determinations for Chorus' UCLL and UBA services (**further draft determination**).

2. We support the Commission's underlying approach - it is tasked with identifying efficient forward looking costs. However, where the Commission gets into trouble is that it constrains its assessment of efficient costs. The Commission has adopted what it terms a "conventional" approach as its guiding light rather than focus on assessing the efficient forward looking costs that underpin the FPP requirements.

3. Further, our advisors report that the draft model still includes errors and omissions, and is based on methodological choices that in themselves result in inefficient costs. The impact of these choices can be seen in benchmarking - proposed monthly charges continue to be significantly higher than those we observe in countries we compare ourselves to. WIK report that proposed connection charges appear to be, on average, 46% higher than those seen in European markets.

4. The proposed approach results in high prices, but the proposed methodology also undermines Chorus incentives to be efficient. Chorus has little incentive to, for example, innovate or invest in performance when the expected upside of these initiatives is already built in to proposed prices.

5. In this submission, we:

    a. Comment on the Commission's overarching approach;

    b. Consider a range of key modelling parameters - assumed technologies, asset valuation and operating costs;

    c. Engage with the Commission for the first time on its approach to non-recurring charges; and

    d. Consider the majority and minority Commission views on backdating.

6. We also attach independent reports from:

    a. WIK-Consult (**WIK**) and Network Strategies (**NWS**) commenting on specific aspects of the Commission's revised draft and approach; and

    b. DotEcon who we have asked to consider the Commission's proposed approach to backdating.

The regulatory framework

7. Identifying the costs that go in to a regulatory model requires any number of choices to be made. The Commerce Commission has chosen to develop a framework to guide it in its decision making – with the intent of enabling it to make a consistent set of choices that will deliver the outcomes required by the Act. In other words, the framework is the foundation on which the identification of efficient costs sits.

8. The framework underpins the legal task. It helps the Commission to continue asking itself the right question – am I making the choice that fulfils my statutory obligations?

9. We support and agree with a number of the choices the Commission has made in articulating the revised regulatory framework in its revised draft determinations. But there are a number of choices the Commission has made, which are not consistent with the

statutory obligations imposed upon the Commission. Despite the stated principles in the Commission's framework, there are choices the Commission has made, which are inconsistent with those very principles. We highlight where the effect of those choices indicates the Commission is trying to answer a different question to what it suggests it should be asking of itself. Those issues concern us most.

10. In summary, as explained in this section, the key legal error under the Commission's framework, which affects various material choices, is that it has:

    a. Rigidly adhered to its chosen "conventional TSLRIC" model of an efficient new operator building a network from scratch; and

    b. Therefore failed to constantly ask or check whether the implementation of that model properly implements TSLRIC interpreted in light of section 18.

The Commission is tasked with identifying efficient costs

Commission's draft view on FPP objectives

11. In its revised draft determinations, the Commission sets out its understanding of the framework within which it must make its modelling choices:

    a. It is required to apply TSLRIC as defined in the Act (paragraph 89));

    b. TSLRIC is broadly defined and the Act provides only limited practical guidance on how to interpret and apply the various components of TSLRIC (paragraph 92);

    c. There does not appear to be any clear link between the Commission's individual modelling choices and the s18 purpose statement (paragraph 161);

    > "…in practice, there do not appear to be any strong and unequivocal ways in which many of our individual modelling choices can promote competition in telecommunications markets for the long-term benefit of end-users"

    d. Commonly understood TSLRIC purposes similarly cannot help to inform those key TSLRIC modelling choices other than by way of cross-check (paragraph 127,129); and

    > …we have found in practice that some of the [TSLRIC] objectives/outcomes … are of limited relevance … their greatest role has been a cross-check.

    e. Instead, the Commission will make those choices informed by (paragraph 93):

    > …the conceptual economic underpinnings of the TSLRIC concept.

12. After discounting the relevance of any s18 or TSLRIC statutory purpose, the Commission is left with only specific legislation definitions and its interpretation of the "conventional" application of TSLRIC to guide its decision-making process in respect of key modelling choices. Its interpretation of a "conventional" TSLRIC framework pre-determines some of the key individual modelling choices it must make.

> … the conventional economic framework for implementing TSLRIC is to postulate a hypothetical efficient operator building and operating an entirely new network using modern assets to provide the relevant regulated services.

Giving meaning to TSLRIC in a way appropriate to NZ circumstances

13. We agree with the Commission that its legal framework is characterised by a mixture of legislative definitions, economic concepts, and statutory purposes (i.e. s18 of the Act).

14. The Commission has rightly changed a number of its previous views that were subject to criticism. In particular, it has stepped back from the reliance on a "predictability" and "orthodox" approach. The Commission has also amended some of the legal interpretations that were questionable – such as the draft view that it was legally constrained to select a copper MEA for UBA.

15. The Commission has followed an approach to TSLRIC (consistent with that previously submitted by Spark) that TSLRIC should be defined with reference to economic concepts. Therefore, economic evidence will guide how TSLRIC is applied. However, the Commission has then failed to apply contextual analysis to its economic thinking, at odds with the purpose of the Act.

16. The Commission argues that because it has a statutory duty to apply TSLRIC, it is unable to give effect to the criticisms of TSLRIC or guard against the distortions inherent in a conventional implementation of TSLRIC that have been highlighted by the European Commission (**EC**) and Australian High Court and Australian Competition and Consumer Commission (**ACCC**). It argues that the EC and ACCC have the flexibility to implement alternatives to TSLRIC that we do not have in New Zealand. But that position is not supported by any legal obligation.

17. In our view the Commission must take note of the clear distortions flagged by its overseas peers and ensure that when it implements TSLRIC in New Zealand it does so in a manner that best gives effect to section 18 of the Act. That requires it to avoid distortionary effects when making each of its choices, as any distortion factored into the model compromises its ability to give effect to section 18. That is especially the case if the choice it makes is guided by “conventional” thinking - it would be wrong to end up in a position down the track (following a series of conventional choices) which:

    a. Rewards the incumbent for inefficient past decisions;

    b. Creates windfall gains; or

    c. Creates incentives for inefficient by-pass.

18. There is a real risk that these erroneous outcomes come to bear if the Commission does not consistently ask itself the right questions along the way – especially if it rigidly adheres to a conventional approach to the exclusion of a proper application of TSLRIC interpreted in the context of section 18.

19. It appears that in places the Commission has sought to mechanically step through and interpret words in isolation (and not by situating them in their intended context and in light of the relevant statutory purpose). That has resulted in a strained interpretation that is not appropriate for a modern, efficient TSLRIC model.

20. The better approach is to give less weight to “conventionality” and more weight to an interpretation that best achieves the outcomes and purpose we are seeking to give effect to in New Zealand today. This will entail a forward-looking approach that: embeds the most efficient modern day practices of operators unencumbered by legacy positions of market power; and which models the capability of current, modern wireless technology as a starting point – not as a fringe filler.

21. The distortions that a mechanical adherence to a conventional TSLRIC approach could create are clear to see and have been highlighted by the EC[1] and ACCC.[2] The Commission has not been sufficiently mindful of those criticisms of a conventional TSLRIC approach. As a result it runs the risk of mis-applying TSLRIC and failing to give best effect to it in the New Zealand context.

22. Some aspects of the Commission's revised approach are consistent with Spark's previous arguments. In particular, we acknowledge that the Commission has now specifically recognised that part of its task includes "preventing monopoly pricing", "providing incentives for the service provider to minimise its costs", and "setting prices to allow the service to recover only costs efficiently incurred, including through providing a normal return on efficient investment". The Commission states that it will use these objectives/outcomes as a cross-check to ensure that its modelling decisions do not undermine these objectives[3].

23. But we are concerned at how ineffectual these cross-checks appear to be. They appear to have almost no effect, for example, in the Commission's treatment of asset valuation/re-use (discussed below). It's entirely unclear to us how a cross-check – a test to ensure that only efficiently incurred costs of a network deployed by a HEO today are captured – would allow in such a large volume of legacy assets at full ORC value.

24. In our view, the correct approach is a framework that relies primarily on s18 to give meaning to TSLRIC in a way that is appropriate to New Zealand-specific circumstances rather than one that relies primarily on "conventional" economic concepts developed in a vacuum:

    a. Contrary to the Commission, we see a clear and unambiguous link between s18, TSLRIC, and the Commission's key modelling choices, with prices being set to allow the recovery of efficient costs being the over-riding common objective; and

    b. Contrary to the Commission, we believe s18, the statutory context of TSLRIC and "forward-looking" direct and limit the use of economic concepts. What is "conventional" in the application of a particular economic concept or concepts is irrelevant. The Act is concerned only with the use of economic concepts that best achieve the statutory objectives set out in the Act. That is, the Commission is directed to use those economic concepts in a way that best assists in setting efficient prices, based on efficient costs, which create efficient market signals and incentives on real-world operators in New Zealand. That is how the overarching purpose of promoting competition is intended to be achieved when regulating monopoly bottleneck services.

25. We support and agree with other conclusions and decisions of the Commission too. It should abstract away from Chorus' actual costs in order to identify efficient forward looking costs. It should undertake a thought experiment using hypothetical tools (HEO and MEA) to identify efficiencies that Chorus has not realised to date because of its actual network and costs.

---

[1] *Commission Recommendation of 11.9.2013 on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment*; European Commission.

[2] ACCC, *Pricing principles and indicative prices for LCS, WLR, PSTN OTA, ULLS, LSS 1 August 2009 to 31 December 2010*, December 2009, p.13.

[3] See Table 1 at page 34 of the Further Draft Determination for UCLL.

26. But again we are concerned that the Commission doesn't apply these principles appropriately to its model choices. Rather than use concepts such as MEA as a tool to assess efficient costs, it has given them a life of their own even when they are clearly not helpful for identifying efficient outcomes. It has termed this the "conventional" approach to TSLRIC.

27. There have been a number of implementations of TSLRIC pricing internationally and all are different. This is what you would expect as NRAs apply TSLRIC to their national circumstances. If anything, this tells us that TSLRIC cannot be applied in isolation from the market and circumstances. Yet this is what the Commission seeks to do by applying a "conventional" TSLRIC approach.

28. It is an error of law, under a framework, that requires the determination of the efficient costs of Chorus providing the UCLL service, for the Commission to exercise its discretion to adopt a model that allows for the recovery of costs on legacy assets that either will not be incurred, or have already been recovered, by Chorus. As articulated below, by electing to rely on a model that does not prioritise efficiency (indeed, quite the opposite), the Commission is acting in complete contradiction of the overarching statutory purpose embodied in s18.

The Act requires a focus on efficiency

29. TSLRIC is a regulatory approach that has been applied overseas. It is accepted practice that TSLRIC seeks to identify efficient forward-looking costs in order to create incentive-based pricing to drive incumbent monopoly access providers to efficiencies in operation. In doing so it sets efficient signals for downstream providers dependent on inputs from incumbents, thereby promoting competition for the benefit of end users.

30. TSLRIC is all about efficiency. First, it is a tool to enable regulators to postulate what competitive provision of the regulated access service would look like if a rational efficient operator entered the market today. What are the competitive technologies that would be deployed? How would the most efficient network be designed? What would the most efficient cost structure be? Secondly, a TSLRIC exercise is by its nature forward-looking. What would the network look like if we built it today? And what would it not look like? What costs would actually be incurred going forward? What costs are sunk and not relevant to the exercise?

31. It requires an efficiency mindset – a leaner, more critical and more outcomes focussed enquiry than that which the legacy access provider would have had historically or may still have today. That's what a competitor would bring to a competitive market and that's what creates incentives for the access provider to innovate.

32. Regulators have applied TSLRIC in a number of ways, depending on the circumstances of the time and market in which services are regulated; nonetheless, the over-riding question that the Commission must constantly be asking itself is how to apply the TSLRIC objectives is to identify prices based on efficient costs. This is how Parliament intended the Commission to promote competitive outcomes for the benefits of end users. This makes the Act, TSLRIC regulatory approach and s18 all consistent – they all seek to promote efficient outcomes.

33. It means that, in order to discharge its statutory obligations (and to be seen as promoting sound regulatory outcomes) the Commission must at all times ask itself whether the choices it makes:

    a. Is the most efficient choice a competitive operator would make;

b. Would enable it to give best effect to section 18; and

c. Would more effectively identify only efficient incremental costs costs than alternative choices which might be available to it.

Definition of TSLRIC

34. The further draft determinations set out the Commission's interpretation of the key elements of the TSLRIC definition.

35. At a high level it appears to us that the Commission has been overly focused on academic meaning ascribed to a number of terms and failed to ask the correct efficiency questions set out above.

36. As discussed below (the TSO case section), this could amount to an error of law.

Forward-looking costs

37. The revised draft determination notes two separate definitions it has given "forward-looking costs":

    a. A 2002 definition, which references "…*costs* ***that will be incurred****…*"(our emphasis); and

    b. A 2013 definition, which references "…*costs that a network operator* ***would incur****…*" (our emphasis).

38. The Commission then notes that:

> *"…historic costs that have already been incurred, and the accounting costs that are recorded in a business' financial accounts, are* ***not necessarily*** *the same as forward-looking costs…" (our emphasis)*

39. We agree that forward-looking costs:

    a. Must be costs that the access provider can reasonably be expected to incur within a reasonable (finite) period; and

    b. Can, in some but not all circumstances, include historic costs, or "renovated" historic costs adjusted to reflect extended economic life due either to technology change or the effect of additional expenditure.

40. It follows that costs that an access provider will never incur cannot meet the definition of forward-looking costs. This may be because those costs:

    a. Will be borne by a third party;

    b. Are recovered by another element of the regulatory framework (or by unregulated services); or

    c. Can be avoided or substantially avoided through prudent asset management based on information and technologies available today (even if they are substantially different to technologies available when the access provider first deployed a regulated service).

41. In the latter case above, the true "forward-looking" cost will be the incremental investment required by the access provider to extend the lifetime of existing assets in order to support continued use.

42. Forward-looking costs are only those than an efficient operator would incur.

    a. It must expressly exclude those an efficient operator would not incur when deploying a network today;

    b. It must expressly consider the most efficient (and accordingly cheapest) technology that would be deployed and then work backwards to any existing legacy network assets required to supplement the modern network;

    c. It must not lock-in historic asset classes or network design choices that would be regarded as economically inefficient in a deployment today; and

    d. Limited optimisation at the edges of the existing network would not necessarily be consistent with forward-looking costs – unless supported by economic / commercial evidence that the existing choices are the most efficient.

43. The MEA construct fails if it includes costs that Chorus will not incur. How can an efficient operator enter a market if it is encumbered with costs that the inefficient incumbent does not face?

44. The concept of forward-looking plainly does not encompass:

    a. A licence to revalue all or the majority of the incumbent's network at current replacement costs; or

    b. An ability to create wealth transfers.

45. But it appears the Commission has a different interpretation of forward-looking, which is not expressly articulated in the revised draft determinations.

46. In explaining the relevance of "forward-looking" to its key modelling choices, the Commission contrasts "forward-looking" costs with "backward-looking" or "historical" costs. This distinction does not address the question of costs that can be avoided or substantially avoided through prudent asset management. Treatment of these costs is a key modelling choice for the Commission, and the definition of forward-looking costs is central to it, but the Commission does not explore this distinction in its explanation of its interpretation of "forward-looking costs". If the Commission disagrees with our characterisation of forward-looking costs, it needs to provide urgent clarification on its interpretation of this concept.

47. The Commission should also think of "forward-looking" more broadly, as a means to identify lower costs to deliver the service today than those historically incurred by the Access Provider. The words of the majority of the Supreme Court in the *Vodafone* case are instructive for the Commission.

> "… [70] It is sensible to revalue on an optimised basis, say, a switch by attributing to it the lower value (price) of a new switch which performs the same or better function but is able to be acquired at a lesser price. It is quite another to attribute a modern equivalent value to an old asset which is not actually being replaced and for which no replacement would sensibly be introduced. All this does is to

> artificially inflate the value of old asset and provide a windfall for the firm of an enhanced return on and of capital employed."[4]

48. Put simply, forward-looking is a way to identify efficient costs. It should not be applied in a way that creates or locks-in distortions.

Over the long-run

49. The Commission defines the "long-run" in terms of:

    a. Classical economic theory, which posits a sufficiently long length of time, such that all costs are considered variable;

    b. The ACCC, which refers to a period of time in which "all necessary investments must be replaced"; and

    c. Baumol, who refers to "the very long-run" as a "period so long that all of a firm's contracts will have run out, its present plant and equipment will have been worn out or rendered obsolete and will therefore need replacement…"

50. It concludes the "long-run" is a sufficient period of time such that all factors of production are variable (i.e. the classical economic theory). We prefer Baumol's characterisation of this approach as the "very long run", which is arguably more consistent with the definition of TSLRIC.

51. It seems that there is a risk that the Commission's approach to the long run has tended to result in costs being included that should not be – particularly sunk and reusable assets. Assets which in the long run would not, on a forward-looking basis be replaced, do not warrant a value.

52. Long run as the Commission appears to have applied it simply uplifts the "pure" economic concept of the long run without considering the use of it in our TSLRIC context. It pays little heed to context.

53. This is not to dispute the Commission's summary of the classical economic concept of "long-run". Generally, absent any other setting, the long run is an imprecise concept to contrast with the short run. In isolation, it doesn't reflect the real world nor apply in a practical manner. There is no formal definition in economics of the "long run".

54. The New Palgrave Dictionary of Economics[5] notes that the concept of the long run has been used in relation to a range of different methods of analysis and of new concepts of equilibrium. These changes have "depriced the terms of a uniform meaning" and "been a source of confusion and misunderstandings in recent debates on theoretical and applied work. In other words, more broadly, the concept is context driven and needs to be applied in a way that exposes the issues in debate.

55. As noted above, the ACCC have stated a view on the meaning of "long run" in relation to TSLRIC which follows the FCC's comments in relation to TELRIC back in 1996.[6] In this context, the term "long run" refers to a period long enough that all of a firms costs associated with the supply of the service become variable, and hence avoidable. The term "incremental cost" modified by the word "total" makes this clear – marginal cost refers to

[4] *Vodafone New Zealand Limited v Telecom New Zealand Limited* [2011] NZSC 138 at [70]
[5] Panico,Petri, "*long run and short run*" The New Palgrave Dictionary of Economics Second Edition (Durlauf, Blume Eds) Palgrave MacMillan 2008
[6] Federal Communications Commission (FCC), *The first report and order re local competition*, Common Carrier Docket 96-98, 1996, paragraph 677.

the increase to total costs of incrementing output by one unit of production, while (total) incremental cost in relation to a product refers to the total current output of that product. It is commonly accepted that telecommunications tends to be marked by the requirement to make a range of high sunk and largely irreversible costs – the use of the long run concept in TSLRIC is to focus on those costs which could be avoided if the firm was to cease production of the service under consideration.

56. Our point is that the Act requires more than simple adoption of economic concepts – it requires an interpretation of each of the elements of the TSLRIC definition in light of their context and purpose in order to give effect to real-world outcomes that achieve real-world efficiencies. In the same way that we do not interpret "competition" in our Act to mean the economic concept of "perfect competition", we cannot interpret "long-run" to mean the economic concept of "the length of time in which all factors of production are variable" – we have to give it a more contextual meaning, informed by the rest of the TSLRIC definition and section 18.

57. Indeed, the surrounding words of the TSLRIC definition suggest that the "long-run" must relate to

    a. Forward looking incremental costs - costs that will not be incurred in the future must not be considered (as these costs will not be forward-looking); and

    b. The requirement that costs that are actually variable in the present must not be considered (as these costs will not be directly attributable to, or reasonably identifiable as incremental to, the service, taking into account the service provider's provision of other telecommunications services).

58. In the case of UCLL, Chorus shares a common infrastructure of trenches, ducts, poles, premises that are also used by Chorus' other copper access services and fibre access services.

59. All of these facilities are required to produce any of UCLL, copper access services, and fibre access services by themselves, although the scale of facilities required for each by themselves might differ.

60. The EU approach to valuing non-replicable assets is not novel, but correctly reflects the application of TSLRIC thinking provoked by the need to consider the impact of NGA networks on existing regulation, irrespective of the sources of funding for those networks. The incremental cost of access to reusable assets can readily be valued; the most defensible approach relates to actual costs incurred by the infrastructure owner.

61. The so-called "conventional" approach taken by the Commission is not consistent with an efficient cost approach. Costs that will not be incurred in the future and are actually variable in the present can't be seen as forward looking or directly attributable in the manner the Commission seems to suggest

62. The Supreme Court found that the Commission committed two material errors of law in the TSO case when it sought to give substantial consideration to the historic decisions of the incumbent and failed to fully reflect only efficient avoidable costs and technologies - an economic approach that was inconsistent with section 18. The Commission is repeating this error here.

63. If the TSLRIC model captures assets with a reasonable expectation that they will be replaced, then TSLRIC won't be expected to deliver windfall gains (although a reset might). However, the Commission's approach is wrong because, by pricing in assets and costs to

the extent that they are not incremental to the service, it is setting a price that it knows will deliver excess returns to Chorus – i.e. over-pricing the service. In other words, it is setting prices that it anticipates will result in excess rents above the level that Chorus would receive in a workably competitive market. This is where the inefficiency lies.

The Commission has made a number of model choices inconsistent with the purpose of the FPP and Act

64. In setting its framework, the Commission has attempted to marry economic concepts with the Act's legislative drafting. In considering the legislative drafting and purpose, the Commission has:

    a. failed to identify the over-arching legislative direction to advance efficiencies to the benefit of end-users as the key objective to inform its individual modelling decisions; and

    b. as a result, has allowed economic concepts to exclude the application of the clear statutory purpose.

The Commission finds no link between modelling choices and end user benefits

65. The Commission is tasked with applying price controls to the monopoly services of UCLL and UBA in order to best promote competition for the long-term benefit of end-users. The Act directs the Commission to achieve this purpose using a TSLRIC costing methodology. As the Court of Appeal has confirmed [7], we must interpret this choice of pricing principle as being consistent with, and capable of implementing, the statutory purpose (set out in s18 of the Act).

66. In other words, there is a clear link between s18 and the TSLRIC costing methodology and the Commission's application of TSLRIC must reflect that. The Commission finds no such link in its revised draft determinations (paragraph 161):

> *"…in practice, there do not appear to be any strong and unequivocal ways in which many of our individual modelling choices can promote competition in telecommunications markets for the long-term benefit of end-users"*

because the predominant effect of its modelling choices can be: (paragraph 162):

> *"…reduced to an impact on the resulting modelled price[s]."*

67. This is wrong in law. There is a very clear efficiency focus in both section 18, and TSLRIC, which is also supported by the relevant definitions in the Act. This efficiency objective should be the key determinant of the Commission's individual modelling choices:

    a. Competition for the long-term benefit of end-users is promoted by ensuring the prices for these monopoly services are based on the recovery of efficient costs. A price based on efficient costs provides all the right competitive market signals and incentives. That is, it will best promote section 18; and

    b. This requires abstracting away from Chorus' actual costs to estimate an efficient operator's costs. TSLRIC provides a mechanism with which to do this, including through the use of economic concepts such as "modern equivalent assets" (**MEA**)

[7] *Chorus v Commerce Commission* [2014] NZCA 440 at [153]

and "hypothetical efficient operator (**HEO**). That is, TSLRIC provides the tool(s) by which the Commission is directed to achieve those efficiency objectives

68. In failing to recognise or have regard to the key efficiency objective of section 18 in its decision-making process, the Commission has taken modelling choices that, by their nature, introduce inefficiencies into its modelling, and in turn result in:

    a. Weak incentives on Chorus to maintain quality and/or invest in its copper access assets;

    b. Windfall gains for Chorus; and

    c. Prices that are well above efficient costs.

69. This efficiency focus in the Act has been confirmed repeatedly by the Courts, which have been clear that it is efficient prices that matter.

Instead, it applies a "conventional economic approach" criteria to choices

70. The Commission's revised draft determinations show that in places it has failed to apply the statutory purpose, by focussing too closely on its choice of modelling concept – what it terms the "conventional" TSLRIC approach - in order to create a perfect hypothetical "model" of efficient assets, prices and incentives, ignoring the statutory direction to focus instead on efficiency as it operates in the real world.

71. This is exactly the same error the Commission made in its July 2014 principles paper (where it elevated "legitimate investor expectations") and its December 2014 draft determinations (where it elevated "predictability"). "Conventionality" is not an approach required by the Act, and nor is it a test open to the Commission under the Act. The test is whether the approach taken to applying TSLRIC gives best effect to section 18. It is not open to the Commission to conclude that section 18 or TSLRIC objectives are not helpful to it in making those choices, and to substitute its own "conventionality" test instead (which actually contradicts the statutory objectives).

72. If the Commission was applying the Act correctly it would realise that conventionality was of little relevance. Just as occurred in the draft determinations when the Commission used a predictability test to direct its decision-making, the use of a "conventionality" test has resulted in a TSLRIC model that:

    a. Can identify and take advantage of a set of hypothetical efficiencies that would be available to Chorus were it to be freed from its legacy decisions and assets; but

    b. Cannot adequately identify the real efficiencies that are available to Chorus as a result of those same decisions and assets; and

    c. Therefore does not, and cannot, operate to provide efficient incentives to Chorus or other market participants; and

    d. In turn, cannot best promote competition for the long-term benefit of end-users.

The failure to identify efficiency as the key determinant in its modelling choices, and its "conventional approach to TSLRIC" test results in individual modelling choices that are inconsistent with the purposes of the Act

73. The combination of these two errors – the failure to identify and apply the efficiency objective in its individual modelling choices, and the elevation of a "conventional"

approach to TSLRIC to a key design principle, has resulted in a series of individual modelling choices that do not meet the key legislative requirements.

74. For example, the Commission's decision to apply an optimised replacement cost valuation (**ORC**) to non-replicable Chorus assets imports costs into its models that real-world evidence tells us are inefficient. In the real-world, network operators re-use existing assets (in particular passive, non-replicable assets) wherever possible, and in preference to deploying entirely new infrastructure. Chorus follows this practice, and indeed has highlighted the importance of this deployment tactic in multiple statements to the capital markets over the last four years.

75. In the real-world, many of the assets incorporated into the Commission's model at full replacement cost will never, in practice, be replaced for the purposes of this costing exercise (taking realistic interpretations of "long-run" and "forward-looking", and having regard to the limited remaining life of Chorus' copper access network).

76. The result of utilising ORC to value these assets on the prices paid for UCLL and UBA services by end-users, as identified by the Supreme Court in *Vodafone*, is twofold: [8]

    a. The Commission fails to reflect the reality that Chorus' assets are not new and that they will not require replacement; and

    b. It affords Chorus the benefit of the "cost" of notionally depreciating the assets again, when in fact, they are not real costs.

77. The result is weak incentives on Chorus to manage its assets efficiently, and prices that are disconnected from efficient costs. When considered through the efficiency lens required by s18, the Commission should not, and could not, conclude that ORC is the most appropriate valuation methodology for this class of assets. That it has reached this very conclusion in its revised draft determination is, we believe, the result of a misplaced and erroneous elevation of its conceptual economic framework for TSLRIC, and its hypothetical HEO and MEA, above the s18 efficiency objective.

78. We agree that the Commission's TSLRIC exercise necessarily requires it to abstract away from Chorus' real-world network, through the use of an MEA and a HEO. But these are simply tools designed to assist the Commission in identifying efficiencies that Chorus' real-world network does not achieve today. They cannot be used to assume away efficiencies that Chorus does, in the real world, achieve today.

79. Put simply, the Commission appears to be making the same mistake identified by the Supreme Court in the *Vodafone* case - allowing Chorus to recover costs that it will never in fact incur on a forward looking basis. That is, it has:[9]

> "…designed a model that could allow net cost to be set at a price higher than Telecom's actual costs."]

80. The Commission has to correct its error, by no longer treating "conventionality" as binary within its decision-making process (conventional views must be adapted to the context).

[8] *Vodafone New Zealand Limited v Telecom New Zealand Limited* [2011] NZSC 138 at [81].
[9] *Vodafone New Zealand Limited v Telecom New Zealand Limited* [2011] NZSC 138 at [43].

The Commission's "conventional" approach to TSLRIC may have been conventional ten years ago, but is not today

81. Even if we were to accept (which we don't) that the Commission is able to make individual modelling choices with reference to "conventionality", with s18 used only as a "cross-check" of the overall model, we do not accept that the Commission's description of a "conventional" approach to TSLRIC is accurate.

82. A "conventional" approach is one that is generally or commonly accepted, or accepted by most people. It must, by definition then, have a temporal element to it: what was "conventional" in the 19th century but little-practiced in the 21st could not rightly now be termed "conventional". Therefore, when the Commission states that the key determinant for it in making its individual modelling choices will be what is "conventional", we infer that it must mean "conventional today".

83. While the conceptual model laid out by the Commission in its description of the "conventional approach to TSLRIC" quite correctly describes the typical implementation of LRIC-based costing models in the late 1990s and early 2000s, we do not agree that it is an accurate description of the "conventional" approach to TSLRIC today.

84. The Commission provides at paragraph 181 of its revised UCLL draft determination a number of citations from economic literature that, it states, support its definition of today's "conventional" approach to TSLRIC. The dates of those citations are respectively:

    a. 2001;

    b. 2001;

    c. 2009; and

    d. 2005.

85. It then cites 2009 and 2010 decisions made by the Australian and Irish regulatory authorities, which it considers support its view of the "conventional" approach to TSLRIC.

86. None of these citations reflects modern TSLRIC thinking, and therefore none can be said to define "conventional" TSLRIC approaches. As the Commission goes on to reference later in its further draft determination, subsequent to each of these citations a number of critical faults have been identified with what was the "conventional" TSLRIC approach. Not the least of these was the key criticism we have made of the Commission's proposed approach above:, that LRIC models based on full replacement cost, while theoretically capable of creating effective efficient investment incentives on access providers, failed to do so in reality.

87. The result has been a fundamental shift in the "conventional" approach, away from full replacement cost LRIC valuations for non-replicable assets. The Australian decision cited by the Commission was the spur for Australia to shift away from LRIC modelling altogether. The Irish decision cited by the Commission was super-ceded by the European Commission's 2013 decision to mandate a Europe-wide shift away from replacement cost valuation for non-replicable assets (whether a LRIC model was used or not).

88. In response to this same criticism, which we made in our submission on the last draft determinations, the Commission has responded that the European situation is different to ours because:

    a. European law does not prescribe TSLRIC, while New Zealand law does;

b. Whereas Europe is concerned about sending "the appropriate pricing signals for efficient market entry, reflecting a competitive process…in which it would be unlikely that civil engineering infrastructure would be replicated by a new entrant"[10], New Zealand is not because competitive entry is occurring without those competitors using of Chorus' civil assets [196]; and

c. Whereas Europe is concerned about "the risk of over-recovery of costs of re-useable legacy civil infrastructure" [11], New Zealand is not, because windfall gains do not affect the efficiency properties of TSLRIC [199].

89. Whether we agree with these distinctions or not (we respond to each below), none of them, individually or in aggregate, can correct the Commission's mistaken characterisation of its proposed TSLRIC approach as "conventional". Australia and all of the 28 EU members – in other words, the jurisdictions we benchmark our regulatory framework against - have rejected the very TSLRIC approach proposed by the Commission. It cannot credibly be described as conventional in 2015.

90. Further, the Commission's distinctions appear to be based on a premise that New Zealand and the Commission, are trying to encourage different competitive outcomes to Europe. As we have submitted, we consider the Act clearly directs the Commission to optimise for overall efficiency, not to be distracted by any particular competitive outcomes. More fundamentally, though, this reasoning introduces a circularity in the Commission's framework:

a. Earlier in its further draft determination, the Commission concluded that there are no over-arching competitive purposes that it can take from section 18 or TSLRIC to inform its individual modelling choices, and therefore those choices are informed more by the "conventional" approach to TSLRIC;

b. Now, though, the Commission seems to be saying that its view on what is the "conventional" approach to TSLRIC is different to Europe's because the Commission, and New Zealand, are trying to achieve different competitive outcomes.

Commission distinction no.1: European law does not prescribe TSLRIC, whereas New Zealand law does

91. While European law does not prescribe TSLRIC as the only costing methodology for UCLL and UBA services, its costing recommendations are explicitly designed to apply to LRIC modelling exercises. That said, we agree with the Commission's implicit point, which is that New Zealand's TSLRIC definition may place particular strictures on New Zealand's implementation of LRIC modelling that other jurisdictions do not have. We have recognised these strictures in our interpretation above of the key elements of our TSLRIC definition, and explained why we consider our definition not only permits, but requires, the Commission to take a similar approach to modelling choices as those included in the European Union's most recent recommendations.

Commission distinction no. 2: Whereas Europe is concerned about sending "the appropriate pricing signals for efficient market entry, reflecting a competitive process…in which it would be unlikely that civil engineering infrastructure would be replicated by a new entrant"[12], New Zealand

[10] Revised draft determination for UCLL, paragraph 194.1
[11] Ibid, paragraph 194.2
[12] Revised draft determination for UCLL, paragraph 194.1

is not because competitive entry is occurring without those competitors using of Chorus' civil assets

92. The Commission's task is to apply our Act's purpose and pricing principle. Whether it is open to the Commission to prefer particular forms of competitive entry over others in the course of this exercise is highly debateable, and not something the Commission has indicated to date is part of its decision-making process. If the Commission does have a competition model it is seeking to optimise for, it should share that with the industry and seek comments on whether it is open to it to seek to support that model in its UCLL and UBA pricing decisions or not.

93. Assuming such a model does not exist, the Commission's role is the same as that faced by NRAs in Europe – to set pricing that provides efficient entry, exit, investment and pricing signals. In so doing, the Commission must reflect re-use of civil engineering infrastructure if it determines that practice to be efficient.

94. Finally, we note that while existing competitive entry by LFCs is occurring without re-use of Chorus' civil engineering infrastructure, it is instead occurring with re-use of those LFCs' (or associated parties') civil engineering assets.

Commission distinction no. 3: Whereas Europe is concerned about "the risk of over-recovery of costs of re-useable legacy civil infrastructure"[13], New Zealand is not, because windfall gains do not affect the efficiency properties of TSLRIC

95. This is perhaps the most surprising of the Commission's statements. It seems incontrovertible to us that the creation of windfall gains for a monopoly provider of regulated services must be inefficient. Excess rents above a normal return do not advance end-users' interests in any identifiable way. The Act directs the Commission to address exactly the problem the Commission suggests in this section it is not concerned with.

Other framework considerations

The Commission is tasked with avoiding double recovery of costs

96. The Commission rightly notes that clause 4B of Schedule 1 of the Act requires it to ensure in this pricing exercise that there is not double recovery of costs recovered through prices for designated or specified services in the Act. In Attachment N, the Commission sets out how it has sought to avoid double recovery of trenching costs as between UCLL and UBA.

97. The Commission makes no mention, though, of the potential for double-recovery of costs through the recurring and non-recurring charges of UCLL and UBA. WIK notes a number of examples of what appears to be double recovery, or the potential for double recovery. For example:

    a. There is very little transparency of how Chorus' service company mark-ups have been applied and why. It appears that in multiple places they are applied in a way that results in double recovery (for example mark-ups applied to already capitalised installation or material charges); and

    b. The Commission's recurring cost model provides compensation to Chorus for efficient capacity management, and efficient network records management. There is evidence to suggest that a number of non-recurring charge transactions today are the result of inefficient capacity management practices in Chorus' network and

[13] Ibid, paragraph 194.2

IT systems, creating the strong likelihood of double recovery of network capacity and IT systems costs.

98. We also refer the Commission to our submissions on its treatment of capital costs contributed by third parties. These represent clear double recovery, which needs to be addressed in the Commission's modelling for the very same reasons that lie behind clause 4B. In particular:

    a. UFB and RBI subsidies: The Commission does not recognise the UFB subsidies provided to Chorus by taxpayers in its modelling and reflects less than 10% of the RBI subsidies it has received. The result is clear double recovery (albeit not of the sort covered by clause 4B); and

    b. Lead-ins: While the Commission has excluded the majority of trenched lead-in charges from its modelling, it has not excluded aerial lead-in costs, or the costs of trenched lead-ins of over 100m. Again, this perpetuates a double recovery.

The TSO case is relevant

99. The Commission's view of the TSO case is

    a. The case is distinguishable because the TSO related to a different pricing / costing methodology (avoidable incremental costs), and a different statutory context (part 3 of the Act, as it was then),

    b. The first error of law identified in the TSO case is not relevant here as the Commission has included mobile / FWA in its model (it believes it has appropriately optimised its model).

    c. The second error of law is not relevant as the use of ORC is conventional in TSLRIC determinations, and assuming a new complete new build by an efficient operator creates efficient build or buy signals.

    d. The Commission has not misinterpreted the legal meaning of TSLRIC – it has the benefit of international economic and regulatory precedents and it has made decisions which are consistent with a conventional approach to TSLRIC – a choice which is available to it.

    e. In any case the Commission has asked itself the right question – i.e. how does it implement TSLRIC in a way that's consistent with Parliament's intention.

Outcome of the Commission's approach

100. The outcome of the Commission's approach has been that it has ended up with a price that remains substantially higher than international comparisons (e.g. countries that use forward looking efficient cost models). A price that high should give the Commission significant cause for concern.

101. More than fifty thousand end users told the Commission they were concerned about such a price. That unprecedented level of public activism should have given the Commission further significant cause for concern. The overriding impression is that a price so far out of alignment cannot be right. In legal terms it signals that the Commission has made mistakes in its application of TSLRIC that amount to an error of law of the *Edwards v Bairstow* variety.

102. In our view a price that is so far out of alignment with major comparators implementing equivalent cost-based methodologies is evidence of an error so manifest – that it undermines the legitimacy of the entire decision.

103. The cause can be linked to the Commission's decision to limit the use of FWA to the RBI footprint and the use of full ORC for re-usable assets. That is, the material difference in outcome is not because of New Zealand's different conditions – rather it is a direct result of the modelling choices made by the Commission.

The TSO principles are directly relevant

104. In our view the TSO case is relevant. The Commission is wrong to distinguish the principles established by the TSO case from its task in this case.

105. The TSO case provides three sets of principles which a court today is likely to find directly relevant:

a. The new technologies issue – we discuss the relevance of the TSO decision to FWA in more detail at paragraphs in a separate section below. In summary,

i. In the TSO case the Commission's first error of law was that it failed to give proper consideration to the capability of (then) new mobile technologies beyond the existing [Telecom] nodes where it was more efficient to do so. What was required was an assessment of the network that would have been used today by an efficient service provider.[14] The parallel in this case is that the Commission has failed to give proper consideration to FWA beyond the current RBI footprint and existing Chorus fixed nodes, despite clear evidence that FWA is more efficient and accordingly will result in lower costs to the HEO deploying the modelled network.

ii. When modelling FWA the Commission should have asked its modellers to incorporate FWA in all areas where it was economically rational (and therefore efficient) to do so.

iii. It should have used Network Strategies' evidence of the economically viable areas for such deployment;

iv. It should have designed the FWA component of the model backwards from the FWA capabilities to the necessary fixed components. It should not have designed the FWA component from the edges of the existing network and then only in a very small area.

v. By locking in the assumption of FWA only in RBI areas (a decision made by the Commission) it is not possible for the Terra model to produce an efficient result.

vi. By limiting FWA to an arbitrary extent the Commission will accordingly have repeated the error of law it made in the TSO decision, by failing to ensure that FWA was included in the model to the extent it would be efficiently incurred today.

[14] Vodafone *New Zealand Ltd v Telecom New Zealand Ltd* [2012] 3 NZLR 153 (SC) at [10]

b. The use of ORC – we discuss the relevance of the TSO decision to ORC in our section on asset valuation in paragraphs below. In particular,

    i. The calculation of efficient costs of assets does not allow sunk assets to be valued at current replacement costs, when it is clear that those assets will not be replaced (i.e. they are not efficient forward looking costs); and

    ii. It is an error of law to use a model or methodology that artificially inflates costs above their efficient value or include costs that would not in reality be incurred in providing the service.15

    iii. It is a mistake to say that the Commission's assumption of a complete new build distinguishes the TSO decision. The TSO decision says that assumption is unlawful.

c. The application error – we consider that, even if the Commission reached an interpretation of TSLRIC available to it, the way in which it has implemented TSLRIC has amounted to an error of law. For example:

    i. The Commission's view is that TSLRIC is about build or buy incentives – But the way the Commission has applied this principle is such that it has given unreasonable weight to compensating Chorus for its past investments. New Zealand courts have consistently been critical of decisions that seek to compensate the incumbent access provider for its historic investments. The High Court, Court of Appeal and Supreme Court was expressly critical of this approach in the TSO case, making it clear that the investment decisions of the incumbent are irrelevant to the task of setting an efficient price. And although the Commission states that it is not modelling Chorus' network, the effect of its modelling decisions is to compensate Chorus for its historic network-build decisions.

    ii. Forward-looking - Incentive regulation is about creating the right incentives for the incumbent to act efficiently in the future - not creating incentives for the incumbent to recover historic investment for years after they have achieved a return on and of the capital invested. Again it is evident from the TSO case that valuing costs which are something other than efficient incremental costs of the service would be acting contrary to the statutory purpose. Yet the way in which the Commission has implemented its decision n forward-looking costs is to lock in numerous historic asset classes and investments in such a way that proper optimisation that a HEO would apply is entirely excluded. The effect is to create incentives for Chorus to act inefficiently.

    iii. And, as Elias CJ put it, the Commission would still have erred in law if it has failed to ask itself the right legal question.[16] In this case, the right question is "what are the forward looking long run incremental costs an efficient service provider would incur to provide the service?" If it includes costs which an efficient provider would not incur it will have erred in law.

[15] *Vodafone New Zealand Ltd v Telecom New Zealand Ltd* [2012] 3 NZLR 153 (SC).
[16] Vodafone *New Zealand Ltd v Telecom New Zealand Ltd* [2012] 3 NZLR 153 (SC) at [15]

The Commission's response to the BeCounted campaign- error of the Edwards v Bairstow variety

106. We appreciate that, in response to the BeCounted campaign, the Commission asked TERA to examine the New Zealand regulatory model against those of Ireland, France, Denmark and Sweden (even though it is not required to benchmark). TERA found that the spatial dispersion of end-users drives higher costs with the New Zealand model incorporating longer network lengths per line and higher costs per trench in most cases.

107. This does not explain why the Commission retained the assumptions to limit the amount of fixed wireless access technologies (FWA) to the RBI areas.

108. Why the Commission erred:

a. Despite the evidence that its modelled costs were entirely out of alignment with those of comparable regimes it did nothing to change its model to ensure only efficient costs were included.

b. If it had asked Terra to reconsider where the HEO would deploy FWA (using Network Strategies report as evidence), we think it would have arrived at a materially different result. Instead it held onto its assumption that FWA would only be deployed on the network edges in the RBI footprint. This meant that long trenches and lines would inevitably need to be costed into the model. An HEO would not do that today, it would start off with a far greater amount of mobile, thereby eliminating substantial amounts of fixed infrastructure currently in the model.

c. At no place in the decision does the Commission explain why it has not incorporated Network Strategies' evidence of areas where it is more economical, cheaper or more efficient for the HEO to deploy wireless technology.

d. That parallels the error of law identified in the TSO case – where the Commission failed to incorporate mobile technology beyond the existing nodes – despite being alerted to the significant costs savings and efficiencies that could be attained.

Calculating the TSLRIC price

109. The Commission specifically considers a number of key modelling choices and parameters in the revised draft.

Network footprint and demand

110. The Commission must identify the network coverage and demand within that network coverage. As the Commission assumes the network is constructed to meet demand for all dwellings in the network footprint, this is a key driver of cost. Likewise, the number of customers (demand) within the footprint increases the customer lines over which the costs of providing that footprint are recovered. We discuss the changes to the footprint, first and then provide comments on the Commission's approach to demand.

111. The Commission has revised its approach on the scope of the UCLL footprint to take into account the appropriate scale for the provision of the UCLL service rather than the extent to which the HEO had an obligation or other incentive to connect and serve end users. The revised approach treats UCLL as a national service, which leads to modelling the HEO as a national operator with a network scaled with the capability to address every address point along the national road network. Attachment A to the 2 July further draft sets out the decision process in

detail. For the reasons set out below, we think that the assumption that the HEO will build a network to fully service all potentially available address points, is inconsistent with the assumption of a forward looking investment made by an efficient cost-minimising HEO serving copper fixed line access demand in New Zealand over the regulatory period. In other words, an efficient forward looking HEO would make an efficient investment to meet actual and reasonably forecast demand over that period.

112. We do agree with the Commission's approach to the extent that it is more correct to determine the scope of the network footprint based on establishing an appropriate scale for the provision of the UCLL service by the HEO, and then to reconsider how capital contributions to the provision of those services should be treated. In particular, we welcome the Commission's approach to the treatment of HFC demand as a part of the fixed line service demand in the model.

113. We differ from the Commission in that we think it inappropriate to model the UCLL footprint based solely on addressable points, notwithstanding that some of those addressable points may not require telecommunications services within the regulatory period, and that in fact some of those points may require more than one connection within the regulatory period.

114. This approach clearly results in a network which is more realistically described as being dimensioned for all potential demand, rather than for actual and reasonably expected forecast demand. As WIK explains at paragraph 329 of its report, the effect of this network footprint is to hypothesise that a cost minimising forward looking HEO invests not merely for actual and expected forecast demand, but for a level of potential demand with a low level of probability.

115. We agree with WIK that the cost and risk of that additional incremental level of investment should not be taken into account in the cost mode, but should rather be assumed to be borne by the HEO (to the extent that that investment cost is not offset by capital contributions[17], and subsequently recouped from the potential revenues from that incremental demand, rather than being borne by the level of actual and reasonably forecast demand modelled for the regulatory period). The importance of this point is magnified by the Commission's assumption of constant demand discussed further below.

116. This approach to a hypothetical network footprint based on potential demand, makes it even more imperative for the Commission to gather further information on address points. It is essential for the Commission to test the relationship between multiple connections at one address points and those address points which may not be connected during the regulatory period.

117. The Commission has concluded, apparently without direct supporting evidence, that it is likely that there is a material offsetting effect between multiple connections at one address point, and those address points which are unlikely to be connected. We have asked Network Strategies to review the Commission's proposed approach and provide their expert views. In section 4.1 of their report, they review data from the 2013 census and from the MBIE's estimates on vacant residential sections and greenfield land ready for subdivision, both in Auckland, This data strongly suggests that in fact the number of multiple connections at one address point is likely to materially outweigh the number of vacant lots, unlikely to be connected within the regulatory period.

118. While this data does not represent a national view, it clearly indicates that further detailed analysis work should be carried out on this point to avoid over-specifying the network footprint.

[17] See the discussion of capital contributions, in the context of network footprint at [currently 86], and further at 315 below.

119. We note the Commission's advice from its consultants that the difference between the number of address points used for the network footprint and the modelled demand is within a broad envelope consistent with real world expectations. We note that this advice reflects TERA's opinion based on their experience. As WIK point out in paragraph 330 of their report, their experience is such that they are not able to confirm TERA's opinion that TSLRIC modelling in other jurisdictions usually assumes a modelled demand which may be up to 10%-20% below the modelled footprint demand.

120. In point of fact, where, as is the case here, there is current New Zealand evidence which strongly raises the risk that the Commission's proposed network footprint does not correctly reflect the connections which are likely to be connected during the regulatory period, we think the Commission must carry out further work to refine its data.

121. We suggest that the Commission carry out further work to identify more accurately the instances of multiple connections at a single address point, and the instances of address points which it is improbable that they will be connected during the regulatory period.

122. The Commission has also assumed constant demand during the regulatory period. In the 2 July draft, the Commission suggests that it has found insufficiently strong evidence to support an assumption of fixed line growth over the regulatory period. We asked Network Strategies to investigate this issue further. In paragraph 4.2 of their expert report, Network Strategies point to disruptive market changes which challenge this point. They agree with the Commission's observation that demand of fixed access lines has been relatively constant over a number of years, and point to the growth in consumption of fixed broadband over the same period.[18]

123. The Commission makes the assumption that historic evidence projected across the regulatory period does not support an increase in demand. The telecommunications industry is well known for the introduction of disruptive technologies which change consumer preferences and demand. Network Strategies points to the current examples of the introduction of cloud services, smart-phones and tablets, and the speed with which these services have been taken up by consumers, Many of these services focus too on mobility, with complementary consumption of fixed broadband access, becoming ubiquitous across fixed broadband users.

124. There can be only limited firm evidence of what the future level of demand will be, but Spark agrees that a forward looking cost minimising HEO would make investment based on a reasonable view of continued growth in demand together with ensuring appropriate scalability in its choice of investment. As Network Strategies point out, the length of the regulatory period is such that the Commission risks setting final prices for UBA and UCLL which may be based on a demand profile which is too low, and which accordingly are too high. The Commission could make some forecasts for possible growth to minimise this risk, or engage in a review and reset process during the regulatory period in a way which minimises market uncertainty.

125. We suggest, at minimum, that the Commission should consider monitoring fixed line and fixed broadband line and comparing actual outcomes with the constant demand assumption. For certainty, the final determination could set a threshold for variation between actual demand and the constant demand assumption which would trigger a reset of the demand assumption to actual demand during the regulatory period.

Network footprint and capital contributions

126. The Commission's December 2014 draft determination for UCLL treated the HEO network footprint as subject to the TSO obligations, and found that any additional lines would only be

[18] Exhibit 4.1 – *Network Strategies – Report for Spark New Zealand and Vodafone New Zealand* reproduced from paragraph 337 of the *2 July Further Draft*

connected if a capital contribution could be commanded from the end user. The cost impact of the revision of the network footprint, and the shift to some portion of all addressable points, goes hand in hand with the Commission's revised approach to the treatment of capital contributions

127. In short, the Commission has determined that the HEO would require a capital contribution for certain of the capital costs, and that these contributions should not form part of the TSLRIC investment cost.

The modelled network (MEA)

128. The Commission has made a number of modelling choices that we consider to be consistent with its stated TSLRIC objectives, and section 18 of the Act.

129. We continue to support the "core functionality" approach that the Commission has adopted to guide the choice of the requirements of the MEA. We support the view that the MEA should still, to a large extent, be able to provide a point-to-point unbundleable layer 1 service[19], where economically practical, and where that would be the choice of an efficient cost minimising HEO making efficient forward looking investment decisions. However, we remain of the view that the extent to which fixed wireless is modelled is wrong.

130. We welcome the Commission's revised view that the Commission *no longer considers itself legally restricted to presupposing that the underlying access network is Chorus' copper network for UBA*".[20] But we still consider that a fibre and FWA MEA remain appropriate for the layer 1 component of UBA. .

131. The disparity between the MEA selected for UCLL and the MEA selected to estimate the UBA increment is problematic. We find no evidence to support the view that a copper access network best serves the objective of fostering competition through access seeker decisions around unbundling. We think that the UBA increment on the TSLRIC cost of an optimised forward looking (fibre) access network would better align with the section 18 objectives. We think the Commission's continued focus on unbundling of the copper access network during the identification of a MEA is incompatible with the TSLRIC objectives and with the over-arching objective of section 18.

132. A copper MEA brings Chorus' past path dependent investment decisions and choices into what are supposed to be the forward looking costs of an efficient HEO. We do not think this is compatible with the Commission's own overall understanding of its task in applying the FPP cost modelling process. In short, it is not possible to model efficient forward looking costs based solely on Chorus' sunk past investment decisions, sunk technology choices, and access network deployments. As the Commission itself recognises, it has to abstract away from Chorus to assess the forward looking long run costs based on its assessment of the choices to be made by an HEO.

133. As a direct result of the choice of the MEA for the UBA service, the Commission's approach does not take into account the possible efficiencies that an HEO would be likely to consider when determining the investment required in connection with the UBA increment. For example:

a. A single fibre based infrastructure suggests lower efficient costs than the artificial dual MEA construct applied by the Commission. We believe that the HEO would not have invested today in the fibre/DSLAM architecture applied by the Commission, particularly given that the MEA for the UCLL is fibre, and given the costs associated

[19] For the reasons set out by the Commission in paragraph 318 in the July Revised Draft UCLL Determination
[20] Paragraph 745

with the copper based technologies. This means modelled costs are inefficiently high for UBA.

b. As we discuss in more detail below, the Commission has chosen to constrain the deployment of FWA technologies and sharing of infrastructure. Again, in our view no forward looking cost minimising HEO provider would leave these efficiencies on the table.

134. In fact the further draft determination recognises that "a hypothetical efficient operator would likely deploy a UBA service over fibre"[21] , but concludes that "a MEA for the UBA service that presupposes an underlying copper access network will likely better allow for competition through unbundling where it is efficient".[22] This elevates relativity, and a competition objective (further unbundling by RSPs) that RSPs have informed the Commission is now unimportant to them, above the s18 efficiency focus. This is a further error – the Commission's justification for departing from s18 is not supported by the available evidence.

Statutory scheme does not dictate the choice of MEA

135. The Commission is correctly concludes that it is not restricted to a copper MEA for UBA.[23]

The MEA should be consistent for both the UCLL and UBA services

136. In determining the MEA for the UCLL service, the Commission correctly stated that:[24]

> Parliament intended us to undertake a TSLRIC exercise by building a TSLRIC cost model to determine the costs incurred by a hypothetical operator using the most efficient means at any point in time to provide the service.

137. Further, as advocated by the Commission in connection with the UCLL service:[25]

> [...] to constrain the choice of MEA to a subset of modern equivalents because of features of access to Chorus' historic network is contrary to the forward-looking exercise required by the Act.

138. The Commission's choice of MEA for UCLL demonstrates a hypothetical efficient operator would elect the "most future proof technology" as its MEA.[26] The inconsistent approach to the UBA MEA is problematic we think that once the Commission has elected to use the MEA concept, and defined what the MEA does, it is illogical to be selective and/or inconsistent in how it applies that concept to the two services. The "most future proof technology" (fibre) should accordingly be the given layer 1 for UBA. To do otherwise embeds historic inefficiencies.

139. We are not convinced that the Commission has provided proper legal justification for its inconsistency.

---

[21] Commerce Commission. *Further draft pricing review determination for Chorus' unbundled bitstream access service*, 2 July 2015, at [775].
[22] Ibid.
[23] Commerce Commission. *Further draft pricing review determination for Chorus' unbundled bitstream access service*, 2 July 2015, at [758].
[24] Commerce Commission *"Further draft pricing review determination for Chorus' unbundled copper local loop services"* 2 July 2015, at [1005.1].
[25] Commerce Commission *"Further draft pricing review determination for Chorus' unbundled copper local loop services"* 2 July 2015, at [1007].
[26] Commerce Commission *"Further draft pricing review determination for Chorus' unbundled copper local loop services"* 2 July 2015, at [998].

140. The legally correct starting point for is to apply TSLRIC in the same way as applied for UCLL. In our view, the additional considerations of relativity and the promotion of unbundling are secondary.[27]

Relativity and unbundling should not distort the Commission's analysis

141. The Commission's elevation of relativity and promotion of unbundling, to factors that inform the choice of MEA, is misplaced.

142. The relationship between the price level and section 18 and the analysis of the risks of under- or over-estimating the TSLRIC price can be addressed through a separate price adjustment process if absolutely required. It's wrong to select a MEA because you wish to achieve a particular "technology policy" outcome. The MEA should simply be the tool to help you identify the lowest cost modern asset. Using a MEA that is not the lowest cost but which is most likely to create "economic space" between the ultimate UBA and UCLL prices is wrong.

143. Relativity and the promotion of unbundling cannot operate so as to distort the Commission's primary choice of model.

144. In any event, neither the Commission, nor any interested parties, have provided evidence to suggest that the relativity requirement prescribed by the Act cannot be promoted

A fibre UBA MEA is efficient

145. WIK stated:

> We are convinced that the HEO would never invest in a newly constructed copper network, even if the copper lines only have to be deployed in the last network segments close to the customers' premises. Fibre has significantly superior transmission characteristics with regard to bandwidth and transmission quality. Such investment decisions which take into consideration copper access lines are only taken in a path-dependent manner, when copper lines already exist and a combined fibre/copper solution allows the operator to reduce immediate investment requirements to meet the actual band-width demand and compete faster with existing cable-TV network operators (operating on DOCSIS 3.0). A nationwide fibre roll-out is more time consuming than just a roll-out of a fibre feeder network. An HEO not having access to existing copper access lines thus in any case would roll-out fibre to the home.
>
> …
>
> Thus from our point of view the appropriate MEA for the UBA service in New Zealand should be FTTH on a PTP fibre topology in particular when that also is the relevant MEA for providing UCLL. In countries with settlement structures like New Zealand it will be amended by FWA in sparsely populated areas. This would be the most efficient approach for an operator which provides both the UBA and the UCLL (and other access) services. [28]

There should be consistency across UCLL and UBA

146. The Commission's approach has become divorced from the efficiency objectives of the FPP. In this case, as it is not expected that the network will be replaced (and not by Chorus), the efficient price and dominating TSLRIC objective is to maximise RSP and end-user use of the

[27] Commerce Commission. *Further draft pricing review determination for Chorus' unbundled bitstream access service*, 2 July 2015, at [162].
[28] Paragraph 92 and 93 at section 2.2

network. Therefore, the efficient price must be one that is just at or below the alternative options available to RSPs. This is what will promote efficient use of the network.

147. Fibre is being deployed in urban areas to replace copper and FWA is being rolled out in more areas. This is what efficient providers are deploying. We therefore support the Commission's fibre/FWA technology choice. It is the efficient choice.

148. WIK also support a fibre/FTTH MEA, as set out in more detail in paragraph 3.2 and 4.2 of their expert report (attached). They also say that the Commission should take into account sharing of pre-existing infrastructure with other owners to a greater extent than the Commission currently has provided for and should apply a greater degree of network optimisation. We agree that a cost-minimising HEO would seek out every opportunity to gain access to infrastructure that could be shared and that it would achieve significantly greater optimisation than currently provided for.

The UCLL MEA: fixed wireless access

149. The Commission has reaffirmed its view that the MEA for UCLL is a combination of FTTH mixed with FWA. We agree with the combination of fibre and UCLL. An efficient operator would not be limited to choosing a single technology across the entire network footprint unless that actually was the cost minimising forward looking long run optimal investment choice. Similarly, an HEO would not invest in legacy technology – which would risk either early asset stranding due to technological obsolescence or being marginalised by competition from operators employing newer technology,

150. As TERA notes in its MEA paper[29], no efficient operator would deploy the technologies in the current network – and in fact, in New Zealand and elsewhere, operators are deploying fibre and wireless networks to provide comparable services. These are the efficient technologies being deployed today that will provide the right incentives to providers and users to join the network. FWA is a key part of the NZ market.

151. We agree that FWA should be considered as part of any efficient service. We already see operators offering fixed broadband and landline services over wireless infrastructure. Vodafone and Spark have both launched fixed services using LTE network.

152. However, FWA should be included in the MEA to a far greater extent than the Commission has allowed. The Commission has not modelled the capability of FWA as a starting point – which is what the HEO would likely do (and what Network Strategies has provided relevant data on). Instead the Commission has presupposed that FWA would be of limited deployment on the edges of the network. This is fundamentally inefficient and therefore inconsistent with its obligation to identify an efficient cost-based price.

153. In effect, the scope of the FWA MEA, and the boundary between the FWA and the FTTH MEA is neither determined on a forward looking basis, or on the basis of an efficient operator's investment decision. Instead, the Commission's selection of the scope of the FWA network is dictated by the level of Chorus' backward looking investment in the legacy copper fixed access network.

154. As a result, it seems clear to Spark that the Commission has incorrectly:

a. Limited consideration of efficient FWA costs to areas that are not capable of being unbundled due to Chorus' historic investment choices; and

[29] ref

b. Taken parameter choices that no reasonable and efficient FWA operator would make.

The cost model must only include efficient costs

155. As correctly stated by the Commission:[30]

> We consider that the hypothetical operator is efficient. Efficiency here has various dimensions. One is in respect of the technology choice, where the hypothetical operator would choose a network technology that is most efficient in respect of factors including (but not limited to) cost, lifetime, customer preferences, and technological performance. Another aspect of efficiency relates to network deployment, where the hypothetical operator could optimise its new network deployment to efficiently meet expected demand. Efficiency also reflects costs that are efficiently incurred, as discussed above.

156. The Commission also notes that the logic underlying this position is that "the network built by the incumbent, and the costs that it incurs, are not necessarily efficient, and to take those as a given would be inconsistent with the TSLRIC approach of reflecting efficient forward-looking costs".[31]

157. Although the Commission has correctly identified that requiring layer 1 unbundleability on every line is inefficient, it has erred by finding that FWA should only be "used for lines where costs are particularly high and unbundling is unlikely" (paragraph 1132).

158. As noted, the effect of the Commission's approach is that the efficient hypothetical operator's unbundleable network is the same as Chorus'. There is no (and can be no) evidence that Chorus' unbundleable network footprint provides a reasonable input for the estimation of efficient costs. The approach is plainly at odds with the section 18 objective and the Commission's view (expressed elsewhere in the draft decision) that the hypothetical efficient operator would choose the most efficient network technology.

159. Even if it could be considered in this way, in particular, there is compelling real world evidence that take up of UCLL does not come close to matching the unbundleable footprint in the Commission's MEA. In effect, it is requiring the efficient operator to build to meet demand that almost certainly will never exist. It will therefore compensate Chorus for inefficient legacy decisions.

160. To ensure consistency with other parts of its decision, the Commission must apply an approach that best promotes section 18(1) by incentivising unbundling.[32] The inclusion of inefficient unbundleability costs in the model artificially inflates the UCLL cost. The Commission's failure to apply the same legal framework leaves it open to challenge.

161. The Commission's choice not to implement FWA as an alternative to the FTTH MEA in those geographic locations where it is clearly the most efficient forward looking technology choice creates a pricing construct for UCLL and UBA which provides incentives for RSPs and end users to avoid using the Chorus network. We think this outcome is contrary to the requirements of section 18 to consider the long term benefit of end-users of telecommunications services in New Zealand.

---

[30] Paragraph 185.
[31] Paragraph 189.
[32] Commerce Commission. *Further draft pricing review determination for Chorus' unbundled bitstream access service*, 2 July 2015, at [747]. Spark does not agree with the Commission's approach to the UBA MEA. Our point here is to highlight the inconsistency in the Commission's legal reasoning and approach.

162. In considering whether the Commission has made an error of law regarding its choices in relation to FWA, a court would be influenced by the Supreme Court's discussion in *Vodafone New Zealand Limited v Telecom New Zealand Limited*.[33] In that case, Elias CJ in found that:

a. if new technology becomes more efficient than that used in the existing network or part of it, the net cost for that part of the network is that of the new technology;[34]

b. it was an error of law for the Commission not to use mobile technology in its modelling of the "net cost" of an efficient provider where there was a statutory obligation on the Commission to calculate the "unavoidable" incremental costs;[35]

c. what was required was an assessment of the network that would have been used by an efficient service provider;[36] and

d. the Commission had therefore overvalued the "net incremental costs to an efficient service provider" of providing the service through modelling the capital cost of providing it on the basis of Telecom's fixed line core network.

163. We acknowledge that the Supreme Court was influenced by the particular statutory language in the case, which required that only unavoidable costs be included in the model. However, it is equally apparent that the Supreme Court was influenced by the broader requirement under section 18 to ensure only efficient costs were included. In our view, this reasoning also applies here:

a. the Commission has a legal obligation under the Act to use TSLRIC to establish an efficient price for the UCLL service that best meets the section 18 objective- that is, based on efficient (forward looking) costs;

b. this requires abstracting away from Chorus' actual network and costs;

c. it is widely accepted that FWA can be more efficient than fixed lines - the only debate is the extent to which FWA would be used by an efficient operator;

d. it would therefore be an error of law, and contrary to the section 18 efficiency objective, for the Commission to continue with its approach of using Chorus' clearly inefficient network footprint as a proxy for efficient unbundling, thereby failing to include an efficient level of FWA; and

e. the Commission must follow a robust approach by including FWA to the extent it would be used by an efficient operator. The HEO would apply a cost/performance trade-off to determine which technology it used, and where.

164. As put by Winkelmann J in the High Court (as cited with approval by Elias CJ), the Commission:

> ... has abandoned consideration of whether Telecom's costs are efficiently incurred and whether services could be more efficiently provided through the application of new technology.37

[33] [2011] NZSC 138
[34] *Vodafone New Zealand Limited v Telecom New Zealand Limited* at [13].
[35] *Vodafone New Zealand Limited v Telecom New Zealand Limited* [2011] NZSC 138 at [9] and [14]..
[36] *Vodafone New Zealand Limited v Telecom New Zealand Limited* [2011] NZSC 138 at [10].
[37] Paragraph [12].

165. The main judgment in the Supreme Court reaches the same answer (albeit via a slightly different route). That is, given that the Commission had used ORC to value all assets, the Commission's reason for excluding mobile technology (Telecom would need to be compensated for stranded assets) did not apply. Put otherwise, including mobile technology would only deprive Telecom of the windfall benefit from the overvaluation that it should not have had in the first place (paragraph 75 of the decision).

166. The same principle arguably applies here: in circumstances where the Commission is proposing to value all assets at ORC (and therefore provide Chorus with the benefit of windfall costs), it is critical, as a matter of law, that the assets to be valued only include efficiently built assets.

167. The issue that the Commission must now focus on to avoid committing an error of law is to determine the appropriate extent of FWA within the MEA. Although a level of pragmatism may be required, that does not allow it to abandon its task of establishing the efficient forward looking costs of providing the UCLL service.

Regulatory obligations irrelevant

168. The Commission says that the HEO, entering the market, would have certain regulatory obligations. This leads to the view that the MEA should be able to provide, to a large extent, a point to point, unbundleable layer 1 service.

169. It is not clear what those regulatory obligations are. If the Commission means to say the efficient operator would have obligations to provide for unbundling on its network, then this is an error of law. Section 18 and TSLRIC require the Commission to incentivise unbundling (as accepted by the Commission). Accordingly, imposing hypothetical regulatory requirements on the hypothetical operator that have the impact of increasing the efficient operator's costs to above an efficient level directly contradicts the legal framework, as it will only serve to undermine incentives to unbundle. One reason for modelling the HEO is to identify only the competitive costs. In other words, what competitive pressure on the incumbent would result in. Once you identify the costs the HEO would incur to provide the service then you have a proxy for the price the incumbent would be required to match in a competitive market. Ultimately lower cost substitutes will drive the competitive price down – they should not be held up by the most expensive operator in the market (whatever that provider's external obligations are).

FWA parameters

170. We also asked Network Strategies to examine the rationale for and implications of the Commission's new approach to FWA modelling. They have considered a range of issues including:

a. Whether the Commission's updated assumptions and cost estimates are reasonable;

b. Comparisons based on our own modelling;

c. The Commission's proposed categories of end-user for the FWA service; and

d. The integration of the FWA results with the FTTH model.

171. Network Strategies recommend that the Commission modifies its revised approach to implementing FWA. The 40 833 premises currently covered in the model is significantly lower than the 250 000 planned RBI premises and does not reflect the deployment of an efficient HEO. As noted in previous submissions by WIK and Network Strategies, a cost-minimising HEO will

deploy FWA in those high cost areas of the access network footprint where it is feasible and economical to do so.

172. The previous submissions from Network Strategies have demonstrated that it is both feasible and economical to model FWA in those areas of Zones 3 and 4 which are not unbundled. This contrasts with the Commission's approach which is to cap the number of premises covered by FWA solely based on distance from the exchange/cabinet. Network Strategies advise that an efficient outcome to FWA modelling cannot be achieved by as this approach over-estimates the costs and under-utilises the FWA base station sites.

173. Network Strategies also urge the Commission to review its capacity and coverage implementation which restricts FWA analysis to ESA boundaries. As discussed in some detail in earlier submissions by Network Strategies in relation to fixed wireless modelling, FWA sites are not planned to cover selective premises in a particular ESA. They also strongly state that the Commission's model should properly account for the greater coverage achieved by LTE in 700MHz (compared to 900MHz) as it is currently using Vodafone's RBI sites which were planned for 900MHz. We endorse these concerns in relation to the Commission's current approach to FWA modelling.

174. Finally, we note that the Commission has assumed in modelling the TSLRIC investment that all FWA sites have fibre backhaul. Network Strategies state, and we agree, that the use of current equipment to provide microwave backhaul continues to represent best current practice for rural sites. Spark is strongly of the view that it is implausible, and contrary to the assumption of efficient forward looking investment, to assume that a cost-minimising HEO would deploy only fibre backhaul to rural FWA sites.

175. We support Network Strategies' recommendations to the Commission set out in section 2.5 of their expert Network Strategies' recommendations. We think that the proper implementation of TSLRIC requires the following changes in respect of FWA:

a. The Commission should expand the number of premises covered using the criteria of forward looking efficient costs to serve those end-users for the reasons set out above and further detailed in Network Strategies advice.

b. The Commission should change its capacity and coverage limitation from Chorus' established EAS boundaries to those determined by FWA capability. Failure to do so would import inefficient legacy network design choices made by Chorus.

c. The Commission should not limit itself to the use of fibre backhaul to FWA sites in those areas where the relevant capacity and reliability required for the provision of the service means that microwave backhaul continues to be the forward looking efficient technology choice.

d. The FWA modelling approach, which was carried out by Network Strategies and provided with submissions on the December Draft Determination was based on a careful selection of sample areas using four representative geotypes, radio propagation and terrain conditions in New Zealand. This is compelling evidence the Commission should have regard to.

176. We think it is clear that an efficient forward looking cost minimising HEO would deploy FWA on a geographic basis in those areas in which it is both feasible technically, and represents the most efficient forward looking MEA for delivery of the regulated services to end-users. As Network Strategies note in their expert report and previous work on this issue, the New Zealand geographies in which this is the case would be those areas of Zones 3 and 4 which are not unbundled.

Deploying the modelled network

177. Sections 4 to 8 of the WIK report point to a range of model choices which, in their expert view, are inefficient. Section 7 of the WIK report sets out their view of the changes made to the model and various parameters since December, identifies omissions and model inconsistencies.

178. We support with WIKs proposals and consider that model parameters, and adjustments to Chorus data, should ensure that the choices reflect as accurately as possible the decisions which would be those of an efficient HEO. The Commission should carefully review these comments and reconsider for the purposes of the Final Determinations.

Aerial Deployment

179. We also asked Network Strategies to comment on aerial deployment. We welcome the Commission's acknowledgement in Attachment D that the HEO will be able to deploy aerial network infrastructure where it can access existing EDB pole infrastructure, and assuming that consent will be forthcoming from local authorities with a cost contribution from the HEO for the consenting costs. We consider these to be sound real world assumptions. The use EDB data to approximate the percentage of aerial deployment that might be possible is appropriate.

180. We consider it important, on a forward looking basis, for the Commission to take account of the current proposals for amendments in National Environmental Standards for Telecommunications Facilities which Network Strategies discuss in section 5.1 of their report. The effect of these changes is likely to materially reduce the level of costs required for consenting processes.

181. Network Strategies note a number of concerns with the detail of the Commission's implementation of these revised assumptions in section 5 of their expert report. We refer the Commission to that section of their report.

182. The Commission has used Chorus data on pole lease costs for distribution and lead-in cables and for lead-in cables alone. Network Strategies raise a number of concerns with the direct use of this information without testing the sources and scope of the relevant values, or how the lease cost has been computed. In addition, the sole use of Chorus information as to the likely replacement costs the HEO would face for poles in the existing aerial network infrastructure as a result of the additional load raises issues for Spark. Spark urges the Commission to seek further data from all LFCs in relation in relation to pole access costs.

183. Even if these estimates do represent observable actual costs, in the current market this is not necessarily the same as the costs which would be faced by a cost-minimising HEO seeking this scale of aerial deployment. We also suggest that the Commission compare actual cost data with an estimate of the likely costs which would be faced by a willing cost minimising lessee negotiating with a willing cost-minimising lessor.

Infrastructure sharing

184. While we also welcome the fact that the Commission has made the further draft decision to include 5% of underground infrastructure sharing with utility companies, we are concerned that the Commission, after considering a range of information, has chosen the level of underground infrastructure sharing proposed by Chorus, which is at the bottom of the range indicated by WIK.

185. We agree that a cost-minimising HEO would deploy its MEA network to the most efficient degree of cost sharing using both aerial and underground infrastructure, together with sharing of FWA towers. Our concern is that, in depending on the current experience of Ultrafast Fibre, Enable, and the submissions of Chorus, the Commission is assuming that their current practice is

the best predictor of the decisions which would be made by the HEO. The Commission assumes in paragraph 1181 that "*underground infrastructure sharing is primarily based on decisions made by the utility company rather than the hypothetical efficient operator*". Although it may well be that past practice in New Zealand has been that underground infrastructure sharing might be limited, this is not necessarily representative of forward looking choices in the long run.

186. We consider that, in hypothesising the choices made by the efficient operator for the purposes of the model, it might be more realistic to consider that in the future, willing but not eager underground infrastructure owners, also seeking to minimise their costs would be more open to sharing infrastructure to reduce costs. Equally, the cost minimising HEO, to the extent that it chooses to invest in underground (or aerial) infrastructure could be expected to seek out opportunities to do the same.

187. We are of the view that there is sufficient evidence that potential for underground infrastructure sharing materially higher than the proposed 5%. A sharing percentage of [10%] would be more realistic as a forward looking estimate, while still likely to be conservative in comparison with WIK's indication of international levels of sharing.

Trenching costs

188. The Commission has not included a discount for a large scale rollout on trenching cost. The reason for this is the belief that the HEO, despite the scale of the network roll-out, would be able to get a discount on the level of cost reflected in the BECA trenching cost analysis. We think that cannot be right.

189. WIK has advised that the approach used by BECA in relation to the determination of trenching costs cannot be verified, and that the efficiency of other modern trenching technologies is still not considered. These matters were raised in WIKs submissions on the December Draft Determinations but not meaningfully responded to. The Commission still relies on the cost analysis supplied by BECA,

190. We remain of the view that where BECA's costs analysis does not take into account any potential discount for trenching costs below the contractors normal tender price. In our experience a large scale network build of the sort envisaged for an HEO would obtain a discount at least equivalent to the indications provided by BECA.

191. We think it is reasonable to assume that a cost-minimising HEO would commission contractors to carry out the most efficient possible build programme, with staff and materials deployed to achieve the coverage build in the most efficient manner. This minimises the need for resources to be deployed in multiple different geographies, minimises management, labour, training, and storage costs, and the associated costs of stakeholder management,

192. Faced with the certainty of optimal deployment of its resources, the benefit of economies of scale and the reductions in costs and risks associated with a build of this magnitude, we think it is clear that an efficient contractor or consortium would provide a discount to the HEO. The Commission has already been presented with evidence by BECA that up to 20% would represent a reasonable level for such a large scale discount in the New Zealand setting. We note too that the expert opinions presented by Network Strategies and WIK suggest that a discount of up to 20% would be a reasonable and conservative assessment. Spark thinks that the assumption that the HEO would be unable to negotiate a discount on the contractors normal tender price is unrealistic, and would represent an inefficient investment decision by the HEO.

Optimising, dimensioning the network

193. Paragraph 321 of the UCLL Draft Determination set out the Commission's further draft decisions on network optimisation. We have asked WIK to comment on the implementation of these choices in the model. They advise that a number of the matters that they raised in their submission on the December Draft UCLL Determination have not been addressed or in some cases not engaged with by the Commission and TERA. For instance we refer the Commission to section 5.4 of their expert report in relation to the potential efficiencies available in relation to the implementation of engineering rules.

194. The Commission has decided to constrain the scope of its scorched earth optimisation with reference to the existing number and location of exchanges and cabinets in Chorus' copper network and align to the road network. Other network aspects have been optimised to some degree by modifications of the ESA boundaries, and MDF coverage areas. WIK advise that in their view, an efficient HEO would be modelled as first optimising the MDF locations and the core network above that level, and also the network nodes within the access network.

195. As a result, the TERA model imports into a FTTH point-to-point network the full effect of past investment decisions based on historic end-user densities associated with different investment vintages, and limited by the technology choices at each time imposed by copper access network capabilities. WIK state that, as a result, the costs, with the associated costs of using a simple shortest path algorithm rather than an augmented shortest path algorithm, mean that a "*huge area of network and cost optimisation´* has not been reflected in the model.[38]

196. We note that the use of Voronoï cells to optimise the MDF coverage areas would go some way to address these criticisms.[39] The Commission has tested the impact of using an augmented shortest path approach to optimising the trench network lengths, rather than solely line lengths. The Commission does not provide any summary information to support its choice of the use of an unaugmented shortest path algorithm in all cases, rather than only those where the costs of additional cables, joints and ducts required to connect the relevant address points is greater than the savings associated with the use of the augmented shortest path algorithm. Since the modelling has been carried out we assume this issue has been considered.

197. Subject to these concerns, we continue to believe that a modified scorched node approach, applied in the manner suggested in WIK's expert report, and as outlined in past submissions, maintains a balance between real world cost constraints, and the choices which an HEO would make in deploying a forward looking efficient network based on the selected MEA,

198. We think it is appropriate for the Commission to make a range of optimisation choices in relation to the size of exchange buildings required for an efficient deployment of the MEA, as long as the Chorus data used to model the most efficient deployment has been tested against engineering best practice.

199. In relation to treatment of roads and motorways, we asked WIK to provide comment. In paragraphs 186 and 187 of their expert report they raise a number of issues which focus on the choice of the most efficient cost modelling option. We ask that the Commission examine these concerns in the course of making their Final Determination.

[38] Section 5.3, 7.2 of the WIK report refer
[39] Paragraph 1075-1083

Asset valuation and annualisation

Valuing assets

200. Attachment E of the Commission's further draft determination for UCLL (cross referenced also from Attachment E of the Commission's further Draft Determination for UBA) sets out a detailed discussion on the Commission's decisions in relation to the use of Optimised Replacement Cost (**ORC**) as the preferred TSLRIC asset valuation methodology for both of the UCLL and UBA services.

201. The choice of asset methodology must, as the Commission correctly states, be consistent with the legislative framework; that is, with a focus on determining the efficient price for the regulated service in the New Zealand context. This, in turn, allows for efficient investment decisions, efficient cost recovery and incentives for the regulated entity to minimise its' costs.

202. We agree with the Commission on these objectives, but in our view, key aspects of the efficiency objectives have still not been taken into account in the approach to asset valuation.

Valuation and the purpose of TSLRIC modelling

203. It is generally accepted that the intent of ex ante regulation of telecommunications is to simulate and promote competitive market outcomes. Ex ante regulated pricing of UCLL and UBA services seeks to create competitive pricing outcomes by regulating prices to limit the opportunity for Chorus to earn excess rents on the one hand, and in providing incentives on the other for efficient investment by both Chorus and access seekers. In doing this, the continual dynamic pressures of a competitive market are replaced by markets under periodic price review, uncertainty as to regulatory outcomes, and some measure of regulatory oversight.

204. Over the long run, in a competitive market, the lowest cost provider of access services will drive efficiencies, innovation and lower price outcomes from others. Ultimately the HEO should be regarded at least in part as a proxy for that competitive provider, operating at the efficient level in the delivery of the relevant services. If the Commission sets the UCLL and UBA price according to that competitive standard it will meet the requirements of section 18. It will provide Chorus with the relevant incentives to conduct its business efficiently and to minimise costs. In turn the reduction of rents from the upstream market will promote efficient investment and innovation and improved price competition among service providers downstream.

205. The use of ORC as the only asset valuation methodology does not permit these outcomes, because – for those civil infrastructure assets of Chorus that are capable of re-use – it permits:

a. Sunk assets to be valued at current replacement costs, when it is clear that those assets will not be replaced (ie they are not efficient forward looking costs); and

b. Costs that will not in reality be incurred in providing the service to be included in the overall cost models.

The Commission's approach to re-use

206. In its further draft determination, the Commission continues to exclude reuse of existing infrastructure assets such as ducts from consideration even in light of empirical evidence of this technique being commonly used by Chorus and other network operators in New Zealand. For the reasons set out below in our discussion of the Vodafone decision, we consider this to be a reviewable error.

207. What is most perplexing is that the Commission recognises the potential impact of re-use of ducts can represent a significant cost saving, but still declines to recognise it in its modelling. In paragraph 1316, the Commission indicates that TERA has advised that the impact of allowing re-use of existing duct would reduce the resulting UCLL price by 9% from the Commission's current base case. That seems like a significant cost saving to us – certainly one an HEO would take advantage of, and a significant efficiency that the Commission's model should not ignore.

208. We note further that there would likely be other opportunities for re-use of other existing assets for which the cost is already avoidable.

209. We continue to be of the view that the EU approach to the reuse of existing assets rejected by the Commission is not novel, but correctly reflects the application of TSLRIC thinking provoked by the need to consider the impact of NGA networks on existing regulation. The incremental cost of access to reusable assets can readily be valued; the most defensible approach relates to actual costs incurred by the infrastructure owner. This might reflect an allocation of costs for use of those assets by the regulated service, reflecting the cost of and on the actual capital currently employed in relation to them, ie an allocation of the capital cost in the books reflecting the actual recovery to date for financial capital maintenance purposes to preserve shareholder capital. This is likely to represent a reasonable estimate of the return available to the infrastructure owner in a workably competitive market.

210. We urge the Commission to reconsider the re-use of existing long life assets whose costs are in actuality likely to be avoidable. The impact of these decisions on the modelled FPP price for UCLL is significant, and contributes to higher prices for the UCLL service and by extension the UBA service for end-users.

211. We are not saying that Chorus shouldn't be compensated for efficient forward looking investment – a properly constructed TSLRIC model anticipates future investment. What we object to is paying for something that will never occur – the very thing the Supreme Court in Vodafone found to be unlawful.

212. As set out by WIK in their expert reports in the submission and cross submission prepared on the December UCLL Draft Determination, there are a range of reasonable approaches to reflect the impact of re-use in the FPP UCLL cost model.

213. WIK has proposed a means to estimate re-use and make an adjustment to the model, and TERA has already valued the impact on the total cost. The Commission dismisses this as being too broad brush. However many of the approaches and adjustments it makes are equally broad brush and estimates – this is a criticism that could be applied to the model. If the use of this technique realises efficiencies that a competitive market would realise (and we know they do, because even the uncompetitive market in which these services are provided in today realises them) the Commission cannot be blind to it.

214. The Commission's hypothetical HEO/MEA model is helpful in identifying the efficiencies that Chorus, tied to its legacy network and assets, has not yet realised. It cannot, though, be used in such a way as to prevent the Commission also recognising the efficiencies that Chorus itself can realise and is realising with that legacy network and assets. That would frustrate the Act.

Legal considerations

215. In our view, the Commission's approach fails to apply correct legal principles. The essential legal problem with the Commission's approach is that:

a. TSLRIC, interpreted in light of section 18, requires the Commission to set a price limited to the recovery of efficient forward looking costs for Chorus to provide the regulated services; and

b. The rigid focus on following a model that incorporates the costs of building an entirely new network from scratch means that Chorus will be compensated for costs it will not incur and inefficient costs.

216. The Commission's defence is that TSLRIC requires this approach, and also distinguishes relevant Supreme Court precedent. This is wrong. It amounts to the Commission saying that its choice of model means that relevant legal principles do not apply. A court would instead find that proper application of the relevant legal principles means that the Commission's choice of model was an error of law.

The Vodafone decision remains persuasive in the current context

217. The Commission considers that the Vodafone decision has no bearing on its determination to use ORC when applying TSLRIC, and is distinguishable from the present circumstances on the basis that:

a. It was made in a different context and related to determining the TSO costs (paragraph 1247); and

b. An historic cost approach to asset valuation would be inconsistent with its forward-looking approach in the TSLRIC context (paragraph 1253 and 1254).

218. However, in our view the Commission has erred in its view that there is limited precedential value in the decision. It was the Commission that asked the court to provide a judgment, even after the parties had settled and with full knowledge of the changed legal regime with regard to TSO. The court would have known that it was the principles of its decision that were necessarily relevant to future Commission processes.

219. In our view, the Supreme Court has established a clear legal principle regarding asset valuation that is not tied to the statutory provisions under consideration in that case. It is of course true that different circumstances could mean that the principle has no application. However it does not follow that because the circumstances are different, the principles does not apply. The following explains this distinction.

220. The Supreme Court established that:

a. the calculation of efficient costs of assets does not allow sunk assets to be valued at current replacement costs, when it is clear that those assets will not be replaced; and

b. it is an error of law to use a model or methodology that artificially inflates costs above their efficient value or include costs that would not in reality be incurred in providing the service.[40]

221. We accept that the statutory contexts under which those legal principles were established are not entirely aligned with the current regulatory framework:

a. In Vodafone, the Commission (and the Court) was tasked with identifying the "net cost" to an efficient service provider of providing the service in question;

[40] *Vodafone New Zealand Ltd v Telecom New Zealand Ltd* [2012] 3 NZLR 153 (SC).

b. Here, the Commission is tasked with setting a price for the service that meets the section 18 objective, by applying TSLRIC.

222. Nevertheless, we still think that the Commission has failed to demonstrate that the legal definition of TSLRIC means that the principle established by the Supreme Court does not apply in this case. The Commission has simply chosen to follow a certain approach under TSLRIC that it believes excludes application of the Supreme Court principle. We say that was a choice that is not allowed by the Supreme Court decision.

223. The essential task for the Commission in the present context is the same as that which was undertaken by the Supreme Court. Common to both tests is the concept of identifying the "efficient costs" of providing a regulated service. That is, the cost to Chorus acting efficiently - as acknowledged by the Supreme Court in Vodafone:[41]

> [...] The definition's reference to "an efficient service provider", although apparently hypothetical, must, when it is applied to Telecom for the legislative purpose, be construed as meaning "... cost to Telecom acting efficiently".

224. The Commission takes the correct view that the TSLRIC model does not in itself dictate the choice of asset valuation methodology. For example, it has recognised that:

a. There are a range of asset valuation methodologies consistent with forward-looking costs and TSLRIC;[42]

b. Forward-looking TSLRIC models can apply a number of other approaches to asset valuation and the Commission has discretion to choose such an approach.[43]

225. Accordingly, TSLRIC does not establish a legal requirement to apply an ORC methodology contrary to the principle established by the Supreme Court.

226. The relevant legal requirement is for the Commission to establish a model that only includes efficient forward looking costs of providing the regulated service. That requirement constrains the Commission's choice of model - including asset valuation.

227. By fixating on ORC being consistent with its concept of a hypothetical efficient operator building a new network from scratch, the Commission has failed to ask whether its model is consistent with the relevant legal tests.

228. Put simply, the Commission appears to be making the same mistake identified by the Supreme Court in Vodafone. That is, it has:[44]

> [...] designed a model that could allow net cost to be set at a price higher than Telecom's actual costs.

229. As identified in Vodafone, by allowing Chorus to recover the costs of valuing notional assets on an "as-new" or entire "cost of replacement" basis, the Commission:[45]

---

[41] *Vodafone New Zealand Limited v Telecom New Zealand Limited* [2011] NZSC 138 at [82].
[42] Commerce Commission *Implementation of TSLRIC pricing methodology for access determinations under the Telecommunications Act 2001: Principles Paper*, 20 February 2004 at [39]-[40].
[43] Commerce Commission "Further draft pricing review determination for Chorus' unbundled copper local loop services" 2 July 2015, paragraph [1218].
[44] *Vodafone New Zealand Limited v Telecom New Zealand Limited* [2011] NZSC 138 at [43].

[45] *Vodafone New Zealand Limited v Telecom New Zealand Limited* [2011] NZSC 138 at [81].

a. fails to reflect the reality that Chorus' assets are not new and that they will not require replacement; and

b. affords Chorus the benefit of the "cost" of notionally depreciating the assets again, when in fact, they are not real costs.

230. The Supreme Court correctly identifies that double recovery, or otherwise, artificial inflation of the value of an old asset, essentially provides:[46]

> a windfall for the firm in terms of an enhanced return on and of capital employed.

231. Such an effect, in our view, again goes to undermine the statutory purpose of promoting efficiency. To be clear, it is no answer to say that the MEA concept under TSLRIC abstracts away from Chorus' actual assets and costs. Given that the notional assets and costs under the model are used to set real world prices, the real world outcome is the same as that which the Supreme Court found unlawful – namely, allowing Chorus to recover costs that it will never in fact incur on a forward looking basis.

232. In summary:

a. The requirement to apply a TSLRIC approach does not entitle the Commission to move away from determining the costs to Chorus acting efficiently. The Commission's choice of an ORC under its hypothetical new entrant model has led to this departure, which shows that the Commission has either:

i. misinterpreted the statutory definition of TSLRIC; or

ii. applied TSLRIC in a way not permitted by the Act.

b. It is a fundamental error of law, under a regime which requires the determination of the efficient costs of Chorus providing the UCLL service, for the Commission to elect a model that allows for the recovery of costs on legacy assets that either will not be incurred, or have already been recovered, by Chorus.

No evidence that an ORC model will promote competitive bypass

233. The Commission considers that the competitive bypass of Chorus's UCLL network by the deployment of the fibre network is a relevant factor to take into account when considering the choice of asset valuation methodology under TSLRIC (paragraph 1227). This is because, in its view, the use of ORC:

a. Is consistent with efficient investment by promoting entry decisions on whether to build network infrastructure or to purchase regulated access to existing infrastructure (paragraph 1227); and

b. Is likely to facilitate the competition emerging between local fibre companies and Chorus, which is expected to provide long-term benefits for end-users (paragraph 1227).

234. Even if this was a legally permissible approach, the Commission has not advanced sufficient evidence to support this reasoning. Rather, the Commission's reliance on the effects of competitive bypass to justify the use of ORC is misplaced:

a. The migration of end-users to fibre is inevitable regardless of copper pricing; and

[46] *Vodafone New Zealand Limited v Telecom New Zealand Limited* [2011] NZSC 138 at [70].

b. There is more benefit to be gained for end-users (consistent with s18) if fibre investment continues as required under government contracts, and copper pricing is not artificially inflated in the meantime.

Weighted average cost of capital

235. The Commission's further draft decision on the Cost of Capital for the UCLL and UBA pricing reviews flows into the 2 July Revised Draft Determinations on UCLL47 and UBA48. The Commission is required to set a forward looking post-tax WACC estimate for the purposes of both determinations.

236. There are a number of changes in the key parameters of the WACC estimate as summarised in Table 1 on page 6 of the 2 July WACC Revised Draft Determination. A key driver in the change in the WACC estimate from the December 2014 Draft Determination is the 93 basis point reduction in the risk free rate estimate which is to some degree offset by changes in other parameters made by the Commission. We do not comment further on the risk free rate and debt premium estimates since they will clearly change in the final determination. We have commented in past submissions on the Commission's approach to estimation of these parameters and do not repeat those comments here.

237. We have asked Network Strategies to analyse the Commission's decisions on WACC issues and provide us with their expert views. These are set out in section 8 of Network Strategies' report attached to this submission.

238. In relation to the Commission's approach to increasing its estimate of asset beta, we have reviewed the updated Oxera analysis.49 We agree with the conclusion that Portugal Telecom should be removed from the comparator sample, although, as noted by Network Strategies, consistency should mean that all Portugal Telecom data points should be removed from the sample. In our submission on the December 2014 WACC draft determination, we supported the Commission's decision to rely on Oxera's refined comparator sample, and subject to the comments above we continue to be of that view.

239. Nonetheless, we continue to think that the Commission should place more weight on asset beta data from the comparator set for the most recent (revised) five year period, for the reasons set out in that submission. In short, we think the most recent time period data is the best indicator of the risks currently facing the HEO in the rapidly evolving telecommunications environment and which would influence the observable asset beta.

240. Network Strategies analyse the Commission's approach to deriving a refined asset beta estimate from Oxera's refined comparator sample and suggest that even giving weight to the earlier five year period (as revised) the midpoint estimate would be closer to the asset beta value set in the December 2014 WACC Draft Determination. Spark supports this view, and considers that the updated Oxera analysis actually supports the Commission's original estimate, We believe the Commission can take comfort that Oxera provide them with reassurance that the risk is minimal of using an asset beta which might be too low.

241. Network Strategies also analyse the Commission's revision of its leverage estimate, We agree with the Commission that it is preferable to adopt a consistent approach to leverage and asset beta due to their interrelationship in the WACC estimation process. Nonetheless, for the

[47] 2 July UCLL Revised Draft Determination at paragraphs 360- 365
[48] 2 July UBA Revised Draft Determination at paragraphs 327-332
[49] Oxera (2015), *Second review of submissions on the WACC for UCLL / UBA*, 15 May 2015

reasons set out by Network Strategies, we think the evidence more strongly suggests that the leverage estimate for the December WACC Draft Determination was a more correct estimate.

242. In relation to the estimation of swap costs, we consider that the Commission's assumption that firms will generally be required to swap from fixed to floating and from floating to fixed is not necessarily valid. Network Strategies adduce evidence to suggest that in practice this is not a sound assumption and provide an alternative suggestion based on market behaviour. We think the Commission should make an assumption which more closely reflects the observed decisions made by market participants.

243. The Commission has decided, in relation to UCLL and UBA to deal with three issues relating to asymmetric risk faced by the HEO:

a. An *ex ante* allowance for the asymmetric risk of catastrophic events by using Chorus' costs as a starting point for the costs which would be incurred by the HEO including the costs of catastrophe insurance;

b. An *ex ante* allowance for the asymmetric risk of asset stranding due to technological change through the adoption of asset lives which recognise the risk of asset stranding; and

c. Excluding any *ex ante* allowance for the asymmetric risks of asset stranding due to competitive developments or future regulatory decisions relating to re-optimisation.

Asymmetric risk of catastrophic events

244. In relation to catastrophic risk, we continue to hold the view that the HEO would insure against catastrophic risks as set out in our submissions and cross-submissions on the December draft determinations for UCLL and UBA. Spark supports the Commission's approach to allowing *ex ante* compensation for asymmetric risk. We note too that although the Commission has taken Chorus' insurance and other costs as being, in their judgment, the best available information on the likely costs incurred by the HEO, it has also adjusted these costs to reflect the efficiencies of the HEO.

245. In relation to these allowances, and in general in connection with the Commission's approach to the allocation of OPEX in the FPP model, we continue to have concerns on the use of top-down accounting information. As noted by WIK in their expert reports during the submissions and cross submissions in this process, the use of OPEX data drawn from Chorus for use in the bottom up cost model in the way applied by the Commission, is not best practice, and more importantly risks the imposition of inefficiencies on the HEO's cost structure. As set out in paragraph 4.2.2.1 of WIK's expert report of 20 February 2015 in relation to the December draft determinations, there are a range of reasonable alternatives which the Commission has chosen not to take into account. At the very least, we think the Commission should consider using an alternative method as a cross-check on its reliance on Chorus data to avoid inefficiencies.

Asset stranding due to technological risk

246. The Commission has considered the issue of asset stranding due to technological change, and determined that the asset lives currently incorporated into the TERA model provide adequate compensation for the asymmetric risks associated with asset stranding due to technological change. We agree, consistently with our past submissions on this point that no further increase to the discount rate is required to provide additional compensation for asset stranding.

No ex ante compensation for competitive or regulatory uncertainty

247. We continue to agree with the Commission's decision not to provide an ex ante allowance for asset stranding due to competitive developments or the risk for future regulatory decisions. We support the further decision that it is not appropriate to provide an allowance for these classes of asymmetric risk.

Price Trends

248. For the July Revised Draft Determinations on UCLL and UBA, the Commission has asked NZIER to provide advice on price trends. NZIER have recommended different methodologies in a number of cases. Spark asked Network Strategies to carry out a review of the NZIER approach and comment on their findings.

249. In section 6.1 of their report, Network Strategies discuss and comment on the approach used by NZIER. A key change from the TERA approach is the use of average annual growth rates by NZIER. Network Strategies comments, and we agree that the NZIER approach will smooth volatility and better reflect the underlying trend. The calculation methodology also appears more robust than the TERA approach to estimating compound annual growth rates.

250. Network Strategies comments that the use of the midpoint of the Reseve Bank of New Zealand's inflation target for the CPI estimate is a reasonable approach to use in relation to price trends. Spark agrees that this is appropriate.

251. In paragraph 6.4 of their report, Network Strategies advise that there appears to be a discrepancy in NZIER's presentation of a price trend for fibre optic cable. For the reasons set out in detail in their expert report, they recommend that the price trend for fibre optic cable should be -3.0% based on US data for the period 2003- 2014.

252. Network Strategies also observe that in the TERA model and the results set out in the July Revised Draft Determination, TERA has not consistently updated its modelling to use the NZIER price trends for copper, fibre, and building. We think the NZIER price trends represent a more robust approach to estimation of price trends, and suggest that the Commission request TERA to update their modelling accordingly in the final determination.

Capital contributions

We support the Commission's proposal to exclude assets funded by third parties

253. Chorus receives capital contributions from end-users and the Crown for assets deployed in the network. These contributions can be in cash or in kind in a variety of circumstances. For example, customers are obliged to provide an open trench and directly incur the cost of lead-in installation, property developers are responsible for the costs of reticulating a sub-division, and the Crown has made significant capital contributions to the deployment of rural and urban fibre infrastructure.

254. The result is that the FPP services are provided, in part, over infrastructure which has been funded by a third parties. Accordingly, the Commission must determine how to treat these capital contributions for the purposes of the regulated model.

255. The Commission proposes to exclude costs for trenches for all underground lead-ins and trenches for subdivision built after 2001. The Commission excludes these costs as in its view, based on Chorus' practice, an efficient provider would not incur those itself but charge them directly to end-users, and the Act evidences a general intention that Chorus should not over-recover its costs.

256. We support the Commission's proposal to exclude assets funded by third party contributions. The Commission is tasked with identifying directly attributable efficient costs and, failing to recognise contributions from end users and third parties to assets, can only result in double recovery and overstatement of efficient costs for the service. To capture these contributions again in FPP prices defies common sense and is at odds with the Act, including the requirement on the Commission to avoid double recovery of costs.

257. The legally correct approach is to exclude from the Commission's models the capital costs for those assets that have been, and/or will be, paid for by contributions from end-users and the Government's UFB and RBI schemes. Ongoing maintenance for these assets will, in contrast, be faced by Chorus (where it is not on-charged to end-users or RSPs through transaction charges for items such as truck-rolls) and should be factored into the model, as we understand is presently the case. This is because:

a. As noted by the Commission in referring to the TSLIC definition, the Act demonstrates a general intention that Chorus should not over, or double, recover its costs (Commission emphasis):

> *TSLRIC, in relation to a telecommunications service-*
> *(a) Means the forward-looking costs over the long run of the total quantity of the facilities and functions that are directly attributable to, or reasonably identifiable as incremental to, the service,* ***taking into account the service provider's provision of other telecommunications services….*** **[emphasis added]**

b. As we discuss above, the wider FPP framework and Act require a focus on efficient costs. This requires the Commission to ensure it removes over and double recovery of costs as, without doing this, prices will inevitably be inefficient; and

c. Obviously regulated services should bear no more than their fair share of costs, with appropriate allocations across services other services.

258. The FPP price is intended to reflect future costs and, therefore, the Commission should look for indications of what an efficient operator would do today. This best mitigates the risk of future double recovery and inefficiently high prices.

We believe there are still assets that are funded by third parties included in the Commission's model

259. Despite its stated principle to exclude assets funded by third parties, the Commission's model still does not fully capture the scope and implications of end user and Crown contributions. For example, end users contribute more than an open trench for lead-in installation, and UFB and RBI funding is clearly a real world contribution to provision of the network. Similarly, end-users contribute to the cost of aerial lead-ins. A review of the service scope indicates that the Commission has not fully removed the double recovery in the model to date.

The Commission wrongly ignores certain third party contributions because they do not lead to double recovery in the Commission's hypothetical model, even though they do have that result in the real world

260. The Commission proposes to only deduct contributions to the extent that they influence the TSLRIC cost of the network, and therefore the final price. Contributions received that do not result in the creation of identifiable assets have not been taken in to account.

261. This approach elevates solving for a "pure" MEA ahead of the Act's clear statutory direction – recognised by the Commission – to avoid double recovery of costs. We have commented on this

theme in our submissions above on the Commission's regulatory framework – the MEA and HEO concepts are mere tools to assist the Commission in identifying efficiencies that a competitive market would achieve and that Chorus has not. They are not intended to, and cannot, prevent the Commission identify and account for, efficiencies that Chorus has in the real world achieved. The Commission's approach results in double recovery by Chorus of real-world assets, in contravention of the Act.

Lead-ins

262. The Commission proposes to exclude, for underground network deployment, the cost of lead-in trenching from the property boundary to the building. The Commission has not excluded aerial lead-ins to date (even though there is a $195 charge for lead-in installation) as the link to the TSLRIC cost is not clear and it has no historical information regarding past practice. The Commission has requested submissions on this point.

263. As set out in our February 2015 submission, it is not clear to us that lead-in installation forms part of the regulated services and can therefore be considered directly attributable to the service. The STD service description specifically excludes the lead in from the service:

> 2.8 The UCLL Service specifically excludes:5
>
> …
>
> 2.8.11 Installation of new copper loops between the Exchange and an End User's premises or installation of new service leads at an End User's premises;
>
> …

264. Accordingly, the UCLL service is only available where there is an existing service lead in to the building. A separate lead-installation service and charge is levied for that service. The Commission has not provided a view on this question yet.

265. In any case, it is clear that the end user contribution to lead-in installation goes far beyond trenching. In its 20 February 2014 informer, Chorus states that the copper lead-in service comprises:

a. Installation of a 20mm pipe in an open trench;

b. Installation of an External Termination Point (ETP); and

c. Provision of an underground copper service lead (in 20mm pipe) and/or four span of overhead service lead between the Network Distribution Point and ETP.

266. Chorus is equally clear that the $195 charge is to *"recover our costs"* to install a standard lead-in that is under 100 meters. For service lead-ins over 100 meters, customers are charged $195 plus time and materials for any additional distance.[50] Likewise, lead-in guidelines for contractors are clear that lead-in installation is the property owners' responsibility.[51]

267. Sub-division developers are required to provide an open trench and reinstatement, install Chorus plant in the trench (within the subdivided area and along the frontage of the subdivision), and pay a contribution towards Chorus' costs including design, materials and supervision. Where

[50] The informer can be found here https://customer.chorus.co.nz/changes-to-the-way-we-charge-for-copper-service-lead-ins
[51] Guidelines here https://www.chorus.co.nz/wiring-for-broadband/contractors/installig-underground-telecommunications-lead-ins-for-urban-premises#cs-182885

outside Chorus UFB areas, developers must contribute the full costs plus margin as if it were a non-standard deployment. Chorus' sub-division policy indicates an expectation that developers contribute the full costs to reticulate the sub-division.[52] Further, chorus charges end users and developers for the full costs to extend or augment the network when requesting to connect to the network, including core capacity.[53]

268. A separate STD transaction charge applies to connect the customer. At the time service is provisioned to the dwelling, Chorus will undertake network configuration, connect the network copper to lead-in at the pillar or terminal and connect the lead-in to premise wiring at the ETP. This is charged to customers through the regulated connection charges.

269. In effect, customers and developers contribute to the full cost of the lead-in and there can be no reason to include these costs in the regulatory model. Accordingly, all the costs from the Network Point to the customer should be excluded from modelled costs irrespective of whether these are for underground or aerial lead-ins.

The model incorrectly captures costs for lead-ins over 100 meters

270. WIK supports the Commission's revised approach as a more consistent approach that avoids Chorus double recovery of costs that would be, or are in fact borne by end users or third parties. WIK note that, in applying this principle, the Commission should ensure it excludes costs for reticulating sub-divisions and aerial lead-ins. WIK could not verify whether copper cable and installation costs have been excluded from the cost base as these costs are hard coded in the model and cannot be checked. These costs should be excluded if not excluded already.

271. Further, WIK notes that the model incorrectly includes costs of lead-ins over 100 meters. On the face of it, the model continues to capture lead-in costs over 100 meters even when the threshold parameter is set to exclude these costs. This means that the current model results include the costs of lead-ins over 100 meters even though the Commission intended them to be exclude (paragraph 240).

RBI and UFB contributions

272. Chorus has also been the recipient of significant public subsidies to deploy rural and urban fibre infrastructure. The Government RBI initiative has contributed over $1.2 billion to Chorus to replace much its copper network through RBI and UFB initiatives. The Government proposes to contribute up to $310 million to extending the RBI and UFB initiatives beyond the current boundaries.[54] Chorus has announced it is participating in the initiative, and can be expected to receive a significant portion of the funding.

273. The Government contributions provided for the deployment of specific infrastructure and these outcomes are publicly available. For example, the RBI initiative has resulted in the deployment of 3100 km of fibre and 986 cabinets.[55] However, the Commission has not reflected these substantial contributions in the model and this inevitably overstates efficient costs.

274. As NWS note in its reports, while unclear from the draft, the Commission appears to have implemented the principle that allowances will be made for capital contributions only where there

[52] The Commission holds this information – it requested Chorus provide this information in its 12 September 2014 section 98 notice, question 4.
[53] See Chorus information at https://customer.chorus.co.nz/field-services/lead-in-services#extension-and-augmentation/network-extension-and-augmentation?&_suid=143933295103200434437347449914 13
[54] Details of RBI and UFB extension initiatives are on the MBIE website http://www.med.govt.nz/sectors-industries/technology-communication/fast-broadband/new-initiatives/
[55] Details of the arrangements and infrastructure outcomes can be found on the MED archived website here http://ndhadeliver.natlib.govt.nz/ArcAggregator/arcView/frameView/IE6639384/http://www.med.govt.nz/

is a demonstrable impact – manifested in 'identifiable assets' – on the TSLRIC cost of the network, and therefore the final price.

275. NWS notes that the Commission's approach, based on identifiable assets in the network, fails to reflect that it is tasked with estimating the efficient costs of the modern network that would be deployed today. The Commission is estimating the costs of a fibre/FWA network. The UFB and RBI contributions are directly relevant for assessment of these efficient costs. The fact that the subsidies are required to encourage commercial fibre deployment beyond more densely populated areas proves that the HEO would seek more cost-effective technological alternatives to serve the more sparsely populated locations.

276. Further, NWS note that the Commission should ensure the model's results have not been indirectly affected by real world subsidies without any compensating allowance. For example, recognising upgraded RBI lines in its count of full speed lines for the purposes of assessing FWA costs, without allowing for the subsidy in the model.

277. As we set out above, we consider the Commission's approach is overly concerned with perfecting its MEA, rather than considering real-world double recovery and efficiencies. This aside, for the Commission's approach to hold (without risk of double counting or over-recovery), then RBI and UFB funding and outcomes would have to be fully additional to the modelled network. We do not believe this is plausible. In terms of Chorus' existing network, unless the upgraded assets were brand new, the contribution would have funded part of the existing functionality (because replacing an asset part way or at the end of asset's useful life means Chorus avoids costs). The fact that Chorus reports minimal investment in the network suggests that the bulk of the contribution is for assets that would otherwise be replaced. In the modern network being assessed by the Commission, where the existing deployed assets are irrelevant, the contribution fully provides for the relevant assets. This contribution is available to the efficient provider and, therefore, the funded asset should be removed from the model.

278. The Commission should undertake an analysis of where the RBI and UFB contributions have been directed, and remove these assets from the model. The Commission must undertake this analysis – it is not something that can be dispensed with on principle.

279. If the Commission undertakes this analysis, we accept that not all funded assets will be removed from the model. But there will be significant assets removed from the model. For example, the RBI initiative provided for fibre backhaul to cabinets, cell sites and demand centres and these funded assets removed from the model. Similarly, the Government programmes also provide for the installation of school lead-ins and these, properly, should sit outside the model in any case.

280. The UFB and RBI contributions to assets forming part of the modelled network should be reflected in the model by removing the assets.

Performance adjustment

281. In the Commission's December draft UCLL determination, consideration was given to the question of performance-based cost adjustments to the MEA to take account of the fact that the performance of the selected FTTH point-to-point MEA was capable of substantially exceeding the capability and performance of the existing copper fixed access network. By extension this increase in performance plainly provides clear benefit to end-users. The Commission's draft decision was as follows:

> We consider that a MEA adjustment on the basis of consumer preference or technological performance would be very difficult to estimate in practice and is likely to introduce a degree of unpredictability, and is therefore not supported in this draft decision. [56]

282. The further draft determination for UCLL does not make any further decision in respect of performance adjustments. The Commission briefly discusses performance adjustments in connection with the consideration of making an uplift to the TSLRIC price. Reference is made to the April consultation paper issued by the Commission canvassing views on their analytical framework for considering the welfare implications of an uplift to the TSLRIC price for UCLL, and Professor Vogelsang's comments on the December Draft UCLL Determination decision not to make an uplift.

283. Professor Vogelsang's June 2015 comments to the Commission[57] referred to the factors which, in our view, implicitly provided an uplift to an efficient TSLRIC price. Professor Vogelsang advised that there was no need for an uplift to TSLRIC pricing "*as long as the main parameters are selected in a neutral way, re-use of assets is not given special credit and there is no performance adjustment for the QoS difference between UFB and copper access*".

284. Consistent with Professor Vogelsang's comments, the Commission further note in paragraph 522 of their Further Draft Determination, that they have set *a UCLL price which is largely independent of Chorus' actual costs*. In paragraph 523, they also note that the absence of a performance adjustment to reflect the higher capability where a fibre network is modelled compared to the copper network, (and the exclusion of re-use) further mitigates the need for adjustment.

285. In our August 2014 submissions on the UCLL and UBA FPP: consultation on regulatory framework and modelling approach, Spark acknowledged that there were difficulties attached to determining a performance adjustment based on consumer preferences or technology performance characteristics. We continue to recognise the difficulties in making any such adjustment but we have pointed to available techniques to make a reliable estimate, and we think some effort should have been made to examine the issue.

286. In our February 2014 response to the Commission's UCLL FPP process and issues paper we responded to the Commission's question 28 as to whether performance adjustments should be made in paragraphs 138-141. In paragraph 141 we directed the Commission's attention to conjoint analysis techniques as a robust, established and practical means of examining the quantum of an adjustment based on end-user preferences and where correctly carried out:

> We believe that the best option for the Commission in making adjustments for utility would be based on rigorously constructed willingness to pay surveys with sufficient sample size and using conjoint analysis techniques. This is an established and useful technique to provide information on end-users preferences. This is an issue on which we suggest that the Commission seek detailed guidance from expert advisors.

287. The Commission cannot reasonably have reached the view that a performance adjustment would be uncertain without a realistic attempt to estimate the likely magnitude and examine the robustness of the estimation methodology.

288. As the TSLRIC modelling process has proceeded, the discussions around the justification for an uplift to the regulatory WACC and/or the TSLRIC price have been in many cases been made based on assumptions rather than on any assessment of the materiality. In the case of

[56] Paragraph 567 of the December Draft UCLL Determination
[57] Professor Vogelsang "*Reply to Comments on my November 25, 2014, paper "Current academic thinking about how best to implement TSLRIC in pricing telecommunications network services and the implications for pricing UCLL in New Zealand"*" 23 June 2015, paragraph [24].

performance adjustment, we think that a best practice TSLRIC modelling approach would be to attempt an assessment of the impact to ensure that the most efficient possible costs are reflected in the regulated prices.

289. Where the Commission has carried out such an exercise, such as in connection with its analytical framework, a decision about the merits of adjustment or other regulatory actions can be made based on objective evidence rather than assumptions. Only then can an informed decision be made as to the validity of an adjustment. By not doing this, it is clear that the Commission's current TSLRIC modelling will overstate the TSLRIC costs of providing the UCLL service by an unknown amount.

290. This also means that the welfare impact of the proposed TSLRIC price cannot reliably be estimated since the fixed access network performance relative to price will impact on consumer choices. By failing to at least make a reasonable estimate of the reliability and potential magnitude of a performance adjustment, the Commission runs the very real risk of undermining future investment in network performance improvement. This is because, all other things being equal, Chorus will receive the value of higher performance with weaker incentives to make any investment in order to earn it.

Opex

The model continues to be based on inefficient operating costs

291. The operating costs comprise a significant portion of the overall cost of the services and the Commission should ensure that these are efficient. Yet there is little transparency in how many opex costs are derived and efficiency adjustments made.

292. In WIK's February 2015 report, it noted that the models overall approach to opex is flawed. The model takes the opex from Chorus accounts and applies limited efficiency adjustments that mainly take into account fibre access network efficiencies (paragraph 271).

293. In its revised draft determinations the Commission continues to conclude that Chorus' operating costs, as the best objective evidence of opex for a national New Zealand provider, should be the starting point for identifying efficient operating. This results in a top-down approach to a material component of what the Commission has characterised as a bottom-up cost model.

294. As WIK submits, and has submitted, if the Commission is to use this approach, it must undertake a rigorous analysis of Chorus' actual opex to identify exactly what costs and activities are recovered within it (in order to ensure there is no double recovery or recovery of irrelevant costs that would not exist in an efficient network) and to identify the nature and scope of adjustments required to Chorus' actual opex. The fundamental issue is that Chorus' actual opex is:

a. Predominantly based on supporting and maintaining a legacy copper network which has assets ages, fault rates and maintenance costs that bear no resemblance to those of a modern FTTH network; and

b. Supporting two parallel networks (a ubiquitous copper network and a rapidly growing fibre access network).

295. Common sense tells us that there will need to be significant and material adjustments for this opex to be an appropriate estimate of the efficient opex for a modern FTTH network. We do not observe that level of adjustment in the Commission's revised draft determinations.

296. WIK proposed a number of suggestions– including efficiency adjustments and labour productivity targets - that better support the model objectives, and provide more efficient incentives and provide more confidence that costs are efficient.

297. The Commission has not adopted any of WIK's recommendations, and instead now proposes to model a less efficient network than that proposed in its first draft. For example, the Commission has increased the level of opex in its revised draft UCLL modelling, by scaling back its fibre efficiency adjustments. Previously, the Commission has performed its principal opex efficiency adjustment in two steps:

a. First, it scaled down Chorus' actual maintenance costs by an efficiency factor reflecting a lower level of faults (LFI) in a newly built network relative to Chorus' aged network – ie adjusting for the difference between an old copper network, to a new one; and

b. Then, it applied an adjustment to reflect the shift from a (new) copper network to a (new) fibre network.

298. This approach made sense – the order was logical, even if we took issue with the scale of these adjustments.

299. In its revised draft determinations though, the Commission has reversed the order of these adjustments. The order no longer makes sense:

a. First, the Commission applies the adjustment to reflect the shift from a copper to fibre network – except now it is effectively producing an adjustment to go from an old copper network to an old fibre network;

b. Then it applies the LFI adjustment – which is now designed to adjust an old fibre network opex for a new fibre network.

300. The problem with this re-ordering is that the LFI adjustment is designed to apply to an old copper network – not a fibre one. Performing this adjustment on a fibre network makes no logical sense – it is a copper network adjustment, that may well have no relevance whatsoever to the change in fibre fault rates over time whatsoever.

301. Further, the Commission has reduced the fibre efficiency adjustment by 20%, from 50% to 40%. In the context of what is already an upwardly biased approach to opex we cannot support this decision. As WIK notes, Verizon reports cost savings of 60% compared to 40% applied in the Commission's proposed model, suggesting the previous adjustment factor under, rather than over-estimated the correct figure.

302. WIK's also highlights the potential double recovery of costs through opex allocations and non-recurring charges, and notes there is no evidence that the Commission or TERA has performed a rigorous analysis of this potential (paragraph 332 in the WIK report).

There are significant unexplained increases in operating costs

303. It is difficult to get to the bottom of changes to proposed adjustments to allocating operating costs. The Commission has made significant adjustments to the treatment of common operating costs – effectively matching off reductions in asset and opex costs– yet these adjustments are not transparent. However, while there have been significant structural changes made to the model, these have not been explained or justified in supporting information.[58] The adjustments to

[58] See table 8-2 and 8-3 or WIK's August 2015 report.

opex made between the initial and revised draft are not considered in the sensitivity analysis nor discussed in any material way in model documentation.

304. In particular, the Commission has inexplicably increased the allocation of non-network costs allocated to the regulated service by over 100%. Whereas non-network costs accounted for approximately 10.48% of the UCLL price in the December 2014 draft determination, it has increased 78.8% to $22.50% of the UCLL price in this revised draft determination. This accounts for more than $2 per line per month, yet is not explained in any way by the Commission or TERA. We simply cannot submit on the appropriateness or legality of this shift in the absence of an explanation for it. We can, though, note that the previous proportion of non-network costs ($10.48% of the UCLL price) was close to international benchmarks (with no obvious reason for why we would be different to those benchmarks) whereas the new figure (22.5%) is more than 100% above them. We request further clarification from the Commission of the explanation for this increase.

305. In the end, the Commission's proposed model results in high operating costs and likely includes significant inefficiencies. WIK reports that proposed opex remains high compared to its international experience.

306. Further, the Commission's own benchmarking suggests that proposed common costs, alone, are $6 higher than seen in the comparable Swedish model[59] (paragraph 391). This gap will widen over time as, contrary to the conventional overseas approach, the Commission proposes not to recognise sector specific efficiency gains. International benchmark examples suggest efficiency improvements of not less than 5% p.a. is the norm (paragraph 350). While the model assumes there is no potential for productivity gains, as shown by announced fibre cost reductions, we believe significant efficiency gains are possible in our sector over time.

307. Therefore, the Commission should reconsider its proposed approach, considering more fully the recommendations set out in WIK's detailed February and August 2015 reports. There is real prospect that its current approach of a top down analysis with limited adjustment or analysis of the potential for double recovery or irrelevant cost, will fail to satisfy the requirements of the TSLRIC definition. The operating costs comprise a significant portion of the overall cost of the services and the Commission should ensure that these are efficient. Yet there is little transparency in how many opex costs are derived and efficiency adjustments made.

Cost allocation

308. We support the Commission's choice of cost allocation methodologies for network and non-network costs. While these choices have not changed from its December 2014 draft determinations, though, the quantum of the non-networks costs has changed considerably, with little explanation.

Converting costs to prices

Allocating total costs to UCLL and SLU

309. The Commission notes in paragraphs 400 and 1733 of the further draft determination for UCLL that since the FTTH MEA for UCLL does not contain any active cabinets, this cost model

[59] TERA points out that Chorus is not an integrated company and would suffer from diseconomies. However, functional separation is common in many market - i.e. Teliasonera operates a standalone network business in Sweden (Skanova) with a separate board, offering wholesale access services on an equivalence basis under Equal Access Board oversight - and there is no evidence that NZ consumers incur - or reason to suggest they should incur - the costs of UFB commercial arrangements. As WIK note, Chorus may well have lower costs as a standalone business. See http://www.teliasonera.com/en/about-us/markets-and-brands/sweden/

does not allow a separate price to be derived for the UCLL and SLU services. The Commission's approach to developing an SLU price is accordingly based on the prices for the underlying copper network from the MDF to the end-users ETP (less any adjustment for capital contributions), and on the cost of the fibre feeder between the exchange and the cabinet which is used to deliver UBA,

a. The Commission's approach is to use the same MEA based price for UCLL between the MDF and the end-user without distinction as to the actual network configuration of active or passive cabinets. We agree with this approach to the UCLL cost estimate.

b. By implication, the price for SLU then should be set with reference to the price for UCLL less the cost of the fibre feeder between an active cabinet and the MDF. We agree with this approach to the SLU cost estimate.

c. Once all cost estimates for the cost of the unbundled local loop, the fibre feeder between the exchange and the active cabinet, and UBA have been allocated to total annualised TSLRIC cost estimates for each service for each year of the regulatory period, the Commission then allocates these costs to UCLL and SLU based on the demand for each of these services.

d. Total demand for copper access to the full local loop is taken to be the demand for UCLL. The demand for the fibre feeder between exchange and cabinet is taken to be the demand for UBA at an active cabinet. The "demand" for SLU is taken to be identical to the demand for UBA at an active cabinet.

310. The Commission provides a cross-check to confirm that this approach neither under- nor over-recovers the TSLRIC cost of providing the UCLL, fibre feeder, and SLU services given the demand for each service. The UCLL cost is recovered in the UCLL price, the SLU cost is recovered in the SLU price, and the fibre feeder cost is recovered in the UBA price together with other copper access network related costs, and the cost of transport from the back of the DSLAM to the first data switch. The Commission's calculation is considered to satisfy the relativity requirement for considering the relativity of the UBA and UCLL prices.

311. We agree with the Commission's conclusion that the optimal forward looking MEA for UBA which a cost-minimising HEO would invest in would be a point-to point FTTH network similar to the UCLL network. The Commission's approach to estimating the SLU price is based on the implementation of a copper FTTC MEA for UBA with an access technology inconsistent with the MEA adopted for UCLL. Within the framework of the copper based FTTC MEA adopted for UBA, the logic of deriving a separate price for SLU seems reasonable.

312. We remain concerned, as noted in this and earlier submissions, that this approach to the UBA MEA creates a range of potential cross-subsidies between regulated and unregulated services using the fixed access network, and also results in inefficient network topologies. This departs from the TSLRIC objective of estimating the costs of providing the regulated service using the currently available technologies as currently deployed.

Price profile

313. We support the Commission's decision to set different prices for each of the years falling within the regulatory period. As previously submitted, by ourselves and by our expert advisors, setting a constant price path across the regulatory period, while providing price stability, also provides price signals for all parties in the telecommunications supply chain that risk distortion of efficient investment choices, This will be the case even though the prices are NPV neutral across the regulatory period as a whole.

314. Constant pricing may also impact on competition across both retail and wholesale levels of the market, in part since these prices will to some extent condition prices of unregulated services as well.

315. It is also clear that constant pricing is likely to have an impact over time since prices will be above estimated cost on issue of the final determination, above estimated cost early in the regulatory period, above estimated cost late in the regulatory period, and there will likely be a step change in pricing at the end of the regulatory period.

316. We agree with the Commission's comments in paragraph 441 of the 2 July Revised Draft Determination that the further draft decision on the price profile will mitigate the risk of price shocks at the beginning and end of the regulatory period, and provide adequate certainty for all market participants. We add that it will also avoid one set of access seekers and end-users (those who purchase services at the beginning of the period) subsidising a different set (those who purchase services at the end).

Price adjustments

317. In paragraph 453 of the further draft determination, for UCLL and paragraph 410 of the further draft determination for UBA, the Commission sets out its further draft decision on the question of whether the central estimate of the TSLRIC price, or the mid-point WACC estimate for the UCLL and UBA services is likely to give best effect to the section 18 purposes statement. The Commission relies on its quantitative analysis, submissions on that analysis, and its consideration of other relevant factors.

318. We agree with the Commission's further draft decision that no adjustment should be made to either the central TSLRIC price estimate for UCLL or UBA, or the mid-point WACC estimates. We also strongly support the Commission's reasons, on the grounds set out in our submissions and cross-submissions on the UCLL Draft Determination, the accompanying expert reports, and material addressed in the Commission's conference.

319. In section 10 of its expert report, Network Strategies refers to the Commission's view on the uplift to WACC set out in paragraphs 221-320 of the 2 July Revised Draft Decision on the Cost of Capital. This analysis examines in detail the quantitative analysis, submissions on that analysis, and its consideration the expert reports provided to the Commission by Oxera, as well as CEG's adaption of the Dobbs model and other quantitative models. The Commission states, and we agree that:

> … that these models ultimately support the conclusion that the link between a WACC uplift for UCLL/UBA and incentives to invest in innovative new telecommunications services is too uncertain to justify an uplift (compared to the increased cost to consumers, which is relatively certain).80 Network Strategies has consistently found no evidence that would support an uplift to WACC or a mid-point TSLRIC estimate in these price review proceedings.

and further that:

> In practice, we are not convinced, in the quantitative models provided, that the differences between the total welfare and consumer welfare estimates were due to factors other than a transfer of wealth from consumers to producers

320. Spark considers that the application of a WACC uplift or an uplift affecting the central estimate of UCLL and/or UBA prices is unsupported by any clear evidence, and accordingly seems likely inevitably to result in direct costs imposed on end-users while the models that have been examined do not provide reliable evidence of any long-term benefits of a sufficient scale to outweigh these direct costs.

321. In paragraph 175 of the WIK report, WIK note that although it welcomes the Commission's decision not to make any uplift adjustment to WACC, the Commission's focus has been on incentivising further investments in the copper access network. We agree with WIK's observation that an uplift to WACC, or indeed to the TSLRIC price estimate, would have an indirect flow-through effect to the investments in technology and service innovation by RSPs who face effective competition with end-users. We think it important that the Commission also take into account the impact of uplifts to WACC or the central estimate of TSLRIC pricing on all market participants in the supply chain.

322. In section 4.3.2 of the WIK report, WIK also supports the Commission's further draft decision on the uplift to central estimates of TSLRIC prices for UCLL and UBA. WIK notes that the current approach to TSLRIC pricing secures the investment incentives required to maintain the copper access network, and to incentivise migration. WIK also draws attention in paragraph 181 of its report to the fact that the Commission's analysis also provides an estimate of the welfare losses which could accrue to the extent that the TERA model calculates a TSLRIC price which inadvertently overstates the "true " TSLRIC cost of either service.

323. We strongly support the Commission's view summarised in paragraph 541, that there is insufficient evidence that the relativity requirements set out in the Act require any adjustment to the central estimates of the TSLRIC prices for UCLL and UBA, We agree that the central estimates are the prices most likely to promote the overall efficiency objectives of section 18, and are accordingly more relevant for the promotion of competition for the long term benefit of end users.

Non-Recurring Charges

324. Unlike recurring UCLL and UBA charges, this revised draft determination is the first time the industry has had a chance to submit in detail on draft non-recurring charges for those services. While the quantum of these NRCs is comparatively small ranging from $5.82 to $285 the volume of transactions – and therefore the number of end-users they affect – is enormous. Spark alone submits around **[ ]SPKCI** connection service orders per month for which it is invoiced around **[ ]SPKCI** per annum by Chorus.

325. Just as importantly, these charges and the one-off services they affect - which predominantly relate to connection and fault restoration time and cost - are integral to the service experience for our customers. Broadband and voice connectivity are critical to Kiwi's work and personal lives. There is considerable value to end-users in ensuring that connection and fault restoration for those services is efficient and cost effective, and that all parties face efficient incentives in respect of them.

326. We have also asked WIK to comment on the Commission's proposed approach.

Scope of the Commission's non-recurring charge price setting exercise

327. The Commission has updated its earlier view on the scope of its analysis, concluding that the Act focusses on the designated access services which includes all of the charges, recurring and non-recurring that are related to it. This is the correct approach, and will ensure that all of the

charges are set as part of a FPP process based on efficient forward looking costs and support desirable FPP outcomes.

328. We support the Commission's objectives to set a complete package of charges. In addition, as discussed below, we propose that:

a. The NRC services for which prices are set should be expanded to include a 10Gbps handover option and specific additional Chorus charges relating to use of existing network capacity; and

b. The Commission also set prices for premises wiring and design of hand-over mapping rather than leave the provision of these services on a POA basis.

Additional regulated options

329. As set out in our previous submission, the Commission is entitled to review transaction charges.

330. The FPP is a new pricing review determination process, pursuant to which a completely different pricing methodology used to determine prices for the designated access service. This is not a second look at the way in which the IPP was conducted or charges specified in the STD, or some kind of correction of the IPP. It is a wholly new process for determining prices for the designated access services under a completely different methodology. In that sense it is a reset of pricing of all the services described in the standard terms determination.

331. While we agree that the existing set of NRCs is a useful starting point for the Commission, we believe it should consider whether they comprise the complete package of efficient charges that support FPP outcomes (as Vodafone pointed out in its earlier submission). The technologies, services and Chorus operational practices have moved on since first determined and existing transaction charges no longer reflect all the necessary components of the service.

332. In particular, we consider existing NRC charges could be augmented by the addition of two further services:

a. *High capacity 10Gbps handover links (UBA)*

The modern network is built around high capacity 10G hand over links – such hand over lines are now mainstream and allow operators to more efficiently manage data growth. However, these are not provided for in the current price list (which is limited to 1Gb links). We currently have **[ ]SPKCI** 10G links deployed out of a total **[ ]** handover links and plan to deploy a further **[ ]SPKCI** over the next six months. The Commission's UBA model is based on a mix of 1Gbps and 10Gbps handover links. This is efficient.

[ ]SPKCI

As WIK sets out in its report, current charges for these services appear to be significantly above cost (paragraph 127 of the WIK report). This drives higher than necessary prices and inefficient behaviour, i.e. multiple network re-mapping as RSPs are encouraged to over use 1Gbps hand-overs at the expense of efficient 10Gbps links.

Setting efficient prices for this service will minimise the risk of inefficient incentives on the access provider (to price bottleneck 10Gbps handover links above cost) and the risk of inefficient purchasing signals for access seekers leading to inefficient levels of congestion for end-users.

WIK has also confirmed that the Commission has sufficient information before it to define and set a cost based for a 10Gbps hand-over connections (UBA).

b. *Charges relating to managing capacity in the copper network (UCLL)*

Further, Chorus charges for services relating to UCLL connections. In some cases, these charges relate to services outside the scope of the STD but in some cases, the services in question are closely related to the purchase of the STD services and accordingly prices should be set by the Commission. In particular, Chorus charges to:

i. Undertake a site investigation to determine whether network is available at a site ($187 for an investigation). A site investigation is long established service undertaken to guarantee a connection date and time. We had around **[ ]SPKCI** transactions in June; and

ii. Provide capacity in order to re-connect a customer to the network. Since February 2015, there have been **[ ]SPKCI** requests for this service by Spark customers with a quoted cost of **[ ]SPKCI**. Not all quotes are accepted.

333. These transactions are difficult to distinguish from the service defined in the STD. For example, while the UCLL service anticipates that there is an existing copper path and lead-in installed, it is not always possible to ascertain its capacity or connectivity without a site investigation. Similarly, if Chorus has removed (or more likely re-allocated) copper pairs in its network between the time a premises is disconnected and re-connected, it will not be possible to purchase the STD services until further capacity is added to the network.

334. As set out below, we consider the charges for these services, where they relate to the purchase of the STD service, should be set at $0 on the basis that these are not costs that would be incurred by an efficient network and - to the extent they compensate Chorus for basic network management and capacity - are implicitly already recovered in the recurring charges proposed by the Commission.

Moving from POA to defined prices for some services

335. We also consider the Commission should set specified prices for two services that it currently proposes to charge on a POA basis.

336. As noted by the Commission, the POA construct provides for competing quotes in order to check the efficiency or reasonableness of proposed charges (paragraph 620). However, in some cases, it is not feasible for RSPs to obtain competing quotes. In particular:

a. Design work for hand-over links (service 1.48 of the UBA price list) – this work is undertaken by Chorus in-house and it is not feasible to obtain competing quotes. While the complexity of each design might vary, we believe the costs could be determined on a per DSLAM mapped basis;

b. In home premises wiring (splitter deployment (service 1.50 of the UCLL price list) – the high volume and small size of each order makes it infeasible to obtain competing quotes. We currently submit around **[ ]SPKCI** service orders per month for home premises wiring, predominantly to deploy splitters in the home.

Where Chorus is required to deploy a service company in any case - i.e. 18% are in conjunction with a site visit connection, while 30% are in conjunction with a cabinet/exchange connection – as standalone visit to the customer's premises is unlikely to be cost effective. This makes it impractical to obtain competing quotes for the

premises wiring service, because all other parties will need to include the cost of transport to and from the premises in their quotes whereas Chorus is already in the field. As noted by WIK, the volume of these transactions means that deriving a specific charge should be possible.

337. The Commission should define premises wiring prices for scenarios where a service company (a) is on site for another purpose and (b) when a standalone truck roll is required.

The Commission's top-down modelling is incomplete

338. In contrast to its bottom-up modelling approach to recurring UCLL and UBA charges, the Commission proposes a top down model for NRCs, with efficiency adjustments. WIK has noted, and we agree, that this approach is second-best to a true bottom-up modelling approach. That said, having regard to the practicalities the Commission faces in undertaking that exercise in the time available, it appears the Commission has no option now but to continue with its top-down approach.

339. WIK notes that an inherent problem and limitation with a top-down approach is that the starting point is the transaction processes as they are. This approach relies on an assumption that existing transaction processes are structured efficiently and represent efficient costs. WIK demonstrates that this assumption is not warranted here, and therefore adjustments to actual costs are essential.

340. While one may assume that – overall -Chorus' agreements with its service companies represent a competitive package for the totality of services to be provided, that only holds for the package in its entirety. It does not tell us, or the Commission, anything about:

a. The specific transaction charges included in it (it is highly likely that these agreements will incorporate cross-subsidies between different codes or transactions types, and it is equally likely that it will be the regulated NRCs cross-subsidising the commercial or Chorus-internalised ones); and

b. Whether the overall volume or value of transactional charges covered by those agreements is efficient. For so long as Chorus is able to recover all of its transactional costs, and to recover network management and capacity costs, through NRCs, it will continue to do so, even if that is (a) inefficient; and (b) a double-recovery of those costs in so far as they are already recovered through the UCLL and UBA recurring charges.

341. WIK also notes in its report that the Commission has adjusted only one of seven components of service company cost calculations - the time budgeted to complete a task. The Commission calls this an adjustment for labour efficiency. However, this leaves components such as labour rates, materials, transport, design and records, vehicle and equipment costs, and civil sub-contractor and traffic management costs completely unadjusted.

342. The result is a top-down analysis with efficiency adjustment of what WIK concludes is less than 50% of service transaction costs and proposed NRC charges that are on average 22% to 46% higher than those seen in benchmark EU countries.[60] Most cost elements are not even reviewed for efficiency – the Commission simply assumes that current processes and costs such as service company costs and techniques and Chorus overheads are efficient and will continue to be efficient. The experiences of other regulators strongly suggests this is unlikely to be the case, and WIK and we present below what we consider is compelling evidence of existing inefficiencies in the NRC delivery model today.

[60] Using NZ weighted average of UCLL and UBA+ UCLL connections. See paragraphs 96-97 of WIK report.

343. The Commission's task is to set efficient charges for all non- recurring activities/charges. If it is not going to undertake a bottom-up modelling exercise, then it must perform a comprehensive top-down efficiency analysis (and likely efficiency adjustments) on all activities and costs.

The Commission's benchmarking will not result in sufficiently efficient prices

344. WIK also raises significant concerns with the Commission's international benchmarking and national benchmarking.

345. The international benchmarking used by the Commission:

a. Uses information that is out of date, some being over 10 years old;

b. Includes countries that do not have comparable labour productivity or labour costs to New Zealand. These countries (Spain, Romania and possible Country A) should be removed from the benchmark;

c. Includes transport times for some countries in benchmarked rates, but not others. We can conclusively surmise that this results in an upward-bias in the benchmark, yet no adjustment is provided for this effect; and

d. Incorrectly includes administrative costs, resulting in a double-recovery of those costs (which are already covered by the service company and Chorus mark-ups allowed by TERA and the Commission).

346. WIK shows that, despite the benchmarked charges being considered comparable to New Zealand's by the Commission, the prices arrived at by the Commission are significantly above those across Europe. In comparing the proposed charges to one country in particular (Germany) WIK demonstrates that the outlier is the proposed new connection – site visit charge, which is 50% higher than the German equivalent despite all other charges being near-identical.

347. The application of the Commission's national benchmark is perhaps even more concerning:

a. The national benchmark (which refers to a fibre network operator) fails the comparability criteria, comparing fibre transactions with copper ones; and

b. It has been applied asymmetrically. Of the six service codes considered, the adjusted costs (after the international benchmarking) were:

i. Lower than the national benchmark in two cases. In these cases, the Commission adjusted the costs upwards – effectively assuming the LFC costs are a cost floor in New Zealand;

ii. Closely comparable with the national benchmark in two cases. In these cases the Commission did not adjust the costs; and

iii. Above the national benchmark in two cases. In these cases the Commission did not adjust the costs.

348. Despite evidence of lower costs being available to Chorus in New Zealand the Commission chose to apply "efficiency adjusted" costs that are above those rates. It is difficult to reconcile this approach with an efficiency focus or the Act, or avoid the conclusion that the international benchmark was flawed in some respect for those two cases (perhaps for the reasons laid out by WIK and summarised above).

349. WIK also notes that:

a. There is currently no provision for improved efficiency over time. This will be important to create strong incentives on Chorus to continue to achieve efficiencies in the provision of these services and is common in other jurisdictions.

   The Commission's proposed approach is not capable of reflecting efficiencies due to developing new techniques (for example Chorus and its service companies are introducing significant efficiency improvement in fibre deployment costs/techniques, which must be able to be reflected in their copper deployment services and management). For example, WIK reports that NRAs in other jurisdictions promote streamlining of service provision by setting efficient prices and incentives – this is absent from the Commission's draft. Even in developed European markets, regulators anticipate ongoing NRC price reductions. At table [3-9], WIK sets out the ongoing reductions in connection charges seen in a number of European countries, ranging from around 15% to 80% over three years.

b. There are other methodological problems relating to the mapping of services codes to NFC services and the inclusion of costs that sit outside the STD or in already allocated opex.

350. As noted above, the Commission approach has resulted in high proposed charges and fails to provide for efficiencies and price reductions over time. RSPs also provide the first point of contact for customers reporting a fault and, where this is undertaken by the operator directly, this further suggests high New Zealand estimates of cost. Spark alone raises around **[ ]SPKCI** fault tickets.

351. WIK makes a number of specific recommendations to make the costing approach more robust.

352. Failing to set efficient charges undermines Chorus' incentives to be more efficient and, importantly, to pro-actively invest to maintain current regulated services. Network operators optimise a trade-off between investing in network capacity and pro-active maintenance, and avoidable operating costs (i.e. restore and connection truck roll costs). Where these operating costs are inefficiently allocated to RSPs through transaction charges, Chorus incentives to invest in the network are likewise diminished.

Anecdotally, we see a large number of efficiencies that could be obtained in the provision of UCLL and UBA

353. The Commission has adopted Chorus contracted service company costs. Chorus periodic reviews of contracts are seen as accommodating cost reductions from both efficiency improvements and increases due to labour rates and other external influences (paragraph 596).

354. However, as WIK observe Chorus copper contracted rates cannot be relied on to reflect efficient costs and techniques by service companies. As noted by WIK, service company negotiations inevitably cover a number of services and activities. Chorus and service company focus has inevitably been on reducing fibre deployment costs. Further, where charges being considered are passed through to RSPs and, where Chorus has limited incentives to reduce and optimise costs, the Commission should be cautious just accepting Chorus data.

355. We are not, for example, seeing the efficiencies in UCLL and UBA deployment practices that are evident in fibre deployment. Comparing copper network outcomes with fibre deployment indicates that there are unexplored efficiencies. Chorus has reported significant efficiency improvements and cost reductions relating to fibre deployment over the past few years. For example,

a. Chorus HY15 connection cost was $1,350 and this is expected to fall to $900 to $1,100 per connection by the end of the programme;

b. In November 2014 announced new service company arrangements that enabled Chorus to reduce its connections cost guidance by over 10% (including some non-standard installs the previously sat outside guidance;

c. In May 2015 Chorus announced the deployment of a new $50M order management system to improve programme to improve fibre installation process;

d. Chorus is working with councils and partners on a number of further initiatives to reduce fibre deployment costs, including the use of new lead-in techniques such as surface mounted cable and deployment models by partnering with lines companies (Westpower).[61]

356. We are not aware of any material new techniques or efficiencies being made for existing UCLL and UBA services. This means that, by simply adopting contracted arrangements, Commission has not reflected efficiencies that could be achieved where parties are focused on reducing cost. The Commission's limited efficiency adjustment – focussed on service company task time budgets – needs to be taken further.

357. There are real, and valuable, gains to be made. Industry copper broadband connection growth is highly skewed to VDSL. But Chorus recommends that every time VDSL is provided at a new address, a technician should install a splitter at that address at a cost of $285, or $10 amortised over 30 months. This represents a 30% increase in UBA costs to the RSP, and is the principal reason most RSPs charge a premium for VDSL – it has a significant effect on retail price.

358. Despite the quantum of this charge and its effect on end-user pricing, and having perfect information about where and when VDSL splitters have been installed, Chorus still has not made available a prequalification tool for VDSL that can inform RSPs of whether a line has already had a splitter installed on it (and therefore whether the $285 charge is needed or not). As a result, RSPs are paying $285 premises wiring charges to Chorus in many cases where this is not necessary.

359. Similarly, no prequalification tool exists to inform RSPs if a line is currently "intact" or not (which determines whether a cabinet/exchange or site visit is needed, charged at $73 and $169 respectively). These are basic functionalities that would be available in a competitive market, that would deliver real world efficiencies that will benefit end-users. They are functionalities that Chorus can deliver today but chooses not to because the regulated NRC framework currently operates to create incentives for them not to do so.

Transactions seen in a modern network

360. Further, in additional to a static approach to transaction processes identified by WIK, the Commission has adopted transaction approaches and volumes from current transactions. These are not necessarily aligned with those seen in an efficient network.

361. The currently deployed network is the product of a number of path dependent decisions and practices. This means that, for example:

[61] See Chorus HY15 results, May 2015 investor update and Westpower line company partnership (see https://www.chorus.co.nz/ultra-fast-broadband-on-the-horizon-for-greymouth#./undefined?&_suid=143936302565802715184327413 24)

a. Network records are in a poor state – potentially requiring multiple services orders and truck rolls due to incorrect network records and additional staff to manage transactions (even if these are not charged for, service companies ultimately build such costs in to prices). For example, about **[ ]SPKCI** of baseband connection "failures“ are due to Chorus network or network records issues;

b. We are likely to see an increasing need for network re-arrangements to meet demand as network capacity is likely short in some areas, i.e. due to in fill housing or use of lines to restore service rather than fixing faulty pairs; and

c. The deployment of different generations of DSLAM equipment requires physical port changes to transfer between UBA variants (this is not necessary with modern DSLAM deployments).

362. There is a significant asymmetry of information between Chorus and RSP's making it difficult for RSP's to pinpoint these issues, but they add up to a clear pattern which suggests there are significant efficiencies to be achieved in the provision of these services, which will save end-users significant time and cost.

363. To get a more complete picture and demonstrate some of the inefficiencies we observe, CallPlus, Spark and Vodafone have shared information on a sample of 300 UBA cabinet /exchange visit and 150 UBA site visit connections in June 2015. The purpose of the exercise was for the gaining RSP to get the other two RSPs to look at their records and identify if they previously had a working copper service on the line (Note: UCLL services were excluded as these would require truck rolls when switching providers). If there was a service on the line previously then there should be no need for a truck roll when the gaining RSP placed the new connection order for UBA.

364. The RSPs findings are strong evidence that significant inefficiencies exist in Chorus' processes and systems (note: the results are understated as only 3 RSPs were involved):

a. **At least one in seven site visits should not have occurred.** In 14% of the cases where Chorus charged for a site visit (that is, a visit to the end-user's premises) one of the other two RSP's had a working UBA service on the same line in the last 5 months. This increases to 20% if we look at a previous UBA services since 2014.

b. **At least one in four cabinet / exchange visits should not have occurred.** In 25% of the cases where Chorus charged the gaining RSP for a cabinet / exchange visit for the UBA connection one of the other two RSPs had a working UBA service in the last 5 months (since start 2015). This increases to 36% if we look at a previous UBA services since 2014.

365. Further, Spark undertook detailed analysis of 100 baseband service orders. The analysis supported the RSP analysis. The analysis of baseband service orders (which apply to all Spark voice and voice/broadband connections) indicates that **[ ]SPKCI** of baseband site visit connections are for dwellings that were previously connected to the network, i.e. these a premises re-connecting to the network.

366. We can conclude from this evidence that intact lines are being broken down at a significant rate. RSPs can only speculate at the root cause of the problem of 'intact lines' being broken down, but possible causes might be:

a. Poor network records. As discussed above, about **[ ]SPKCI** of failed baseband connection service orders are rejected because network records are inaccurate, and the same issue may lead to unnecessary site visits;

b. Incorrect incentives for Service Companies. Service company technicians are paid to perform truck rolls, but technicians are not paid for connections which are found to be faulty. If technicians do not have faith in the accuracy of Chorus network records for ports and intact lines then it is in their best interest to undertake unnecessary truck rolls as a precaution to minimise faults; or

c. Insufficient capacity built in the network for spares or demand. If Chorus has insufficient capacity in the network then it will drive the unnecessary breaking of intact lines and network re-arrangement:

    i. This may be a technician looking to repair a fault and in the absence of spare ports or pairs the technician breaks an existing intact to a site; and/or

    ii. This may be that there is simply insufficient capacity for demand and rather than invest in additional capacity Chorus chooses to break down and reuse intacts instead.

367. Neither Chorus nor the technicians are incentivised to minimise the level of broken intacts as a result of network rearrangement. If Chorus' network records or processes are inefficient or it has insufficient network capacity for spares or demand it is RSPs and end-users that pay for the network rearrangement, and therefore the inefficiency.

368. Finally, we note that the model proposed by the Commission to calculate the recurring charges for UCLL and UBA already has sufficient capacity to meet all demand in the network footprint, and modern IT systems, meaning there is no need to break down intact lines. This means that Chorus is compensated for the higher capital cost of this modern network, while also recovering the operational costs of a legacy network through NRCs.

369. This example illustrates our principal concern with the current approach to NRCs:

a. RSPs face inefficiently high NRC volumes and charges that are inconsistent with the modern network modelled for the purposes of the FPP;

b. Additional Chorus, service company and RSP resources are required to manage transactions than would otherwise be efficient, i.e. to manage transaction volumes and service order failures; and

c. The proposed approach will do nothing to create efficient incentives on Chorus to optimise between investment (to add capacity or for pro-active maintenance) and operating costs. Rather, it encourages Chorus to minimise investment in the copper network.

370. Chorus will act on incentives and the proposed approach. It will inevitably under-invest in the current network and systems leaving RSPs and end users to continue to be exposed to volume and capacity related costs.

Proposed adjustments for network inefficiencies and double recovery

371. Accordingly, in addition to the efficiency adjustments proposed by WIK, the Commission should align NRCs with the modern network being modelled, so as to avoid double recovery, and provide Chorus with incentives to optimise between investing in network capacity and pro-active maintenance, and additional operational costs. It can achieve this through the following:

a. Adjust UCLL/UBA site connection charges (1.1 site visit) by clarifying that the charge only applies where premises connection at the ETP is required, thereby excluding

circumstances where network has subsequently been removed by Chorus or service companies;

b. Set the UCLL cabinet/exchange connection charge (UCLL 1.1 cabinet/exchange) equal to the charge for remote connection. This activity is only necessary because an intact line has been removed. Accordingly, to internalise costs to Chorus and remove double recovery, the RSP and end user should only be responsible for the remote connection;

c. Set the UBA cabinet/exchange connection charge (UBA 1.1 cabinet/exchange) equal to the charge for remote connection. While some connection activity is likely necessary, this approach best allocates costs to where they are best managed, i.e. Chorus can optimise between DSLAM port capacity and the costs of an exchange port change; and

d. Set transfers between UBA service variants where a port change is required (1.9, 1.10 port change) equal to the charge for a remote connection. Chorus currently charges for transfers between UBA variants, i.e. between ADSL1 and ADSL2+ and VDSL. However, the MEA modelled by the Commission is based on deployment of ISAMs with a single line card that can support all of these variants. Therefore, there should be no port change required at the exchange when transferring between UBA variants.

Backdating

372. There is no legal requirement to backdate FPP prices and, as noted by all our advisors, backdating is not an accepted *ex ante* regulatory practice. Nonetheless, the Commission has decided to consider whether backdating should be applied to FPP derived prices.

373. There are differing views within the Commission. The Commission's majority view on the legal framework for backdating (which departs from its December 2014 preliminary views) is that:62

a. It is not legally required to backdate its pricing review determinations, but it has discretion to do so (paragraph 848 and 893).

b. Section 18 provides the basis for an assessment of whether to backdate prices. Any decision to backdate will need to be demonstrably efficient, demonstrably promote competition, and directly benefit end-users (in the long-term) (paragraphs 851, 854 and 855).

c. Backdating does not provide incentives that promote competition for the long-term benefit of end-users, and may in fact harm them (paragraph 885):

i. the RSP market can be regarded as "workably competitive". Any past "error" in prices should have been passed through to end-users (and can't be unwound now). Therefore any backdating should only be implemented by way of a claw-back mechanism (paragraph 886.1);

ii. although a claw-back is less damaging to RSPs than lump sum backdating, such a mechanism still does not promote competition for the long-term benefit of end users (paragraph 886.1); and

iii. while prices since the IPP may have been "wrong", there is nothing to be gained from reversing that "error" by increasing future prices above the central

[62] All paragraph references are to the Commerce Commission's July 2015 further draft determination.

TSLRIC estimate. Any forward-looking increase would only create a different distortion (paragraph 886.3).

d. The legislative scheme does not envisage draft decisions to have a significant price signalling status. A draft allows parties to give views that inform the final decision, and may be significantly amended.

e. Although some parties have an incentive to delay the FPP decision, the Commission controls the FPP process and timing, and is able to prevent unnecessary delays.

374. Accordingly, for UBA and UCLL, the regulatory price period should start after the final determination in December 2105.

375. Commissioner Duignan's minority view is that:

a. a start date of 1 December 2014 best promotes the purpose of the Act (per section 18); and

b. a lump sum settlement of the difference between the IPP prices and FPP price should apply (paragraph 895).

376. Commissioner's Duignan's reasoning is:

a. The logic in the backdating decisions of the High Court and Court of Appeal (which dealt with materially different circumstances) is "compelling" and "generally applicable to pricing review determinations" (paragraph 897);

b. Backdating is consistent with the "reasonable efforts" requirement for the UBA in the Act that show a statutory preference for a 1 December 2014 start (paragraph 898);[63]

c. An earlier start date will:

i. promote incentives to get more accurate FPP prices into the market place as early as possible (paragraph 899.1); and

ii. reassure investors that they do not need to rely on less accurate benchmarking processes at any point (paragraph 899.2).

d. Backdating is consistent with providing the best platform for competition in the long-term benefit of end-users, because the most efficient price is applied and responded to earlier (paragraph 900);

e. Spark's immediate notice to increase in prices shows that prices that are more reflective of the FPP should be in the market earlier, and reversing the initial view in favour of backdating will undo the benefits this has created (paragraph 901);

f. Backdating incentivises investment in infrastructure, and maintains investor confidence in the regulatory regime (paragraph 902 and 903);

g. A lump sum settlement is more appropriate than a claw-back because this incentivises early adjustment of market prices, and encourages all parties to expeditiously complete price determination reviews (paragraph 904); and

[63] Section 77 of the Telecommunications (TSO, Broadband, and Other Matters Amendment) Act 2011.

h. A claw-back results in market prices that deviate from the TSLRIC derived prices (paragraph 905).

377. We support the majority view – the Commission is not constrained by judicial precedent in the manner suggested by Commissioner Duignan, and therefore must consider the issue in light of specific evidence in this case of demonstrable efficiencies, promotion of competition and interests of end users.

378. WIK, Network Strategies and DotEcon have all advised on the Commission's proposed approach and all support the majority view – there is no efficiency to be gained from backdating the FPP price. Efficiency can be promoted by better decisions, yet backdating would not improve the efficiency of rational business decisions. Efficiency requires that market players take the relevant prices and costs into account when conducting their business model and investment decisions. However, given the uncertainty of the outcome of the FPP pricing determination, a backdating policy will result in any rational business decisions or change to business decision modelling being delayed until the FPP process is finalised.

The Commission is tasked with considering backdating in light of efficiencies and end user' interests

Judicial precedent is not binding

379. The judicial precedent is not binding. Therefore, it is for the Commission to consider in light of efficiencies and the interests of end users.

380. The Commission majority correctly concludes that the Court of Appeal judgment in *Telecom New Zealand Limited v Commerce Commission*[64] is not a binding precedent. We believe that:

a. The Courts' previous consideration of backdating were in materially different circumstances to that of an FPP for a STD; and

b. This means that the Court of Appeal's findings are inapplicable in the current context..

381. To explain:

a. the Interpretation Act 1999 strongly supports an "ambulatory" approach where statues are given a "dynamic" interpretation:[65]

i. Section 6 provides that "an enactment applies to circumstances as they arise";[66] and

ii. Similarly, section 7(1) sets out that legislation must be interpreted "as applying to circumstances as they arise".[67]

b. It would be consistent with the scheme of the Interpretation Act to distinguish the CA and High Court's reasoning in the backdating cases on the basis that they both arose, and contemplated backdating, in different circumstances.

c. The Commission (albeit in the context of the use of the ORC asset valuation methodology) applies similar reasoning in reaching its view that the Supreme Court's Vodafone New Zealand Limited v Telecom New Zealand Limited decision is not binding,

[64] CA75/05, 25 May 2006.
[65] R I Carter *Burrows and Carter Statute Law in New Zealand* (5th ed, LexisNexis, Wellington 2015) [413].
[66] Interpretation Act 1999, s 6.
[67] Interpretation Act 1999, s 7.

and is distinguishable on the basis that applying TSLRIC is a materially different circumstance (albeit we disagree with that finding).

d. Chorus similarly seeks to distinguish the Vodafone case (again in the context of the use of the ORC model) for the same reasons articulated by the Commission, and additionally because:68

i. that decision was concerned with a distinct set of statutory provisions; and

ii. the issues arose from a specific definition of "net cost", which is not relevant to the current exercise of choosing an appropriate asset valuation model.

382. We accept that, like the Supreme Court decision in relation to ORC, the CA's findings are persuasive and relevant. However, any attempt to argue they are legally binding in relation to the FPP are misconceived and contrary to sound principles of statutory interpretation (as above):

a. The present context is different to that considered by those decisions. Here the Commission is considering:[69]

i. A different type of determination (an FPP for an STD);

ii. Under a different industry structure; and

iii. Without an IPP expiry date that precedes the pricing review determination - as the High Court noted: "A review of the price "to be paid" could only relate to the price fixed by the section 27 determination for a defined period."[70]

b. The efficiency benefit of backdating is less clear than it was to the Court of Appeal. The extent to which an FPP price is more accurate than an IPP price relates to forward-looking incentives only, and is therefore not an accurate reflection of Chorus' actual network costs.[71]

383. The Act is silent on backdating, and so assuming that the Commission has a discretion to decide to backdate for FPP (it arguably does not), the key issue is whether backdating (or not) is consistent with the section 18 objective of promoting competition in the market for the long-term benefit of end-users. The Commission is correct, per section 18, to ask itself if backdating would be demonstrably efficient, demonstrably promote competition, and directly benefit end-users.72

Commission's minority view is not supported by the statutory scheme

384. As set out above, in Commissioner Duignan's view, having the most efficient price applied and responded to earlier, is therefore consistent with providing the best platform for competition in the long-term benefit of end-users (paragraph 900).

385. However, in our view, this reasoning misinterprets section 18:

---

[68] Chorus "Cross submission for Chorus in response to Draft Pricing Review Determinations for Chorus' Unbundled Copper Local Loop and Unbundled Bitstream Access Services and Process and Issues Update Paper for the UCLL and UBA Pricing Review Determinations", 20 March 2015, paragraph [287].
[69] Commerce Commission "Further draft pricing review determination for Chorus' unbundled copper local loop services" 2 July 2015, paragraph [890].
[70] *Telecom New Zealand Ltd v Commerce Commission* HC Auckland CIV-2004-404-005417 at [29].
[71] Commerce Commission "Further draft pricing review determination for Chorus' unbundled copper local loop services" 2 July 2015, paragraph [891].
[72] Commerce Commission "Process and issues update paper for UCLL and UBA pricing review determination 19 December 2014, paragraph [15].

a. The rationale of having FPP prices in the market earlier undermines the majority's reasoning that it would be contrary to the statutory scheme to set up an expectation that draft decisions should be acted on by the market. The Commission has itself acknowledged that:[73]

> *A draft is intended to allow parties to give views that inform the final decision: it is not a quasi-final decision itself, and may be significantly amended.*

b. If draft FPP prices were to have price signalling status, this would constrain the Commission's statutory obligation to properly consult with an open mind, and put pressure on the Commission not to vary its draft position when it makes the final decision. The Commission would simply invite allegations of pre-determination in relation to each final decision.

c. It could also lead to a number of speculative price adjustments throughout a lengthy consultation period as the Commission develops its thinking - with each development potentially affecting retail prices.

d. Beyond referring to backdating as "reassuring investors" (based solely on the fact that Chorus advocated for backdating from an early stage in the process), Commissioner Duignan does not seek to explain, or provide evidence of, how investment will be promoted by the payment of a lump sum to Chorus, or that any such investment will be in the long-term interests of consumers (whether by remedying past under-investment or otherwise) (paragraph 903). Chorus has suffered from the same problem in its submissions.

386. Further, we think that Commissioner Duignan's reasoning does not align with the overall section 18 objective of promoting competition and efficiency, thus constitutes an error in law.

Earlier start date is only relevant for the UBA

387. The Commission's minority view is that a 1 December 2014 start date is consistent with the statutory context for the introduction of the amended cost-based pricing principle for UBA, and the date by which the Commission was required to make reasonable efforts to complete any UBA pricing review determination (paragraph 876).

388. A one-off transitional mechanism cannot reasonably be interpreted to establish a precedent that all FPP decisions should be backdated. Even in the context of this review, the policy reasons for the 1 December 2014 start date in no way require backdating. The three year price delay was to freeze UBA prices in Chorus's favour. It makes no sense to now backdate to provide Chorus with an additional year's worth of windfall gains.

389. Further, an earlier start date in the UBA context does not logically flow through to apply to the UCLL service (paragraph 877 and 898). To the contrary:

a. The fact that UCLL is part of the total cost "stack" for the UBA service is not relevant.

b. The pricing principles for the UCLL have not changed over that time.

c. The relativity between services imposed by the Act is not relevant as it was entirely possible to not commence an FPP review of the UCLL prices.

[73] Commerce Commission "Further draft pricing review determination for Chorus' unbundled copper local loop services" 2 July 2015, paragraph [888].

Backdating does not promote efficiency, competition or consumer interests

390. We have asked DotEcon to consider the Commission's proposed approach. Network Strategies and WIK have also commented on the proposed approach in their accompanying reports.

391. All advisors support the Commission's majority view and proposed approach. DotEcon agrees that the reasons put forward by Commissioners Gale and Welson for their majority view are a fair reflection of the factors that need to be taken into account when considering the likelihood that better decisions would be made in the future if there were an expectation that backdating will take place (page 28). They conclude that there are not good arguments for the Commission to backdate FPP prices.

392. More generally, the view that better decisions would be made on the basis of expected FPP prices being backdated than on the basis of IPP appears to be inconsistent with the rationale for having an IPP phase in the first instance (page 28). Conversely, by increasing uncertainty over the possible backdate period, backdating would likely undermine efficient investment.

Backdating is not commonly applied to ex ante regulatory pricing

393. WIK and DotEcon note that backdating is not commonly applied to ex ante regulatory decisions.

394. WIK WIK advise in Section 2 of their expert report that backdating wholesale pricing decisions is very uncommon in the European regulatory context. Price setting procedures in case of ex ante regulation of wholesale prices are usually completed before new wholesale prices become effective. Many NRAs even decide that newly determined wholesale prices only become effective following an announcement period of several months and up to 6 month notice. The reason behind this announcement period is to support rational business decisions in case of price changes and to avoid stranded investment (paragraph 69).

395. DotEcon advise that backdating is not generally used in – and regarded by some as being incompatible with – ex ante regulation where regulatory bodies set prices on a prospective basis. Retroactive rule-making and retroactive rate-making are generally frowned upon. Legal certainty and predictability are undermined where material terms on which decisions have been made are subsequently changed by an agency.

396. The US Courts have similarly been particularly scathing at any proposals to backdate -there is a clear pattern here.

397. Where backdating has been applied, it has been applied in specific purposes to discourage parties seeking to retain otherwise illegal prices or to delay processes. DotEcon note that backdating can be applied to remove the gains from deliberately setting 'wrong' prices (perhaps in breach of legal obligations) or from delaying the process that would establish the 'correct' price level. It is for this reason, reports DotEcon, that backdating has been applied in arbitration models or to remedy unfairness in process.

398. As DotEcon note, these circumstances do not apply here. The process is entirely within the control of the Commission and there is no suggestion that the IPP was in any way illegal or that parties have attempted (or indeed been in a position to attempt) to delay the FPP process. This would suggest that there is no case for backdating a decision (or announcing an intention to do so) in order to correct for incentives to delay the process (page 22).

399. Network Strategies agree, noting that backdating can influence incentives to delay. However, there is no evidence that this is occurring here (page 35).

Backdating can only promote beneficial outcomes in very limited circumstances

400. Efficiency is promoted by better decision making and, to that extent, accurate price signals that parties can act on must promote efficiency. It is for that reason that the Commission must remain focused on setting efficient prices, stripping out inefficiencies.

401. Having said that, there appears to be common ground that backdating in itself cannot influence investment decisions made in the past.

402. DotEcon endorses the Commission's majority approach, noting that regardless of the basis on which the parties involved have made their historic purchase decisions, "*the retrospective implementation of prices cannot influence decisions already made*", as the Commission has quite clearly stated. Bygones are bygones, and changing prices (or other terms) with retroactive effect does not change what happened in the past. If the decisions that have been made on the basis of prevailing prices have been inefficient, then this situation is not going to be improved by backdating prices. Regardless of whether the backdated price is 'better' or 'more accurate' (e.g. derived from a more detailed cost modelling exercise), applying this price retroactively in itself does not improve past outcomes (page 5).

403. Because backdating cannot, in any specific instance, change what has happened in the past, it is purely a transfer of wealth between parties that have transacted with each other on terms that were different from the ones that are now presumed should have applied. The position against retroactive rate-making historically held in the US rests on the assumption that there cannot be any justification of such a transfer as long as the past transactions were lawful.

404. Therefore, consistent with the Commission majority view, DotEcon considers the effects of backdating and the ways in which backdating might create efficiencies through promoting better decision making. These efficiencies have to be related to the expectation of backdating or not in future instances, as changing prices retroactively will not undo any decisions that have been made in the past and will thus not change outcomes from past behaviour (page ii).

405. As the Commission has put it, it is the "expectation of retrospective implementation at some future date" that influences decisions.

406. Even then, As DotEcon illustrates , a number of important conditions must hold to achieve demonstrable efficiency gains or pro-competitive effects:

a. In any particular instance, parties must correctly predict that backdating will take place.

   As noted by the Commission, it can't bind future Commission's to decisions. The parties cannot guarantee that backdating will occur.

   Network Strategies goes further noting that, given that the legislation specifies a forward-looking costing standard as the FPP and in the absence of any formal backdating regime, it would be reasonable for market players and investors to assume that there will be no backdating. There is no general backdating regime that applies to the UCLL / UBA price review and, as noted in the revised draft determination, this is a discretionary matter that will not bind future Commissioners. As such any decision to introduce backdating made in this proceeding cannot be regarded as providing certainty that the same will happen again in future (page 36).

b. Parties must correctly predict to what point in time the future price will be backdated.

Even at this late stage in the process there is still significant uncertainty and disagreement amongst submitters as to the logical point for the Commission to backdate an IPP to?

c. Parties must be able to predict the 'correct' price that will eventually be determined with a reasonable degree of certainty.

Replacing prevailing prices with expected backdated prices in the parties' decision-making is unlikely to create efficiency benefits when expectations held by parties are likely to be wrong (and potentially by a considerable margin).

As WIK notes, the outcome of the cost modelling – the first such modelling undertaken by the Commission for these services - is highly uncertain. The process so far has shown that Chorus and the RSPs as "sophisticated market participants" have not been in a position to estimate the outcome of the TSLRIC modelling exercise (paragraph 49). The range of estimates efficient prices by our international experts has ranged from $16.64 as estimated by WIK-Consult and $74.10 as estimated by Analysys Mason on behalf of Chorus. The draft and revised draft UCLL charges proposed by the Commission are significantly out of step with those set in countries the Commission typically benchmarks New Zealand against. It is clear that even sophisticated market participants are unable to predict the Commission's final determination (paragraph 50).

DotEcon notes that it is unreasonable to assume that parties in similar settings in the future would be in a position to accurately predict the outcome of an FPP determination and be able to take decisions on this basis. If this were the case, and uncertain expected FPP prices were to result in better outcomes than certain IPP prices, this would entirely undermine the case for the use of the IPP. Rather than setting IPP prices, which might possibly be revised at some later date, the Commission would be better to simply instruct parties to take their decisions on the basis of their best guesses of the outcome of a prospective FPP determination. It of course cannot do that under the Act, which requires it to report the legally binding IPP prices.

d. Finally, parties must be in a position to behave, during the period prior to the backdating being confirmed, as if the future prices already apply. This is, of course, impossible, where there is sufficient uncertainty as to prevent parties from confidently predicting the level of the prices to be backdated.

407. International evidence support the Commission's majority view. Faced with uncertainty over final FPP prices, backdating is unlikely to deliver any efficiency benefits.

Conversely, backdating increases uncertainty

408. In the end, the degree of uncertainty about a major decision parameter such as a regulated wholesale price has direct impact on the degree of efficiency which is achievable. Backdating does not decrease uncertainty regarding the final determination of the cost calculation of the regulated service. Backdating therefore does not "provide better incentives to update retail prices with expected TSLRIC outcomes" (paragraph 48), it simply imports uncertainty into the backdating period

409. As DotEcon notes, one has to consider the additional uncertainty that is created through the expectation of backdating. Revenues and costs are subject to additional uncertainty as they will only be known at the point at which the backdating decision is actually made: the expectation of backdating removes the certainty over prices during the backdating period. Instead of being based on a known set of prices, decisions have to be made on the basis of expectations about

what these prices will eventually turn out to be. This increases the volatility of revenue and cost streams (page 8).

410. The additional uncertainty that arises in a world where prices may be backdated is likely to have a detrimental impact on investments. Even if backdating may imply that 'wrong' prices are corrected, this process involves a greater volatility of revenue and cost streams over the entire investment period. In particular where investments are to a large extent sunk, there may be considerable option values associated with delaying investment until some of the uncertainty has been resolved. In this case, there will be clear costs associated with increasing the volatility of revenues and costs (page 9).

411. In any case, as noted above, it is far from clear that decisions based on uncertain expectations about FPP prices would necessarily be better than decisions based on IPP prices even if FPP prices more accurately reflected those that would pertain in a competitive market (namely prices based on the cost of a hypothetically efficient operator). Therefore, while Commissioner Duignan is right in pointing out that the retroactive application of FPP prices might have the benefit of "reassure[ing] investors that they need not be reliant on less accurate benchmarking processes at any point", this argument misses the downside from the additional uncertainty that industry participants are facing during the periods where they have to rely on their respective best guesses of what future FPP prices might be. By comparison, IPP prices that are certain (even though they might be based on less accurate benchmarking) are likely to be preferable (page 26).

412. The additional uncertainty created will impact RSP investment more than Chorus. As NWS note, in an environment in which there is considerable uncertainty as to whether there will be backdating and the extent (time-period and the quantum) of any backdating, would likely affect RSPs' investment plans while Chorus' investment plans would remain largely unaffected. As we have described previously Chorus' future copper investment is limited by its contractual obligations, while its fibre investment is already committed. On the other hand, typically RSPs in a competitive market have a much shorter investment time-horizon as they seek differentiating solutions to improve or maintain market share (page 36).

Backdating will impact end users

413. In considering each of these efficiency effects, it is, of course their effect on the interests of end-users that the Commission must ultimately be concerned with. Uncertainty of revenues and costs created by backdating for RSPs, and the squeeze on retail margins a wealth transfer would create for RSPs will have clear and well understood impacts on end-users: RSPs will innovate less, invest less, and increase retail price.

414. In contrast, there is a much more tenuous relationship between end-user benefits and an investor expectation of backdating in future regulatory decisions. In our specific case, of course, the access provider's investment programme for the foreseeable future is contracted for, and will result ultimately in replacement of all, or almost all, of the network in question – the question of backdating or not will be irrelevant to that investment programme. Further, the backdating question is posed in the context of a pricing decision that confirms that Chorus has significantly over-recovered across its UCLL and UBA services for a considerable period of time.

415. Sophisticated investors know the Commission cannot bind future Commissions. They know that the specific circumstances of this decisions are just that – specific to the circumstances – and that future decisions will be made having regard their (different) circumstances.

Cross check/benchmarking

416. The Commission has conducted a more detailed examination of comparator countries in response to the questions raised by Spark in its submission on the December Draft Determination. Spark used unbundled local loop prices in a broad range of European Union countries as a comparison with the proposed draft prices set out in that Draft Determination. These prices were compiled from a third party information provider and regulatory authority decisions, and converted into New Zealand dollar equivalents using the Commission's own methodology.

417. The primary concern expressed by Spark, was the lack of any available explanation for the significant disparity between the proposed price for New Zealand, and the range of regulated prices across the entire European Union. The Commission responded to this concern by publishing a report by TERA looking at the possible reasons for this difference.

418. In Attachment Q of the further draft determination the Commission sets out the four principal avenues of inquiry that it pursued;

a. An examination of regulatory decisions in four comparator countries for which public information is available; Ireland, France, Denmark, and Sweden;

b. A detailed analysis of the publicly available European Union dataset compiled by Spark, and a reduction and adjustment of that dataset to attempt an increase in comparability;

c. A review of the Commission's own past benchmarking exercises; and

d. A review of a range of cross-checks submitted by Chorus in their cross-submission.

419. For the following reasons, we do not discuss the detail of the last three avenues of enquiry in this submission:

a. The adjustments to the European Union dataset submitted by Spark are more or less consistent with the Commission's established approach to IPP benchmarking, but do not serve to explain in any way the underlying reasons for the cost differential.

b. We do not consider that the Commission's past benchmarking approaches address the key question it raised – what is the driver for the large difference between regulated prices drawn from a simple range of international regulatory decisions, and the draft FPP modelled prices for UCLL?

c. Finally we agree with the Commission's reasoning in for its assessment of the "sense checks submitted by Chorus. We also consider that they have little value as a cross-check on the draft FPP UCLL price.

420. We turn now to consider the Commission's investigation into four comparator regulatory models in order to try and isolate the causes for the divergence in modelled prices. The Commission asked TERA to examine the New Zealand model as a comparison with the modelled utilised in Ireland, France, Denmark and Sweden.

421. TERA has advised the Commission that one of the possible factors driving different costs for New Zealand is the spatial dispersion of customers driving a higher network length per line, and for the comparison with Sweden and Denmark, higher trenching costs. TERA advised the Commission[74] that that the network length per line is 64.3 metres for New Zealand compared to

[74] Table 6 of the TERA report

41.2 metres for France, 51.2 meters for Sweden, and 55 meters for Denmark. No information is provided in Attachment Q, or the TERA report to indicate how network length per line is distributed around TERA's measure of length. This is significant as the distribution of line lengths has an important impact on cost.

422. When considering the European Union dataset provided by Spark, the Commission's first response is to eliminate a number of countries on a range of comparability filters. While this approach is well understood as the practice the Commission has adopted in relation to the IPP process, the Spark dataset poses a different question to the Commission. Simply put, where the draft New Zealand price is so far in excess of the EU benchmark set, why is it that the Commission's model is producing prices so much higher than any of the regulators in the countries represented. In commenting on the data put forward by Spark, the Commission itself notes in paragraph 1821 that the prices set by regulators in a particular jurisdiction can be strongly driven by the approach of individual regulators. We agree.

423. We have asked both Network Strategies and WIK to review the material set out in Attachment Q, and TERA's June 2015 report to the Commission, International comparison of TSLRIC UCLL and UBA costs and prices.

424. Network Strategies advises in its expert report, that there are a number of areas in which it considers the TERA analysis should be improved:

a. The documentation used by TERA relates to time periods from 2005 for the French model, to 2015 for the Danish model. Best practice for a detailed analysis of this type would be to use the most recent available information and to assemble benchmarking data from a consistent time point.

b. In Network Strategies opinion[75], the French data is so old, that it may not represent a valid view of current costs and network configuration.

c. TERA uses a 2009 version of the Swedish fixed model primarily reflecting a copper fixed access network as the MEA even though a more recent version is publicly available which uses fibre as the MEA consistent with the Commission's choice for the FPP MEA for UCLL.

d. The Irish data dates from 2010 and is also so old that it may not represent current network costs. In fact Network Strategies also advise that the lack of publicly available data in relation to the Irish model means that TERA has had to "transform the Irish UCLL price into a *pro forma* price". Spark thinks that the Irish comparator should have been excluded based on the Commission's own well understood approach to excluding benchmarks where there is insufficient publicly available data.

e. Due to the age of the models, TERA have chosen to use a copper fixed access network as the MEA in attempting to adjust the benchmark models and jurisdictions for comparability. Accordingly, the Commission's actual selection of the UCLL MEA for the FPP process - FTTH point-to point with FWA at the network edge - has not been used.

f. Currency conversions carried out by TERA use a simplistic two-step process, first converting adjusted prices in non-Euro currencies into Euros at current market exchange rates, and then converting all benchmark currencies from EUR into NZD at a single current market exchange rate. The Commission's established approach to reflecting relative prices when benchmarking, which Spark used in its analysis balances long term market exchange rates and current purchasing power parity rates to reflect a measure of

[75] Section 11.1

relative prices. As Network Strategies point out in section 11.2 of their report, the effect of the approach used by TERA is to lead to higher current UCLL prices and estimated national average UCLL costs.

g. Network Strategies also discusses at length the various adjustments made by TERA to the prices for both comparator countries, and New Zealand in an attempt to improve comparability. Section 11.3 of its report discusses these in detail. Network Strategies considers that the French data should not be viewed as relevant benchmark data, and that the Irish analysis relies on a wide range of assumptions, inferences and calculation errors and should not be relied on as a relevant benchmark.

425. WIK advise in paragraph 378 of their expert report that in their opinion, the Commission has not made a serious effort to actually address the question posed by Spark.

426. WIK advises us that TERA, in their report, carry out a detailed examination of the adjustments which are necessary to reflect the costs of a comparable aggregation of lines when analysing the detail of comparability. WIK advises that the TERA study, after correctly making those adjustments to its model, arrives at a figure of NZD 38.13 per month for the New Zealand comparator value rather than the estimate of NZD 26.31 used by the Commission in Attachment Q for the "FPP levellised" price excluding TSO areas from consideration. WIK advises in paragraph 379 that the Commission commits a significant error in comparing its "FPP levellised" price with the reduced EU price dataset it produces from the data provide by Spark.

427. The Commission found that Sweden was the best available comparator country in the benchmarking process used to derive the IPP price for UCLL, and has reaffirmed that comment. We agree that Sweden continues to be the only country out of the four country set reviewed by the Commission which could really be seen as comparable with New Zealand. In relation to the IPP process, Spark carried out some high level comparative analysis of subnational population densities using publicly available Swedish and New Zealand census data. We found that the median urbanisation levels at a regional authority level were similar at about 80% urban, and 20% rural, and the total urbanisation levels were also close at approximately 85% and 15% for Sweden and 86% and 14% for New Zealand. There was some limited evidence that median urban population densities are higher than New Zealand and rural median population densities are lower.

428. WIK has reviewed the Commission's adjustment to the Swedish model, and made its own adjustments to that model in order to test the conclusion that New Zealand-specific factors such as trench cost and length are the cause of our high draft FPP UCLL costs.

429. WIK set out in detail the approach they have taken, which was intended to adjust the cost estimate from the Swedish bottom-up model using New Zealand inputs to estimate the annualised CAPEX for a fixed access line if it were installed in New Zealand.

430. WIK made a range of adjustments to the Swedish model used by TERA to replicate the specific Swedish/New Zealand comparison issues which were identified in the TERA study. No amendments were made to the differences identified by TERA in this exercise. The objective of this analysis was to derive an estimated cost per line which could be reasonably expected to be applicable in the New Zealand setting.

431. WIK found, despite taking care to make a conservative estimate, that the cost from TERA's New Zealand model is some 65% higher than the cost estimate based on the adjusted Swedish benchmark model. In paragraph 392, WIK summarise their findings as to the annualised capex for a line in New Zealand using the Swedish model in the table below:

Parameter	Value

Investment per line according to the Sweden model	1,774 NZD
Multiplicative factor to account for higher cost in NZ	1.81
Investment per line after adjustment for higher cost	3,211 NZD
Depreciation factor after adjusting for different weights for asset types	6.16 %
Annualized capex	193.12 NZD
Monthly capex	16.09 NZD
Opex, common and other costs according to Swedish benchmark (estimate, obtained from the TERA study)	7.00 NZD
Final adjusted Swedish benchmark	23.09 NZD

432. It is important to note that the value of the Swedish benchmark of 23.09 NZD per month, adjusted for differences with New Zealand is to be compared with the value of 38.13 NZD that TERA on behalf of the Commission showed to be the relevant cost for New Zealand. WIK also note that, although Sweden and New Zealand are both developed countries with similar price and cost levels (as discussed by TERA), and the levels of OPEX are similar in this comparison, the apportionment of common cost is substantially higher for New Zealand at about NZD 6.00 than the one for Sweden at about NZD 2.50.

433. We agree with WIK's view that the Commission inappropriately discounts the similarities between Sweden and New Zealand. At both a national and sub-national level, Sweden has the most similar distribution of population density to New Zealand when compared to a range of other European countries. The level of urbanisation in New Zealand is higher than that in Sweden, and although there are some differences in housing density in highly urbanised areas, it is not clear from any evidence currently put forward that the overall effect on pricing of services should be so materially different. WIK advises that in its expert opinion, the Commission's substitution of intuition as to spatial dispersion of end users, for evidence to explain the network length per line difference is not convincing.

434. We agree with WIK's assessment that the Commission's benchmarking review does not support its conclusion, or explain the significant difference between New Zealand's draft FPP UCLL costs and those observed in comparable countries.

435. We urge the Commission to take further steps to identify more precisely the reasons for the higher modelled costs in New Zealand, and to consider the cumulative impact of the modelling decisions which have been taken. In the absence of clear evidence, to identify the sources of increased cost, we continue to think that the Commission should explore the issue further and in a more rigorous fashion before making its final determination.

END

Attachment A: WIK-Consult report

Provided as a separate document.

Attachment B: NWS report

Provided as a separate document.

Attachment C: DotEcon report

Provided as a separate document.