

Vodafone Submission



New regulatory framework for fibre:

Submission on Commission's proposed approach

21 December 2018



Executive Summary

Thank you for the opportunity to provide views on the proposed approach to the new regulatory framework for fibre. We support the open and constructive approach the Commission has taken to the start of implementing this new regime.

Our submission focusses on those areas of the regime that will have the greatest impact on our customers, and our ability to compete alongside the fibre providers. These are:

- protecting and encouraging competition;
- ensuring fibre providers are not gifted windfall gains through the losses calculation, and
- ensuring that the price and quality of products meet the needs of New Zealanders.

We have also attached two expert reports to this submission: a report from Frontier economics considering cost allocation issues and an opinion from James Every-Palmer QC regarding the unbundling obligations on the fibre providers. The opinion from James Every-Palmer was originally commissioned in 2016 as part of the review of the Telecommunications Act, but remains relevant to many of the implementation issues the Commerce Commission will face.

Promotion of competition is critical to deliver the best outcomes for end-users

The requirement to 'promote workable competition' is the biggest difference in this regime, compared to the similar regulatory regime established under Part 4 of the Commerce Act 1986. This will have wide-ranging implications, and will require a different approach to certain issues depending on the level of competition present for different services.

First, existing competition must be protected and enhanced through robust cost allocation rules. Vodafone has commissioned an expert report from Frontier Economics that looks at this issue in detail. It recommends prescriptive rules in the Input Methodologies for allocations where fibre providers have conflicted incentives, such as costs in common between copper and fibre, layer 1 and layer 2 fibre, and for the anchor products.



The Commission must also encourage the emergence of new competitive markets where it is in the long term interests of end-users. For example, fibre unbundling has the potential to deliver fantastic innovation and efficiency outcomes for end-users. But for this to become a commercial reality, it will need active guidance from the Commission to help fibre providers navigate through their various obligations. This guidance is best codified as a distinct unbundling input methodology to provide sufficient clarity and predictability.

Finally, the fibre providers must also be exposed to competitive pressures wherever possible. Competitive pressures will always deliver a better outcome for end-users compared to artificial regulatory incentives. Specifically:

- the 'wash-up' mechanism must not allow for cross-subsidy between different types of services;
- any assets used as part of a competitive service must be removed from the asset base if they are no longer in use. Fibre providers are better placed to manage this risk than end-users, and
- there is no need for any WACC uplift; competitive pressures will provide a stronger incentive to maintain quality.

The losses calculation risks imposing significant unwarranted costs on end-users

The Telecommunications Act 2001 requires the Commission to determine whether any of the fibre providers have suffered any losses since the UFB build began and up to when the new regime comes into effect in 2022.

Awarding any losses would be a huge mistake, potentially burdening end-users with significant unwarranted costs for years to come. We know that Chorus has earned an excessive profit ever since the UFB build began. Its return on equity from 2011 to 2018 is 24.4% on average, allowing them to recover over \$300m more than would have been possible using a return on equity determined by the Commission for regulated utilities.

It is difficult to justify losses in this context. They would only emerge as an artefact of a regulatory interpretation that has little bearing on actual performance. There are three key factors that will help keep the losses more in line with the costs experienced by end-users.



- Common costs should not be allocated to fibre if it causes losses to occur. This is consistent with the Commission's past decisions which allow cost allocation to be adjusted during the start-up phase of a new venture.
- Efficient costs should be applied wherever possible. There is no incentive component to the losses calculation so any cost savings realised by the fibre providers should be fully shared with end-users. Tax costs must also reflect a reduced tax burden for any years where losses actually occurred. Information about the fibre providers' actual financing arrangements should also be used, such as Chorus' extremely high leverage ratio of 76%.
- If any losses do occur the cost of debt must be used to calculate the present value of these losses, consistent with past decisions from the Commission.

Prices and quality will need sophisticated oversight

The prices and quality set by the fibre providers will have a significant bearing on dynamic efficiency for the sector. The light-touch guidance used by the Commission for regulations set under Part 4 are not appropriate.

The Commission must exercise its right to adjust the broadband anchor product just prior to the implementation of the regime. This will ensure that the right product is chosen to fulfil the role of the broadband anchor product as a constraint on the price and quality of other products. However, we appreciate the need for some greater certainty, so the Commission should determine criteria within the input methodologies for choosing what the anchor product will be.

The Commission must develop robust pricing methodologies within the Input Methodologies. The fibre providers would otherwise have too much flexibility to influence how New Zealanders use the fibre infrastructure. This should cover both pricing principles to be reported on, but also the process that must be followed before any prices are changed.

Finally we support the approach the Commission has proposed for the quality input methodology. We look forward to working with the Commission in implementing this part of the regime.



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Competition must be protected and encouraged

1. The biggest challenge that the Commission faces in implementing the new regime is how to adapt a 'building blocks' model to facilitate current and potential future competition. Many of the core assumptions of a building blocks approach do not align well to a competitive market, and will need a significant re-think.

Promotion of competition must be at the core of every decision the Commission makes

2. Section 166(2)(b) of the amended Telecommunications Act 2001 (the Act) requires that the Commission must make all recommendations, determinations and decisions in a way that is likely to best give effect:

to the extent that the Commission or Minister considers it relevant, to the promotion of workable competition in telecommunications markets for the long-term benefit of end-users of telecommunications services.

3. The promotion of workable competition is relevant in all cases where actual competition exists or there is potential for competition to exist. The Commission has attempted to identify circumstances where the promotion of competition may be in conflict with the long-term interests of end-users. However, this conflict is unlikely to ever occur in practice, adding competition to an otherwise monopoly market will always be in the long term interests of end-users.¹
4. After the 'relevance' threshold is crossed the Commission is then required to promote workable competition. To produce the best outcomes for end-users the Commission must seek the following outcomes when giving effect to this requirement.

¹ This approach is consistent with underlying objectives of the Telecommunications Act, including the objective of preventing or limiting restrictions on competition that might arise in telecommunications markets with few operators and relatively high barriers to entry



- 4.1. Enable other parties to compete alongside the fibre providers on a level playing field.
- 4.2. Expose fibre providers to competitive risks and rewards to the maximum extent possible.
5. Promoting workable competition in this way will always produce more accurate and effective incentives on the fibre providers than any artificial regulatory incentive ever could. Market regulation is only ever intended to mimic the conditions of a hypothetically competitive market. Where competition is possible, it will always be a better solution than complex and costly regulations.

The level of competition is different across services

6. Fibre providers operate across a range of competitive and uncompetitive services. This can broadly be categorised into three groups, as per figure 1 below, each of which requires a different regulatory approach.

Figure 1: Groups of competitive and uncompetitive activities of fibre providers



7. These categories reflect the approach recently proposed by Ofcom for the regulation of fixed line services in the UK.² They help set out the different scenarios the regulations need to consider and how and when to apply different regulatory tools.

² <https://www.ofcom.org.uk/consultations-and-statements/category-1/promoting-investment-competition-fibre-networks> Ofcom considers it likely that full duplication of fibre networks will occur in the UK, leading to infrastructure competition. It is therefore looking to define each geographic area into one of these three categories. Due to New Zealand's scale, full network duplication is not realistic, but a similar framework can be taken to defining the level of competition on different services.



8. The regulatory approach taken for uncompetitive services does not need to fundamentally change to the approach taken for Part 4 of the Commerce Act 1986 (Part 4). This captures the Layer 1 'dark fibre' services. These have all the characteristics of a natural monopoly: the fixed costs are so high that it is unlikely any competition will emerge at scale. It is critical that these costs are well controlled as they are a key input into competitive technologies, including backhaul for fixed wireless access, and fibre unbundling.
9. Potentially competitive services are those where competition is either present at the fringes, or has the potential to emerge if the right access conditions are granted. This covers competition on entry level plans with fixed wireless, and unbundling if it becomes commercially viable.
10. Potentially competitive services will be the biggest challenge for the Commission. Consumers will continue to need protection as competition is currently insufficient, but the best way to enhance outcomes for end-users will often be to enhance competition, and competitive incentives rather than establishing regulatory incentives.
11. Finally, competitive services must remain outside of the asset base, and protections put in place to ensure the fibre providers can't harm currently competitive markets. The Commission's statement at para 7.26 that competitive services above Layer 2 may be included in the asset base is extremely concerning. Despite what a strict reading of the Act might suggest, the Commission must apply appropriate judgement and not expand into competitive services.

The application of the economic principles varies based on the level of competition

12. The Commission applies three economic principles to all its decisions:
 - 12.1. Real financial capital maintenance
 - 12.2. Allocation of risk to those best placed to manage it
 - 12.3. Asymmetric consequences of over and under-investment.
13. These needn't fundamentally change. However, to best give effect to the requirement to promote workable competition where relevant, a fourth principle must be added. This principle should focus on maximising competitive incentives on regulated fibre providers by ensuring there is an optimal level of competition.



14. Table 1 below considers each of the four economic principles against these three groups of services. This shows where the Commission’s existing approaches need to be adjusted to reflect the competitive nature of the fibre market.

Table 1: Application of Economic Principles to Uncompetitive and Competitive Services

	Uncompetitive services	Potentially competitive services	Competitive services
Optimal competition for the long term benefit of end-users	Ensuring open access on the same terms, and conditions. Priced at a level that facilitates competition.	Fibre providers are exposed to competitive pressures wherever possible.	Ensure Chorus isn’t able to leverage its monopoly assets to gain an advantage.
Financial capital maintenance	Applies to all Layer 1 assets.	Ensure any application of FCM principles do not dilute competitive incentives. For example, the wash-up mechanism must not be used to shift cost recovery from competitive to uncompetitive services.	
Allocation of risk	No real risk. Stranded assets retained in the asset base as they cannot be easily re-sold or re-purposed.	Risk of competition best managed by fibre provider. For example, stranded assets must be removed from the RAB.	
Consequences of over- and under-investment	There is limited potential for under-investment to occur.	Balanced – competitive pressures will ensure appropriate investment.	

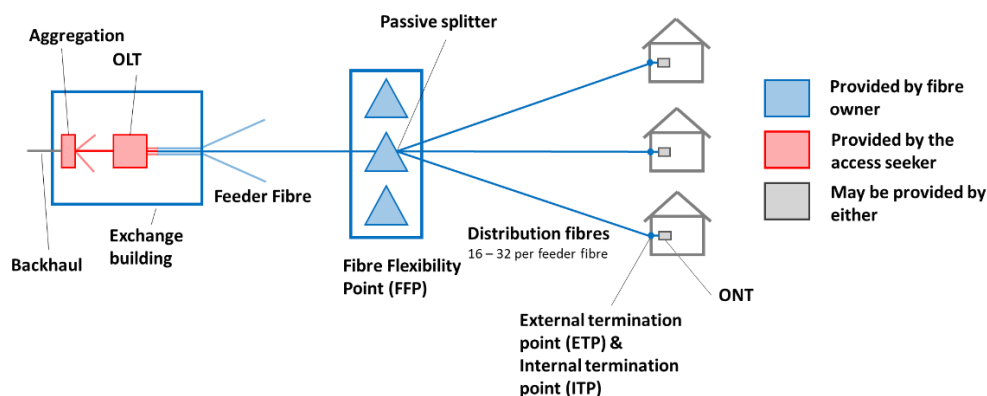


15. Table 1 helps condense the key differences in the fibre regime compared to Part 4 into five key areas:
 - 15.1. Access to uncompetitive services by making unbundling viable
 - 15.2. Cost allocation between uncompetitive, potentially competitive and competitive services
 - 15.3. The wash-up must not allow cross-subsidisation
 - 15.4. Unused competitive assets must be removed from the RAB
 - 15.5. A WACC uplift is unnecessary.

The Commission must facilitate commercial unbundling

16. Unbundling will allow competition deep into the fibre networks by allowing access directly to the fibres themselves (known as Layer 1 access). Rival companies can then invest in their own active equipment creating a competitive market over features such as access speeds, latency and resilience. Competitive pressures will deliver continued improvements for all New Zealanders.
17. Figure 2 below provides a simple technical overview of an unbundled network.³

Figure 2: Technical overview of unbundled fibre network



³ In this diagram the splitter is provided by the fibre provider. This is different to the description provided by the Commission on page 37 of the consultation paper. However, the splitters are passive equipment, and therefore meet the definition of Layer 1 technology as defined by the OSI. This is also consistent with the unbundled service proposed by Chorus, where they will provide and install the splitter themselves.



Unbundling is a core part of our fibre strategy

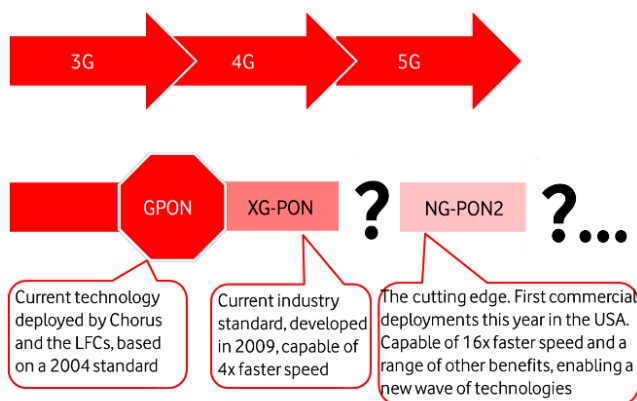
18. Vodafone and Vocus have joined forces as a consortium to bring the benefits of unbundling to New Zealanders. Both companies see unbundling as a core part of their future fixed-line strategies. It will allow us to break free from the product constructs and upgrade paths set out by the fibre providers, and provide targeted and truly differentiated services to New Zealanders.
19. To bring the future we see to New Zealand, we need to ensure that we have the right network to deliver it. For example, connected homes of the future will require much greater bandwidth. Internationally, Gartner has named Vodafone as the world leader in IOT technologies for each of the last four years, and we are also investing heavily in video streaming services like Vodafone TV which will in the future require significantly greater assured speeds.

Unbundling is essential to fulfil the requirements of the purpose statement

20. Unbundling is critical to meeting the objectives of the s162 purpose statement. The purpose statement requires the Commission to promote the long term benefits of end-users, specifically focussing on innovation, efficiency and limiting excessive profits. To best meet these objectives the Commission must do all in its power to help make unbundling a commercial reality.
21. For end-users the most obvious outcome of unbundling will be increased innovation. The best way to understand the impact of unbundling on innovation is to compare with the mobile telecommunications market. These two markets have a lot in common, they both require significant up-front investments, and the key innovation steps are reliant on international standards and infrastructure built by large international vendors.



Figure 3: Comparison of upgrade path of mobile vs fixed in New Zealand



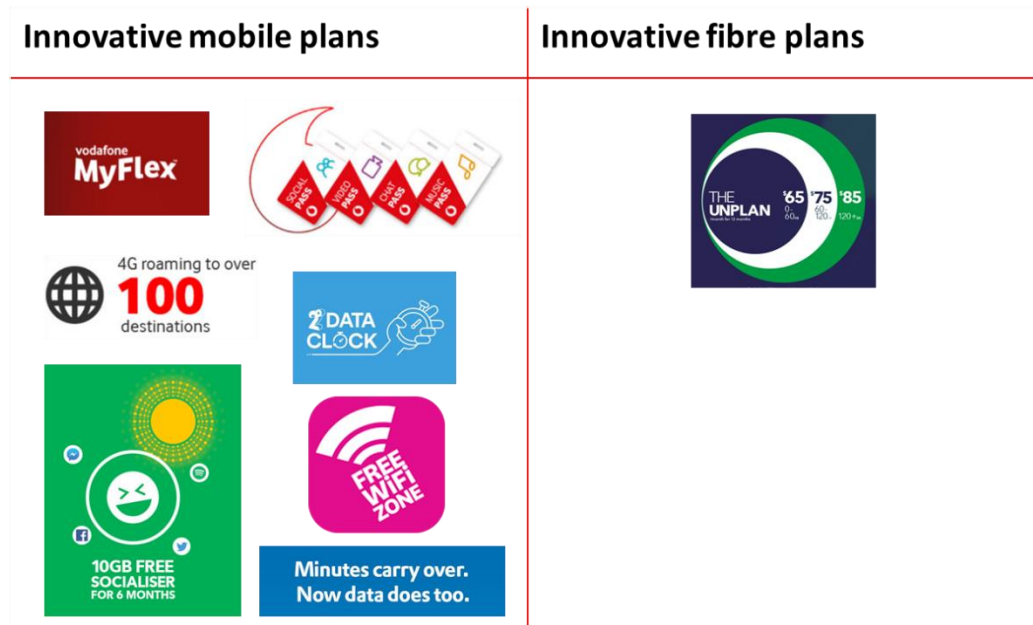
22. However, in two crucial respects the mobile market in New Zealand is substantially more innovative than the fibre fixed line access market. This is almost certainly due to having three competing mobile networks, which has delivered fantastic outcomes for Kiwis.⁴

23. First New Zealand has always been at or near the forefront of adoption of new mobile technology. The same cannot be said for fixed line fibre services. As figure 3 shows New Zealand is still languishing on fibre technology first developed in 2004. Two further generations of technology have been developed since then, but are not on offer in New Zealand. Chorus has recently announced plans to trial 10gb services early next year, which is likely a demonstration of the commercial pressure that our public statements on unbundling have placed on them.
24. Secondly, there is significantly greater product differentiation in the mobile market, catering to the needs of all different Kiwis. As per figure 4 below there are a number of highly innovative plans on offer using mobile networks. Retail fibre plans are almost always a simple re-sell of the plans offered by the fibre providers, except for a recent attempt at product innovation by Spark.

⁴ https://comcom.govt.nz/data/assets/pdf_file/0013/104242/Vodafone-Submission-on-the-Issues-Paper-26-October-2018.PDF



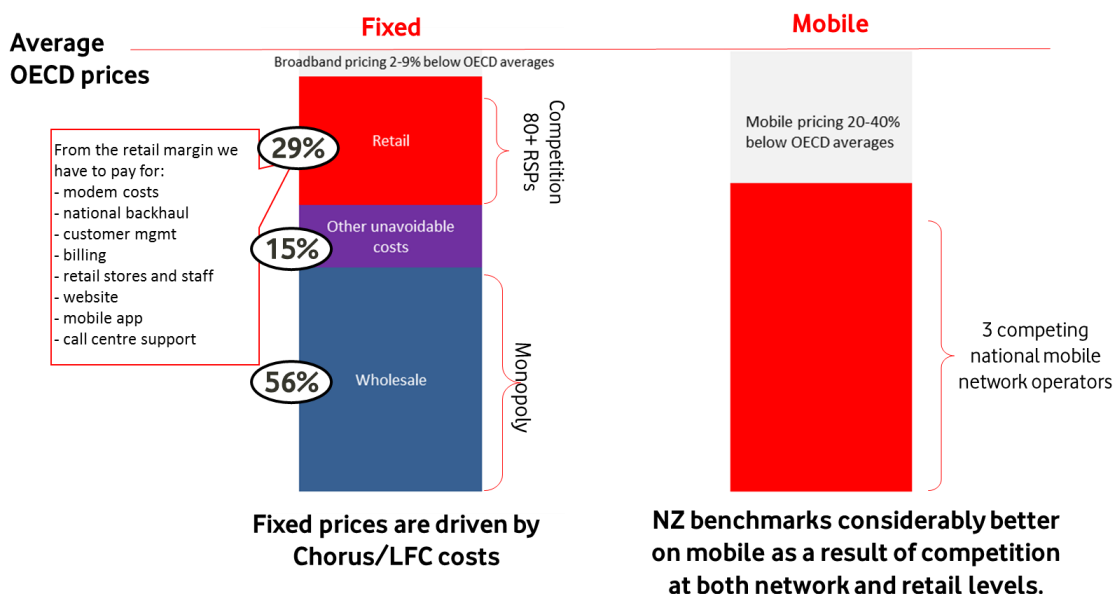
Figure 4: Comparison of innovative plans on mobile networks vs fibre networks



25. Unbundling will also provide a strong incentive to improve efficiency and reduce excessive profits via price competition. Competition will always provide the strongest incentive to keep prices down. Many of the regulations serve this same purpose, but can only ever be an estimate of the outcomes of competition.
26. Again we can compare outcomes with the mobile market. Figure 5 below shows that the mobile market is delivering a significantly larger discount for New Zealanders compared to OECD averages than the fixed-line market.



Figure 5: Comparison of savings compared to the OECD average for fixed and mobile services



An unbundling input methodology is essential

27. Unbundling fulfils such a vital role in the regime that the Commission has a duty to do all in its power to facilitate it emerging on fair terms. The best way to do this is to establish a specific input methodology focussing on unbundling.
28. While the Act does not allow the Commission to propose a price for the unbundled service until the end of the first regulatory period, an unbundling input methodology would still play a vital role in the regime. It would provide certainty around key interpretations for information disclosure,⁵ and future reviews of the unbundling price.
29. The current level of uncertainty is a problem for all the industry.
 - 29.1. Investors, like the Vodafone / Vocus consortium, who want to unbundle the network, have little negotiating power with the fibre providers in the absence of guidance on the interpretation of key requirements.

⁵ As covered in more detail in the following section on cost allocation, information disclosure must separately report on Layer 1 and Layer 2 costs.



- 29.2. Fibre providers have no way to self-assess compliance with their requirements such as equivalence of inputs and non-discrimination. They risk being found to be non-compliant after the fact simply because they did not know the way the Commission will interpret their requirements.
- 29.3. The Commission does not have the basis to collect the right data for the purposes of setting a Layer 1 price, or for the purposes of information disclosure, and later assessment.
- 30. The input methodology should cover three topics: how equivalence of inputs obligations apply to price; how non-discrimination and equivalence obligations apply to non-price terms; and how a review of the unbundling product is triggered after the first regulatory period.

Unbundling pricing principles

- 31. The fibre providers must meet an equivalence of inputs (EOI) standard when setting the unbundled service.⁶ However, in the absence of any guidance from the Commission, it is unclear how the fibre providers must interpret the EOI requirement. There are two key questions that must be answered: what model to take in determining the Layer 1 price, and how to treat costs associated with unbundling.
- 32. Broadly there are three models that can be applied to determine the Layer 1 price:
 - 32.1. An economic replicability test, where there must be proof that there is sufficient 'economic space' between the Layer 2 bitstream price and the unbundled Layer 1 price
 - 32.2. Cost based – where the bottom-up costs of Layer 1 are calculated
 - 32.3. International benchmarking of Layer 1 price.
- 33. Domestic interpretation of EOI and international precedent heavily points towards an economic replicability test. In advice attached to this submission (which was initially commissioned for MBIE's review of the Act) James Every-Palmer states that:

⁶ See for example "Chorus Limited Deed of Open Access Undertakings for Fibre Services, 6 October 2011"



*the key requirement is that there must be sufficient “economic space” between the Layer 1 and Layer 2 prices such that an **equally efficient access seeker** purchasing the Layer 1 service from the UFB provider **will be able to compete against the UFB provider** in respect of the Layer 2 service or against other RSPs at retail. This concept is variously described as the ‘efficient component pricing rule (ECPR)’, ‘economic replicability’ or an ‘equally efficient rival’ test.*

34. This interpretation is consistent with guidance from the European Commission in 2013, which recommended regulatory agencies adopt an economic replicability test (ERT) to promote competition and investment in broadband infrastructure.⁷
35. A number of regulators have also applied the EOI standard or the similar equivalence of outputs (EEO) standard. As per table 2 below, the majority of these countries have applied an ERT. They test that there is sufficient economic space between the regulated product and the next product up in the value chain for competition to thrive.
36. The key exception is the Netherlands, where they have costed an unbundled fibre product based on estimated costs of the Layer 1 network. This has resulted in a very high unbundled price, resulting in less than 6% of fibre connections being unbundled by the end of 2017.⁸ This approach has not promoted the emergence of competition.

⁷ European Commission (2013), European Commission Recommendation of 11.9.2013 on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment, 11 September 2013. para 17.

⁸ Autoriteit Consument & Markt, Telecommonitor Q3-Q4 2017, 24 May 2018.

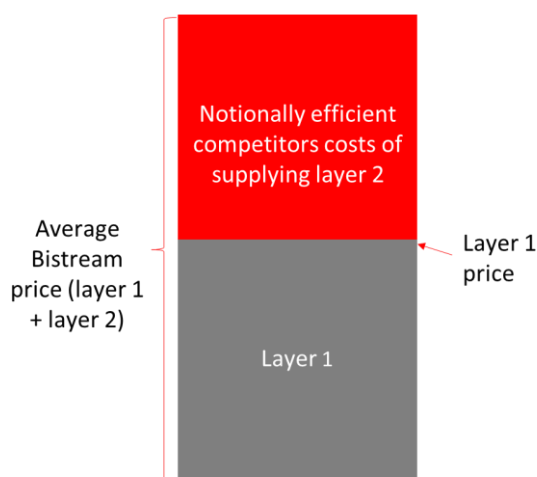


Table 2: Application of EOI and EOO standards in other jurisdictions

Country	Sector	Non-discrimination obligation	Pricing approach adopted
Malta	Fibre VULA	EOO	Economic replicability test
Netherlands	Unbundled fibre	EOI	Discounted cash flow of the Layer 1 network
Norway	Fibre VULA	Non-discrimination	Economic replicability test
Spain	Wholesale fibre access	EOI	Economic replicability test
Sweden	Wholesale fibre access	EOI	Economic replicability test
United Kingdom	Fibre VULA	EOI – VULA products	Economic replicability test

37. An 'economic replicability test', requires that an input wholesale price not exceed a level that would preclude replicability by other operators. This can be applied to unbundling by using a 'wholesale minus' approach. As per figure 6 this approach requires the costs of a notionally efficient Layer 2 competitor to be subtracted off the bitstream price. The Commission should also clarify its view on some of the key features of this notionally efficient competitor, such as its market share, and how to estimate its cost base, for example by using Chorus and LFC info disclosure data, or independent information.

Figure 6: Conceptual picture of wholesale minus calculation





38. The Commission must also provide some guidance on how to treat costs associated with unbundling. For example, there will be costs associated with management of the splitters in the cabinets (FFPs), installing new fibre between the exchange and the cabinet, and management of equipment at the exchange.
39. There are two broad ways the costs associated with unbundling can be treated:
 - 39.1. Charged on to the unbundled access seekers, or
 - 39.2. Charged equally to the fibre provider and unbundled access seekers, to maintain a level playing field.
40. Directly charging access seekers for the costs associated with unbundling is inconsistent with the EOI principle. It would reduce the margin between layers 1 and 2, and make competition near impossible.
41. This was the conclusion reached by Ofcom in its recent decision on setting a price for physical infrastructure access (ducts and poles).⁹ They concluded that the costs of unbundling couldn't be charged to one access seeker. These costs must be included in the duct and pole price and charged across all access seekers evenly, including the fibre provider itself.

Unbundling Access principles

42. The input methodology must also set some guidelines on the access terms for the unbundled service to ensure an access seeker can technically offer the same service to end users as the fibre providers.
43. The need for these guidelines is underscored by the consultation that the fibre providers are currently undertaking on the initial specification of the unbundled service.
44. We have highlighted to the fibre providers a number of areas where their proposals breach their obligations. These issues have not been resolved in Chorus' most recent consultation paper, so it is now inevitable that industry will ask the Commission to step into this process and clarify its obligations.
45. The clarifications the Commission issues should then be included in the input methodologies to provide long term certainty and stability. They should also be expanded to provide full clarity over all key access issues. The European Commission has specified the non-price issues that need to be covered by regulatory agencies:

⁹ [Wholesale Local Access Market Review: Draft Statement – Volume 3: Physical infrastructure access remedy](#)



- 45.1. ordering process
- 45.2. provision of service
- 45.3. quality of service, including faults
- 45.4. fault repair times, and
- 45.5. migration between different regulated wholesale inputs (excluding one-off bulk migrations).¹⁰

Triggering a review against the input methodologies

46. Finally the input methodology should stipulate when the Commission will review whether the fibre providers are meeting the economic and technical replicability tests. There are at least three parties that should be able to trigger a review:
 - 46.1. the Commission itself
 - 46.2. the Minister
 - 46.3. a potential access seeker.

Greater cost allocation protections are needed

47. How costs are allocated within the Part 6 regime will have a huge bearing on the success of both existing and potential competition. To help establish these rules on a sound foundation we commissioned an expert report from Frontier Economics to consider the principles and approach that should be applied. This report is attached to our submission.
48. Frontier's report shows that cost allocation for fibre services will be far more complex and risky than for Part 4. As a consequence the cost allocation rules must be far more sophisticated, and in some cases will required detailed prescription within the input methodologies.
49. There are three key factors driving complexity for cost allocation:
 - 49.1. the risks of getting cost allocation wrong are very high;
 - 49.2. fixed line services are in a transition phase as people move from copper to fibre, and

¹⁰ European Commission, "Recommendation of 11.9.2013 on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment", 2013, para 20.



- 49.3. allocations need to be made across a wide range of costs.
50. The way fibre providers' costs are allocated will have a material impact on the health of competition. The fibre providers have a clear incentive to allocate as many costs as possible towards uncompetitive services, squeezing the margins on competitive services.
 51. For example, a considerable amount of costs are shared between copper and fibre services. Chorus has a clear incentive to allocate as much of these common costs towards fibre as possible to inflate the asset base, allowing them to increase fibre prices. This will have no impact on copper prices which are set independently to this regime. Similarly the fibre providers are likely to try and allocate as much costs as possible to Layer 1 services to justify a high price and a very thin margin to Layer 2 services.
 52. This strikes at the heart of the requirement for the Commission to 'promote workable competition'. It is critical that the impact on competition is at the forefront of all cost allocation decisions made by the Commission.
 53. As end-users transition from copper services to fibre services the allocation of common costs also needs to adjust. To mimic the outcomes of a workably competitive market, the transition of common costs should start small, particularly for the calculation of losses in the period before the implementation date. This is because in a workably competitive market common costs are only allocated to a new venture once it is proven to be viable and profitable. This is discussed in more detail in the section on the losses calculation.
 54. Cost allocation in the Part 6 regime also needs to cover a number of different cost categories. In the Part 4 regime cost allocation is purely concerned with the allocation between regulated and unregulated activities. This is not sufficient for Part 6.
 55. The pricing of certain services within the scope of the regime can have a huge impact on competition, such as the anchor products, DFAS, ICABS and the Layer 1 service. The costs associated with these services must be separately reported on under information disclosure to provide full transparency and dissuade anti-competitive tactics from the fibre providers.



56. It will also be necessary to determine the cost allocation rules for Opex as well as Capex. Determining both of these allocations within the input methodologies will improve the consistency and predictability of the regime. The Commission must make Opex allocations to determine what losses (if any) the fibre providers incurred before the implementation date. It is sensible to then codify these rules into the input methodologies on a forward-looking basis to ensure consistency of treatment.

Some cost allocations will need to be prescriptive

57. To address these complexities and risks the Commission must re-think how the cost allocation rules are set within the input methodologies. In Part 4 the input methodologies set out principles and guidelines that must be followed. For Part 6, this will often create too much risk.

58. For example the proxies chosen to allocate costs in common with copper and fibre will influence the incentives on when to withdraw copper. These wider considerations are better considered by the Commission than the regulated party itself.

59. Frontier has proposed a decision-making framework to determine the level of prescriptiveness for different areas of cost allocation. This is summarised in figure 7. This emphasises the need to consider the incentives for the fibre provider to choose a proxy allocator that is not in the long term interests of end-users. Wherever these risks are present, the Commission is better placed to determine the details of the allocation approach.

60. Table 3 below presents the findings of Frontier's analysis across a selection of key allocations, many of which are better suited to prescription from the Commission rather than leaving the decisions to the fibre providers.

Figure 7: Framework for deciding the cost allocation method

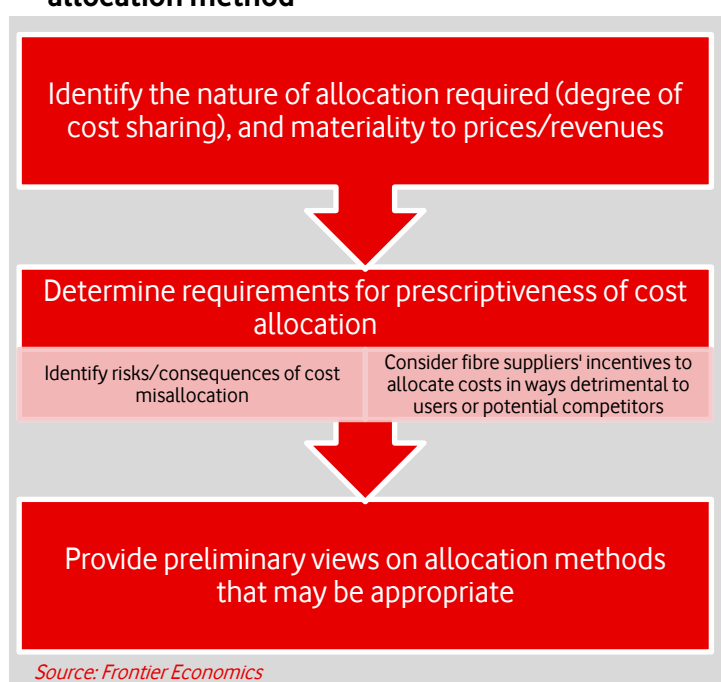




Table 3: Results of Frontier analysis of the level of prescriptiveness of key cost allocations

Cost allocation	Chorus ability to misallocate	Impact of misallocation	Prescriptiveness required
Fibre vs copper: rollout	High	High	High
Fibre vs copper: post-implementation	Medium	High	Medium-High
Layer 1 vs Layer 2	Medium	High	Medium-High
Anchor vs other products	High	Medium	Medium-High

Wash-up must not reduce competitive incentives

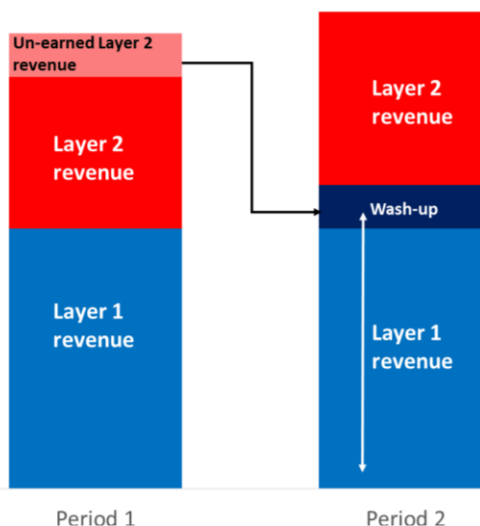
61. The Commission is required to 'wash-up' any un-recovered revenues in one period to be transferred to the next.¹¹ The Commission may also choose to do a yearly wash-up (as is the case with the price-quality regulation of Transpower).
62. Depending on how it is implemented, the wash-up could go a step further than the Commission's description of the financial capital maintenance principle. The Commission emphasises that the expectation of normal returns only applies *ex ante*. But continually compounding unrecovered returns into future looks a lot more like an *ex post* guarantee.
63. This mechanism has the potential to seriously distort competitive incentives, unless it is very carefully implemented. The primary role of the wash-up mechanism should be to remove forecasting risk. For example, when setting prices at the start of a year, Chorus will not know actual demand. The wash-up allows the resulting over- or under-recovery of revenues to be smoothed out into the next period.
64. The wash-up mechanism must not be used to protect Chorus from competitive risks. This could occur if Chorus is able to transfer unearned revenue from competitive services to the revenue it is allowed to earn on uncompetitive services.

¹¹ s196 Telecommunications Act 2001.



65. For example, if unbundling is more successful than anticipated the revenue Chorus earns from Layer 2 services will decrease, and it may fall short of its revenue cap. The wash-up mechanism will then allow Chorus to transfer the under-recovery into the next period. If left unchecked Chorus may attempt to recover the wash-up by increasing the price of the monopoly Layer 1 services, as per figure 8.

Figure 8: Competitive distortion of the wash-up mechanism



66. This is in conflict with the allocation of risk principle. The fibre providers are much better placed to manage competitive revenue recovery than end-users are. To avoid this result the input methodologies must require that the wash-up only be recovered on similar services. This will ensure Chorus faces the right competitive incentives. In the scenario above, this approach would give Chorus a strong incentive to improve their Layer 2 services to regain market share and recover lost revenue from the previous period.
67. Without restricting the way the wash-up can be recovered, Chorus may be left with a perverse incentive to run down the quality of the Layer 2 part of its network. If it loses customers it can recover the revenue through Layer 1 prices in the future, which in turn will reduce the margin between Layer 1 and Layer 2, making competition less viable.

Un-used competitive assets must be removed from the RAB

68. In regulations set under Part 4 the Commission allows for any assets that are no longer employed to be retained in the asset base. This means the regulated company can continue to draw down depreciation on these assets and earn a return on the capital, which end-users must continue to pay for despite it not being in use.



69. These assets are deemed to be stranded because there is typically no secondary market for specialised equipment like electricity towers, or if there is the cost of recovering the asset for sale is prohibitive. The Commission provides the following reasoning for retaining stranded assets in the asset base:
- where demand for services supplied by an asset falls away for reasons beyond the supplier's control, ensuring the supplier is compensated for any losses it incurs protects incentives for new investment, consistent with s 52A(1)(a). This is particularly important where the assets involved are large, and long-lived.*¹²
70. Applying the same logic to fibre regulation results in a different treatment for uncompetitive Layer 1 services, and competitive services.
71. Any Layer 1 assets that are no longer used meet the definition of being stranded. They are specialised equipment that are difficult to re-sell. The deployment of these assets has also been thoroughly overseen by Crown Infrastructure Partners, to meet reasonable expectations of the network that needed to be deployed. Any future stranding can easily be classified as beyond the supplier's reasonable control.
72. This addresses a recent concern raised by Chorus about whether unbundling will result in some Layer 1 assets becoming stranded. We do not agree with Chorus' assessment. We believe all Layer 1 assets have a role in the network. However, if a Layer 1 asset was built with proper oversight, and later became stranded, it is reasonable to retain these costs in the asset base. This will allow Chorus to continue to earn a return, satisfying the financial capital maintenance principle, and preserve its incentives to invest.
73. The treatment for unused competitive assets must be quite different. Firstly, in many circumstances unused competitive assets don't meet the definition of being stranded, as there will be demand for them to be re-sold. For example, when an end-user is unbundled the active Layer 2 equipment at their premises (the ONT) will no longer be utilised by the fibre provider. To minimise customer disruption the Vodafone / Vocus unbundling consortium has requested the ability to buy or rent the existing ONT. If the asset can be sold it does not meet the definition of being stranded.

¹² Commerce Commission, Input Methodologies (Electricity Distribution and Gas Pipeline Services): Reasons Paper, December 2010, para E11.4



74. In Chorus' most recent unbundling product construct paper¹³ they are refusing to sell the intact ONTs at an end-users premises. This appears to be motivated by making unbundling harder for access seekers. This is not in the interests of end-users - therefore end-users should not be forced to pay for these assets simply to give Chorus a strategic advantage.
75. Secondly, the fibre owners have a certain degree of control over the demand for their Layer 2 assets. If unbundling becomes viable this will be a competitive market: the fibre providers will win and lose customers on the strength of their competitive offering, just like any other firm in a competitive market.
76. Finally, many competitive assets are not large or long-lived. Layer 2 equipment typically has an asset life of around five years, and in the case of the ONTs discussed above, they typically cost less than \$100 each.

No WACC uplift is required

77. In regulations set under Part 4 the Commission typically sets an uplift to the WACC. The Commission has provided the following rationale for the uplift.

*We consider that the main reason to set a WACC percentile above the mid-point is to mitigate against the risk of under-investment relating to service quality generally, and contributing to major supply outages in particular.*¹⁴
78. This same logic does not apply to fibre services, either for uncompetitive Layer 1 assets, or for competitive assets.
 - 78.1. For uncompetitive Layer 1 dark fibre the quality of service, or its reliability, can't be changed by proactive investment. Once the fibre is in the ground and undisturbed it is functioning as well as it can, and there is no on-going maintenance schedule. Faults will only occur when the network is damaged by some external factor. Incentives to quickly restore faults are better set through the quality scheme than through a blunt WACC uplift.

¹³https://sp.chorus.co.nz/sites/default/files/files/Chorus%20PONFAS%20Product%20Construct%20consultation%20paper%20V2_December%202018%20final_0.pdf

¹⁴ Commerce Commission, "Amendment to the WACC percentile for price-quality regulation of electricity lines services and gas pipeline services: Reasons Paper", 30 October 2014



- 78.2. Competitive services, such as those at Layer 2, require more ongoing investment to maintain and upgrade their capability. However, if unbundling is viable then competition will provide a more accurate incentive to maintain and increase quality. It also mitigates the risk for end-users. If the fibre provider reduces Layer 2 quality, there will be an alternative provider they can shift to instead.
79. Using the mid-point of the WACC won't disadvantage the fibre service providers or their investors. The inherent uncertainty of the WACC means that in any given period the WACC estimated by the Commission may be too high or too low. However, the probability of it being too high or too low is equal. Over the long run the mid-point is a good estimate of the actual capital costs faced by fibre service providers.



Fibre providers must not receive windfall gains through the losses

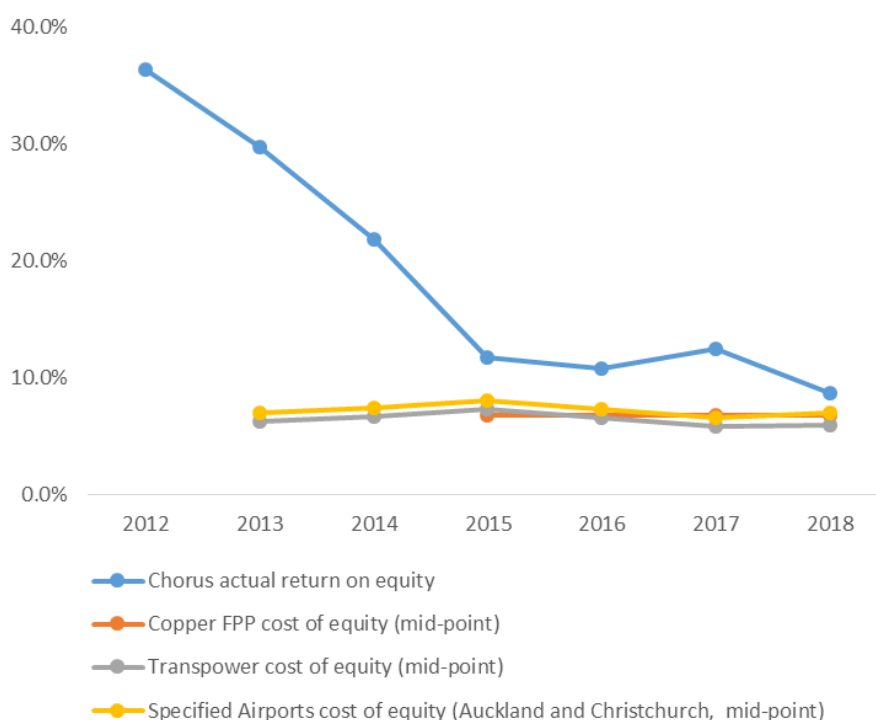
80. The Commission is required to consider if the fibre providers suffered any losses due to providing fibre services prior to 2022. This is likely the most significant decision the Commission will make, with some analysts predicting it could total as much as \$2b for Chorus alone.
81. Awarding any losses would be a huge mistake. This would simply hand the fibre providers a substantial windfall gain that Kiwis will be paying for years to come. The financial performance of Chorus in particular suggests that far from any losses occurring, it actually made excessive profits during this period.
82. In this section we focus on the impact of the losses calculation on Chorus as they are the largest entity and the only one subject to price-quality regulation. However, the Commission should undertake similar analysis for the LFCs.

Chorus has not suffered a loss

83. Chorus' financial performance since the start of the UFB build suggests that it has not suffered any loss. In fact, since its separation from Telecom, Chorus has earned an excessive profit, resulting in an average return on equity of 24.4%.



Figure 9: Chorus return on equity, 2012 - 2018¹⁵



84. In figure 9 above we have compared Chorus' return on equity to the cost of equity determined by the Commission for a few similar services: copper, electricity transmission, and specified airports. This clearly shows that Chorus' investors have earned well above what a reasonable investor in a regulated utility should expect. Chorus has earned more than \$300m extra than it would have under a standard utility return on equity.
85. Within this context the Commission has to determine if Chorus has suffered any losses on fibre services. As with all other decisions the Commission must make this decision in a way that is consistent with outcomes produced in workably competitive markets.
86. In a workably competitive market a new investment within an existing business would only be considered to have incurred any loss if the incremental costs of the investment exceed the incremental revenues.

¹⁵ Uses a two year average of equity to estimate the average equity in each year. For 2012 net earnings have been scaled up to reflect that there were only seven months in that financial year.



87. In agreeing to participate in the UFB build Chorus must have had an ex-ante expectation of recovering its incremental costs. At the time of the UFB build the regulatory environment was far too uncertain for it to have relied on a future regulatory decision to compensate for any losses.
88. The incremental costs of the UFB build were largely known upfront, and in many cases actual costs incurred by Chorus are at the bottom end of forecasts. For example in 2018 the cost per premises connected was \$1,037, compared to the forecast \$1,050 - \$1,200.¹⁶
89. Chorus must then have set prices in a way to recover its known incremental costs. Anything less would have been financially irresponsible. Many prices were set in negotiation with the Crown. Some products were set at a level to encourage uptake, while others such as the direct fibre access service (DFAS) remain very high. Chorus itself then set the price for some of the most popular products – such as the 100/20mbps product. It is inconceivable that they chose a price that would have resulted in a loss.
90. Furthermore the uptake of fibre has exceeded everyone's expectations. When roll-out began uptake was targeted to reach 20% by 2020. The most recent Broadband Deployment Update puts current uptake at 44.1% already. Because the majority of the costs of the UFB build are sunk, the surge in uptake would have substantially improved on the expected returns.
91. Chorus would not have required fibre revenues to cover the common costs between the fibre business and its existing businesses. The high returns shown above clearly demonstrate that common costs could easily be recovered from existing sources of revenue. Over time, as fibre displaces copper, common costs will need to be recovered from fibre. However, common costs would not be a feature of any assessment of losses in a workably competitive market.
92. We see merit in the Commission's proposal to retain the same regulatory approach for the calculation of any losses as will be used for future regulations. However, the outcomes expected in a workably competitive market must be used as guidance to ensure that the right outcome is produced. This can be achieved by applying two key principles to the losses calculation:
 - 92.1. Common costs should not contribute to any losses.
 - 92.2. There is no incentive component to actions taken in the past, so the losses calculation should use efficient costs where possible.

¹⁶ Chorus, FY 2018 Investor report, p16

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Common costs should not contribute to any losses

93. The Commission must ensure that costs common between fibre and other services offered by the fibre providers are treated in a way consistent with a workably competitive market. This means that in the early stages of the fibre roll-out the majority of common costs should be attributed to the existing services, and not included in the losses calculation.
94. The Commission has developed an allocation methodology for Part 4 that achieves this purpose. The optional variation to the accounting based allocation approach (OVABAA) allows for common costs to be adjusted if a new business venture would otherwise not be viable.¹⁷
95. As stated by the Commission itself:

This reflects outcomes produced in workably competitive markets where some services may, for a period, bear most of the common costs while others bear little (e.g. during the start-up phase of a new service).¹⁸
96. This was supported by Professor Yarrow:

it is not unusual for an established infrastructure supplier to offer discounts early on that would encourage the development of the new business¹⁹
97. These rationales are consistent with the start-up phase of the fibre network. It was a new venture, with low uptake initially, operating alongside a highly profitable business. In a workably competitive market the remainder of Chorus' business would have borne the majority of common costs to help the new fibre venture get off the ground.
98. The OVABAA methodology requires common costs to first be allocated using the standard allocation approach that will be used after the implementation date. We do not support using simplifying assumptions as suggested by the Commission. This is a very important calculation and should not be taken lightly.

¹⁷ This approach is not applicable in the regime going forward. This is because it has the potential to impact on competition in related markets, a factor the Commission must explicitly consider. Competition does not come into play for the pre-implementation period, meaning adjustments to the allocation approach are appropriate.

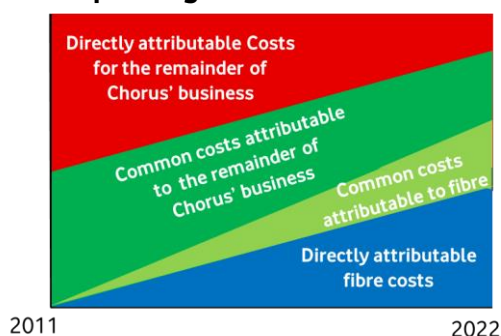
¹⁸ Commerce Commission, Input Methodologies (Electricity Distribution and Gas Pipeline Services): Reasons Paper, December 2010, p75

¹⁹ Commerce Commission, Input Methodologies (Electricity Distribution and Gas Pipeline Services): Reasons Paper, December 2010, P81



99. OVABAA then allows cost allocation to be adjusted to help make the fibre business viable. This can be applied to the losses calculation by assessing the entire period as a whole. If any losses are found to occur using the standard allocation approach, common costs should be shifted off fibre until the fibre business either suffers no loss, or there are no more common costs allocated to fibre. This will likely look like a phase in curve for common costs like represented in figure 10.

Figure 10: stylised representation of phasing in of common costs



100. This approach would not make Chorus or its investors worse off. As above, Chorus has earned an excessively high 24.4% return on equity during this period. This sort of return would not have been possible if common costs were not already fully recovered.
101. A useful cross-check on the impact on Chorus' investors is to consider its profitability under the counterfactual as if it was not selected for the UFB build. Under this scenario all common costs would need to be recovered through existing services.
102. Under the counterfactual Chorus may have been able to earn some additional revenue by renting exchange and duct space to the fibre provider. However, this has not occurred in all areas where local fibre companies are rolling out UFB, so is likely to be a limited amount.

Efficient costs should be used where possible

103. Because the vast majority of the losses calculation will relate to revenues earned in the past, it cannot influence Chorus' incentives. Therefore, it is better to use efficient costs as much as possible. In most cases the actual costs faced by Chorus are a good approximation of efficient costs given the oversight of Crown Infrastructure Partners.
104. For example, any efficiency gains that Chorus achieved during the pre-implementation period must all be passed-on to end-users. As there are no incentives at play, there is no justification for allowing Chorus to retain the benefits of these cost reductions.



105. It is also important to consider Chorus' actual tax costs. If there are some individual years that Chorus' fibre business earned a loss after the appropriate cost allocation method is applied, then it would have incurred no tax cost. Rather than using a theoretical construct of the taxes that would have been paid under full recovery, Chorus' actual tax burden for the fibre business should be used.
106. Furthermore, any losses in the fibre business would have reduced the tax burden on the remainder of Chorus' business. This should be properly accounted for as a revenue item on the fibre business, mitigating the size of the losses.
107. Conversely, it is inappropriate to use Chorus' actual cost of capital to calculate potential losses. As above, Chorus earned well in excess of what its investors should have expected since the start of the UFB build. Using Chorus' actual cost of capital for this period allows Chorus to double-down on the over-recovery.
108. Instead the Commission should use the cost of capital methodology determined through the input methodologies. This should be updated each year to reflect the actual costs of capital for that year. It should also use as much information as possible about Chorus' actual financing arrangements.
109. For example, Chorus has funded the majority of its build through debt rather than equity. For financial purposes Chorus recorded all Crown funding as debt. However, even when Crown funding is removed from both total assets and total liabilities, Chorus still had an extremely high leverage ratio of 76% on average. This is well above the 38% estimate used when estimating the WACC rate for copper services in the FPP.
110. Applying a 76% leverage ratio to the WACC used for the FPP makes a material difference. The pre-tax mid-point estimate drops from 6.09% to 5.37%.

The present value of any losses must be calculated using the cost of debt

111. In the event that Chorus or the LFCs are found to have legitimately suffered any past losses, the Commission is required to make an adjustment to reflect the present value as at the implementation date.



112. The 2010 – 2015 electricity distribution default price-quality path sets a specific precedent for determining the present value rate for un-recovered revenues.²⁰ Due to litigation this price-path started one year later than anticipated. In some cases this meant that electricity distribution businesses under-recovered revenues compared to what they would have been allowed under the price-path.
113. The Commission determined that un-recovered revenues was akin to a loan between suppliers and consumers. Therefore, the most relevant present value rate is a mix of the cost of debt as determined by the Commission, and the prevailing mortgage rate.²¹
114. We support this approach for the calculation of fibre losses as well. It ensures the present value calculation is not inflated for systematic risk, which is included in the full WACC rate. Carrying forward any losses would have no systematic risk, so should not be included in Chorus' and the LFCs' compensation.

²⁰ This precedent was later reinforced in the Orion CPP approval. See P 132 at: https://comcom.govt.nz/data/assets/pdf_file/0023/63158/Final-decision-for-setting-the-customised-price-quality-path-of-Orion-New-Zealand-Limited-29-November-2013.pdf

²¹ Commerce Commission, Resetting the 2010-15 Default Price-Quality Paths for 16 Electricity Distributors, 30 November 2012, p148.



Products must be right for the New Zealand market

The Commission must ensure that anchor services are fit for purpose in 2022

115. The Ministry of Business, Innovation and Employment (MBIE) intends to set the regulations determining the anchor products that will come into effect from 2022. They have indicated that the broadband service will be set as the 100/20mbps service.
116. As the majority of the industry has stated throughout the consultation process the 100/20mbps product is unlikely to be relevant in the market after the new regime comes into effect. This is especially true now that the implementation date has been pushed out to 2022.
117. The Act requires that the anchor services:

act as an appropriate constraint on the price and quality of other fibre fixed line access services
118. The 100/20mbps product has no prospect of fulfilling this role between 2022 and 2025.
119. We continue to believe that the anchor product should be set closer to the time of the first price-quality path being set, requiring the Commission to exercise its rights under s 208 to review the anchor products before the first regulatory period.
120. To provide some further certainty the Commission should provide some transparency on the factors that it will take into consideration for the anchor services review. This could be in the form of guidelines in the input methodologies, that state that the Commission will set anchor product(s) to ensure:
 - 120.1. that the speeds on the anchor product(s) is sufficient to be a reasonable substitute for other products, so it can effectively constrain price of other fibre fixed line access services



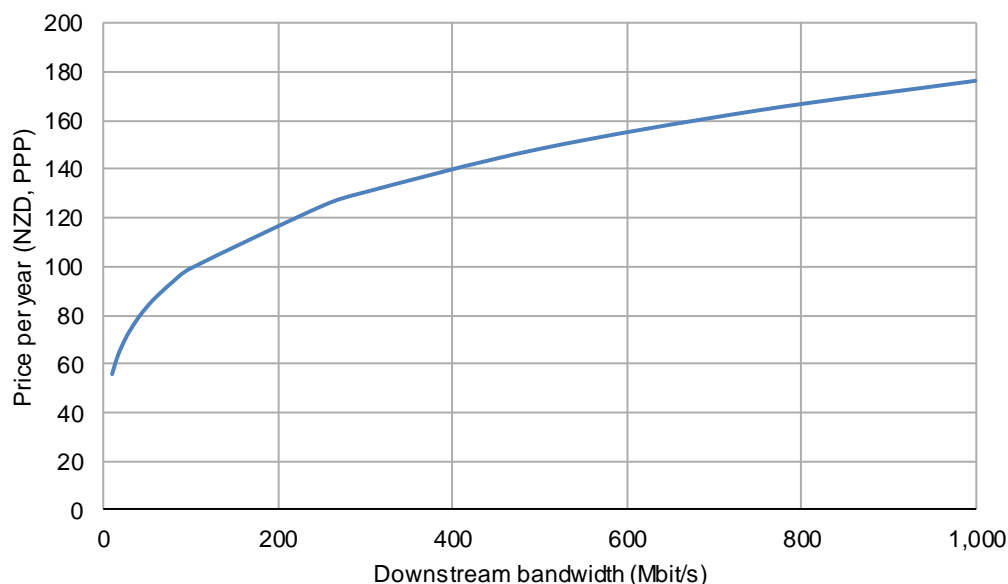
- 120.2. that forecast volumes on the anchor product(s) are high enough to demonstrate the product(s) are relevant in the market, and
- 120.3. that the quality of the anchor product(s) is aspirational to help ensure standards of quality are lifted across the board.

Non-anchor products must be well priced relative to each other

- 121. Chorus is largely left to price the non-anchor products as it sees fit within the overall revenue cap. As noted by the Commission, pricing efficiency will be a key factor for fibre services. The fibre providers have significant power to determine which services Kiwis are directed towards by the way they price.
- 122. For example, Chorus is currently lowering the prices of the 'fibre max' plans. This will increase demand, but in the future it may want to increase these prices to increase revenue as it attempted to do for the 100/20 service. This gives the fibre providers significant flexibility to manipulate demand to suit their own purposes, rather than what is in the best interests of New Zealanders.
- 123. The Commission must therefore set a pricing methodology. This should:
 - 123.1. set certain principles to require that prices are set well relative to each other
 - 123.2. require fibre providers to report against the pricing principles in their information disclosure reporting
 - 123.3. set penalties for breaching the principles
 - 123.4. set processes for changing prices, including requiring industry consultation, and a six-month lead time before any price changes take effect.
- 124. Setting pricing principles will be complex because the costs of delivering different capability fibre services are near identical. The rationale for having differentiated prices purely comes down to allowing some price discrimination to put more of the costs of the network on to those able to afford to pay for it.
- 125. However, this issue has been considered and solved in other jurisdictions. For example the Danish regulator (Erhvervsstyrelsen) has priced individual fibre products along a logarithmic curve, as per figure 11 below. Chorus could apply this approach as a way of demonstrating prices are well constructed.



Figure 11: Prices for Danish fibre bitstream services by bandwidth



Quality at standards New Zealanders expect

126. The Commission is required to set quality dimensions as part of an input methodology. Correctly setting the quality dimensions of the FFLAS service is important to ensure that RSPs have access to high quality wholesale fibre services, so RSPs can compete and deliver innovative services to end-users. As near monopolies, the fibre providers may not have strong enough incentives to focus on quality where there is a cost associated with meeting a particular service standard. We welcome the Commission's initial work on this – including the report from Cambridge Economic Policy Associates (CEPA).
127. Recent amendments to the Telecommunications Act have introduced new powers for the Commission to set minimum retail service quality standards. When considering the relevant quality dimensions in a future Price-Quality Determination, the Commission will need to consider any flow-on impact of specific input methodology quality dimensions on the ability for RSPs to meet any required minimum retail service quality standards the Commission might determine in the future.



128. CEPA set out options to prescribe quality standards and quality reporting requirements. We support CEPA's initial view that Level 2 metrics should be set for quality dimensions. Level 2 metrics in the input methodology will set out narrower principles for each quality dimension, outlining principles to guide how the Commission would establish the quality metrics and standards that would apply. We believe this will provide reasonable specificity on the specific quality dimensions that matter. This is balanced against the need for some flexibility, recognising the actual metrics themselves will change over time.
129. We agree with CEPA's six high level categories relating to:
 - 129.1. ordering
 - 129.2. provisioning
 - 129.3. switching
 - 129.4. faults
 - 129.5. availability, and
 - 129.6. performance.
130. We also agree with CEPA's conclusion that aspects of service quality will span the dimensions. Chorus, LFCs and RSPs will be best placed to develop initial metrics through the TCF – and those areas of quality that are important to end-users.