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

Cross Submission | Commerce Commission

24 September 2015

Contents

Executive Summary

1. The Commission is tasked with undertaking a TSLRIC cost calculation for the UCLL and UBA services, with the ultimate objective of delivering the benefits of competition to end-users in markets that Chorus does not face meaningful competition.

2. The TSLRIC exercise is explicitly designed, and required, to abstract away from Chorus' actual network, technologies and operating costs. This provides Chorus with incentives to innovate and improve efficiency, in the same way competition would. In abstracting away from Chorus' existing network technologies and practices, this exercise will results in some costs that Chorus – with its legacy assets, systems and processes – may be unable to achieve. That is absolutely intentional and a fundamental underpinning of the TSLRIC theory – the only way Chorus will be able to achieve these efficiency standards is by investing and innovating in the future.

3. The trade-off, of course, is that TSLRIC rewards Chorus with a revaluation of its existing assets. A significant revaluation. In aggregate, the result is a return on Chorus' copper network that will comfortably exceed normal returns expected in competitive markets.

4. Chorus and its experts, and a number of investors in Chorus, in their submissions, seek to maximise the quantum of this revaluation benefit, but avoid any use of more efficient technologies or practices. They seek, in short, the best of both the TSLRIC and rate of return models. This is not supported by the Act or any economic theory, and should be ignored by the Commission.

5. Chorus claims its narrow interpretation of the Act constrains the Commission from applying TSLRIC principles wherever that would result in a more efficient standard than Chorus achieves today.

6. Where the evidence is clear that backdating would deliver net costs to end-users, Chorus claims the Act precludes the Commission from considering the net benefits to end-users, because the Act requires backdating even where it is not in the long-term benefit of end-users. In effect they argue the Act elevates backdating above the s18 purpose statement.

7. Where the evidence is clear that Chorus itself, and all other network operators, re-use existing assets when deploying networks in preference to building new, Chorus claims the Act precludes the Commission from recognising this efficiency in its model. Every network operator in New Zealand re-uses assets, but Chorus claims the Act requires an HEO who doesn't.

8. Where the evidence is clear that Fixed Wireless Access (FWA) is a more cost effective and superior technology in parts of New Zealand, Chorus claims the Act precludes the Commission from using a normal commercial cost/performance trade-off when choosing the technology an HEO would deploy in a particular area. In effect they argue that – despite efficiency being the touchstone of both s18 and the TSLRIC definition – the Act directs the Commission to ignore efficiency when determining the MEA.

9. These are not credible positions, and they must be rejected by the Commission. The purpose of the Act when applied to this price review determination is to regulate Chorus and to use that regulation to derive benefits for end-users. It is not to deliver a target cashflow to Chorus and its investors.

10. Similarly, the Commission must ignore the flawed logic behind Chorus' suggestion that it has acted in a time-inconsistent manner. We have asked four separate experts to review this claim by Chorus and Sapere. All discount it as legally and factually incorrect. Chorus submission on this point should be seen for what it is: an attempt to bully the Commission into submission by making hyperbolic public accusations without reference to the facts. The Commission has not overridden

any rules in reaching its decision on backdating. Rather, it has transparently exercised a discretion following consultation, and provided clear reasoning for that decision.

11. To read the Chorus submission, one would be excused for thinking the Commission was proposing a set of draft prices that were below, or at the low end of, international benchmarks. Yet the opposite is true.

12. The New Zealand context is a unique one. We have a copper network that is no longer being invested in. We have a replacement fibre network that has been subsidised by the Crown and is already contracted for. We have an access provider that has world-leading EBITDA. And we are compensating that access provider using a TSLRIC methodology that revalues the copper access network well above its true cost.

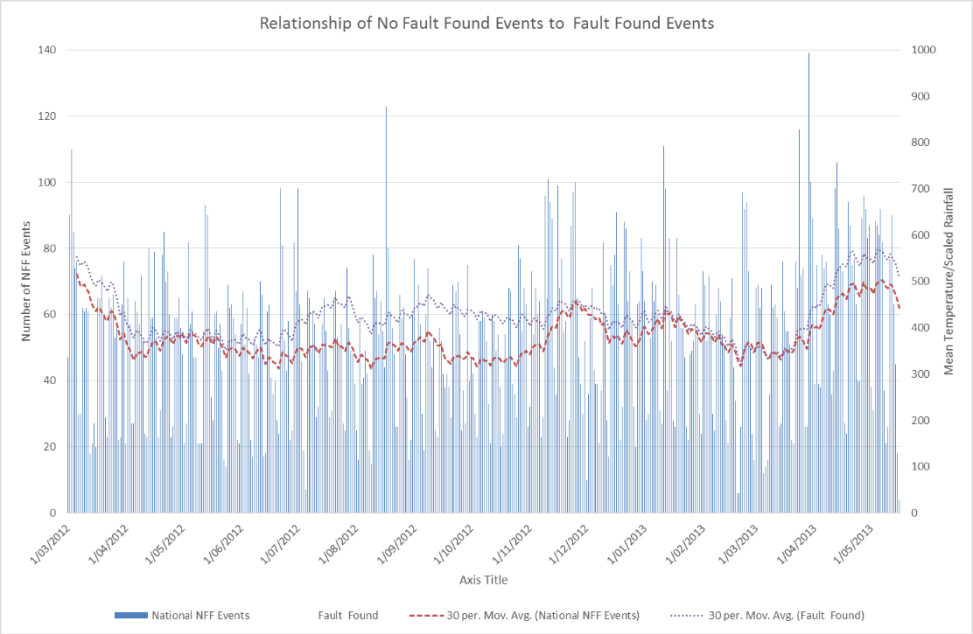
13. The international evidence on TSLRIC shows that even these above-cost returns do not result in expected investment levels in maintenance and replacement of copper access networks. In our unique context then, there must be even greater questions about the extent to which it can create any investment incentives for Chorus.

14. And yet, we have draft UCLL costs that are off the top of the charts of international benchmarks. This being the last chance we will have to submit on the Commission's FPP process, we re-iterate one last time our concern at what appears to be an overly conservative approach to UCLL TSLRIC modelling. Appropriate use of FWA and sensible levels of re-use will materially reduce the Commission's calculation of UCLL costs and appear inarguable to us. We have certainly seen no evidence from either Chorus or the Commission to explain why any HEO would not utilise FWA and re-use to lower its costs. Absent that evidence, the Commission will err in law in ignoring them again in its final determination.

A significant proportion of No Fault Found charges to RSPs are avoidable

15. Finally, in Chorus' submission it identifies the no fault found and cancellation codes as examples of charges it considers the Commission should examine more closely. It infers that there is an inefficient number of end-users claiming network faults when, in fact, the fault is within the RSP or end-user's environment. This suggestion has caused us to look more closely at these charges.

16. What we have found is the opposite: there is a very strong correlation between actual network faults and no fault found events – a Pearson product-moment correlation co-efficient of 0.95757 - strong enough in fact to conclude that no fault found events are largely under the control of Chorus. In short, Chorus can influence the level of these events by investing more in pro-active maintenance and placement of aging plant:



17. We conclude the Commission should make an efficiency adjustment to the no fault found charges of 60% in order to ensure Chorus has the correct incentives to optimise management of, and pro-active investment in, its copper network.

Introduction

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

2. This pricing review determination (**PRD**) has been a long process, and this is likely to be parties' last opportunity to make submissions. The Commission has been right to permit time to properly consider the issues as this is an important decision:

    a. It will have significant implications for end users not only in terms of a wealth transfer, but also in terms of connectivity: a number of consumers will simply be unable to afford a fixed network service;

    b. It will directly impact productivity and competitiveness of our country. As set out through this process, there is significant evidence that infrastructure and telecommunications uptake has wider economic impacts; and

    c. This process will lock in wholesale prices for an extended period. The prices are expected to remain until 2020 and, depending on the outcome of the Government review of the Telecommunications Act, may well set the baseline on which prices will be set beyond 2020.

3. The Commission's proposed UCLL prices are significantly higher than those we see in countries we compare ourselves to[1]. WIK analysis of the Swedish regulatory model – acknowledged as being the most comparable model – tells us that proposed prices are 65% higher than those in Sweden due to the Commission choices of modelling parameters[2]. WIK advises that it is not aware of higher parameters used by any other regulator.

4. The submissions highlight that Chorus and its investors have significantly different view to RSPs and consumers on the purpose and components of a TSLRIC pricing model. Chorus submits that the PRD model should reflect its operating model and cashflow, while RSPs and consumers argue for lower prices that better reflect the outcome of a competitive market.

5. It is understandable that Chorus and investors prefer a model that preserves prevailing price levels, and closely mirrors incremental changes in Chorus' operations and investment. However, the TSLRIC methodology seeks to establish efficient prices that would be the outcome of a competitive market – providing efficient signals for access provider, RSP and end user consumption. Chorus' proposed approach is inherently inconsistent with a TSLRIC methodology.

6. In this submission, we:

    a. Contrast Chorus' proposed model with that required for TSLRIC incentive regulation;

    b. Address key Chorus propositions by which it seeks to – incorrectly – frame the pricing review;

[1] See our February 2015 submission.
[2] See our August 2015 submission. The analysis normalises for demographic differences by applying New Zealand parameters in to the Swedish regulatory model.

c. Respond to Chorus' submissions on modelling choices and Non-Recurring Charges (**NRCs**); and

d. Address arguments that retrospectively applying FPP determined prices is in end-user interests.

7. Also attached are independent reports from:

a. WIK Consult considering proposed changes to model parameters, and the approach to opex, NRCs and backdating;

b. Network Strategies, which comments on FWA implementation, proposed changes to trenching and aerial deployment parameters, WACC and backdating;

c. DotEcon, which addresses specific issues raised by Chorus and Sapere relating to backdating; and

d. Dr Trillas explaining the concept of time inconsistency and assessing the relevance of the quote taken by Sapere from Dr Trillas' co-authored paper.

8. We have also asked Russell McVeagh to consider issues relating to backdating, the application of an optimised replacement cost (**ORC**) methodology to assets, the use of FWA in identifying efficient costs, and the modern equivalent asset for determining the UBA service costs. Russell McVeagh's legal opinion is attached.

Chorus is asking the Commission to apply a rate of return model

9. Chorus and its advisors ask the Commission in their submissions to apply a very different model to that implied by the FPP in the Act. Under the guise of "certainty", "assurance" and claimed legal constraints on the Commission's decision-making, they ask the Commission to elevate Chorus' interests above end-users'.

Chorus and its investors ask the Commission to mirror it's operating model and cashflow

10. Chorus propose a number of propositions in its submission that, from its perspective, frame how the FPP should be implemented and how interests of end-uses should be considered. Chorus submits that the Commission must apply a TSLRIC model:

a. That reflects Chorus' technologies deployed, operating model and operating costs. For example, Chorus claims the Commission can only consider technologies that can technically be unbundled to a passive layer 1 service, which effectively constrains the analysis to the existing technologies deployed by Chorus;

b. That reflects Chorus existing network typography and deployment choices, for example, the degree to which it has deployed aerial infrastructure or shared facilities with other operators and utilities;

c. Where the underlying standard is the return Chorus achieves on its investment. Where the benefits of a price uplift should be considered solely by drawing a direct link back to potential access provider investment; and

d. Where the key consideration for a price uplift or backdating is Chorus' investment requirements, alleging that failing to apply these adjustments would result in Chorus under-recovering the costs of these investments.

11. Chorus investors also seek a model where there is "line of sight" between Chorus investments and costs, and the outputs of the TSLRIC model. Chorus further reported at its 2015 annual results that investors are concerned that[3]:

    a. The Commission's model efficiency adjustments, when applied to planned (incremental) investment, are simply un-achievable by Chorus;

    b. The assumed return is less than what the market requires (for investment in Chorus); and

    c. The Commission approach to backdating suggests that it can't be relied to not change its views.

12. This is consistent with Chorus investors' submissions. For example, that the FPP price should reflect Chorus asset counts and costs incurred to deploy the fibre network, and that investors expect operating costs to be grounded in Chorus' context[4].

13. These submissions, individually and in aggregate, ask the Commission to implement a cost model that is tightly bound to Chorus' current operating model and cashflow. In other words, a rate of return regulatory model – with an important twist.

14. A rate of return approach promotes consumer welfare by setting prices on the basis of the access provider's prudent and efficient actual costs and investment. A starting valuation linked to the actual value of the actual regulated assets is added to over time by the access provider through continued prudent investment in the maintenance and replacement of those assets. This in turn provides clear investment incentives for the access provider and confidence that it will receive a normal return on its ongoing investments.

15. But Chorus and its investors are seeking to apply rate of return concepts to a TSLRIC model – where the starting valuation is determined by reference to a revalued network that has no bearing to Chorus' actual assets or their actual remaining value. In effect they are asking for the best of both worlds – they argue both for the very highest network valuation possible based on hypothetical assets, and the very highest operating and common costs possible, based on their actual costs.

16. Investor concerns suggest a similar focus on Chorus cashflow, and this makes sense as they look to incremental investment and cashflow to support firm value. Firm value is determined by cashflow and investors, understandably, would be concerned with incremental cashflow and investment.

17. This is not a model that the Commission can apply.

The Commission can't apply these settings to a TSLRIC model

18. The Commission is tasked with applying a TSLRIC regulatory model. TSLRIC is incentive based regulation that seeks to create incentives for efficient choices by the access provider, access seekers and consumers. It does this by identifying efficient prices that reflect those that would be the outcome of a competitive market, providing incentives for:

    a. Chorus to be efficient in its operations and investments (achieving a normal return on efficient investment over time);

[3] Lift point from the
[4] See Allan Gray August 2015 submission, page 2.

b. RSPs to make efficient investment decisions (build/buy) and business decisions (double marginalisation, complementary activity); and

c. End-users to efficiently use the network, using capacity that would otherwise sit idle.

19. In other words, TSLRIC price is the “benchmark” price against which efficient build, buy or consumption decisions can be made.

20. Under a TSLRIC framework the modelled costs, which reflect the efficient provider, will inevitably depart from those of the regulated firm. The Commission can’t apply a TSLRIC model and give Chorus and investors that outcomes they are seeking:

    a. Price levels will be largely independent of Chorus actual cashflow, i.e. they do not change with changes in Chorus' investment or cashflow. The TSLRIC model is not seeking to, in itself, set Chorus investment returns. The Commission can’t, as a TSLRIC objective, aim to support a particular Chorus investment set a particular price;

    b. The Commission is equally concerned with setting efficient costs for RSPs (build/buy decisions) and consumers (maximising use of sunk capacity) as it is with setting efficient investment signals for Chorus; and

    c. The implementation of a TSLRIC model will inevitably result in prices changing over time, as they inevitably do in a competitive market - there is no guarantee of particular price levels and cashflow.

21. A TSLRIC model will inevitably depart from Chorus’ actual cashflow. For example, in this case, while the modelled TSLRIC provider implies a more efficient operating model and costs than Chorus, the TSLRIC derived asset value against which return is determined substantially exceeds Chorus’ actual investment. We accept that there is cause for concern if the TSLRIC model, overall, resulted in returns below Chorus’ costs. However, this is not even close to happening under any of the scenarios being considered by the Commission.

22. Accordingly, Chorus’ proposed approach and the outcomes desired by their investors are disconnected from the TSLRIC model that the Commission is required to implement. If the Commission were to take the approach Chorus and investors’ request, it would not be applying the TSLRIC model. This is not a failing of the TSLRIC model or the Commission, as investors and Chorus have characterised it as - it is a known and predictable outcome of correctly applying an incentive based regulatory model.

23. Spark would have no objection to a rate of return regulatory access framework for copper services. But all parties would need to be clear that shifting to that model trades-off a much lower starting valuation relative to TSLRIC, for more certain, increasing, increments to that valuation (and thus to prices) as investment occurs. No model can deliver both a high revalued starting valuation and increasing increments linked to actual investments and costs thereafter.

TSLRIC outcomes should be a surprise to no one

24. The characteristics of the TSLRIC model should be a surprise to no one.

25. The Commission summarised the TSLRIC model in its December 2013 process and principles paper, referring to New Zealand consideration of TSLRIC as far back as 2002 and useful ACCC paper published in 1997[5].

> We have also considered an international body of literature on the various outcomes that a TSLRIC based price may promote. An ACCC paper published in 1997 usefully sets out the possible outcomes of a TSLRIC-based access price which the ACCC considered under its (then) new telecommunications regulatory regime.16
>
> > **First**, TSLRIC encourages competition in telecommunications markets by promoting efficient entry and exit in dependent markets. […]
> >
> > **Second**, TSLRIC encourages economically efficient investment in infrastructure. As TSLRIC provides for a normal commercial return on efficient investment in infrastructure (in the long term) it provides the appropriate incentives for future investment. It also promotes efficient 'build or buy' decisions. […]
> >
> > **Third**, in the long term TSLRIC provides for the efficient use of the existing infrastructure. […]
> >
> > **Fourth**, TSLRIC provides incentives to access providers to minimise the cost of providing services. […]
> >
> > **Fifth**, TSLRIC by allowing efficient access providers to fully recover the costs of producing the service promotes the legitimate business interests of the carrier or carriage service provider providing access. […]
> >
> > **Finally**, TSLRIC protects the interests of persons who have rights to use the declared service. […]. [this was given as an outcome in a context where the incumbent network operator was vertically integrated] (Commission emphasis)

26. National Regulatory Authority (**NRA**) implementation of TSLRIC has evolved over time reflecting changing market conditions and policy objectives. For example, as Professor Vogelsang notes in his report for the Commission, in the UK/EU differentiation is being made between replicable and non-replicable assets (the latter valued at the lower of replacement or inflation adjusted book value (which can be zero))[6]. However, key underlying model principles of forward looking, efficiency and provision of efficient price signals remain. The TSLRIC standard sets the efficient price level, and does not seek to mirror the access provider's actual.

27. Chorus itself, has been equally clear about the limitations of the TSLRIC methodology. For example, in its September 2013 submission on the Telecommunications Act review, it noted that the TSLRIC pricing methodology risks being unpredictable and drives a service by service focus potentially without any regard to financeability overall[7].

> 297 Because forward-looking cost-based prices must reflect replacements costs, the resulting prices can be volatile. As it is typically applied, the TSLRIC principle requires periodic revaluations of network assets, which implies that regulated prices can move up or down reflecting changes in technology, labour and materials costs and/or financing costs. This means there is potential under TSLRIC for new investment to be "written off" before it can be recovered (if the network was revalued to a substantially lower value, to reflect a change in technology, for example). Equally, if the costs of trenching, compliance with local body regulations, labour and other inputs change, the TSLRIC price can swing upward.

[5] See Commission 6 December 2013 Process and Issues paper, paragraph 57-58
[6] See Professor Vogelsang's November 2014 report to the Commission, paragraph
[7] See Chorus submission on Telecommunications Act review September 2013, paragraph 50.

> 298 Investors in regulated utilities expect a stable regulatory environment and a fair rate of return on their investment. The experience in other jurisdictions is that TSLRIC does not deliver this. The volatile prices it produces are inconsistent with regulatory certainty and confusing to investors.

28. Chorus understands the nature of TSLRIC, and the pros and cons of it. It is attempting to maximise the pros and avoid the cons, and the Commission must remain alive to this.

Price change is inevitable under a forward looking TSLRIC model

29. The nature of the TSLRIC methodology is that prices are based on efficient forward looking costs and, as explained by Chorus in its submission to the Telecommunications Act review (referred above), an inevitable characteristic of the TSLRIC is that prices change and cannot be guaranteed to cover actual the costs of past investment.

30. In other words, investments and decisions made in the past, do not necessarily reflect those of the future. Price and value change is an inevitable part of a competitive market and, with TSLRIC, Chorus is exposed to these forces.

31. Accordingly, Chorus' proposed approach is impractical because it would mean that, to provide the certainty required, the Commission could never change price and its ability to signal efficient costs would be constrained.

The Commission would not be behaving time-inconsistent or opportunistically merely by correctly applying the TSLRIC methodology

32. Chorus has further suggested that the Commission is behaving in a time-inconsistent or opportunistic manner in applying the TSLRIC methodology. This is not the case. We have sought opinion from WIK, Network Strategies, Russell McVeagh and Dr Francesc Trillas (whose paper Sapere quote from) on this matter. All conclude that Chorus, and Sapere are incorrect in their characterisation of the Commission's approach.

33. As noted by Dr Trillas in his report, the transparent processes followed by the Commission, and the nature of the consultation followed by the Commission mean that neither a decision to backdate or not to backdate could be characterised as time-inconsistent[8].

34. Accusing the Commission of time-inconsistency – essentially a suggestion the Commission is acting in an opportunist and unprincipled manner – is a serious accusation. Absent any clear evidence whatsoever of such behaviour – and let's be clear there is no such evidence in this case – this simply amounts to an unsophisticated attempt to bully the Commission into submission.

Under any of the scenarios being considered Chorus will recover its actual costs

35. Further, the reality of the current exercise is that, under any of the scenarios being discussed, Chorus will recover its actual costs to provide the access network. This is not about taking Chorus investment or opportunism.

36. Professor Vogelsang notes that the Commission's approach, in itself, will overstate Chorus' actual costs[9].

> From an actual cost perspective the TSLRIC method currently proposed by the NZCC is likely to be substantially more than needed by Chorus for covering the cost of its copper access network. Thus, the copper access network is likely to remain highly profitable. […]

[8] See Dr Trillas' accompanying report, page 5.
[9] Professor Vogelsang's . paragraph 24.

37. In fact, we know that Chorus will continue to be one of the most profitable telecommunications provider in the world:

    a. Network Strategies notes in its report that Vector has estimated that, had Chorus' copper network be operating under price control as per Part 4 of the Commerce Act, the IPP determinations would allow Chorus a 19 - 23% return on investment (ROI) for the period between 2014 and 2019[10];

    b. WIK advised in its August report that Chorus' 60% plus EBITDA puts it at the top of the range of telecommunication companies anywhere in the world; and

    a. Analysys Mason has recently compared the profitability of NGA operators in a number of markets for Ofcom (below)[11]. Chorus returns are significantly above those in the benchmark countries – so far above in fact, as to be off the top of the chart.

38. Chorus continues to be highly profitable. WIK noted in its March 2015 report that Chorus EBITDA margin was 60.9% for the six month period ending 31 December 2014 (on operating revenues of $527M and operating expenses of $206M)[12]. Chorus' full year results reported operating revenues of $1006M and operating expenses of $602M meaning that, for the second half of the year when IPP prices applied, Chorus maintained an EBITDA margin of 58.7%. This is significantly higher than WIK's reported European average of between 30% and 50% and Analysys Mason July 2015 case studies for Ofcom.

Figure 1: Analysys Mason comparison of incumbent EBITDA margins

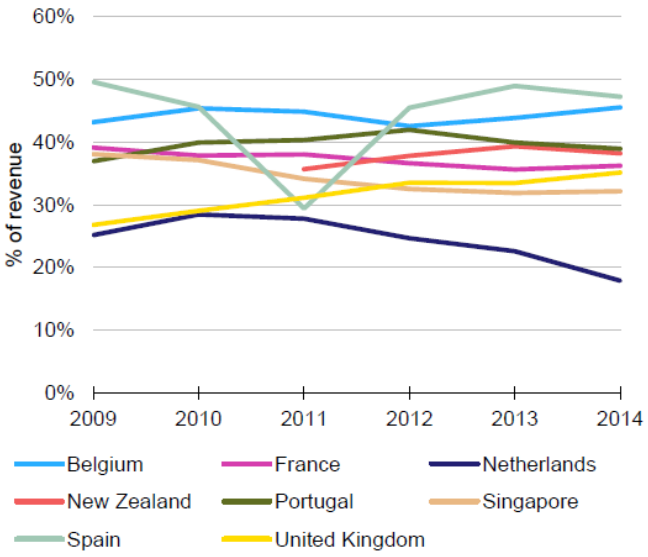


Figure 1.5: Incumbent EBITDA margins [Source: Operators' annual reports, 2015]

Note: These margins are for the operator at a national level (including mobile)[22]

Note: The dip in Telefónica's EBITDA margins in 2011 is attributable to a large-scale redundancy programme in that year

39. The Commission must, of course, give due consideration to Chorus' and investors' submissions. But it should be in no doubt that the characterisation by these parties of the current process and draft outcomes as extreme is at best ill-informed and at worst intentionally misleading. In fact, with world-leading returns, a committed and subsidised

[10] See Network Strategies report, page 89.
[11] See Analysys Mason report for Ofcom, July 2015, page 15. Analysys Mason note that EBITDA margins are somewhat obscured by the inclusion of mobile businesses of the incumbent. The original report records Spark as the NZ incumbent rather than Chorus (page 142).
http://stakeholders.ofcom.org.uk/binaries/consultations/dcr_discussion/annexes/International_case_studies.pdf
[12] See WIK March 2015 report, paragraph 52.

fibre investment programme and very little investment in copper assets, we would say the current draft outcomes are extremely generous.

This pricing review should not be driven by Chorus investment arguments

40. Chorus are effectively proposing that the TSLRIC model be driven by its investment requirements.

41. However, while investment is a key part of the TSLRIC model, the model does this by identifying efficient price and it is these prices that encourages efficient investment. For the model to be driven by Chorus investment claims would be failing to recognise that the model to set an efficient "benchmark standard" against which such investments can be considered.

42. In any case, we know that the TSLRIC price is unlikely to change in Chorus practice. Chorus (and formerly Telecom) has received above TRLRIC returns for a substantial period and there is no evidence that materially more investment has occurred. In fact, Government changes to the TSO and current UFB and RBI initiatives show this is not the case.

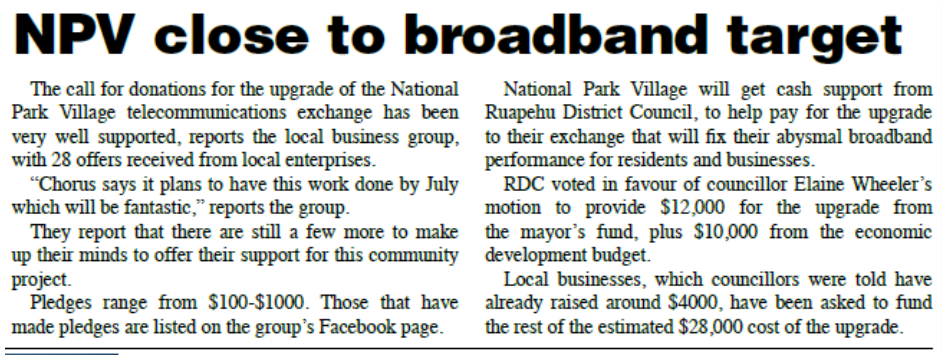
43. Further, Chorus is making no material investment in the UCLL network:

    a. Spending around $60M on the copper network, with this mainly driven by connection growth and fault optimisation;

    b. Chorus charges, via its copper extension policy, the full cost to augment the network to connect new customers;

    c. Chorus is making minimal investments to improve performance outside the RBI/UFB programme and is unwilling, for example, to fund broadband upgrades where backhaul augmentation is necessary of in Vodafone RBI coverage areas.

Figure 2: Broadband upgrade for National Park Village



NPV close to broadband target

The call for donations for the upgrade of the National Park Village telecommunications exchange has been very well supported, reports the local business group, with 28 offers received from local enterprises.

"Chorus says it plans to have this work done by July which will be fantastic," reports the group.

They report that there are still a few more to make up their minds to offer their support for this community project.

Pledges range from $100-$1000. Those that have made pledges are listed on the group's Facebook page.

National Park Village will get cash support from Ruapehu District Council, to help pay for the upgrade to their exchange that will fix their abysmal broadband performance for residents and businesses.

RDC voted in favour of councillor Elaine Wheeler's motion to provide $12,000 for the upgrade from the mayor's fund, plus $10,000 from the economic development budget.

Local businesses, which councillors were told have already raised around $4000, have been asked to fund the rest of the estimated $28,000 cost of the upgrade.

44. While there is minimal investment today, we should expect even less investment in their regulated services over time, for example:

    a. Chorus is only obliged to provide the STD UCLL service where there is an existing lead-in and network path available. Accordingly, we should expect copper capacity to be degraded and retired over time as end-users migrate to fibre;

    b. The Government has indicated in the Telecommunications Act review discussion paper that any TSO obligations are likely met by voice over fibre services; and

    c. **[ ]SPKCI**

45. Chorus will act on the incentives it faces, and the incentives are clear. Chorus has learnt that its best strategy is to withhold investment and provide outside the TSLRIC model. For example, Chorus has been clear than any further investment UFB2 is dependent to changes in the regulatory model. Inflated regulated prices simply set a new (higher) baseline against which Chorus will naturally seek incremental cashflow.

The modelled network and footprint

46. As noted above, Chorus proposes to identify efficient costs by reference to its context and thus to adopt an approach that no efficient provider would do.

Footprint must extend to all customers

47. Chorus says the cost footprint should extend to all premises in the UCLL footprint not just active customers because this is what it is obliged to offer.

48. However, as noted by Network Strategies in its report, the Commission model already extends to all sites. The difference is that the Commission correctly recognises that efficiency requires it to recognise that customers contribute to the cost to extend the network.

49. The Commission correctly recognises that this is the practice today and is what we would expect an efficient provider would do. Quite simply, where Chorus does not itself fund network extension, then neither should the HEO.

FWA MEA

50. Chorus says that the Commission can only adopt a technology that can be unbundled at layer 1. In other words, the Commission cannot assess efficient costs on the basis of FWA and GPON technologies but must model a network that can deliver the full functionality of UCLL.

51. We disagree. The MEA is a tool to determine efficient costs. Not an exercise in and of itself to ensure that every single line that Chorus may be required to provide UCLL on can and will always be physically unbundleable. The Commission has correctly concluded that the ability to support voice and broadband services is the core functional requirement. Newer, more efficient, and cheaper technologies that can efficiently deliver that functionality should be modelled. That principle is set out in the Supreme Court's TSO judgment and is relevant to this case.

52. FWA must be included in the cost model to the extent that it is the most efficient technology for the HEO to deploy. In other words, the Commission must ask itself to what extent a HEO, acting rationally, would include FWA when determining the efficient costs. It has not applied that standard, and has instead followed an approach based on Chorus' actual network.

53. In our view the principles set out in the "new technologies" part of the TSO judgment indicate that the Commission's task is to start with the modern technologies available to the HEO and model the most efficient and commercially rational network that it would design using those technologies today. That would include FWA across a broader area than currently provided for in the model. If the Commission were asking itself the right question (as above), it would not conclude that the extent of FWA would be limited to low speed dial-up lines.

54. Russell McVeagh agree with this conclusion and notes that the Act does not require Chorus to ensure its whole network is unbundleable (and in fact Chorus' whole network is not unbundleable today). Rather, Russell McVeagh anticipates that an HEO would wish to determine the extent to which layer 1 unbundleability would likely be requested on its network before determining where to provide this capability.

55. This aligns with the approach Network Strategies has taken in its FWA modelling work. Chorus' claimed constraint on the Commission's choice of MEA makes no sense from a commercial or market perspective. It makes no sense when seen in the context of Chorus' existing copper network (which includes a variety of technologies, some of which do not support unbundling) and fibre network (which is also built in a way that precludes economic layer 1 unbundling). It is also incompatible with the use of TSLRIC as a pricing principle.

56. The Commission is right to focus on voice and broadband provision because these are the services end-users purchase, and that drive their purchasing decisions. It is similarly the provision of these service capabilities that ultimately drive Chorus and RSPs' decisions.

57. Accordingly Chorus is wrong to exclude FWA which is a viable technology that an HEO would choose to deploy in certain areas of New Zealand in preference to copper or fibre, even having regard for the lack of unbundleability. In this respect, we note the summary provided by Network Strategy of the advice to this effect provided by Analysys Mason to the Finnish regulator earlier this year.

FWA model parameters

58. Chorus and Analysis Mason have proposed a number of parameters for the use of FWA that defy logic and appear designed only to limit the use of FWA in the Commission's model to zero, or close to zero, customers.

59. In this process, Analysys Mason has advised the Commission that it should not deploy FWA in its model because FWA cannot be unbundled. In April of this year, though, Analysys Mason advised the Finnish regulator that:

    a. Some areas of Finland are most efficiently served using FWA;

    b. The business case for unbundling in these areas will be weak, and so unbundlers will be unlikely to seek to serve rural customers;

    c. Therefore the use of FWA to serve highly rural customers in a bottom-up UCLL model is not unreasonable; and

    d. Algorithms could be used to determine whether it is more cost-effective to serve a location using fixed or FWA technologies.

60. We cannot reconcile these two positions.

61. Similarly, we cannot reconcile Analysys Mason's Finnish recommendations with its recommendations to our Commission that:

    a. The Commission should model an HEO that excludes FWA across most of rural and remote New Zealand in favour of a fibre solution without performing any comparative cost analysis;[13]

[13] Ibid, section 7.11.

b. Use of FWA should be determined on the basis of both distance from the exchange and building density, with building density floors that very little or no areas could possibly meet;

c. If FWA is used, the HEO should be assumed not to use its spectrum for any other purposes, despite that HEO serving at most 40,000 customers spread across the country. There is no prospect of any profit-maximising firm purchasing and using valuable mobile spectrum to serve only 40,000 customers and ignoring the alternative uses any un-used spectrum could be put to. We are more than surprised that an expert in mobile spectrum and technologies could suggest an efficient operator would even contemplate this;

d. It should adopt non-standard square grids for coverage analysis and unrealistic coverage values;

e. The Commission should model 1447 base stations to serve the 40,000 FWA customers suggested in its latest model. Again, this conclusion defies all logic. Spark operates a national mobile network that serves over 2 million customers. We do that with less cell sites than Analysys Mason recommends for the Commission's 40,000 FWA customers. In contrast, Network Strategies, using real-world propagation models, calculates that only 617 base stations would be sufficient to serve 290,660 customers in zones 3 and 4.

62. The only explanation for Chorus and Analysys Mason's proposals is that they have been purposely designed to constrain the deployment of FWA such that it would not be viable at all.

63. The Commission is required to apply the Act's efficiency standard, and to use the tools it has identified for meeting this standard (MEA and HEO) diligently and having regard to all available efficiencies. It is incontrovertible that the use of FWA represents a significant efficiency opportunity in parts of New Zealand which any HEO would take advantage of. We believe the Commission should apply FWA properly within the model, applying the parameters suggested in NWS' earlier advice.

Third party contributions

Chorus says it's not open to the Commission to recognise contributions

64. Chorus says that TSLRIC requires replacement costs that an HEO would require to deploy the network. Therefore, it can only take account of third party contributions on a forward looking basis.

65. Chorus further argues that it is not open to the Commission to exclude costs required to provide the service on the basis that an HEO would require contributions because

    a. Chorus is obliged to maintain all existing connections and provide the regulated service in respect of any end-user connected to its copper network; and

    b. Excluding costs will understate forward looking long run costs and distort build/buy by setting a monthly rental price that no new entrant can attain without a contribution;

66. We disagree:

    a. The fact is that customer contributions are a feature of today's market – no material investment is occurring in the absence of third party contributions:

i. RBI;

ii. UFB;

iii. Customer and local authority contributions;

The Commission must have a way of recognising that service providers have multiple sources of funding (including contributions), otherwise it will inevitably overstate efficient costs.

b. Contrary to what Chorus says, not recognising contributions leads to incorrect signals. For example:

i. Chorus is receiving contributions and to add those costs in again would exceed the efficient price signal. it would result in a double recovery that distorts Chorus' efficient build/buy signal;

ii. Conversely, failing to reflect the contribution would distort RSP and consumer price signals. This is where Chorus tries to give the HEO a life of its own – but by doing that it ends up seeking to identify a new entrants costs rather than the efficient costs of the UCLL service.

c. The Commission hasn't based its approach on historic costs – it has used these as an indication of industry practice. The Commission is correct, it is forward-looking costs that are relevant, but current and past practices can provide useful evidence of how costs are recovered and will be recovered going forward. It indicates what adjustments are necessary to remove current and future double recovery and inefficiently high prices.

Lead-ins and subdivisions

67. Chorus further argues that underground lead-ins should not excluded as UFB is the best proxy for how a HEO would seek to shift demand onto its newly built network.

68. We disagree. An efficient commercial provider would look to all sources of funding and, with the UCLL and UBA services, these clearly anticipate that the end user is charged the cost to provide lead-in installation.

UFB lead-in arrangements

69. Specific lead-in arrangements were agreed as part of the UFB initiative. Chorus is, in effect, funded for the standard lead-in because it is required to provide that lead-in in return for receiving Crown UFB funding.

70. In the CFH Q&A, it notes (page 2)[14]

> As with other UFB contracts, CFH funds the cost of fibre "passing" (the connection running down the street) as it is completed and signed off to specifications, and then it becomes operational. Chorus funds each "drop", the connection from the premise to the fibre in the street, as it hooks customers up. This arrangement retains an overall pro rata per premise funding allocation.

71. In the copper world where there is no Crown subsidy, the end user pays for lead-in installation. The UCLL STD service, itself, anticipates that a lead-in has already been installed (and is excluded from the service). In the case of sub-divisions, developers

[14] http://www.crownfibre.govt.nz/media/13216/fact%20sheet%20-%20agreement%20with%20chorus.pdf

further provide an open trench and pay a fee that enables Chorus' to cover its costs.[15] Where new sub-divisions are being deployed, the developer provides an open trench and pays for where they want service.

72. Further, Chorus has signalled that standard lead-ins are only funded through the UFB arrangements to 2020. It noted in its May 2014 investor briefing that the funding policy will change at the end of the UFB build contract in 2020[16].

Lead-in trenches are provided by end-users

73. Chorus further note that the historic record is sparse for a principle that trenches are provided by the end user – referring to a single undated engineering pamphlet to infer Telecom in 1999 required an open trench for underground lead-ins.

74. The historic record is not sparse. Telecom List of Charges (TLOC) documents show that – as at 15 December 1999 – that[17]:

> All other materials, including additional poles after the first-in pole in the case of overhead lead-ins, and all labour associated with the installation of the lead in, such as trenching, installing poles, etc, will be charged to the customer.
>
> Due to the variable nature of this work, it will generally be quoted to the customer on the basis of the work involved.

75. While specific drafting may have evolved over time, there is a clear underlying principle that the end-user is responsible for providing the trench.

76. While we note that the historic approach is informative of how the efficient costs are funded today and likely approach going forward, we accept that specific tactics can evolve over time. The Commission should look to todays practice as well.

77. Chorus' current practice is clear: the consistent and current approach is that end users (outside specific UFB funding) are required to fund the lead-in installation. In other words, lead-in installation costs does not form part of the monthly charge or connection charge (which provides for connection of an existing lead-in).

Chorus offer to refund

78. Chorus suggests that its capital contributions policy for new copper connections was only implemented in response to IPP. It states that if an "efficient" monthly price is set, and backdating confirmed, it will reverse the payments. It does not state what an "efficient" price might be for the purposes of this commitment, although it has previously submitted that an efficient price ranges from the pre-2014 price of $45 to about $75 per month.

79. Given this, it is difficult to assess how credible that offer is and to put any weight on it. On its face, it appears to be an unprincipled "offer" from Chorus to trade its commercial policy for a (more valuable) increase in the regulated price. This is not the sort of arrangement the Commission can or should countenance. Its role is to assess what costs an efficient operator (and an efficient market) would recover directly from end-users or third parties. Chorus existing policies are clear evidence of costs that should be assumed to be recovered from end-users – because Chorus has been successful in introducing them and

[15] See https://www.chorus.co.nz/land-development#land-development/subdivisions/developing-a-greenfields-subdivision?&_suid=144099935909802868676766605575
[16] See page 39 of briefing https://www.chorus.co.nz/file/48837/InvestordayFINALslides.pdf
[17] See page 1.4 of TLOC No.1049

achieving contributions. That Chorus now offers to trade its commercial position away should be irrelevant to the Commission's consideration set.

80. In any case, it's difficult to see how the Commission could contemplate Chorus' proposal without amending the STD. The reason that Chorus can implement these charges is because they currently fall outside the STD, i.e. the STD service assumes that there is an existing path and lead-in. Accordingly, these do not currently form part of - and are not directly attributable to - the regulated service.

Lead-in installation extends to the network terminal

81. Analysys Mason suggests at section 2.1 of its report that laterals are incorrectly excluded from the model. Analysys Mason state that:

> Laterals are not part of the lead-in. They should therefore not be assumed to be included within the lead-in trench (and therefore should not be excluded from the model on the basis that lead-in assets are covered by the installation charge).

82. However, laterals form part of the lead-in installation and provided by end users. Accordingly, in terms of current practice and setting aside road crossings, AM has likely overstated the degree to which there are laterals that should be in the model.

83. This is because Chorus' lead-in guidelines are clear that the lead-in pipe runs from the ETP to the Network Terminal. The lead-in is the property owners' responsibility[18]. Chorus' guidelines provide that:

> Our network is typically built up to the boundary of the property. A lead-in pipe is needed to get the network cable from the point on the boundary where our network terminates (the network terminal) to the point on the building where the internal cabling needs to connect to our network (known as the external termination point or ETP). The lead-in is the property owner's responsibility and can be installed by an electrician or builder.

84. While the guideline refers to the "point on the boundary", the accompanying diagram indicates that the trench continues through to network cable, i.e. beyond the property boundary and in to the road reserve. Further, the cross sectional views and accompanying text clearly anticipate that property owners will need to trench beyond the legal property boundary and arrange access to the road reserve where necessary. Therefore, at a minimum, the lead-in extends to the Network Terminal wherever that lies.

85. Further, as a matter of practice, the cable runs along the berm or - if there is no berm – along the footpath as close to the property boundary as possible. This way the Network Terminal (which in many cases is a grey pillar) is positioned on the cable and does not obstruct pedestrians. In other words, for the side of street where the cable is laid there should be minimal if any lateral paid for the Chorus (because the property owner is responsible for the lead-in, which runs to the Network Terminal that is located at the deployed cable).

86. Accordingly, there is unlikely to be any material lateral where the cable runs down the same side of the road as the end user dwelling

[18] See page 3 of Chorus lead-in installation guidelines.

The cost of the modelled network

87. Chorus has proposed in a number of places that costs should be based on its current operating costs.

88. The Commission, consistent with the typical practice of regulators implementing the TSLRIC approach, and as implicit in its consultation on aspects of the FPP process for UCLL and UBA adopted two important assumptions. The application of these assumptions has been consulted upon extensively, and decisions taken by the Commission, The detailed implementation of those decisions has taken place in relation both to the TERA modelling and the Commission's proposed application of that modelling. These steps are all set out its draft determinations. In summary, these assumptions are:

    a. The forward looking estimates of long-run incremental costs are based on the costs of a hypothetical network utilising the modern equivalent asset required to deliver the regulated service, for a hypothetical network operator.

    b. The network assets and ancillary assets and business functions are optimised so that the costs that are measured represent the best available estimate of the incremental costs which would arise if the hypothetical operator employed the most efficient technology, production methods and business infrastructure required to deliver the regulated service.

89. By definition these costs are not, and need not, necessarily mirror Chorus' actual costs of, as the actual network operator[19].

The model should capture all efficiencies and anticipate incentives

90. Consistent with the two overarching assumptions referred to above, the regulatory policy underpinning the use of TSLRIC in the Telecommunications Act, is that the modelling should capture all reasonable efficiencies, in order to provide the best available estimate of the price that would be representative of the long run competitive market price for the provision of the regulated service.

91. A regulatory framework using TSLRIC pricing in telecommunications seeks to simulate the long run efficient outcomes in investment and innovation which would be expected in a competitive market, by the combination of efficient pricing and incentives:

    a. The underlying presumption is that the efficient forward looking long run price set over the regulatory period, provides the regulated party, Chorus in this case, with certainty, and with strong incentives to adjust its strategy and organisational structure appropriately, and to invest in and innovate toward the cost-minimising revenue maximising technologies, business processes, and business organisation required efficiently to deliver the regulated service, and by extension, to deliver other services in response to demand;

    b. An efficient long run price should also deliver the regulated firm with revenues sufficient to provide a risk adjusted return on the capital invested, a return of the capital invested consistent with a competitive market, and as a result, the ability to

[19] As noted by the Commission in e.g. TERA Consultants "*TSLRIC literature review on UBA and UCLL costing approaches*" June 2014; Commerce Commission, "*Consultation paper outlining our proposed view on regulatory framework and modelling approach for UBA and UCLL services*" 9 July 2014; Commerce Commission "*Draft pricing review determination for Chorus' unbundled copper local loop service*" 2 December 2014; Commerce Commission "*Process and issues update paper for UCLL and UBA pricing review determinations*" 19 December 2014.

fund further investment in new technology or business innovations, either from within the firm or from capital markets without reducing the incentives toward efficient investment; and

c. Equally, the efficient price provides downstream market participants such as RSPs with a similar set of incentives to structure their business operations, investment strategies, and commercial relationships, efficiently in response to end-user demand.

92. The Chorus submission highlights that there are significant efficiency opportunities that are apparently not captured in the data provided by Chorus, and by extension, indicates as well that we should expect Chorus to act on the incentives given by the Commission. The clear implication is that individual classes of unadjusted costs provided to the Commission by Chorus may well be neither reflective of efficient cost, nor what you would expect to see when efficiently deploying and operating the hypothetical network using the MEA.

There are significant efficiency opportunities available that are not reflected in the data

93. Chorus has reported significant cost reductions in major projects and this would generally be expected as a result of the learning effect. It is well understood that, in the course of a major project, significant organisational learning takes place. This would also be the case for the cost minimising HEO building a hypothetical new network, and taking advantage of the latest deployment technology.

94. As network build projects progress, the HEO and its contractors would gain additional experience with the use of the latest deployment technology, and the MEA equipment components. Increasing efficiencies would be achieved through contractual adjustments allowing lower costs, improvements in administrative methods, and as a result of personnel learning to carry out the build and deployment tasks in different locales more efficiently in order to reduce the direct and indirect costs.

95. In assessing the factors which give rise to the learning effect, typically, only a limited ongoing benefit can be observed as attributable to institutional knowledge or experience. The contribution of institutional learning depends on factors such as the level of personnel turnover at relevant levels, management structures, changes in contractor relationships, the consistency of staff/organisational training, and the frequency of organisational change.

    a. Tracking the average experience for different tasks/skill requirements would generally show that the direct labour input per deployment task would decrease in a non-linear fashion as the cumulative number of tasks increased. The slope of the resulting curve would be dependent on the average percentage by which the deployment time decreases for each iteration.

    b. Similarly, efficiencies in administrative, management and support processes, such as staff management, inward logistics and task sequencing and planning, and staff and contractor relationships with suppliers, and other relevant parties show a learning effect. Rather than evolving gradually, the learning effect is observable in indirect costs in step-wise fashion as productivity improvements are recognised and implemented.

96. An experienced project manager estimating the costs for a network build project would be likely to use his or her past experience with staff and contractors to assess the likely cost of labour in a new network deployment based project, modified by the learning rate based estimate of the impact of the learning effect, the task number estimate, and labour rates. We would expect Chorus to be able to provide averaged cost data which embeds and

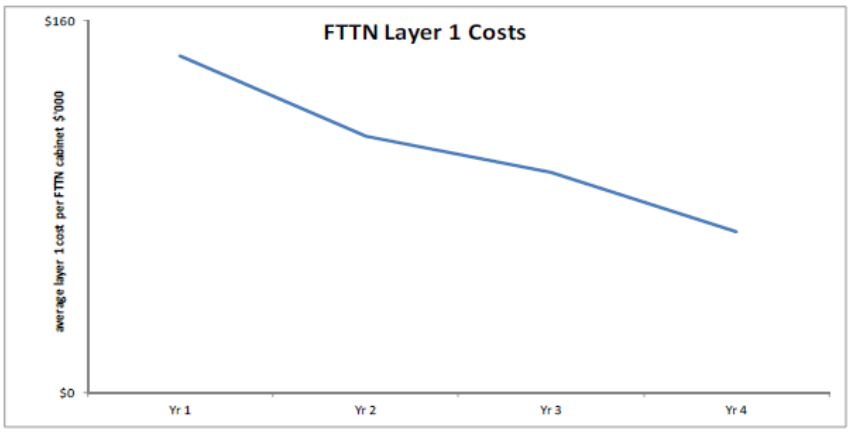
reflects the learning effect. In most fixed price projects, there are strong incentives for a cost minimising, revenue maximising business to seek out and drive these efficiencies in both bidding, and project fulfilment.

97. As far as we have been able to ascertain, Chorus is asking the Commission to apply costs that ignore the impact of the learning effect and other efficiencies possible in major build programmes. This is evidenced by general experience of the evolution of the learning curve – typically direct labour requirements and as a consequence labour-related costs, decrease at a declining rate as cumulative execution of a project increases. In other words, depending on the number of cumulative task completions, and the consequential learning rate, the reductions in labour costs scale in a non-linear manner to a long right hand tail as the cumulative task completions increase.

98. Chorus' public statements provide evidence of the existence of significant learning effects in the execution of major build projects. A selection of examples shows the importance of this effect in improving efficiencies.

99. In May 2012, Chorus noted that the FTTN project demonstrated there are significant opportunities to improve efficiencies and reduce unit costs over major build programmes.[20] We would expect this graph to represent the impact of annual average estimates of expected efficiencies achievable across both direct and indirect costs.

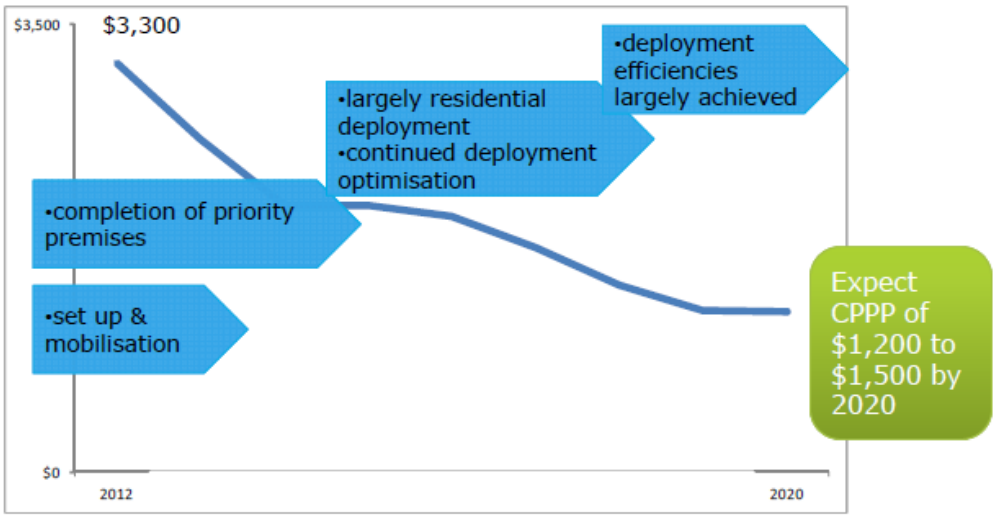
Figure 3: unit cost reduction over FTTN programme



100. At that time Chorus reported significant expected cost reductions for the UFB programme.

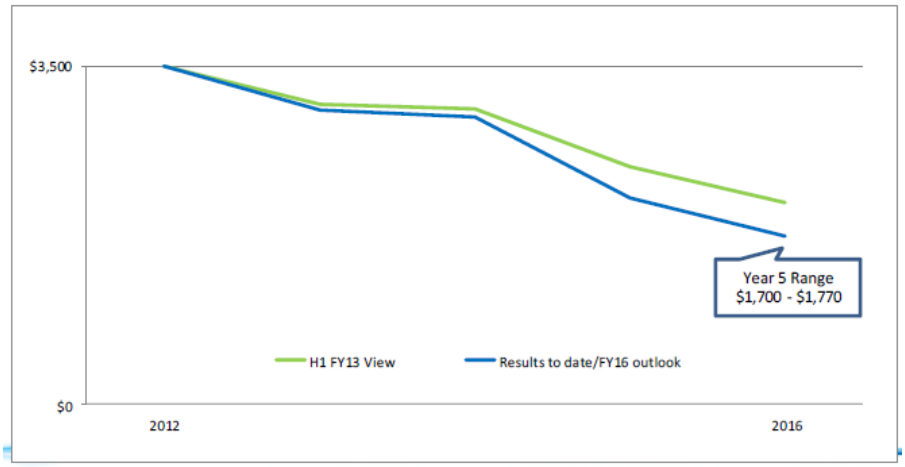
[20] See May 2012 investor presentation.

Figure 4: Chorus May 2012 expected unit cost reduction over UFB programme



101. Chorus reports in 2015 that these cost reductions are still expected to be achieved and, indeed, that additional reductions are now forecast. We would expect the reduction in the unit cost per premise passed to embed a mixture of lower direct and indirect costs associated with the learning effect, and also with the lesser complexities and additional requirements of New Zealand's largely low density residential deployment.

Figure 5: Chorus August 2015 unit cost reduction over UFB programme



102. In addition to new lower cost techniques, Chorus also obtained CFH agreement to more flexibility over the phasing and order the regions are built[21].

103. One implication of this is that the UFB planning and roll out at the outset was not efficient, with consequences for all related costs. The change in the slope of the unit cost reduction over time reflects the learning effect on both direct and indirect costs, the change in the deployment locations, and finally the stepwise change associated with the indirect cost reductions achievable from greater phasing and planning flexibilities

104. Chorus has also indicated further indirect cost savings as achievable. It also announced significant fibre lead-in cost reductions through revised techniques and

[21] See Chorus' May 2014 investor briefing https://www.chorus.co.nz/file/48837/InvestordayFINALslides.pdf

commercial arrangements with service companies with the effect of reducing guidance by $100 per premises connected.

105. In short, there are significant efficiencies to be made in a build project such as rolling out the hypothetical MEA network. While the evidence is that significant efficiencies are available, Chorus has argued that these significant efficiencies be ignored.

The Commission should expect Chorus to act on incentives

106. The Commission should generally expect that Chorus will act based on the multiple incentives it actually faces in the market and under regulation. Like any other cost-minimising, profit maximising entity, and in the case of Chorus, with an awareness of the contractual relations with CFH, and the political and regulatory environment within which telecommunications operators do business, Chorus will respond to the actual incentives it faces, subject to the express requirements of regulation. In other words, we suggest that subject to contractual and regulatory obligations, and operating within the legal requirements of the Commerce Act and other relevant legislation two key incentives might be as follows:

a. Chorus is likely to continue to minimise unavoidable costs, and defer investment, within its perception of the constraints of technical, legal, political and regulatory acceptability unless it considers there are supervening reasons to the contrary;

b. Chorus is likely, as far as possible, to shift costs on to RSPs and end-users again within its perception of the constraints of technical legal, political and regulatory acceptability unless it considers there are supervening reasons to the contrary;

107. Chorus will optimise based on its interpretation of the information it has available to it, and its understanding of the costs and benefits it faces, (in other words its incentives to act will be dependent on the level of asymmetry of information, and its understanding of the trade-offs it must make for a given outcome).

108. In short, when considering the actual costs provided to it by Chorus, the Commission should consider a number of key aspects, including the impact of the incentives Chorus faces:

a. Cost data should be used only where objective evidence supports the actual or adjusted level of cost, as representative of the best available cost information, and as efficiently incurred (consistent with the assumptions both of the hypothesised network, and second, the hypothesised efficient operator; and

b. Project cost data reflecting direct and indirect costs should be tested to ensure that it reflects a reasonable expectation of the impact of the learning effect over the duration of the contract, (subject to the detailed comments noted above).

Trenching

109. Chorus argues that the Commission trenching estimates are unreliable and that, instead, proposes that the Commission should rely on its cost data. Chorus had submitted trenching cost data and accompanying Analysys Mason statistical analysis.

110. Network Strategies has reviewed the analysis and concludes that, due to the fundamental flaws in the data used by Analysys Mason in its trenching analysis, the analysis is unsound and should be ignored. In particular, Network Strategies observe:

a. Underlying data problems (the proportion of clutter, road and rock types fail to reconcile) that are inconsistent with key model assumptions and render the statistical model, and any estimates made by the model, invalid:

b. The model does not consider whether the characteristics of the sample areas are suitable for extrapolation to the whole ESA and this has resulted in misleading results for a number of ESAs;

c. The sample includes data from early years of the RBI rollout and thus does not reflect efficiency gains achieved in the later years of the rollout;

d. Significant problems with mark-ups applied to the costs: with inconsistencies treatment of a mark-up for overheads, mark-up for contractor overheads even when there appears to be no involvement by third party contractors; and no explanation of the scope of overhead activities or 'other' costs and thus these can not be assessed as reasonable;

e. The statistical model is erroneously applied to ESAs for which values of the input parameters are not available.

111. WIK note that, in its view, the trenching costs calculated by BECA are not too low but likely high. This is because BECA has not considered new and more cost-efficient trenching methods (as noted by Downer in its submission). The evidence is that hydro trenching and new trenching machines currently in use in other countries can bring down costs to as little as 8 €/meter, which is only a fraction of the costs currently used in the model. Some indirect factors lead to further overestimation to trenching cost.

112. The Commission should base its model on the BECA advice, potentially looking for further efficiencies by applying modern techniques as WIK suggest.

Aerial

113. Chorus also proposes changes to the proportion or aerial deployment and assumed costs.

114. Network Strategies identified a number of critical problems with Chorus' data and analysis relating to aerial deployment, in not its irrelevance in the context of an HEO deploying a nationwide network. Network Strategies concludes that the Commission disregard Chorus' proposed adjustments.

115. As Network Strategies notes in its report, the Commission is tasked with identifying efficient costs and the evidence from LFCs indicates that aerial deployment is used wherever possible since aerial reticulation is more cost-effective than undergrounding. In the case of NorthPower 60% aerial deployment has been achieved. Clearly economies accrue through the avoidance of trenching costs, and further savings occur with the faster deployment time of aerial reticulation. Network Strategies further notes that the lease costs and data provided by Chorus misleading, biased and inaccurate.

116. Accordingly, the Commission should disregard Chorus' comments on the extent of aerial deployment and continues to rely on EDB and other LFC information as to the extent of aerial deployment that would be possible for an efficient provider. The Commission should refer to LFC data to identify efficient pole lease costs and adopted expected forward looking consent costs rather than rely on backward looking data (as an efficient operator would).

117. Additionally, Network Strategies proposes that the Commission amend its calculations for percentages of aerial deployment and lead-ins to correct for the errors noted in its August 2015 report.

Asset valuation

118. Chorus supports the Commission relying on an ORC methodology for valuing assets. In particular, it recommends that the Commission not value re-usable assets at historic cost as this departs from an orthodox and forward looking TSLRIC model.

119. We disagree. Failing to recognise re-used and unlikely to be replaced assets in the model will inevitably result in inefficiently high prices.

Relying only on ORC will not identify efficient costs

120. We disagree with the blanket use of ORC and have previously highlighted why we think the principles set out by the Supreme Court in the *Vodafone* TSO *case* direct the Commission away from ORC and towards an alternative methodology. To apply ORC to assets that will not likely be replaced is to over-state the efficient cost of the network because the methodology will not enable the Commission to identify efficient forward looking cost. It creates a clear distortion likely to be inconsistent with section 18. While the Commission has discretion to select a valuation methodology, it must ensure that when determining the appropriate valuation, it does so in answer to the right question - i.e. whether the valuation methodology enables it to identify efficient costs. If it is likely to create a distortion the Commission must apply an alternative method.

121. And, as we see it, it is relatively easy to recognise the apparent distortion. Blanket use of ORC is not principle based. Chorus knows that ORC will give it the greatest windfall and has therefore continued to advocate for it. The Commission needs to guard against that.

122. It remains unclear to us why, despite the guidance the Supreme Court has provided on ORC, Chorus (and the Commission) continue to take the view that ORC is the appropriate methodology in this case. We asked Russell McVeagh to provide a considered, independent view on whether the use of ORC in this case would be regarded as an error of law by a higher court. They are of the view that the Commission would be exposed to legal risk if ORC is applied to all assets in the UCLL cost model. Neither Chorus nor the Commission has provided compelling reasons to depart from the Supreme Court's explicit guidance on this point.

123. Despite the different statutory context of the *Vodafone* case and this PRD the Supreme Court drew on comparative precedent on TSLRIC and articulated the principle that, where the Commission's task was to identify only efficient costs, it would constitute an error to use ORC when doing so would inflate those costs.

124. The most relevant overseas precedent on TSLRIC remains the *Telstra* case which makes it clear that ORC will result in distortionary windfalls if used in the determination of a TSLRIC price. It was that case which influenced the Supreme Court in its decision and Chorus has simply not addressed the matters raised by the Supreme Court, including the point by Justice Tipping that such a distortionary approach is contrary to section 18.

125. We certainly disagree with Chorus' view that TSLRIC requires the use of ORC as a matter of law. There is no statutory or judicial support for that position. In fact, with efficiency the very clear central objective of both s18 and the TSLRIC definition, we believe the opposite is true.

Failing to recognise re-use means prices are over-stated

126. Given that it is the current business practice of Chorus in New Zealand today to re-use assets in the context of its UFB build, Spark considers that it would be most appropriate for the Commission to consider and recognise the cost benefits of re-use in the UCLL cost model. We note that the Commission asked TERA to estimate the impact of considering re-use of existing ducts, based upon Chorus information in on the number and book value of existing ducts. As noted in the Commission's Draft Determination for UCLL in July 2015, TERA advised the Commission that the resulting impact for UCLL would be a reduction of 9% in the monthly UCLL charge if re-use were to be considered.

127. Spark and Vodafone asked WIK to test the TERA result, evaluate it for completeness. Section 2.6 of the WIK expert report accompanying this cross-submission sets out their findings.

128. WIK advises that the details of the TERA approach were not made available to parties to the FPP process, and accordingly, in the absence of further information, it tried to replicate the TERA results. WIK assumed that it was likely the asset categories "ducts", "trench", "manhole", and "pole", represented assets which could be reused. WIK advises that a re-use saving factor of approximately 28% of the investment in these asset classes gives rise to the 9% cost savings in the monthly UCLL charge reported to the Commission by TERA.

129. Based on the public announcements by Chorus in relation to its target of 40% for the reuse of ducts in the UFB deployment, WIK adopted this as a realistic basis on which to estimate investment savings for the four classes of reusable asset noted above. WIK advise us that this degree of reuse results in a reduction in the UCLL monthly charge of about 13.8% in the 2016 year.

130. It is clear that a cost minimising HEO would actively seek to reuse existing duct infrastructure, to reduce its investment cost. Given that re-use is established as practice in New Zealand, the Commission should include the re-use assumptions modelled for it by TERA, as extended in the manner estimated by WIK, in its model.

The Government is considering asset valuation in the context of the Telecommunications Act review

131. On 8 September 2015, the Government released the discussion paper *Regulating Communications For The Future: Review of the Telecommunications Act 2001*[22], (**MBIE Paper**). Section 4 of that paper sets out a range of proposals for discussion around the pricing of fixed line access services. Section 4.2 of that paper seeks feedback on the use of a utility-style price-setting system, colloquially known as a building block mode, (**BBM**). Under this approach, the value of the underlying assets is typically fixed on entry into the utility-style price-setting regime, and the regulator sets a maximum allowable revenue which can be earned from those assets.

132. The MBIE paper notes that while there is no single accepted approach for the valuation of the initial regulatory asset base (**RAB**), one option to "minimise disruption" would be to use the final valuation of Chorus' access assets generated in this FPP process as an input into the starting RAB. [23]

[22] *Regulating Communications For The Future: Review of the Telecommunications Act 2001,* Ministry of Business Innnovation and Employment, September 2015
[23] Ibid at page C-4

133. Spark is still developing its views on the proposals set out in the MBIE paper and will make appropriate submissions on them. It is important however that the Commission consider that the TSLRIC valuation underpinning their Final Determination in the FPP process for UCLL and UBA may well, as a result of the outcome of the review of the Tele-communications Act, be the basis for regulated pricing in the future, well beyond the current regulatory period for which it is setting prices now.

134. Spark doesn't believe that a TSLRIC valuation could easily be applied to the BBM context without significant adjustment. The conventions of a TSLRIC valuation do not sit easily with the approach to setting the initial valuation for a RAB. The RAB envisages an initial valuation based on the efficiently incurred actual costs of an actual asset base, including a return on and of the capital efficiently employed, and the expected operating and capital expenditure consistent with an efficient access provider's maintenance and operation of the network. This valuation does not necessarily consider the use of the most efficient modern equivalent asset, nor does it adopt a forward looking long run incremental approach.

135. In contrast to the TSLRIC approach, the BBM model typically allows a regulated entity to receive a return which provides a return on and of the capital employed in the RAB, as adjusted for future investment added to the asset base and the value of disposals removed from it in the period in which they are incurred. The BBM approach does not anticipate (potentially significant) future investment, but takes it into account only at the time it is incurred.

136. The TSLRIC valuation, on the other hand is based on a forward looking long run incremental cost model assuming that a hypothetical efficient operator will build a network using modern equivalent assets capable of delivering the regulated service. The hypothetical network is dimensioned based on the expected demand, and the investment an efficient operator would make across the duration of the regulatory period. A TSLRIC valuation includes the cost of that future efficient investment, while the valuation of the RAB under the BBM approach is adjusted over time for efficient investment.

137. In fact, the costs of the hypothetical network constructed under this approach, are independent of the historical cost of the actual assets currently deployed, the actual costs currently incurred, and the impact of historic investment decisions, historic patterns of demand, and the impact of historic regulatory and policy settings on the investment decisions of the regulated party. The regulated party receives a return based on the hypothetical network as a simulation of the pricing consequences it would face in a competitive market.

138. Nonetheless, as noted in our response to the Conference questions, an advantage of a DORC valuation is that it more readily permits comparisons with asset valuations applied in different contexts.

WACC parameters

139. Significant effort has been expended by Chorus and CEG in their respective submissions in examining the Commission's further draft decision on cost of capital and raising arguments for change to its proposed approach to establishing the regulatory weighted average cost of capital (**WACC**).

140. We address CEG's comments on the Commission's approach to estimating the risk free rate and the tax adjusted market risk premium, (**TAMRP**), and their arguments in relation to the interdependencies. CEG also make a range of claims in relation to the

Commission's approach to the asset beta, the use of a zero debt beta, and, in this connection, the Commission's approach to leverage.

141. We note that many of these arguments are not new, and have been responded to by Spark and its expert advisors, as well as other participants in the FPP process. Further the Commission's approach to the assumption of a zero debt beta, and its use of an average leverage derived from a comparator sample, was the subject of extensive consultation processes during the finalisation of the Input Methodologies proceedings in the context of Part 4 of the Commerce Act.

142. We presume that the Commission will have reference to all or some of these materials in making its final determination in the FPP process for UCLL and UBA. Accordingly we have tried to summarise views on matters only to the extent necessary to enable us to place the new material put forward by CEG in context and provide our comments on it.

143. We also refer as appropriate to the analysis provide by Network Strategies in section 7 of their expert report which accompanies this submission.

The risk free rate and TAMRP - the CEG criticism

144. In section 2 of CEG's expert report the claim is again made that the Commission's further draft decision on cost of capital does not adequately take into account the potential for interdependency between the risk rate, and the TAMRP. In their report, CEG assert that although this omission may not, of itself, always lead to a material error in the estimate of regulatory WACC, it does in fact do so in current market circumstances[24].

145. We disagree with this assertion. For the reasons set out below, we think that the approach to estimating the TAMRP is sound. As Network Strategies advises in its discussion of international regulatory precedent, the Commission's approach is entirely consistent with international regulatory practice[25]. Further, for the reasons set out by Network Strategies in its discussion of the equity premium, we do not consider that current market conditions reflect any circumstances which require any changes to the Commission's approach to WACC.

The risk free rate and TAMRP - responding to CEG's comments

146. The validity of this argument rests on the assumption that the cost of equity adopted by the Commission is understated since the proxy used to estimate the risk free rate currently produces relatively low values, while the long term historic data used to estimate the TAMRP does not reflect a higher market risk premium as a reflection of the expected reward in the face of current market uncertainty. While this assumption has intuitive appeal, it is not supported by empirical evidence.

147. For the reasons set out below it is appropriate to rely on a TAMRP of 7.0% based on the expert advice it has received and after considering previous submissions on the subject. We do not think there is a real risk of regulatory error, material or otherwise in the estimate of the WACC from not taking into account the potential for interdependency between the TAMRP and the risk free rate and the variability of the relationship between these over time. There is no academic or empirical evidence to support taking these issues into account.

[24] *Response to the further draft determination*, CEG, August 2015
[25] Network Strategies ibid at 64

The TAMRP is forward looking, but can only be estimated ex post

148. As previously submitted, in general terms, we support the Commission's use of the simplified Brennan-Lally CAPM approach to estimating the regulatory WACC in the context of the FPP processes for UCLL and UBA. Although the capital asset pricing model, ("CAPM", which underlies the simplified Brennan-Lally WACC calculation used by the Commission, is a simplified reflection of actual market realities, and with a number of simplifying assumptions which do not always hold true, it is widely used to value equity[26]. Key inputs to this process are the proxy used for the risk free rate, and the estimate of the TAMRP.

149. It is generally understood that the CAPM is used to produce an ex ante forecast of the return that is expected from the regulated asset base - a required (or contractual) return on debt, and an expected return on equity . Functionally, the estimate of TAMRP used in this process represents an *ex ante* forecast of the expected premium, relative to the risk free rate, that is required for an investor to prefer to hold this class of assets, (typically shares), rather than riskless government bonds. As a reflection of the aggregate expected reward for a risk bearing asset class, it should vary with the aggregate of investors' risk aversion and ex ante perception of risk levels.

150. In the context of setting a regulatory WACC based on a chosen estimation methodology, it is important to be clear about the actual concept being captured by the term "market risk premium" (setting aside the tax adjustments for the purposes of discussion). At least three different concepts are associated with the term.

a. The first of these, as stated above is the notion of the forward looking incremental return of a diversified portfolio (representative of the equity market) over the risk free rate (estimated by the return of a relevant term government security), adjusted for taxes, which would be required by an investor, and as a result would be different for different investors given different investment horizons and expectations of future outcomes. This is the *ex ante* MRP, and for the reasons set out below, this is effectively only able to be inferred as an ex post estimate from historical data in aggregate, over time, and in retrospect.

b. The second is the estimate of the historical return of the equity market over a relevant term government security adjusted for tax which, as an objective measure, would have been experienced by all investors in that market. This is the ex post MRP which is effectively only observable in aggregate and retrospect and which we discuss further below.

c. The third, is the resulting *ex post* MRP estimate which infers the mean reverting expected future differential return of the equity market in aggregate over a relevant term government security over time adjusted for tax. This estimate is typically used as the best available proxy for the *ex ante* MRP.

151. Conceptually then, the actual ex ante TAMRP, if it could be observed, will not be constant, and could possibly be modelled by a stable distribution if all causal factors and the relevant parameters of the distribution could be ascertained. We do not believe either modelling of the actual ex ante TAMRP by this approach is currently possible in accepted theory or widespread commercial practice.

[26] The CAPM makes an implicit simplifying assumption that for a firm making rational and efficient business decisions, the “required” equity market return is the same as the “expected” equity market return.

152. Equally, reliable forecasting of changes is at the very least extremely difficult. It may well be the case that the interdependencies between actual risk free rates, (rather than the Government bonds typically used as a proxy) and the actual TAMRP at a given point in time may reflect an inverse relationship when compared to the actual value of both at an earlier point in time. Equally, it would be remarkable if an accurate estimate of the prevailing TAMRP could be made as CEG seems to assume.

153. As a result, accepted practice in applying the CAPM is that the TAMRP can only readily be estimated ex post. Due to its stochastic nature, and the noisiness of the data, any short term point estimates can only be viewed as unreliable. By definition, ex post it cannot be constant, because if it were to be, there would be no risk, and hence no possible risk premium. Hence any ex post estimate of the TAMRP, to be used as a proxy for the ex ante estimate will be based on the mean,

The TAMRP and the real risk free rate tend to exhibit reversion to the mean

154. As Dimson, Marsh and Staunton noted in the study cited by the Commission in its further draft determination[27]:

> the empirical evidence … indicates that when markets are turbulent, volatility tends to revert rapidly to the mean, so that we should expect any period of extreme volatility to be relatively brief elevating the expected equity premium only over the short run.

155. The empirical evidence they refer to, and other evidence which is available in relation to the MRP supports the proposition that over the long run, as proxies for risk free rates go up, proxies for expected returns tend to remain relatively stable, and estimated equity risk premia also rise, and as proxies for risk free rates fall, so also do estimated equity risk premia[28]. The same evidence also broadly supports historically the assumption of mean reversion in both real risk free rates and the TAMRP over the longer term.

156. This being the case, it might be possible, if it could be reliably estimated, that the detailed behaviour around the inverse relationship suggested by CEG could be observed in the short term. There is some indicative evidence that this inverse relationship occurs. Over the longer term, however, it is the tendency to mean reversion observable in both the risk-free rate, and the TAMRP is the feature which would shape investor expectations of the reward to be expected for the risk associated with a particular asset class. As we have noted in previous submissions on this issue, the Brennan-Lally CAPM estimate of WACC combines the required reward on debt and the expected reward on equity.

Commission's IMs approach to estimating the risk free rate is relevant to the FPP process

157. As Network Strategies discuss in detail in Section 7 of their report in relation to the implications of the Input Methodologies, the Commission has consulted extensively on the issue of whether the risk free rate should be estimated by reference to historical interest rates, or current interest rates. The Commission determined that the use of current risk free rates best served the Part 4 (of the Commerce Act) purpose (loosely) of promoting the long term benefit of end-users and preserving incentives to invest, and the resulting potential dynamic efficiency benefits. Spark regards the Commission's final decision on this issue to

[27] *The low-return world*, Dimson Marsh and Staunton in *Credit Suisse Global Investment Returns Yearbook 2013* at page 12

[28] *Equity Risk Premiums (ERP): Determinants, Estimation and Implications – The 2013 Edition*, Damodaran, A , http://ssrn.com/abstract=2238064
The Equity Risk Premium: A Review of Models, Fernando Duarte and Carlo Rosa, Federal Reserve Bank of New York Staff Reports, no. 714
February 2015

be equally relevant to the determination of the risk free rate in the context of the UCLL and UBA FPP.

Asset beta and leverage - responding to the CEG criticism

158. CEG criticises the Commission's assumption that a zero debt beta is reasonable for all firms in the benchmark sample constructed by Oxera. They provide a detailed analysis to substantiate an argument for an increase on the estimated asset beta due to this assumption. CEG estimate the impact of the claimed bias is an understatement of the equity beta by between 0.05 and 0.15, and assert an increase of 0.035 in the average five year asset beta if correction is made for a claimed bias arising from the use of a zero debt beta. CEG further make the claim that asset beta estimates of 0.53 and 0.59 would be more correct.

159. CEG raise arguments previously put forward for the Commission's consideration in the context of the Input Methodologies consultation processes. The Commission, in setting the estimated WACC for the purposes of the regulated entities subject to Part 4 of the Commerce Act, adopted the same approach of using the average leverage of the revised comparator sample and adopting a zero debt beta. We do not propose to represent the various arguments presented for and against this approach in that context. As Network Strategies note in section 7.2 of their expert report, this approach was previously well debated and finalised in the context of the Input Methodologies. We support the Commission's reasoning on this subject from the Input Methodologies with reference to the setting of a regulatory WACC in the context of the FPP processes in relation to UCLL and UBA. Accordingly we support the Commission's approach on this point in its Further draft decision.

Zero debt beta assumption is common finance industry practice is

160. Spark further notes that in our understanding, and experience, it is common financial industry practice internationally to assume a zero debt beta when estimating a value for WACC in most instances. Implicitly this approach suggests an assumption that the firm in question is a solvent going concern, and will remain solvent for the period over which the WACC estimate is intended to apply. In other words, the corollary to the zero debt beta assumption is that the probability payoff profile of the promised and actual return on debt will be identical over the relevant period.

161. As the Commission notes in its Further draft decision on WACC at paragraph 208 et seq, in principle, and for completeness, debt betas should be included in cost of capital calculations[29]. However in the *ex ante* regulatory setting, the circularities identified above and the difficulties of accurately estimating a relevant debt beta, particularly when also taking into account the probability distribution of variance in debt beta estimates over time due to changes in interest rates and layering of debt maturities, such an approach becomes increasingly hard to estimate robustly. We note further that most regulators do not use debt betas in practice.

No material bias in assuming a zero debt beta using appropriate leverage

162. The CEG analysis of the Oxera sample makes the assumption that all the firms contained in it have differing leverage, and accordingly must have differing debt betas if the debt and equity betas were to be re-levered. In fact, the assumption required for the use of the comparator firms in the regulatory context is simply that the firms will be able to remain

[29] Page 47 et. seq.

solvent over the period for which the WACC estimate is intended to apply, and accordingly that the average leverage for the comparator sample, is a prudent leverage level for the regulated firm.

163. This is not to suggest that there is no potential for bias, but rather, as Oxera notes that the assumption of a non-zero debt beta only leads to a marginal increase in the asset beta. For the reasons set out below, Spark disagrees with the assumptions CEG makes in proposing that the Commission's approach leads to material bias, and justifies an increase to the average five year asset beta.

164. The key assumption, when considering the likelihood of bias due to the zero debt beta assumption, is that the shape of the probability payoff profile of the contracted return on debt is best measured by the rate at which the company's creditors lend the money and the risk of variance in forecast cashflow.

165. As leverage ratios increase beyond a prudent level dependent on the risk of variance in cashflow, the company may not be able to realise the benefit of the tax shield resulting from debt and depending on the degree of variance in cashflow, be unable to attach imputation credits to dividends, utilise the benefit of the tax shield in the current year, or carry that benefit forward for later utilisation for a lesser benefit depending on circumstances.

166. The zero debt beta assumption using a prudent central estimate of industry leverage is not likely to incorporate a material bias in a regulatory context. This is because the circularity inherent in both rate and price cap regulation which has the effect that the estimate of WACC largely determines the value of the regulated asset base, and accordingly the revenue flows representing the return on and of the (regulatory base of) capital employed, and the expected future cash flow in turn determines the market value of the assets. This process in turn not only determines prices, but also influences both actual risk drivers and the actual risk adjusted cost of capital.

167. In other words, the promised return on capital at the regulatory WACC is likely to be largely assured, and as a result debt providers to the regulated firm, at leverage levels representative of the industry average essentially bear a lesser level of systematic risk. Particularly in the regulatory context where the risk of variance in the regulated cash flow is more limited, Spark considers that the Commission's zero debt beta assumption is realistic in setting a WACC estimate for the TSLRIC model for UCLL and UBA.

Price adjustments

168. Both Sapere and CEG have provided expert reports which examine Oxera's social loss function model, which makes a case for an uplift to the WACC on the basis that in the right circumstances, an uplift would deliver end-user welfare benefits from accelerated innovation which would exceed the direct welfare costs of the uplift. The Sapere and CEG reports both suggest various adjustments to the Oxera approach.

a. CEG has provided a detailed comment on the Oxera model and argued that, under certain conditions, the Oxera model understates the benefit of an uplift.

b. Sapere have essentially provide an alternative presentation of the Oxera analysis with the addition of a discussion of the impact of the use of a total welfare standard.

169. The additional material from CEG and Sapere both uncritically adopt the underlying assumption set described by Oxera. Both expert reports fail to address the underlying failings of the Oxera model in that there is no evidence to suggest a link between setting higher prices and claimed benefits by Chorus, no evidence of an incentive structure which assures that the claimed benefits would arise, and no evidence that incentives over and above efficient prices for the UCLL and UBA services is actually necessary to incentivise Chorus or RSPs in this manner.

The CEG criticisms of Oxera parameters and model settings

170. We discuss the CEG report, further below, but like the Sapere report, it too uncritically adopts the underlying assumption set described by Oxera. No attempt is made to examine critically the underlying assumption set described by Oxera, or to make any substantive analysis. The Oxera model assumes that a WACC uplift will provide the regulated firm with the incentive to accelerate investment and innovation which would otherwise take place at some later point in time. This acceleration will give rise to a welfare benefit from the earlier availability of the result of the innovation or investment than would otherwise be the case. The corollary of this assumption is that the mid-point estimate of WACC will not provide the regulated firm with this incentive.

171. As described by Oxera[30], on their face

> the set of assumptions one would have to believe in order to conclude that a modest WACC uplift is justified seem quite plausible … [a]t the same time, the evidence is not strong, and requires significant speculation about the nature and scale of benefits of future innovation, and therefore, does not contradict the continued use of a midpoint WACC for UCLL/UBA

172. In fact, as set out in this cross-submission, our submission on this matter, and in the expert report provided by Network Strategies, we do not find the full set of assumptions to be plausible and that confirming evidence in the present instance is likely to be so weak that, as the Commisision concludes in its draft decision, the case for an uplift is difficult to sustain..

173. CEG and Sapere's failure to examine critically Oxera's fundamental assumptions, and in particular, the strength of the direct and indirect incentives created by the hypothetical uplift is a flaw in their analysis. While CEG and Chorus argue for precision relating to specific parameters in the Oxera model, they fail to consider the real difficulties with Oxera's underlying assumptions.

Oxera's starting position incorrectly constrains its analysis, and this further limits its value

174. Oxera has essentially applied a modified electricity line company model to considering a WACC adjustment. The difficulty with this approach is that, by starting with an electricity line company model, there is no consideration of whether there material differences in the designs and incentives created by the two regulatory regimes should be considered. TSLRIC for instance provides strong incentives for efficiency by regulating monthly prices at a level as consistent as possible with a competitive market using the modern equivalent asset. When properly executed, this regulatory approach provides all market participants with pricing signals which create strong incentives to seek out efficiencies and to invest and innovate.

175. Oxera's starting premise is to apply the solution developed in the electricity line company analysis using a social loss function. As noted by the Commission, this solution

[30] *Is a WACC uplift appropriate for UCLL and UBA?,* Oxera, June 2015, p 37

was developed in the context of a rate of return regulatory construct with established linkages - in a rate of return model erring on the high side the regulated provider has a strong incentive to make additional investment to derive efficiencies. Accordingly, it is not surprising to Spark that Network Strategies identified as a key flaw, the absence of evidence of a causal relationship between a WACC uplift and the acceleration of investment or innovation. The regulatory mechanisms and incentives created by a TSLRIC methodology differ materially from those created in a rate of return approach.

176. As a result, the addition of a WACC uplift based on the social loss function proposed by Oxera modifies the incentives created under TSLRIC in important ways. It may well be appropriate to make a WACC uplift adjustment where the need can be properly evidenced, and the incentive structure makes the intended outcome probable.

177. The failure of both CEG and Sapere to consider the appropriateness of the Oxera model gives rise to a further concern. Their support for an uplift which would lead to higher prices for end-users, with some social costs attached, which does not create additional incentives for Chorus to invest, and which may or may not incentivise migration to UFB, suggests ignores the impact on the incentives which should be created by a TSLRIC pricing regime. Further, by quantifying a trade-off that is at best questionable and at worst flawed, and arguing for further increases in the resulting uplift, results in undue weight and a sense of artificial accuracy being given to the question of uplift over other more important considerations in determining the optimal TSLRIC FPP pricing.

178. As noted, in a TSLRIC incentive regulatory framework the mechanisms of the regime are intended to promote investment and consumption decisions by access seekers and providers, and consumers. The TSLRIC price is not intended to compensate the access provider for actual investment, but to create incentives for market participants to make efficient investment decisions based on the TSLRIC estimate of the efficient price that would be the outcome of a competitive market.

179. A further implication of this regulatory framework is that the efficient price over the regulatory period does not change based on the actual costs faced by Chorus or resulting from Chorus investment decisions. Chorus creates additional value from the efficiency oriented incentives for investment, innovation, cost minimisation and revenue maximisation based on the efficient standard. As the Commission notes, there is no necessary link between the determined price and incremental Chorus investment, as there would be in a rate-of-return model.

180. CEG and Sapere have not examined the implications of the fact that Oxera adopted did not fully consider the TSLRIC regulatory context of their WACC uplift mechanism. Spark believes that a more robust analysis would have determined the appropriate linkages in a TSLRIC context and for the telecommunications environment in the design of an incentive mechanism. The quantification presented by Oxera and only partially critiqued by CEG and Sapere, raises the very real risk that the Commission could incorrectly over-weight the artificial precision and potential applicability of the trade-offs explored in the Oxera analysis. CEG add further (artificial) precision to the Oxera analysis.

181. These limitations mean that, if the Commission were to take the analysis further, it should be cautious if it were to give the Oxera calculations weight over other as relevant considerations.

There is no linkage to the context being considered by the Commission

182. Chorus argues that, while there might be little investment being made in the PRD services, a WACC adjustment has important signalling benefits for wider investment. As set out in our earlier submission, we have reservations that the Commission can increase the price of the regulated services for the claimed investment benefits of other services.

183. There is no material investment being made in the copper based services within the scope of the STD. All investment and innovation is occurring in services that do not come within the scope of the PRD. Accordingly, there could be no justification for a WACC uplift on the basis of consideration of the PRD services on their own.

An uplift is difficult in itself

184. Chorus argue that it is important, for wider signalling purposes, that an uplift be applied. Likewise, the claimed benefits of an uplift sit outside the PRD service and investment. However, for this to apply would mean that the Commission must always price in excess of the expected efficient price irrespective of the circumstances, i.e. regulated prices must always be above cost (probability adjusted).

185. We have reservations that this is consistent with the Act as this would require the Commission to always price above efficient cost, whereas the Act requires the Commission to set the efficient price for the PRD service. Therefore, in terms of promoting certainty, the Commission can only go as far as a policy that it will consider the case for a WACC adjustment for each PRD on the merits of that service. In this way, if the other wider services to Chorus refer are regulated, they can have confidence that the Commission will undertake a principled review of the merits of an adjustment for that investment.

186. The Commission can promote innovation and service performance within the PRD by, for example, ensuring that Chorus faces the full operational costs of failing to invest in network performance (by avoiding allocating these costs to RSPs as NRCs) and ensuring that it does not undermine the business case for fibre performance improving investment (by failing to make a performance adjustment to the fibre MEA)31. However, there is no reliable evidence to suggest that Chorus' proposed general price uplift will achieve these outcomes.

There is no linkage to the claimed outcomes

187. Essential to the Oxera framework is the underlying assumption that there is a direct causal relationship between, and created solely by the incentives provided by the WACC uplift on the one hand, and the acceleration of investment in innovative technologies on the other. Surprisingly, both CEG and Oxera fail to consider the nature of the relationship between the regulator and the incumbent, and the nature of the incentives provided to the incumbent by the WACC uplift.

188. Rather than simply assuming the performance of the incumbent in response to the incentives provided, Spark thinks Sapere and CEG should have examined the risk associated with the uncertainty of the level of social cost inherent in the model. This uncertainty, and the risk that the accelerated investment does not in fact occur, is largely due first to the to the structure of incentives created by the uplift mechanism and the

[31] By failing to make a performance adjustment, this removes incremental revenue that an investor in fibre service performance can reasonably achieve (because they already take the premium through the lower performing service).

actual incentives faced by Chorus and the Commission, and secondly to the asymmetry of information between the parties..

189. The regulator in the Oxera model analyses the potential social loss function, and chooses a structure designed to remedy it by providing a WACC uplift to the incumbent. The regulator, having established a social choice function by providing the uplift, is required to monitor the effectiveness of regulation and accordingly has an interest in the outcome.

190. The relationship between regulator and incumbent is marked by a range of asymmetries of information. It could be expected that the incumbent will have partial but incomplete knowledge of the regulator's private valuation of the social benefits of the uplift, based on consultation and the regulators published decision. The incumbent will have a secret valuation of the benefit of the uplift to it, (in terms of priority selection in its capital budgeting process, the benefits available from its customers in terms of possible incremental revenues, and as an increased amount partly available for distribution to shareholders), that is likely to vary probabilistically from the incumbent's valuation of the social benefits of the uplift. The Myerson-Satterthwaite theorem shows that in this situation there is no incentive mechanism possible *ex ante* to guarantee the outcome without the attendant risk that one of the parties will suffer a loss. In fact, the prospect of an efficient outcome is possible, but only likely to be plausible in two rather impractical situations; first where the regulator and the incumbent do in fact coincidentally share the significantly similar private valuations, or secondly where the regulator is able to enforce the outcome on the incumbent such that the regulator always receives its preferred outcome. Spark thinks both of these situations are unlikely,

191. The risk of loss as a result of this incentive mechanism, lies in the probability that the direct increase in return to investors as a transfer of surplus, together with the loss of surplus from reduced consumption at higher prices as a result of the uplift is greater than the benefit arising from the increase in the PV of future benefits arising from acceleration of a range of investment decisions which would in any case take place at some later time.

192. In Spark's view,CEG and Sapere's failure to examine critically both the strength of the direct and indirect incentives created by the uplift, and the likely shape of the probability density function associated with the risk of loss, is a key flaw in their analysis solely of the potential for an uplift to give rise to social benefit

CEG's proposed approach to estimating the benefits of acceleration

193. CEG's further analysis of Oxera's modelling of the innovation benefits, on the assumption that hypothetically the WACC uplift were to be effective to accelerate those benefits relies on a range of key assumptions, and adjustments to Oxera's assumptions. These include the scale of the asset bases of the new and existing technologies, the assumptions of the probability weights and costs used in computing benefits, the trajectory of relevant elasticities over time, the assumptions of pass-through, and the scaling of, and form of the relationship between the WACC uplift and the probability of investment.

194. We asked Network Strategies to examine these assumptions. Section 8.2 of their report[32] discusses the merits of these proposals in detail, noting always that the flaws in the Oxera model, and subsequent CEG analysis make the conclusions of this further analysis flawed.

[32] CEG at page 112

a. Spark agrees with Network Strategies' detailed comments on CEG's proposed approach to the scale of the asset bases of the new and existing technologies, the assumptions of the probability weights and costs used in computing benefits, the trajectory of relevant elasticities over time, and the assumptions of pass-through.

b. In relation to the benefits, CEG suggests a non-linear function should be used to describe most accurately the relationship between the WACC uplift and the probability of investment being accelerated, (assuming for these purposes that the relationship exists). Oxera themselves suggest that their assumption of a linear relationship may not be valid. Network Strategies have examined the CEG analysis, and while the use of a non-linear relationship may be appropriate if supported by evidence, they find the actual implementation suggested by CEG not to be strongly supported by the economic literature, and to be flawed in practical application. Based on its own research, Spark agrees with this analysis.

CEG and Sapere support for an uplift mechanism not appropriate for a TSLRIC regime

195. Spark is strongly of the view that the key assumptions one would have to believe, in order to conclude that a modest WACC uplift on the basis proposed by Oxera can be justified in the TSLRIC regulatory context are actually implausible. We also strongly agree with Oxera that "the evidence is not strong, and requires significant speculation about the nature and scale of benefits of future innovation, and therefore, does not contradict the continued use of a midpoint WACC for UCLL/UBA." In our view, the Commission rightly concludes the relationship between uplift and incentives for investment and innovation is tenuous at best[33].

196. Network Strategies points out on page 78 of its expert report that Sapere and the CEG reports provide no additional evidence as to the probability and relevance of the next disruptive technology that will have fixed access network services similar to those currently under regulation, which might be introduced by the incumbent, and which are likely to offer benefits on the same scale as the introduction of high speed broadband. CEG, in section 4 of their expert report, has provided a detailed comment on the Oxera model and argued strongly, but unconvincingly, and without adducing evidence in support, that under certain conditions, the Oxera model actually understates the benefit of an uplift. We think there is no basis, beyond CEG's mathematics based on a range of unsupported model uplift assumptions, to suggest that the costs of a WACC uplift are overstated, and the benefits are understated[34].

197. We note that Sapere explores the potential impact of the use of a total welfare standard in the context of the Telecommunications Act. While it is inappropriate to debate this aspect of the Sapere report in the scope of the present discussion, Spark disagrees with the suggestion that the Telecommunications Act only references a total welfare standard.

Non-recurring charges

198. 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.

199. As set out in WIK's August report and our submission, the proposed approach applies an efficiency consideration to only one of the seven cost components identified by TERA.

[33] Further draft Determination at paragraph 519
[34] CEG summary of findings at section 4.1.2

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

200. Chorus supports an approach that, effectively, adopts its current operating model and service company prices as being reflective of efficient costs. Further, Chorus proposes that the Commission adopt current service company charges plus a Chorus mark-up as they stand without any further consideration of efficient.

Chorus' service company are not efficient costs for a TSLRIC model

201. As WIK notes in its report, while the service company charges might be tendered, this does not necessarily result in efficiency as this can only be achieved if the design of the process is efficient. WIK provided compelling evidence in its August report which strongly suggests that Chorus' underlying processes are not efficient. A comparison of connection charges indicates that, even with the Commission's limited labour efficiency adjustment, the proposed charges are significantly higher than those set by European authorities.

202. Service company arrangements cover a number of services and accordingly there can be a significant difference to efficient costs for individual services. Chorus seeks the best overall price across all services rather than optimising for individual price points. In doing this, Chorus has little incentive to optimise processes or minimise costs that pass through to RSPs as transaction charges.

203. RSPs provided evidence in submissions of these inefficiencies, for example:

a. While Chorus is making significant efficiency gains in other areas of Chorus' business – Chorus' annual report sets out significant gains in UFB build costs through new techniques and processes - we do not see a similar focus and improvement for regulated services;

b. RSPs provided a comparison of UBA connections which show an inefficiently high level of network arrangements in the network. This means that service companies are required to make repeated and ongoing truck rolls in to the network in order to connect customers;

c. Chorus charges $285 per visit (subsequently annualised - for VDSL only - at $10 per month for 30 months) to install a splitter that improves customers broadband service. This is a significant increase from the previous $145 per site visit charge (at the time, a component of the travel was recovered through UBA connection);

d. Chorus is unwilling to deploy 10Gbps in some centres and this drives multiple 1G connections and re-mapping costs. **[ ]SPKCI**;

e. There are a number of instances where inadequate testing of service installs results in a second truck roll;

f. As set out in our earlier submission, additional UBA connections are required due to legacy service specific DSL cards at the DSLAM; and

g. Chorus has increased charges wherever possible, i.e. site investigation, network extension and lead-in installation charges has all increased substantially.

204. All the evidence we have suggests that Chorus' unadjusted NRC processes and service costs are inefficient. There are numerous examples of increasing costs, but we are not aware of any instances where cost saving have been made and passed to RSPs and end users.

205. Accordingly, if the Commission is to apply a top down model, it should at a minimum make the proposed labour productivity adjustment. While we believe further adjustment is warranted – i.e. see the WIK August report – we appreciate this may remain the only practical means of making and efficiency adjustment in the current process.[35]

Benchmarking of task times is a reasonable - but not complete - approach

206. Chorus sets out a variety of criticisms of the proposed efficiency benchmarking approach.

207. WIK considers the Chorus criticisms in the attached report and conclude that, overall, they are unfounded:

a. While the identification of comparable activities is not straight forward, this is not material to the outcome. This is because the activities may differ between countries for efficiency reasons and the purpose of the exercise is to identify these efficient differences. Benchmarking is a practical and acceptable approach that anticipates some inaccuracies in the detail. To recognise this is not, in itself, a failing of the approach;

b. Chorus and Analysys Mason make a number of assertions – i.e. that benchmark countries may use more experienced labour or there may be New Zealand specific factors that drive task times – without any evidence of this being the case or implications for efficiency. In other words, even if true, they may indicate more or less efficient approaches are available for cost model purposes;

c. In terms of Chorus' claimed New Zealand specific factors, WIK provides evidence that these factors are not specific to New Zealand. For example, European countries also require high standards of workmanship and quality, it is usual practice for operators to outsource - and work with - third parties and networks can include aerial network.

208. WIK further notes that many of the differences identified by Chorus – differences in service codes and task times – suggest that there are efficiencies to be made rather than undermine the relevancy of benchmarking. In other words, these differences are evidence that New Zealand processes are more reason for the Commission to delve further and adjust costs (than less as Chorus propose).

209. Chorus suggests that there are a number of New Zealand specific factors that drive task times for some NRCs, and this means international task times cannot be meaningfully compared with those in New Zealand. We agree that there are requirements and conditions when providing services, but all operators face these conditions here and in comparable countries. Chorus provides no evidence to suggest that New Zealand conditions are different of more onerous than conditions in other countries[36].

210. We have not had the opportunity to exhaustively survey and compare New Zealand conditions against overseas jurisdictions. However, even our limited survey set out below indicates that any Chorus suggested differences are minor. There is nothing to suggest that international comparisons do not provide useful information relating to possible efficiencies.

[35] As set out in our August submission, we believe the Commission should have gone further. The Commission's proposed approach assumes existing operating model and techniques are efficient (which we know is not the case).
[36] See Chorus, submission at paragraph 352.

Health and safety obligations

211. Chorus suggests that health and safety obligations can increase task times, and are likely to be more onerous in the future.

212. We believe health and safety of our employees, contractors and people effected by our business is important, and should influence processes and task times. The New Zealand approach that we operate within is a mainstream approach to health and safety consistent with many countries that we compare ourselves to.

General health and safety framework

213. New Zealand's health and safety regulatory framework is based on a Robens approach. The Robens report on safety and health at work recommended a wide range of initiatives to ensure improved occupational health and safety outcomes in United Kingdom. These included the introduction of a single piece of legislation that applied consistent policies and enforcement procedures across the range of industries, and tripartite governance for health and safety. The Robens approach was subsequently adopted by many nations (including New Zealand) as a model of best practice for delivering occupational health and safety services.

214. Accordingly, our framework is very similar to other jurisdictions, such as the United Kingdom and Australia.

215. A review of Denmark, France, Italy, Romania, Spain and United Kingdom showed health and safety frameworks and requirements that have similar characteristics (see the table below) and in some instances, New Zealand has a lower or no requirements.

Table 1: Comparison of health and safety requirements against benchmark countries

Health and Safety Framework Element	Commentary
Description of national OSH regulatory framework.	All countries have a health and safety regulatory framework.
Scope, coverage and exclusions.	All countries had a health safety frameworks that cover physical and psychological health and defines what a worker is. One country doesn't define what and employer is and one country had no data available.
Institutions and programmes relating to OSH administration and/or enforcement.	All countries have a national authority for health and safety at work.
Employers' duties and responsibilities to protect the safety and health of workers and others.	All countries have duties and responsibilities set on employers.
Employers' duty to organize prevention formally along generally accepted OSH management principles and practices.	Four of the six comparison countries have a duty to have elements of an OSH System. Romania in some circumstance did and Denmark was not applicable. Half the countries compared did not have data to support requirements for an OSH system. It is worth noting the New Zealand sometimes had the requirement and did not have data available for ILO to comment on the obligation to implement a specific OSH management system.
Employers' duty to ensure availability of expertise and competence in health and safety	New Zealand did not have data to support is element.

Health and Safety Framework Element	Commentary
	For OSH competence, half the comparison countries required this, and the remaining bar one had the requirement sometimes. Five of the six comparison countries had a requirement to appoint am OSH practitioner and the remaining one sometimes did.
Workers' rights and duties.	All countries that returned data were comparable in this element.
Consultation, collaboration and co-operation with workers and their representatives .	All countries that returned data were mostly comparable in this element. There were some differences in the sub elements where the requirements applied sometimes.
Specific hazards or risks.	No country had no requirements for the following specific hazards and risks. Of the eight risks identified below, no data was available for one each in five occasions. <u>Biological Hazards</u> ▪ All bar one not available (New Zealand). <u>Chemical Hazards</u> ▪ All bar one sometimes (New Zealand). <u>Ergonomic Hazards</u> ▪ All countries had provisions. <u>Physical Hazards</u> ▪ Most Countries sometimes had (including New Zealand) had a specific framework for these risks <u>Psychosocial hazards</u> ▪ Only Italy had provision for psychological hazard and risk, the remaining had these sometimes. New Zealand had no data available. <u>Other Hazardous Substances</u> ▪ All had this, bar one where no data was available. <u>Machinery</u> ▪ Four of seven jurisdictions had provisions in this area, of the three reaming, two sometimes had the (New Zealand) and one had no data. <u>Provision to protect works in specific condition of vulnerability</u> ▪ Four of seven jurisdictions had provisions in this area, of the three reaming, two sometimes had the (New Zealand) and one had no data.
Recording, notification and investigation of accidents/incidents and diseases.	Over half the comparison country had a duty to record and/or investigate the causes of work accidents, and the remainder sometime had to. All countries had a requirement to notify serious injuries and death.
OSH inspection and enforcement of OSH legislation.	All country had OSH inspectors and powers to varying degrees.

<u>Working at height</u>

216. Chorus provides the example of working at height as increasing set up and labour time. However, all the benchmark countries for which we have data have regulations relating to working at height. We believe that most would require the same or more rigour in this high risk activity.

217. Overall, Chorus' example is a superficial representation of health and safety requirements for working at height and provides no context into the task that is being completed, its duration, other hazards that maybe present, and contractor competencies.

Table 2: Comparison of working at height requirements against benchmark countries

Jurisdiction	Requirements
France	The Labour Code includes provisions related to movable equipment, temporary work at height, access and circulation at height, scaffolding, ladders, stepladders and footstep and ropes. ▪ Décret n° 2015-444 du 17 avril 2015 modifiant les articles D. 4153-30 et D. 4153-31 du Code du travail. ▪ Ordonnance n° 2007-329 du 12 mars 2007 relative au Code du travail (partie législative). (Art. R4323-58/61, Art. R4323-65 /90") Related CEACR Comments ▪ Safety Provisions (Building) Convention, 1937 (No. 62) Observation 1998 ▪ Safety Provisions (Building) Convention, 1937 (No. 62) Direct Request 2010
Italy	Yes. ▪ Décret législatif n° 81 du 9 avril 2008 portant exécution de la loi n° 123 du 3 août 2007, en matière de protection de la santé et de la sécurité au travail. (Annex I,Point 1.2.1
Denmark	No data available. Related CEACR Comments ▪ Safety Provisions (Building) Convention, 1937 (No. 62) Direct Request 1992
Spain	Workers performing at height must use protective systems preventing them from falling. ▪ Real Decreto 1215/1997, de 18 de julio, por el que se establecen las disposiciones mínimas de seguridad y salud para la utilización por los trabajadores de los equipos de trabajo (Annex I- 6) Related CEACR Comments ▪ Safety Provisions (Building) Convention, 1937 (No. 62) Direct Request 2014
Romania	Yes. ▪ Government Decision no. 300/02.03.2006 concerning the minimum safety and health requirements at temporary or mobile construction sites
United Kingdom	"Where any person has to work at a place from which he will be liable to fall a distance more than 2 metres, then, unless the place has secure footholds and, where necessary, secure hand-holds, a means must be provided, so far as is reasonably practicable, by fencing or otherwise, for ensuring his safety. (Factories Act 1961) There is a Regulations governing working at height conditions which apply to all situations where there is a risk of a fall liable to cause personal injury. It imposes duties on employers, the self-employed, and any person that controls the work of others (for example facilities managers or building owners who may contract others to work at height). The Work at Height (Amendment) Regulations 2007 apply to those who work at height providing instruction or leadership to one or more people engaged in caving or climbing by way of sport, recreation, team building or similar activities in Great Britain. (Work at Height Regulations 2005) There is a specific Regulation governing work in the construction area, which contains specific requirements relating to certain types of work equipment, such as scaffolding. (The Construction (Design and Management) Regulations 2007) The are Regulations governing health, safety and welfare at the workplace which contain specific provisions relating to falls or falling objects, including placing the

Jurisdiction	Requirements
	employer under a duty to take suitable and effective measures to prevent specified events, including a fall from a distance likely to cause personal injury; a person struck by a falling object likely to cause personal injury. So far as is reasonably practicable, the measures taken must be measures other than the provision of personal protective equipment, information, instruction, training or supervision. (Workplace (Health, Safety and Welfare) Regulations 1992) Restrictions / obligations: Factories Acts1(4) Except in a case where the inspector for the district otherwise requires, the provisions of subsection (3) of this section shall not apply to any factory where mechanical power is not used and less than ten persons are employed. The Workplace (Health, Safety and Welfare) Regulations 1992 do not apply to: - domestic premises; - "7(a)where the Diving Operations at Work Regulations 1981 apply; - (b)where the Merchant Shipping (Medical Scales) (Fishing Vessels) Regulations 19" apply ; - Para. 4(2)does not impose any requirement upon a self-employed person in respect of his own work or the work of any partner of his in the undertaking. ▪ The Construction (Design and Management) Regulations 2007 (2007 No. 320). ▪ The Work at Height Regulations 2005 (2005 No. 735). ▪ Workplace (Health, Safety and Welfare) Regulations 1992 (S.I. No. 3004 of 1992) ▪ Factories Act 1961 (Chapter 34)
New Zealand	Every employer shall take all practicable steps to ensure that where any employee may fall more than three metres, means are provided to prevent an employee from falling. ▪ Health and Safety in Employment (Prescribed Matters) Regulations 2003 (SR 2003/90). (§ 21) Note: There is guidance on work at height that can supersede this.

Proposed reforms

218. Chorus also speculates that future health and safety requirements are likely to be more onerous.

219. The Government intends to release exposure drafts for General Risk and Workplace Management, Major Hazard Facilities, Asbestos, Engagement, Worker Participation and Representation (available shortly for public consultation) ready for the Health and Safety at Works Act's commencement on 04 April 2016. At this stage, while intended to improve the framework, we are not aware of any evidence that future planned legislation and regulation will increase (or reduce) costs. For example, the reform provides for horizontal consultation (overlapping duties) between Persons Conducting a Business or Undertaking (PCBU - our businesses). Sharing information on hazards or training can reduce duplication and time.

Local authority compliance

220. Chorus further refers to local authority compliance, which can differ from district to district, as a point of difference.

221. While we acknowledge that local authority compliance costs deserve focus, there is nothing to suggest the NZ approach is more demanding than approaches in other western countries (and possibly less). Most countries appear to have a local authority construct. Further, there are initiatives such as the regulated National Code of Practice and proposed National Environmental Standard that promote consistency across local authorities.

222. Overall, many aspects of telecommunications are a permitted activity in almost all plans and providers are fully consented for work in the area. In practice, an operator anticipating scale deployment would work with local authorities to minimise ongoing costs (including oversight) by a template approach and building confidence that work will be undertaken to a good standard. There is no evidence to suggest that New Zealand obligations are drive costs relative to benchmark countries.

Other factors

223. Chorus refer to standards of workmanship and quality in New Zealand, however, it provides no evidence that there are more onerous than overseas regulated services. WIK notes in its report that there is no reason to suspect that standards are more onerous in New Zealand compared to benchmark countries. The inefficiencies noted in our earlier submission relating, for example, to the inefficient breaking down of intact connections, would suggest that New Zealand practices are worse.

224. Chorus also refers to other factors that may drive longer task times (although providing no evidence of whether these differ to overseas jurisdictions):

a. Service companies needing to work with third parties. However, WIK advise this is common in benchmark countries;

b. Work on end-user premises or exchanges fed by aerial distribution. WIK also advise that aerial is common in benchmark countries. Further, we are not aware of any overhead fed exchanges and the majority of aerial work relates to lead in installation that is separately funded by end users;

c. The nature of network infrastructure, for example centrex connections. WIK notes such services are common in benchmark countries. Further, we are unsure where such work is required for the purposes of the STD - an additional and separate premises wiring charge applies for faulty Centrex phones/services and the standard provisioning fee does include plugging in a Centrex phone. We do not believe centrex provisioning is a complex activity. Centrex faults can be complex, but these are charged to RSPs as customer or CPE faults (i.e. not in the Chorus network); and

d. Division of the ownership of network components can increase task times. WIK notes that this is common in benchmark countries.

Chorus' proposed benchmark adjustments

225. WIK also addresses Chorus' proposed adjustments to the efficiency adjusted results, concluding that:

a. TERA was right to take the lowest benchmark point for the purposes of an efficiency adjustment. The TERA benchmark values are biased to higher costs by in some cases they include transport times, and the lowest point is consistent with an efficient operator. The wider benchmarking set out in WIK's August report indicates the comparators used by TERA are significantly above the European average;

b. The Commission is right to take a weighted average approach to averaging transaction service costs. While service area costs vary, and volumes within a service area may change over time, there is no evidence to suggest that this difference will be to the provider or purchasers detriment. WIK concludes that the

TERAs proposed weighted average approach and possibility of amending of the cost calculation in the future if significant changes occur would reflect what would happen in a competitive environment;

c. Proposed overhead allocations are not warranted. As set out in WIKs August report, service company overheads are inflated and do not reflect efficient costs. Further, concerns that Chorus over-heads will be under-estimated fail to recognise that these costs can be controlled or adapted by Chorus, and that Chorus overhead costs are already inflated.

226. WIK agrees that fibre related transaction activities are not comparable to copper related activities, and re-iterates its concerns with the Commission's asymmetric adjustment to benchmark results that simply inflates costs. For these reasons, WIK does not support Chorus' proposal to increase prices to the LFC benchmark.

No Fault Found and cancellation charges

227. Chorus proposes that the Commission recognises access seekers incentives. Chorus refers to no fault found and cancellation codes as examples of the importance of RSPs to diagnose service complaints and end user related errors prior to referring the fault to Chorus. It notes that some charges seek, in addition to recovering costs, to encourage RSPs to behave efficiently, i.e. encourage RSPs to diagnose service complaints and end-user related errors prior to referring a fault to Chorus.

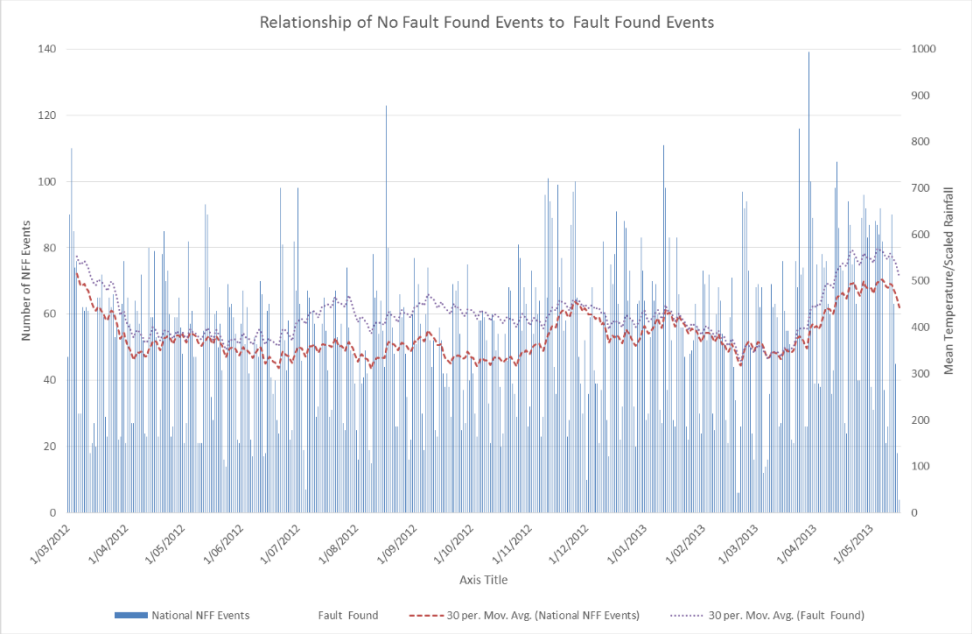
228. We agree this is an area that requires more analysis - the Commission should further adjust consider proposed NFF charges so that they better reflect efficient network management techniques. As will network re-arrangements, network provider faces a trade-off between pro-active maintenance and operating practices, and the number of reactive fault tickets. Where Chorus is not seeing the signals of some costs (because they are born by RSPs), then it has less incentive to efficiently invest in network or operations.

NFF correlated to total Fault Found volumes

229. Our analysis of NFF and Fault Found data shows a strong correlation between the total fault tickets produced, and those reported back as NFF. In other words, RSP NFF are a function of network faults and, therefore, Chorus network practices has a direct impact in NFF costs.

230. The figure below shows the relationship between No Fault Found and cancellation events (**NFF**), and Fault Found events. It indicates both a strong correlation between the total fault tickets produced, and those reported back as No Fault Found. The divergence of the 30 day moving average series for each set of data indicates a likely seasonal pattern across the fifteen month period surveyed, and the Exchange Service Areas for which fault data was reported.

Figure 6: correlation between NFF and Fault Found events



231. The No Fault Found event data represents the number of Fault Tickets created for a given date and for which Chorus reported back to Spark a range of codes giving rise to a no fault found charge.

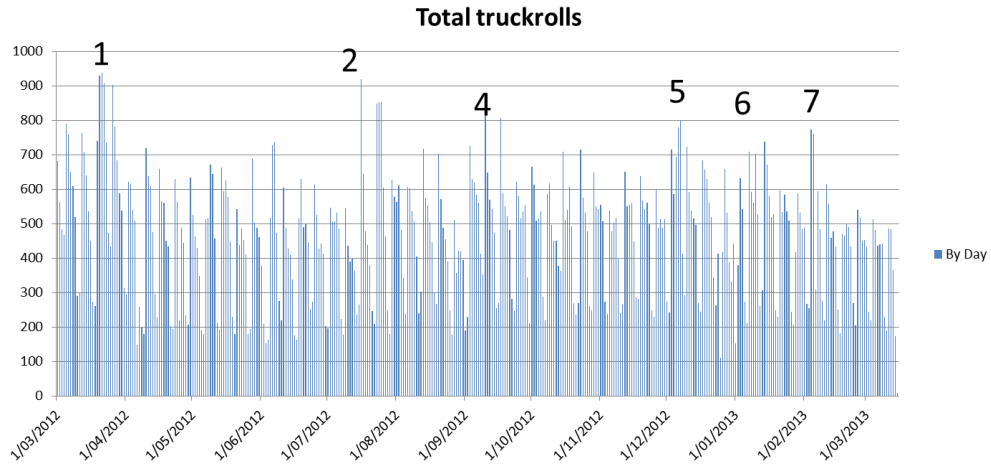
232. The Fault Found Events represent the number of all Fault Tickets created for a given date and for which no fault found charge was reported back to Spark.

233. The two values are positively correlated – the Pearson product-moment correlation co-efficient is 0.95757. When testing for the null hypothesis that the true correlation co-efficient was equal to 0, based on the value of the sample correlation coefficient, the p value was very small for both the single and double tailed tests, suggesting that the null hypothesis should be rejected. In short, significance testing on the large sample size confirmed a high level of correlation.

234. Further fault analysis indicates that weather events trigger a number of faults, which we believe relates to the quality of the underlying network, i.e. deferred investment/replacement of aging network elements means that they are sensitive to moisture and/or temperature fluctuations.

235. The Chorus network is susceptible to weather events. Figure 7 below identifies selected adverse weather and seasonal events over the twelve month period between 1 March 2012 and 1 March 2013. It is highly probable that these weather events are directly or indirectly the cause of peaks in both total faults, and No Fault Found events.

Figure 7: Faults and relationship to weather events



1	20-22 March 2012	Heavy winds battering the North Island have brought down trees and caused havoc on the roads as forecasters warn of more bad weather to come. The storm that hammered Northland yesterday spread further south overnight, with heavy rain lashing the top of the North Island and winds gusting to 120km/h in the central and lower North Island.
2	16-Jul	Rain in Auckland
3	23-Jul	Heavy rain/ Wind 85 mm Auckland and North
4	10-Sep	Snow down south to between 2-400 metres
5	5-7 December	Storm ending with Whenuapai Tornado
6	10-Jan	Electrical storm
7	4-5 February	1st Rain of year 16mm in Auckland. Most tickets Auckland North- only 4 mm in Whangarei.

236. The high positive correlation between network faults and NFF is unsurprising as NFF relates to any fault for which no Chorus network cause has been identified and could, for example, be due to:

a. Intermittent weather related faults as a result of moisture and/or temperature on aging access network components. These can clear by the time the service company responds to the fault ticket;

b. Weather related faults which represent minor or low cost repairs which can be carried out while still reporting the result as NFF;

c. Misdiagnosis of an actual fault, or failure to identify an intermittent fault on truck roll;

d. RSP customer cancellations, or other service co-ordination problems resulting in an unnecessary truck roll due to service delivery process inefficiencies; or

e. A fault condition outside the Chorus network, i.e. in the RSP or end customers' domain.

237. The implications are that the network operator can influence the level of faults in the network through investing in pro-active maintenance and replacing aging plant.

238. The current NFF approach results in an inefficient allocation of costs to RSPs through NFF charges. In other words, Chorus does not face the full costs of its network management and investment decisions as these costs are, in part, passed directly to RSPs

as NFF charges. Chorus faces less incentive to invest in the network than would be efficient and this means that Chorus does not have appropriate incentives to:

a. Invest in network management tools and processes that increase the efficiency of fault identification, management and resolution, or to make these processes fully transparent to RSPs;

b. Proactively invest in network repair, maintenance and renewal are reduced by the fact that it recovers an additional charge for an avoidable cost, without the need to invest further until absolutely necessary;

c. Optimise network management tools for its own use, or to provide RSPs with access to network management tools to enable RSPs to reduce unnecessary requests or to identify or confirm the likely reasons for a fault, and responsibilities for fault management themselves.

An adjustment for NFF costs

239. Accordingly, the Commission should make an efficiency adjustment to NFF charges to provide incentives for Chorus to optimise management of the network.

240. We accept that – as with the volume of network re-arrangements that occur – there is an optimal number of NFF occurrences in operating the network. It would not be efficient to remove all network re-arrangement or NFF activity. However, we do not have the data available to use to optimise these services. We have proposed that the Commission consider performance issues in the S30R review, and the Commission could consider this issue there.

241. Chorus is the only party that is able to act – by investing in network quality, fault processes and management tools that allow RSPs to help reduce NFF volumes – to optimise the level of network faults. RSPs do not have the network information, and visibility of the network and costs to influence these services. Therefore, the Commission should err on the side of efficient network operation and make an efficiency adjustment to NFF costs in this process that reflects likely efficiency.

242. Figure 6 above depicts No Fault Found and Post-truck roll Cancellation data over a 15 month period. Approximately 12.5% of the fault tickets created during this period resulted in one of these two outcomes. Both result in a NRC charge to the RSP.

243. By breaking down NFF and cancellation fault ticket data, we can estimate the efficiency adjustments that should be made. This suggests that the Commission should make a 60% efficiency adjustment to reflect that only 40% of No Fault Found and Post-truck roll Cancellation costs are likely to be attributable to matters that can be influenced by RSPs.

Figure 8: Analysis of 15 Month Sample of Fault Codes Resulting In a NFF Charge

[ ]SPKCI

244. This adjustment would provide Chorus with appropriate incentives to implement network and management tools (scheduling and coordination processes) to minimise the incidence and costs of cancelled orders.

245. In terms of NFF, Spark's experience is that about 38% of the total Chorus and Spark NFF events initially indicated a truck roll was required, but no fault was subsequently found. This proportion is likely to equate to a rough estimate of unavoidable No Fault Found events, and represents about 16% of the total No Fault Found and post-truckroll

Cancellation events. The remaining 62% of NFF events are likely to equate to a rough estimate of avoidable NFF events, and represent some 26% of the total No Fault Found and Post-truckroll Cancellation events.

246. On this basis, a discount of approximately 60% should be applied to the No Fault Found charge in order to provide Chorus with reasonable incentives to better manage efficiencies in the decision that there is enough indication to truckroll, and manage its other investment in network quality, fault processes and management tools to ensure that both Chorus and RSPs can work together more efficiently to reduce NFF volumes

247. Spark's experience is that about 38% of the total Chorus and Spark NFF events initially indicated a truck roll was required, but no fault was subsequently found. This proportion is likely to equate to a rough estimate of unavoidable No Fault Found events, and represents about 16% of the total No Fault Found and Post-truckroll Cancellation events. The remaining 62% of NFF events are likely to equate to a rough estimate of avoidable NFF events, and represent some 26% of the total No Fault Found and Post-truckroll Cancellation events.

248. On this basis, a discount of approximately 60% should be applied to the No Fault Found charge in order to provide Chorus with reasonable incentives to better manage efficiencies in the decision that there is enough indication to truckroll, and manage its other investment in network quality, fault processes and management tools to ensure that both Chorus and RSPs can work together more efficiently to reduce NFF volumes.

Provision of network management tools and diagnostics

249. Our proposed pricing approach will provide Chorus further incentives to efficiently manage the network, including the provision of diagnostic tools for RSPs to enable them to better understand network performance and diagnose faults. However, this will need to be augmented by performance reporting as Chorus is not exposed, for example, to RSP costs to manage faults or consumer preferences.

250. Therefore, for this reason, we proposed that the Commission include in its section 30R review consideration of obligations to provide more transparency over network performance. This would provide:

a. More transparency over the performance of the network and whether there are investment or operations concerns; and

b. Enable RSPs to better diagnose faults and optimise connection service orders. At this stage, RSPs do not have access to the tools which would enable them to better diagnose broadband and access related faults.

Specific services discussed by Chorus and indexing

251. Chorus also propose adjustments – in Attachment C - to several transaction services charges such as "manual prequalification order" and "manual line test". WIK note that these costs are the result of Chorus' inefficient systems and processes and should be set to zero.

252. Finally, WIK recommend that a moderate price reduction factor of -3% to -5% should be applied to NRC services in order to reflect changes of labour costs and further efficiency potential through the regulatory period.

Backdating

253. Submissions further highlight the differing views of submitters on the question of backdating. There appears to be common ground among access seekers and experts that backdating, in this case, will not promote efficiency over the current review period. It is not possible to change or "correct" investment decisions or prices charged to end users in the past, and there is clear evidence that, on a forward-looking basis, backdating will distort competition to the detriment of end-users.

254. Chorus, on the other hand, relies on a proposition that – despite this inefficiency – the Commission is required to backdate its FPP decision. Chorus, in fact, go even further and claim the Commission cannot even consider the efficiency or competition effects of a decision to backdate – in effect elevating backdating above s18 of the Act.

255. Sapere, in a supporting report for Chorus, seek to put a policy framework around the Chorus position, suggesting that the FPP option provides parties the "assurance" that prices will be set using the cost modelled FPP TSLRIC estimate if any party is sufficiently dissatisfied with the result of the IPP.

256. Access seekers agree that the IPP price is replaced by the FPP price once the final FPP determination is made. However, Sapere proposes that the two-tier IPP/FPP model comprised a promise of some kind that price set by regulation would always be the closest possible approximation for the FPP which can only be complete if backdated to the date of the IPP decision. In other words, that the promise of the Act is that the FPP derived estimate of TSLRIC will apply retrospectively from the date of an IPP determination.

257. Sapere is wrong. We have reviewed the statutory history and find no material to support the so-called assurance function that Sapere has framed. Theirs is a novel and creative idea which has no relevance to the New Zealand legislative environment as it has stood since the Fletcher Inquiry. Sapere's proposition, in fact, directly contradicts the stated purpose of the IPP/FPP framework designed by the Fletcher Inquiry, which was to speed the introduction of competition and its associated benefits for end-users. As we describe below, the principle that an FPP price will always retrospectively replace the IPP price would create an irresistible incentive for access providers to use FPP processes to frustrate the earlier application of STDs (and thus competition) by extending the period of price uncertainty for access seekers. The Commission has discretion to backdate or not

258. We disagree with Chorus' view that the Commission is required to backdate prices. The Act is silent on backdating, so we asked Russell McVeagh to consider Chorus' claim that backdating is required as a matter of law. Russell McVeagh's advice is that Chorus' claim is legally incorrect:

a. The Act is silent on backdating. If the Act does not expressly require a practice as unconventional and onerous as backdating, the most that can be concluded is that backdating is an option available to the Commission in appropriate circumstances.

b. The Court of Appeal decision in *Telecom* did not consider, nor was it required to consider, whether the Act requires backdating. Russell McVeagh agrees with Dr Every-Palmer that the Court of Appeal in *Telecom*, rather than considering whether the scheme of the Act required backdating, considered the narrow question of whether a (non-STD) pricing review determination could include a commencement date earlier than the public notice of its making. In fact, the Court of Appeal in that case implicitly supported the earlier High Court finding that the Commission has the power (but not an obligation) under s52 to decide when a pricing review determination should apply from - a finding that directly contradicts a legal requirement to backdate.

c. The fixed-term nature of the bilateral s27 determinations that were applied by the Commission prior to the 2006 introduction of open-termed STDs represents a definitive distinction between the circumstances of the *Telecom* case and the present situation. The Court of Appeal was concerned with avoiding a perverse or absurd outcome – that the determination to which the pricing review determination related would have expired *before* the pricing review decision could take effect. This concern does not arise in relation to an STD.

d. There are no other factors that would support Chorus' argument that a purposive interpretation of the Act supports the proposition that backdating is required in all circumstances. In particular, Russell McVeagh agrees with the majority Commission view that:

i. The Chorus proposition is contrary to the statutory scheme which, among other things, provides that the IPP is legally binding; and

ii. Draft FPP prices cannot have been intended to have price signalling status, as this would constrain the Commission's statutory consultation obligations.

259. The reality is that under the STD regime prices can and do change. The Commission updated benchmarked prices for UBA and UCLL on a number of occasions and it will, in future updated prices set under the FPP. Under the bilateral determination regime there was arguably only one price for the relatively short duration of the determination.

260. We have also considered the nature of the Commission's task in conducting a TSLRIC exercise for not one but two layers of the New Zealand access network for the first time. TSLRIC modelling of this sort is inherently complex and takes time. When we looked at what overseas regulators do, we found evidence that these processes each take at least one to two years to complete and each establish forward-looking prices from the date of the conclusion of the regulatory processes (not backdated). And in each case these regulated prices replace a former price.

261. The only evidence of backdating emerges in the context of a negotiate/arbitrate model, where a party with incentives to delay a final decision becomes a concern. Under such circumstances, backdating may become appropriate. Prior to the 2006 legislative amendments, our Act employed a negotiate/arbitrate model (and accordingly, the Court of Appeal decision in *Telecom* can be seen to be consistent with international best practice). Subsequently, though, the introduction of STDs has shifted our framework from negotiate/arbitrate to *ex ante* regulation. As noted in DotEcon's earlier advice, backdating has been used in the context of negotiate/arbitrate models to encourage parties to negotiate arrangements and discourage delay. However, there is no suggestion that the parties have sought to delay the current process. Nor has there been any suggestion that the statutory context for a STD provides any party with scope for delay or the incentive to do so.

262. In our view that implies that backdating would be an exceptional course of action to even consider. And in considering it, the Commission must still only exercise its discretion in the way that gives best promotes competition for the long term benefit of end users.

Chorus' proposed approach means an IPP determined price has no purpose

263. Sapere suggest that the promise of the Act can only be fully applied if the cost modelled TSLRIC price is backdated to the date the IPP was determined. However, there is no such promise in the IPP and FPP statutory scheme in the Act and, if the Act were applied in the manner proposed by Chorus, an IPP determination would have no meaning.

That cannot be the case given that we have had so many IPP-based determinations over the years and no FPP prices have reached the market until now.

264. As set out in the Fletcher inquiry report, the IPP had a key role in allowing parties to secure access terms and to "get on with it". The inquiry was concerned that the FPP modelling exercise was complex and would take some time to complete, delaying the benefits of access seekers participating in the market. Thus, while the Fletcher Inquiry provided for parties to apply for a full TSLRIC pricing process following an IPP determination, it does not follow that the FPP replaces the IPP price ab initio. In fact it cannot follow – because this finding would be directly contrary to the very purpose of the IPP as described by the Fletcher Inquiry.

265. Rather than allowing access seekers to use an IPP price to "get on with" providing competition to the benefit of end-users, Chorus and Sapere's proposed approach means that the price for regulated services would remain uncertain for the period of any pricing review. That is, access providers could use an FPP to significantly extend the period of pricing uncertainty for access seekers, and therefore extend the period of softened competition to that access provider.

266. This would be an irresistible option for access providers that parliament could never have intended to provide them with. Although a legitimate IPP price had been determined, the effective price would remain uncertain as it could be replaced in the future by the Commission retrospectively applying an uncertain FPP price. Faced with this uncertainty, the IPP derived price would be of limited use. Access seekers would not be able to make commitments on the basis of the IPP as they face the risk of an uncertain later price being imposed.

267. Accordingly, Chorus' proposed approach is contrary to the statutory framework which anticipates an IPP price that parties can act on.

268. This is not to say that the Commission cannot backdate or the Court of Appeal was incorrect. We accept the Court of Appeal's view that the Commission has the power to exercise is discretion when determining the commencement date of the FP price. There may be circumstances that suggest backdating is appropriate – in particular, where the Commission is requested to make a determination under s27 of the Act, or where an access provider or seeker has unreasonably delayed or frustrated the application of an STD.

There must be demonstrable benefits to justify backdating

269. Chorus also argues that the Commission is not required to show a promotion of competition in order to support backdating of prices.

270. We disagree. Where the Commission has discretion, it should apply it in a way that gives best effect to section 18. Setting efficient prices promotes competition in that efficient prices avoid distorting competition and competitive outcomes. Providing a retrospective transfer from competing service providers to the monopoly Access Provider distorts competition. That alone is inconsistent with section 18, which directs the Commission to promote outcomes that would occur in competitive markets. Parties in a competitive market would never agree to a retrospective price increase for services that have been provided over a number of years. Only a monopoly could insist on such onerous and repressive terms–.

271. We agree with the Commission's view that any decision to backdate must be accompanied by evidence that it was demonstrably efficient, and would demonstrably promote competition in a

way that is likely to directly benefit end-users[37]. While the Commission notes in the revised draft that the term demonstrable may be unnecessary colour, we believe it is an accurate reflection of the material and tangible evidence that would be required to apply backdating. Why? Because backdating is not consistent with ordinary commercial practice or ordinary regulatory practice and the assumption against backdating should only be over-ridden on the back of strong evidence of demonstrable benefits that will enable the Commission to give best effect to section 18. The Commission's uplift analysis shows that high prices have significant costs for end-users. Chorus would need to show that there are demonstrable countervailing benefits to justify backdating of FPP prices.

272. DotEcon confirmed that possible backdating of price increases leads to pricing uncertainty which increase risk and decreases competitive benefits for providers and end-users.

The FPP outcomes were far from predictable

273. The underlying problem is that the FPP price is uncertain and, therefore, any approaches that see uncertain prices retrospectively applied to Chorus or access seekers will increase risk and distort decisions already made.

274. Chorus' proposed approach does nothing to address this underlying risk and, as noted by DotEcon in its earlier report, introduces new risks over the period under which the pricing review is being considered.

No party could have predicted the outcome of the FPP process

275. Chorus claims that the FPP was anticipated and that any reasonable RSP would have been able to predict the likely FPP price, pointing to the UFB tender prices, RSP letter to the Minister in 2012 and RSP pricing policies. But all of those are at best guesses. The settlement proposed by RSPs was entirely rejected by Chorus as they twice appealed the IPP price and forced parties down the FPP route. No party could have reasonably anticipated the likely FPP price (and it remains uncertain today, recognising the further demand work being done by the Commission). We are not aware of any party that had anticipated the Commission would propose significant price increases for the wider set of under-lying baseband and UCLL services in December 2014.

276. Perhaps the best illustration of this are the public comments from Chorus in 2012 during the Commission's UCLL re-benchmarking process. At the public conference held by the Commission, Chorus' General Counsel confirmed during its opening statement that Chorus believed the policy intent and market expectations were for a UCLL price of $24.46[38]:

> … it is open to the Commission to confirm the current prices [$24.46]. This is our first preference and aligns with what we believe is the policy and intention and expectations

277. In its submissions during the same process, Chorus was just as emphatic about its expectations for the correct level of forward-looking costs for the UCLL service:

> An averaged UCLL price close to the existing price…is consistent with changes in the forward-looking cost of providing the UCLL in NZ[39]

[37] The Commission observes in its updated draft that it would require evidence of these effects, and that the use of "demonstrably" was on reflection unnecessary as it does not add any signficiant colour or threshold to that description [855]. We believe that, consistent with the [IM WACC decision and general obligations], the Commission was correct to identify that material tangible evidence would be required in order to backdate.
[38] Commerce Commission UCLL Benchmarking Review Conference 19-20 September 2012, p8, line 27.
[39] Chorus, Submission on UCLL Re-Benchmarking Revised Draft Decision, 5 June 2012, p5.
Ibid, p73.

…leave the current price unchanged. This would be an appropriate price for both UCLL and UCLFS, as was expected last year.

278. If it was so obvious to all market participants that the FPP process would result in UCLL costs of $27-$28, how is it that – only five months before the FPP process commenced - Chorus' expert legal and regulatory advisors with a clear information asymmetry were convinced that the correct price level, and the price level expected by the market, was $24? The simply answer is no party, Chorus included, was or is still able to correctly predict the outcome of this FPP process.

279. With respect to the RSP letter which Chorus claims as evidence of prior knowledge by RSPs of the likely UCLL FPP cost level, we note that letter related solely to the UBA service and was silent on under-lying baseband and UCLL prices, assuming these remained unchanged. Further, we also note that the proposed FPP costs for UCLL+UBA are equivalent to a UBA price of $41 per month, when adjusted for non-recurring charges.

280. Similarly, we see no basis on which any party could sensibly infer efficient costs from UFB prices. For example, in other processes, Chorus has indicated that fibre prices do not reflect cost. Chorus' September submission on the Government's Telecommunications Act review discussion advised caution in drawing inferences from UFB prices relating to the deployment costs of fibre networks:

a. The commercial objective of the price points was to identify the prices that was believed would provide consumers an incentive to transition to the new network, given the levels of existing prices for copper services (see paragraph 158). In other words, wholesale prices were not derived from cost but held at a level relative to prevailing copper prices, with other factors of the commercial arrangements such as the level of public subsidy being varied; and

b. The entry level UFB price range applies for the period to 2020 (when take up and cost recovery is low), with customers expected to take up high quality, higher priced services in later years (paragraph 160). Customers are already indicating a strong willingness to pay a speed premium with Chorus reporting 75% of new fibre connections being for higher prices 100M services; and

c. The price during the early years of an investment cycle may understate the total quantum of investment costs. Chorus notes that its estimates of the efficient cost of the UFB network is above then current broadband price ($45 per month) (paragraph 165).[40]

281. More fundamentally, as a tender, the winning price effectively reflects the commercial position of the second placed tender party. Where competing providers do not have access to re-used assets and synergies from existing copper based revenues and demand41 that competing price will be higher than Chorus' costs. As the Commission correctly concludes in the updated draft, UFB prices are commercial prices that do not necessarily reflect cost;

RSPs acted on anticipated lower wholesale prices

282. Chorus also asserts that entry level broadband prices have not fallen over time and suggests that this is evidence that RSPs have taken into account draft prices by holding prices (see paragraph 317).

[40] See Chorus submission https://www.chorus.co.nz/file/48854/Chorus-submission-on-the-Telecommunications-Act-review---FINAL.pdf
[41] For example, the undeserved anti-competitive margin discussed by Cave et al here ftp://ftp.repec.org/opt/ReDIF/RePEc/idt/journl/CS8507/CS85_CAVE_FOURNIER_SHUTOVA.pdf

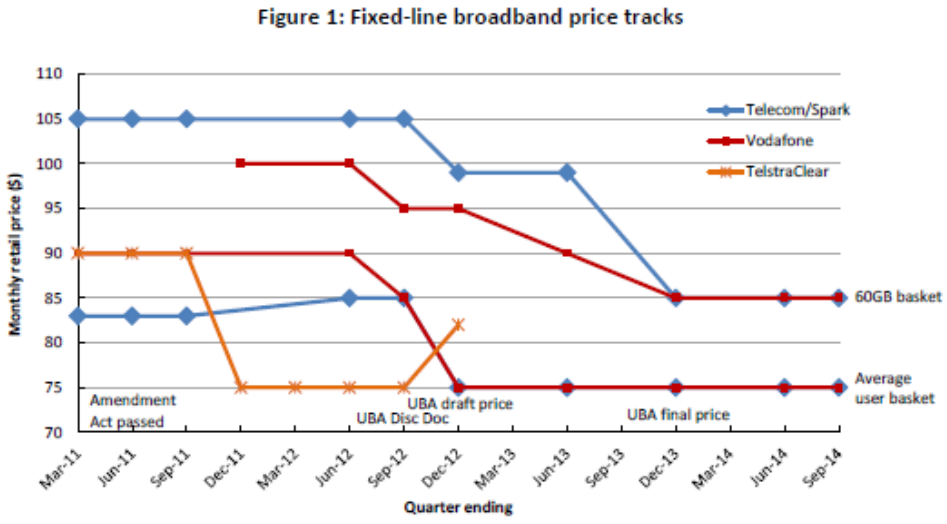
283. The Chorus analysis fails to reflect actual RSP margin – for example, by comparing GST inclusive and exclusive prices – nor take into take in to account the dynamic nature of retail markets. For example, by assuming that:

a. RSPs are only providing a single entry level service whereas RSPs offer a range of services and provide additional value over time. As Chorus noted in its submission on the Telecommunications Act review discussion paper, it is important when making such comparisons that the wider perspective is taken in such analysis. Over the period considered by Chorus there has been significant changes in the market; and

b. RSPs only respond retrospectively, rather than to anticipated changes in price. In this case, the transitional period provided for by the Act was coming to an end, and Commission determined IPP prices would apply from December 2014. There is clear evidence that RSPs competed in anticipation of lower wholesale prices.

284. In practice, the RSP market is competitive and input cost changes are reflected in business decisions and retail offers. For example, the Commission concludes in its June 2015 telecommunications monitoring report that there were in fact significant retail broadband price reductions of $10 to $15 per month over this period[42]. Taking a wider perspective that better reflects the nature of retail markets, the commission observed marked price reductions over the 2011 to 2014 period.

Figure 9: Commission analysis of broadband prices 2011 to 2014



285. The Commission notes that the retail broadband market is complex with many moving parts and this makes it difficult to come to definitive conclusions over what has been driving prices in the last few years and to determine the exact impact of wholesale price changes. Nonetheless, it concludes that, given that the wholesale price fall was to take place on 1 December 2014, it is possible that the earlier retail price reduction by RSPs was in anticipation of a drop in their wholesale costs. However, competitive pressures in the market may also have caused the retail price reduction.

286. We agree that a number of factors influence RSPs and consumer demand, and it is difficult to isolate a single element that is driving the market. Nonetheless, the Commission's analysis

[42] See the Commission's June 2015 Telecommunications Monitoring report *Price trends in retail fixed-line broadband services, 2011 to 2014, and the impact of wholesale price changes* http://www.comcom.govt.nz/dmsdocument/13293

indicates that competition is driving RSP behaviour and accordingly wholesale prices will influence market outcomes. Inefficient prices can only distort the competitive outcomes.

Considering backdating in light of the statutory framework and section 18 purpose

287. As noted above, we consider that in this case backdating a price increase for the purposes proposed by Chorus is inconsistent with the Act. It is an option that is not open to the Commission unless supported by overwhelming evidence that it will demonstrably result in more competitive outcomes. A policy to backdate where the FPP price is uncertain and in the context of ex ante regulation undermines the whole purpose of an IPP determined price[43]. The Commission's approach must support the IPP/FPP scheme of the Act.

The Commission's approach is not time-inconsistent

288. Chorus and Sapere have suggested that the proposed approach by the majority could be time-inconsistent. DotEcon has reviewed Chorus' submission and the supporting report by Sapere. They find the Sapere characterisation of the Commission's majority decision as time-inconsistent logically flawed and conclude that, in any case, the majority is not acting in a time consistent manner. DotEcon finds that Sapere has confused opportunistic changes in the rules – which are at the heart of concerns about time inconsistency in regulatory policy – with the exercise of discretion under those rules. In our case, the Commission has not changed any rules, and therefore cannot be said to be acting in a time inconsistent manner.

Chorus is really asking the Commission to guarantee its cashflow at the expense of RSPs and consumers

289. None of Chorus' backdating proposals make any real sense in the context of the current process. The detrimental impacts of backdating would be material for RSPs and end-users. The benefits to end-users are impossible to observe. Chorus is not investing in its copper network. There is no prospect of Chorus not recovering its actual investments in its copper assets. In fact, as a result of the previous years of above-cost UBA pricing, Chorus is guaranteed to achieve an above-normal return on those assets. Chorus is also already contracted to replace its copper assets, with significant Crown subsidies. These subsidies are intended to be extended further through UFB2 and RBI2 and can be expected to be further extended in future. Ultimately, Chorus is really asking the Commission to guarantee its cashflow at the expense of RSPs. This has significant implications for RSPs and future investment:

a. Chorus is recovering well in excess of its actual costs in any case but is not making significant investments on the basis of the regulated price. Therefore, the Commission would simply be assuring its high profits;

b. Whereas RSPs are operating in a competitive market and – therefore – backdating means that they will be underwater on their investments. In other words, as the RSP return on decisions is approaching NPV=0, any backdate will inevitably push them to NPV<0.

290. The message from Chorus for RSPs is clear: the Commission should be willing to confiscate value from RSPs for Chorus benefit (to preserve higher than necessary Chorus returns). This will inevitably go in to RSP decision making, and result both in higher retail prices and deferred RSP investment. The Commission's uplift analysis has confirmed the harm these higher prices will do to end-users. We also know that true dynamic efficiencies (over and above those already

[43] This means that the IPP/FPP statutory scheme must be considered in the context of the rest of the Act. Therefore, it is right that the backdate approach might be different in a negotiate/arbitrate model compared to a reference offer model.

contracted through via UFB and RBI) will almost certainly come from driven by retail-market developments. These are real costs to end-users, for no apparent countervailing benefit. There is therefore no case to be made under s18 for backdating. The majority Commission position is the correct one, and should be confirmed.

END

Attachment A: WIK-Consult report

Provided as a separate document.

Attachment B: Network Strategies report

Provided as a separate document.

Attachment C: DotEcon report

Provided as a separate document.

Attachment D: Trillas report

Provided as a separate document.

Attachment E: Russell McVeagh opinion

Provided as a separate document.