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Fibre regulation emerging views: Technical Paper



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Contents

CHAPTER 1: LEGAL FRAMEWORK.....	4
CHAPTER 2: KEY ECONOMIC PRINCIPLES.....	25
CHAPTER 3: ASSET VALUATION.....	40
CHAPTER 4: COST ALLOCATION.....	60
CHAPTER 5: COST OF CAPITAL AND RISK.....	90
CHAPTER 6: QUALITY DIMENSIONS.....	141
CHAPTER 7: CAPEX IM.....	164
CHAPTER 8: TREATMENT OF TAXATION.....	186
ATTACHMENT A: GLOSSARY OF TERMS.....	203
ATTACHMENT B: REGULATORY AREAS WHICH MAY DERIVE A DIFFERENT APPROACH THAN APPLIED WITH GAAP.....	205
ATTACHMENT C: POTENTIAL DISAGGREGATION CATEGORIES FOR THE RAB.....	206
ATTACHMENT D: QUALITY STANDARDS COVERED BY THE NIPA AND WSAS.....	207

Chapter 1: Legal Framework

1. This chapter explains our current position on the legal framework issues that were considered in our paper “New regulatory framework for fibre - Invitation to comment on our proposed approach” published on 9 November 2018 (**proposed approach paper**) as well as on two new matters raised in submissions.
2. It provides reasons for our views on key aspects of the framework that we propose to apply when determining the input methodologies (**IMs**) for providers of regulated fibre services (**suppliers**) as set out in the Summary chapter of this paper.
3. Where we consider it useful to stakeholders we have expanded on some of our previous discussions to provide greater clarity of our views on these issues and have discussed submitters views.
4. The key topics covered in this chapter include:
 - 4.1 the relevance of Part 4 of the Commerce Act 1986 (**Part 4**) to Part 6 of the Telecommunications Act 2001 (**the Act**);¹
 - 4.2 our interpretation of s 162;
 - 4.3 our interpretation of the term ‘end-user’ as used in Part 6;
 - 4.4 our interpretation of s 166(2)(b);
 - 4.5 our interpretation of how s 166(2)(a) and s 166(2)(b) interact;²
 - 4.6 our approach to the application of s 174;
 - 4.7 adopting a building blocks model (**BBM**);
 - 4.8 the 2011 Government Policy Statement (**GPS**) on the incentives for businesses to invest in ultra-fast broadband infrastructure; and
 - 4.9 our power to set fibre IMs.
5. We note that the framework chapter generally provides a high-level overview of our positions and does not deal with their practical application. Our positions will become progressively more detailed through the economic principles we adopt and the reasons we provide for specific IMs.

¹ All references to Part 4 in this chapter are a reference to Part 4 of the Commerce Act 1986, and all references to Part 6 are a reference to Part 6 of the Act.

² Section 166(2)(a) requires us (and the Minister) to make the recommendation, determination, or decision that best gives, or is likely to best give, effect to the purposes in s 162, (the outcomes of workable competition). Section 166(2)(b) requires us to promote workable competition in telecommunications markets where relevant.

Reasons for our proposed approaches to key regulatory framework issues

The relevance of Part 4 to Part 6

6. In our proposed approach paper, we noted that Parliament made a deliberate decision to base the regulatory model in Part 6 on the existing model in Part 4 and that certain key sections in Part 6 corresponded with key sections of Part 4:
 - 6.1 The Part 6 purpose statement (s 162) is adapted from the Part 4 purpose statement (s 52A). They both direct us to promote outcomes that are consistent with those produced in workably competitive markets.
 - 6.2 Part 6 introduces the same two key regulatory tools as Part 4 using substantially similar language: information disclosure (**ID**) regulation and PQR.
 - 6.3 The regulatory tools in Part 4 and Part 6 are both supported by IMs which provide a framework for the development and operation of ID and PQR.
 - 6.4 The purpose statements of the IMs in Part 4 (s 52R) and Part 6 (s 174) both aim to increase certainty for market participants.
7. However, we also noted that there were certain differences:
 - 7.1 Section 166 directs us to go wider than just s 162 (the s 52A equivalent). It contains an additional ‘purpose’ provision in s 166(2)(b) which is based on s 18 of the Act. It provides that when we make a recommendation, determination or decision, we must, in addition to giving effect to the s 162 purpose, also give effect “to the extent that [we] consider it relevant, to the promotion of workable competition in telecommunications markets for the long-term benefit of end-users of telecommunications services.”
 - 7.2 Part 4 is focussed on the long-term benefit of ‘consumers’ – a group which under the definition in s 52C of the Commerce Act includes both persons who consume and those who acquire regulated services, including intermediaries such as retailers. Part 6, on the other hand, is only concerned with the interests of the ‘end-user’— in the case of s 162, the person who ultimately receives the regulated service or other services that are dependent on the provision of the regulated service but excluding intermediaries such as retail service providers (**RSPs**).³
8. We explained that we can use our experience in applying Part 4 to inform our application of Part 6 but must always take the specific characteristics of the telecommunications sector and the structure and language of Part 6 into account when we make our decisions. We also noted that we could not simply import the approach we had adopted to a particular topic under Part 4 without also considering

³ However, we note that the IMs purpose statement in Part 6 is also directed at promoting certainty for access seekers such as retailers.

whether that approach was appropriate in light of the particular provisions of Part 6 and the telecommunications sector.

9. Submitters generally agreed with our approach to the relevance of Part 4 recognising that there was potential to adopt Part 4 precedent where the principles were already clearly established and appropriate for Part 6.
10. However, many submitters emphasised the inclusion of s 166(2)(b) as an important feature which could lead to a different approach to that under Part 4.
11. Some submitters also emphasised the industry-specific differences between Part 4 and Part 6 which may drive different regulatory settings. For example, Spark and the local fibre companies (LFCs)⁴ noted the following in their submissions:

Spark

The competitive landscape in telecommunications is much more dynamic than that of the Part 4 sectors, and the Act recognises this by directing the Commission to have regard to, and to promote, actual competition. In contrast, Part 4 asked the Commission to promote outcomes that were consistent with competition. The decisions the Commission makes in implementing the Part 6 regulatory framework will affect real competition as opposed to hypothetical competition, and in our view this must be at the centre of the Commission's decision-making process throughout the Part 6 process.

So, while the Commission has experience in applying utility regulation to other sectors under Part 4 of the Commerce Act 1986, we believe there are important differences in both the legislative framework and the market dynamics that the Commission will need to have regard to in designing the regulatory regime under Part 6.⁵

LFCs

Part 6 of the Act introduces a form of utility-style regulation that is currently applied to energy networks and airports under Part 4, all of which have been determined to be natural monopolies which face little or no competition. Those competitive environments are far removed from what the Discussion Document describes as "the unique competitive landscape of telecommunications". ...

The Commission's starting point should accordingly be that the broadband access market is already workably competitive, and its process should be to determine what parts of the Part 4 framework can relevantly be applied in that context, rather than using previous decisions it has made under Part 4 as its starting point.⁶

12. This view was also apparent from submissions on specific topics where a number of submitters advocated for a different approach to that adopted for the Part 4 IMs. For

⁴ When referring to LFCs we mean Enable Networks Limited, Northpower Fibre Limited, Northpower LFC2 Limited and UltraFast Fibre Limited. We note that Chorus is also considered an LFC. If referring to all of the regulated fibre service providers including Chorus we will use the term suppliers or Chorus and the other LFCs.

⁵ Spark "Submission on new regulatory framework for fibre" (21 December 2018) page 1.

⁶ Enable, Ultrafast Fibre and Northpower Fibre "Submission on new regulatory framework for fibre" (21 December 2018), page 3.

example, the LFC's, Christchurch City Holdings and Northpower all submitted that our decisions should recognise that Chorus and the other LFCs faced different investment risks and that a sector-specific asset beta was inappropriate.⁷

13. Some submitters also emphasised that we need to be clear about the relevance of Part 4 when we make our Part 6 decisions and the extent to which we plan to rely (or not rely) on Part 4 regulatory decisions.
14. We disagree with the suggestion that our starting point should be that any FFLAS markets are workably competitive. However, we agree that s 166(2)(b) is a feature which could lead to a different approach to that under Part 4 and that it may not always be appropriate to use our Part 4 IMs decisions as a starting point for our Part 6 IM decisions. The relevance of Part 4 precedent to the different fibre IMs is something we need to assess on a case by case basis.
15. Our view is that we should maintain the approach to the relevance of Part 4 precedent when setting the Part 6 IMs that we set out in our proposed approach paper. This recognises that although we may consider our approaches under Part 4 when making our IMs decisions, these decisions cannot in any way substitute for our decisions under Part 6 and our Part 6 IMs decisions must stand on their own merits taking account of the actual competitive landscape.
16. We note submitters views that it would be beneficial if we are clear where we are adopting any of our approaches from the Part 4 IMs. Where the approach taken in a proposed IM set under Part 6 is similar or identical to the approach taken in an IM set under Part 4, we will note this so that stakeholders are aware that this is the case. We may also highlight any differences to the Part 4 IMs where we consider this will assist stakeholders.

Interpretation of s 162

17. In our proposed approach paper, we noted that the High Court's discussion of the purpose and operation of s 52A of the Commerce Act in the Part 4 IM merits appeal provided valuable guidance to the approach to s 162.⁸ This is because s 162 is adapted from s 52A and they are both directed at promoting the same outcomes (although in different markets).
18. Consistent with the High Court's approach to s 52A(1)(a)-(d) of the Commerce Act, we see Parliament as having identified the outcomes in s 162(a)-(d) of the amended Act as being integral to promoting the long-term benefit of FFLAS end-users, and reflecting key areas of supplier performance that characterise workable competition.

⁷ Enable, Ultrafast Fibre and Northpower Fibre "Submission on new regulatory framework for fibre" (21 December 2018), page 4, Northpower Fibre "New Regulatory Framework for Fibre" (21 December 2018), page 3, Christchurch City Holdings Limited "Submission on new regulatory framework for fibre" (21 December 2018), paragraph 21.

⁸ Wellington International Airport Ltd v Commerce Commission [2013] NZHC 3289.

19. As the High Court put it, the overall purpose—of promoting the long-term benefit of end-users - is achieved by the promotion of outcomes in the market that are consistent with outcomes in workably competitive markets, such that the paragraph (a)-(d) outcomes are achieved.
20. None of the outcomes are paramount and they are not separate and distinct from each other, or from s 162 as a whole. Rather, they are incentives and constraints on suppliers that flow from our promotion of outcomes consistent with those produced in workably competitive markets. In seeking to promote the long-term benefit of end-users of FFLAS we will exercise our judgement to balance these outcomes.
21. Submitters did not raise any concerns with our proposed approach to s 162 and our view is that we should maintain the approach to s 162 that we set out in our proposed approach paper which is based on the High Court guidance in the Part 4 IM merits appeal.

Interpretation of end-user as used in Part 6

22. The term end-user is used in both of the purposes described in s 166(2).
23. Section 5 of the Act defines ‘end-user’ in relation to a telecommunications service as “a person who is the ultimate recipient of that service or of another service whose provision is dependent on that service.”
24. Section 162 requires us to focus on the long-term benefit of FFLAS end-users, while s 166(2)(b) requires us to consider the long-term benefit of telecommunications services' end-users more generally. Our interpretation of the terms “end-user” is therefore relevant to both of these provisions
25. In our proposed approach paper, we explained that we considered that “end-users in markets for fibre fixed line access services” as referred to in s 162 includes any consumers of telecommunications services that used FFLAS as an input and excludes any intermediaries such as RSPs who purchase FFLAS from suppliers but are not the ultimate recipient.
26. We also noted that this term would also often cover consumers of retail broadband provided using fixed wireless access (**FWA**), because direct fibre access services (**DFAS**) which are a FFLAS are frequently used as an input for FWA.
27. With the exception of the LFCs, submitters agreed or did not object to our approach to the interpretation of end-user in s 162 which captures all consumers of a telecommunications service where FFLAS is used as an input.
28. In its submissions, Chorus supported our interpretation:

We also agree with the Commission’s approach to the interpretation of “end-user”. In particular:

The use of “end-user” is a deliberate change from section 52A. It requires the Commission to focus on the long-term benefit of the ultimate recipient of the service or another service whose provision is dependent on the service, rather than intermediate acquirers like RSPs; and

The second part of the definition of an end-user is most relevant given the restrictions on retail supply of telecommunications services by Chorus and other LFCs. The end-users of FFLAS will include consumers of retail fibre fixed line broadband services and, in some cases, consumers of Fixed Wireless Access (FWA) services where a FFLAS, such as Direct Fibre Access Services (DFAS), is an input into the FWA voice or broadband service.⁹

29. In contrast, LFCs submitted:

We do not agree, as the Commission suggests at 5.28, that customers taking a fixed wireless access (FWA) service should be included in the s 162 definition of “end-users in markets for fibre fixed line access services”, simply because FWA providers are using fibre backhaul provided by a regulated fibre access provider. The term “end-users in markets for fibre fixed line access services” should be limited to end-users of fibre services, not end-users of other telecommunications services whose service provider uses fibre somewhere in its network.

The addition of FWA end-users whose service provider is obtaining fibre backhaul from a regulated FFLAS provider rather than an unregulated competitive supplier of backhaul services is also impractical, as the Commission has no easy way of distinguishing the first category of end-user from the second.

There is no policy reason to include FWA end-users as FFLAS end-users. Section 166 provides the mechanism for the Commission to consider the benefits flowing to that group of end-users if it considers it relevant to do so.¹⁰

30. The LFCs’ position was challenged by a number of submitters in their cross-submissions with 2degrees stating that:

Implementation of Part 6 is about FFLAS, including FFLAS as a key input to other services, as well as the impact of decisions on competition for all telecommunications end-users.¹¹

Given this FFLAS definition, it follows that end-users of FFLAS include not just our UFB consumers but also FWA and mobile users, which rely on FFLAS services such as DFAS and ICABS for these networks. For the avoidance of doubt, we consider that the reference to “markets for fibre fixed line access services”, in the section 162 purpose, refers to any telecommunications market services provided to end-users where FFLAS is used as an input.¹²

31. Similarly, Vocus stated:

The section 162 purpose refers to all end-user services where FFLAS is an input: The reference to “markets for fibre fixed line access services”, in the section 162 purpose, refers to any telecommunications market services provided to end-users where FFLAS is used as an input.¹³

There is nothing in the section 162 purpose that limits its scope from any end-user telecommunications services or market that uses FFLAS as an input. Section 166(2)(b) is broader still referring to all relevant “telecommunications services” i.e. all telecommunications services where

⁹ Chorus “Submission on new regulatory framework for fibre” (21 December 2018), paragraph 85

¹⁰ Enable, Ultrafast Fibre and Northpower Fibre “Submission on new regulatory framework for fibre” (21 December 2018), page 10.

¹¹ 2degrees “Cross-submission on new regulatory framework for fibre” (5 February 2019), page 2.

¹² 2degrees “Cross-submission on new regulatory framework for fibre” (5 February 2019), page 14.

¹³ Vocus “Cross-submission on new regulatory framework for fibre” (1 February 2019), paragraph 4.

regulation of FFLAS can impact on the level of competition. We agree with Chorus that “The end-users of FFLAS will include consumers of retail fibre fixed line broadband services and, in some cases, consumers of Fixed Wireless Access (FWA) services where a FFLAS, such as Direct Fibre Access Services (DFAS), is an input into the FWA voice or broadband service”.¹⁴

32. While Spark did not expressly address this point, its submission on the interpretation of s 162 and s 166(2)(b) could be taken as preferring the LFCs’ position:

We further consider that a plausible interpretation of section 162 is that it is focussed on markets for fixed fibre line services only and that section 166(2)(b) provides the route to consider the effect of fibre regulation on downstream markets that rely on fibre inputs. While we would support an interpretation of section 166 which recognises the interdependence of fibre markets and downstream services that rely on fibre as fibre services, we consider that such an interpretation is not clear cut and 166(2)(b) makes clear the scope to consider the effect on competition in downstream and adjacent communications markets.

33. In our view, the LFCs’ position would mean reading down the plain meaning of “end-user” as defined in s 5 in respect of FFLAS end-users. We agree with 2degrees, Chorus and Vocus that it is not appropriate to read down the meaning of ‘end-user’ under the Act in the way proposed by the LFCs.
34. We consider instead that we should give full effect to the definition of “end-user” to capture consumers who purchase a telecommunications service that uses regulated FFLAS as an input.
35. We note that the ultimate consumer of a service that uses FFLAS as an input can be seen as an indirect participant in a market for FFLAS since the retailer will typically purchase this service on their behalf.
36. While in many cases, the precise answer will not lead to a different approach being adopted, since s 166(2)(b) permits the Commission to consider the interests of all end-users of telecommunications services, this will not always be the case. For example, under the LFCs’ interpretation of “end-user”, if an FWA end-user was affected by the regulation of fibre, but not through the promotion of competition, there could be an argument that we could not take this impact into account on the basis that it would be outside the scope of both s 162 and s 166(2)(b).
37. Our view is that we should maintain our approach to the interpretation of “end-users in markets for fixed fibre local access services” that we set out in our proposed approach paper.
38. The definition of end-user also gives rise to the question as to when a retail service is “dependent” on a FFLAS. This is because, the definition of end-user refers to “the ultimate recipient of ... another service whose provision is dependent on that service”.

¹⁴ Vocus “Cross-submission on new regulatory framework for fibre” (5 February 2019), paragraph 55.

39. Our view on this issue is that there has to be a limit on the meaning of "dependent" and that this term would therefore not capture services that only utilise a FFLAS in a remote sense. For example, we do not think it would capture services such as electricity metering services as described below. The telecommunication service is the conveyance of data from the meter to the meter service provider. The meter service provider is the ultimate recipient of the telecommunication conveyance service and therefore the end-user under the Act. Any services provided by the metering service provider using the metering data can, in one sense, be said to be dependent on the conveyance, but that dependency is too remote for the purposes of determining an end-user. The recipients of services provided by the metering services provider are not end-users of the telecommunications service.
40. Further, where a non-FFLAS alternative is available, there is an argument that retail services that use FFLAS as an input are not "dependent" on the FFLAS, because the retail services could be supplied using the non-FFLAS alternative. However, our view is that the term "end-user" must include all ultimate consumers of a FFLAS. If a FFLAS is being used as an input into another service then it is being consumed by users of that other service, irrespective of whether or not a non-FFLAS input is available. Our view is therefore that retail services will be "dependent" on a FFLAS whenever a FFLAS is used as an input to supply the retail services, even where a non-FFLAS alternative is available.
41. The reasoning that underpins our approach to end-users in relation to FFLAS also applies equally to our approach to interpreting end-users in telecommunication markets more generally.

Interpretation of s 166(2)(b)

42. In our proposed approach paper, we explained that s 166(2)(b) requires us to consider the interests of end-users in telecommunications markets generally through the promotion of competition, and not just consider the interests of FFLAS end-users.
43. We also noted that in assessing whether the promotion of workable competition was relevant we would have to consider whether a decision had the potential to affect the level of competition in telecommunications markets and that it was particularly important that our decisions did not unreasonably hinder or impede the supply of telecommunications services that use new and more efficient technologies.
44. Submitters agreed with our approach, with all submitters recognising that telecommunications markets were dynamic with the potential for our decisions to impact actual competition, including in respect of certain aspects of FFLAS.
45. However, submitters differed in where we should focus when applying s 166(2)(b).
46. In particular, Chorus and Trustpower emphasised the importance of retail competition:

Chorus

We encourage the Commission to consider that the primary reason for Chorus' existence as a structurally separated, wholesale only service provider is to encourage workable competition in retail markets for fixed line broadband services. Accordingly, the Commission should not take any decisions that would prioritise competition in other markets over that objective, e.g. decisions that would reduce the ability of consumers to easily switch RSPs or disadvantage RSPs who do not own mobile networks.¹⁵

The retail market for telecommunication services is the most obvious and important market for the Commission to consider. Competition in that market is already present and is the primary arena of competition to drive long-term benefits for end-users, reflecting the strategic policy choices made by the Government to introduce a structurally separated, wholesale only provider of copper and fibre network services. Part 6, together with the provisions of Part 4AA, supports this choice by promoting retail competition through a regulated open-access fibre network across which large and small RSPs can compete on equal terms. Accordingly, in considering section 166(2)(b), the Commission should give significant weight to the benefits of retail competition for the long-term benefit of end-users of all telecommunications services.¹⁶

Submitters were aligned in acknowledging] that competition is principally relevant at the retail level. Trustpower, the 4th largest retail service provider (RSP), has suggested the Commission recognises and increases focus on competition at the retail level, as opposed to the network level.¹⁷

47. Trustpower also focussed on the need for a 'level playing field' between RSPs in the downstream markets for services which use FFLAS as an input and the promotion of retail competition:

In relation to Part 6, we have suggested the Commission:

- recognises and increases focus on competition at the retail level, as opposed to being at the network level; and
- develops input methodologies (IMs) which foster competition at the retail level ...¹⁸

Our view is that it is in the long-term interests of end-users to have vibrant competition in the retail sector including competition from genuine, credible market challengers. This requires decision-making to safeguard the competitive process and maintain the level playing field on which Part 6 is based.¹⁹

However, if there is a conflict between s 162 and s 166(2)(b) our view is that the overall purposes of the Act will be best served if the promotion of retail competition is preferred. This appears to be Parliament's intent.²⁰

¹⁵ Chorus "Submission on new regulatory framework for fibre" (21 December 2018), paragraph 24.

¹⁶ Chorus "Submission on new regulatory framework for fibre" (21 December 2018), paragraph 92.

¹⁷ Chorus "Cross-submission on new regulatory framework for fibre" (5 February 2019), paragraph 5.7.

¹⁸ Trustpower "Submission on new regulatory framework for fibre" (21 December 2018), pages 2 -3.

¹⁹ Trustpower "Submission on new regulatory framework for fibre" (21 December 2018), paragraphs 3.1.3 and 3.1.4, Appendix C.

²⁰ Trustpower "Submission on new regulatory framework for fibre" (21 December 2018), paragraphs 4.1.10, Appendix C.

The promotion of infrastructure-based competition is not an objective in itself under the Act. What is important in terms of section 162 is the interests of end-users in markets for FFLAS. While we recognise that infrastructure-based competition can benefit end-users in certain circumstances, the Commission's focus should be on the FFLAS retail market as a whole and that market includes services-based competitors acquiring layer 2 access from Chorus and LFCs, within the framework of Part 6, as well as infrastructure-based competitors.²¹

48. In contrast, a number of the RSPs such as 2degrees, Spark and Vodafone emphasised the importance of promoting competition with Chorus and the other LFCs at the network level.

2degrees

Chorus is asking the Commission to focus only on retail and UFB competition. A narrow focus on retail UFB competition may be in Chorus' best interests. Implementation of Part 6 is about FFLAS, including FFLAS as a key input to other services, as well as the impact of decisions on competition for all telecommunications end-users. Other services that Chorus does not wish to focus on, because they are competitive or will compete against itself, cannot be conveniently relegated. This includes the unbundling of fibre (whose provision has been mandated from the time of the UFB deeds), and competition in mobile, that has been the subject of Schedule 3 (for example, MTAS). ... While choice is good and we support it, as long-recognised by the Commission in its considerations, competition, particularly infrastructure-based competition, better provides the incentives to deliver competitive price, innovation and investment for the benefit of consumers.²²

Whilst it may be in the interests of Chorus to focus on retail UFB, the Commission must not prioritise the retail market for UFB over other telecommunications markets (including unbundled fibre, FWA and mobile).²³

Spark

That is, while Part 6 (like Part 4) regulation is predicated on the regulated service being a natural monopoly, section 166(2) necessarily involves consideration of whether the regulated supplier in fact competes (or could compete in the future) at the wholesale level to some degree. Any increase in competition at the wholesale level will benefit end-users of FFLAS-services and of non-FFLAS services.²⁴

We see no evidence that the Act directs the Commission to consider specific markets, or to ignore others. Rather, we read the plain words of the Act as directing the Commission to consider the promotion of competition in any relevant telecommunications market that is to the long-term benefit of end-users.²⁵

We read the Act as directing the Commission to consider the promotion of actual competition at all levels of the value chain, on the basis that competition at each level of the value chain can be

²¹ Trustpower "Cross-submission on new regulatory framework for fibre" (5 February 2019), page 2.

²² 2degrees "Cross-submission on new regulatory framework for fibre" (5 February 2019), page 2.

²³ 2degrees "Cross-submission on new regulatory framework for fibre" (5 February 2019), page 2.

²⁴ Spark "Submission on new regulatory framework for fibre" (21 December 2018), paragraph 21.c.

²⁵ Spark "Cross-submission on new regulatory framework for fibre" (5 February 2019), pages 1 - 2.

expected to result in long-term benefits for end-users, even where they do not participate directly in the relevant intermediate markets.²⁶

The Act does not specify the form of competition that it must promote - the Commission must be open minded in its consideration of outcomes that are in end-user interests. In this case, we also note that: ... Infrastructure competition deeper in the network is generally seen as supporting investment and innovation.²⁷

Vodafone

Our views remain unchanged after reviewing the submissions from other parties. We continue to believe that the key to making this regime work is to ensure competition thrives wherever possible, and that Chorus and the LFCs are exposed fully to competitive pressures.

We are concerned by submissions that intend to limit competition. For example, Chorus have argued that retail competition must be enhanced above all other markets, a thinly veiled ploy to take attention away from competition over fixed wireless and unbundling. This approach would deny end-users innovative and diverse services to better meet their needs.²⁸

49. Our view is that we should maintain our approach to the interpretation of s 166(2)(b) that we set out in our proposed approach paper.
50. We agree with Spark that s 162 is premised on FFLAS markets having natural monopoly characteristics. That is, FFLAS is subject to Part 6 due to the risk of there being little or no prospect of competition. Accordingly, s 162 directs us to promote outcomes consistent with those seen in workably competitive markets with the consequences in paragraphs (a) to (d), in order to promote the long-term benefit of FFLAS end-users. That is, read in isolation, s 162 imagines that the role for competition is between RSPs at the retail level rather than between Chorus, LFCs and any other participants at the network level.
51. However, s 166(2)(b) adds a further requirement. We must also consider whether there is potential to promote actual workable competition (rather than the outcomes of workable competition) for the long-term benefit of all telecommunications end-users. This recognises that, for example, there may be some situations where fibre providers in fact compete with each other and/or with other technologies (or could compete in the future) at the wholesale level. We, therefore, also agree with Spark that under s 166(2)(b) we must consider the promotion of actual competition at all levels of the value chain and not only retail competition.
52. When we apply s 166(2)(b) we do not consider that we should focus on promoting a particular form of competition., We do not consider that there is any presumed hierarchy between the different types of competition that we could promote, or that we should limit ourselves at the outset to the consideration of particular markets.

²⁶ Spark "Cross-submission on new regulatory framework for fibre" (5 February 2019), paragraph 19.

²⁷ Spark "Submission on new regulatory framework for fibre" (21 December 2018), paragraph 22.

²⁸ Vodafone "Cross-submission on new regulatory framework for fibre" (5 February 2019), page 2.

Rather we agree that we should consider the effect of our decisions on the promotion of competition in any markets where competition exists or has the potential to emerge.

53. Accordingly, where we consider that the promotion of competition may be relevant, we must consider whether it would be in the long-term interests of both FFLAS end-users and non-FFLAS end-users to promote competition, including various forms of competition between RSPs, between the individual regulated FFLAS providers, between fibre and other technologies, and between the regulated FFLAS providers and RSPs. Our decision will further generally be informed by whichever option provides the greatest benefit to end-users (to the extent this can be assessed) when taken together with our obligation to give effect to the purpose of s 162 as mandated under s 166(2)(a).
54. Submitters generally also sought more guidance on the criteria we intended to apply when deciding whether the promotion of competition was relevant with Chorus stating “we strongly encourage the Commission to define clearly the relevant market(s) in which it is seeking to promote competition and why it considers that there is a real prospect of workable competition in those markets, and consider how different forms of competition in different markets will be affected by its decision.”²⁹
55. Submitters’ suggestions about how to approach this question were generally consistent. For example, Chorus and Vodafone made the following suggestions:

Chorus

... it will arguably be relevant to consider the section 166(2)(b) objective where:

- There is a telecommunications market or markets in which competition is present or likely to emerge; and
- The determination to be made by the Commission may affect competition or the likely emergence of competition in that telecommunications market.³⁰

Vodafone

The promotion of workable competition is relevant in all cases where actual competition exists or there is potential for competition to exist.³¹

56. Some RSPs were also of the view that s 166(2)(b) was particularly important. For example, Spark submitted that it would play a role in most of our key parameter decisions, eg, asset valuation, cost allocation, pricing methodologies/price relativities between different services and line of business restrictions.³²

²⁹ Chorus “Submission on new regulatory framework for fibre” (21 December 2018), paragraph 26.

³⁰ Chorus “Submission on new regulatory framework for fibre” (21 December 2018), paragraph 90.

³¹ Vodafone “Submission on new regulatory framework for fibre” (21 December 2018), paragraph 3.

³² Spark “Submission on new regulatory framework for fibre” (21 December 2018), paragraph 39.

57. Spark, Vodafone and Vocus also suggested we adopt a further economic principle to provide more certainty on how this objective would be approached.
58. We have asked our expert advisory panel to provide their views on a framework for deciding when it would be relevant to promote competition under s 166(2)(b). The question whether we should adopt an additional economic principle relating to the promotion of competition is discussed further in the Key Economic Principles chapter.³³
59. We will also be clear in our IMs decisions where we consider the promotion of competition to be relevant under s 166(2)(b).

Interaction between s 166(2)(a) and s 166(2)(b)

60. In our proposed approach paper, we explained that we considered that we must make decisions that best give effect to both of the purposes in s 166 and that this required us to exercise an evaluative judgement.
61. We also explained that as both s 166(2)(a) and s 166(2)(b) were concerned with outcomes produced by workable competition their objectives were complementary rather than competing, and that there was no hierarchy between the two outcomes.
62. Submitters largely agreed with our approach, with all of them agreeing that:
 - 62.1 s 166(2)(a) and s 166(2)(b) are both mandatory requirements when we make our decisions;
 - 62.2 we will need to exercise our judgement on how best to give effect to the objectives under the two sections; and
 - 62.3 there is generally a complementary relationship between the two objectives.
63. However, submitters had differing views on the position in the event of a conflict between the two objectives, with Chorus and the other LFCs submitting that s 166(2)(a) (ie, s 162) has primacy over s 166(2)(b) in the case of a conflict between the promotion of the objectives under each provision.
64. Chorus suggested that in the event of a conflict, “section 162 has primacy as the overarching purpose of Part 6 and the new regulatory framework”, while “section 166(2)(b) is only a mandatory consideration, where relevant”³⁴ and “section 162, as the purpose statement for Part 6, is to be given primacy over section 166(2)(b), which is simply a mandatory consideration where the Commission or Minister considers it relevant”.³⁵
65. Enable and Ultrafast supported Chorus’ position in their cross-submission:

³³ Members of our expert advisory panel include Martin Cave, Jeffrey Church and Ingo Vogelsang.

³⁴ Chorus “Submission on new regulatory framework for fibre” (21 December 2018), paragraphs 25 and 94.

³⁵ Chorus “Cross-submission on new regulatory framework for fibre” (5 February 2019), paragraph 7.1.

We agree with Chorus that in the case of a conflict between s162 and s166, s162 must prevail, as it governs all of Part 6, including s166. ...

The purpose tests in s162 and s166 are not alternatives. The Commission is not required to choose between them. Any determination of the Commission that promotes competition in other markets, but does not promote the long-term benefit of end-users in FFLAS markets, would be contrary to the Part 6 purpose statement.³⁶

66. Most submitters agreed with the position that we adopted in our proposed approach paper that there is no hierarchy between the provisions and that we must seek to promote both purposes.

67. According to 2degrees, Spark and Vocus respectively:

2degrees

We agree with Vocus that just as the Commission needs to weigh up the subparts (a) to (d) to determine how to best achieve the section 162 purpose, the Commission will need to weigh up the section 162 (section 166(2)(a)) focus on replicating competitive market outcomes and the section 166(2)(b) focus on promoting workable competition to best promote the long-term benefit of end-users. That is, section 166(1) does not have primacy over section 166(2) where 166(2) is relevant. Both must be considered. There is nothing particularly new or unique about these requirements. The Commission has to make decisions where there are potential trade-offs in relation to many of its responsibilities.³⁷

Spark

Chorus further suggests that the Commission adopt a limited application of s166 and find that s162 outcomes should have precedence or primacy over other considerations. We disagree with the view that the legislative history (spanning successive governments) requires subservience of section 166 to section 162. Rather, we see the sections as equally important and complementary. This is clear from the words used in section 166.³⁸

Vocus

Vocus does not agree with Chorus' claim that "if a balance between the objectives is required, the section 162 purpose statement should be given primacy [over section 166]". We would welcome Chorus being upfront about what kind of trade-offs it is concerned the Commerce Commission might make.³⁹

68. Vocus went further, explaining that our focus should be on achieving the greatest long-term benefits for end-users:

The common purpose of section 162 and 166 is that the Commerce Commission should aim to maximise "the long-term benefit of end-users".

³⁶ Enable and Ultrafast Fibre "Cross-submission on new regulatory framework for fibre" (5 February 2019), paragraphs 2.1 and 2.7.

³⁷ 2degrees "Cross-submission on new regulatory framework for fibre" (5 February 2019), page 12.

³⁸ Spark "Submission on new regulatory framework for fibre" (21 December 2018), paragraph 24.

³⁹ Vocus "Cross-submission on new regulatory framework for fibre" (5 February 2019), paragraph 49.

In simple terms, if the long-term benefits to end-users from “promoting outcomes that are consistent with outcomes produced in workably competitive markets” exceed [are less than] the benefits from “promotion of workable competition in telecommunications markets” then section 162 [166(2)(b)] should be given precedence.

Our submission noted, in general terms, that the benefits of promoting actual competition can be expected to be greater than the benefits from replicating workably competitive market outcomes.

The reference to “end-users in markets for fibre fixed line access services” under section 162 and the broader reference to “end-users of telecommunications services” under section 166(2)(b) does not change this. The Commerce Commission is required to maximise the long-term benefit of end-users in markets for fibre fixed line access services PLUS the long-term benefit of end-users of telecommunications services.⁴⁰

69. Vocus also questioned our assumption that in practice the s 166 objectives would generally be met for most of our decisions if they promoted the s 162 outcomes:

We question the Commission’s expectation that “in practice the s 166 objectives will generally be met for most of our decisions if they promote the s 162 outcomes”. By way of analogy, the statement is equivalent to suggesting it would be fine to replace the Mona Lisa in the Louvre with an imitation or reproduction. Promoting outcomes that replicate competition is distinct from promoting actual competition, and should only be applied where competition is not possible. Replicating competitive market outcomes can be expected to be inferior to actual competitive market outcomes.⁴¹

70. 2degrees, like Vocus, also noted that “promoting competition, where competition is possible, is expected to deliver better benefits to consumers than trying to replicate the outcomes of competition (the second-best solution)”.⁴²

71. Our view is that we should maintain our approach to how s 166(2)(a) and s 166(2)(b) interact that we set out in our proposed approach paper.

72. We agree with 2degrees, Spark and Vocus that there is no basis to give s 166(2)(a) primacy over s 166(2)(b) if we are required to make trade-offs between the two objectives. We consider that this is clear from the language of s 166(2) which simply says that we must make the decision that best gives effect to both purposes.

73. We remain of the view that we must make the decisions which best promote the long-term benefit of all relevant telecommunications’ end-users. This includes all of the end-users described in paragraphs 22 to 41, by promoting the outcomes of workable competition for the long-term benefit of FFLAS end-users through incentive regulation, and where relevant promoting actual competition for the long-term benefit of end-users of telecommunications services generally.

⁴⁰ Vocus “Cross-submission on new regulatory framework for fibre” (5 February 2019), paragraphs 50 - 53.

⁴¹ Vocus “Submission on new regulatory framework for fibre” (21 December 2018), paragraph 53.

⁴² 2degrees “Submission on new regulatory framework for fibre” (21 December 2018), page 9.

Our approach to the application of s 174

74. In our proposed approach paper, we explained that a focus when setting the IMs is to increase certainty by maintaining regulations that are stable, provide suppliers with incentives to invest in long-lived infrastructure and deliver long-term benefits to end-users consistent with the IMs purpose statement in s 174.
75. We noted that certainty is not the predominant consideration given our obligation to make the decisions that we consider best give, or are likely to best give, effect to the objectives in s 166(2). We also noted that the Part 6 regime does not aspire to absolute certainty and that increased certainty, timeliness and incentives to invest would develop over time.
76. We further stated that we considered that s 174 would apply in substantially the same way that s 52R of Part 4 applies because the provisions are identical in almost all respects and that the court decisions on the application of s 52R under Part 4 would likely be directly applicable to s 174.
77. Submitters all agreed with our approach to the application of s 174, but 2degrees and Spark emphasised the importance of regulatory certainty to all market participants:

2degrees

As a party that is making substantial investment commitments, 2degrees considers regulatory certainty to be a critical element of the regulatory regime.

It must be recognised that regulatory certainty is important for access seekers and end-users, and not just for access providers. Operators such as 2degrees are making substantial irreversible investments and value having confidence that they can reasonably expect to earn a normal return on their investment.⁴³

Spark

However, in terms of s174 and the IMs that fall out of this, there will likely need to be more emphasis on access seeker and end user requirements than was necessary under Part 4 considerations. Access seekers and end-users (or verticals) are both making significant long-term irreversible architecture and investment decisions that will be promoted by certainty on the rules that apply to FFLAS providers.

78. We agree with 2degrees and Spark that certainty is important to all market participants and not just the regulated suppliers, noting that s 174 refers to “regulated fibre service providers, access seekers, and end-users”.
79. Our view is that we should maintain our approach to the application of s 174 that we set out in our proposed approach paper while recognising the importance of certainty to all market participants. We therefore propose to approach the

⁴³ 2degrees “Submission on new regulatory framework for fibre” (21 December 2018), page 9.

requirement for certainty in s 174 in substantially the same way as s 52R of Part 4 applies.

Our proposal to adopt a building blocks model approach

80. In our proposed approach paper, we noted that the framing of the legislation, together with the background material (including the Minister's review of the telecommunications regulatory framework conducted under the now-repealed s 157AA), demonstrated that Parliament contemplated that we would adopt a BBM approach similar to that under Part 4 when setting the regulation under Part 6.⁴⁴
81. We also noted that while some changes from the Part 4 approach would be required, given the differences in the services and markets concerned (including the supply and demand characteristics), our view was that a BBM approach with a rolled-over regulated asset base (**RAB**), similar to that adopted for regulation under Part 4, would best give or be likely to best give effect to the objectives set out in s 166.
82. All submitters supported a BBM approach to Part 6 regulation with a number noting that there would need to be changes to some aspects of the BBM approach developed under Part 4. For example, Spark submitted:
- We agree that, in practice, Part 6 regulation is likely to be a building block model approach in its broadest sense – e.g. setting prices or revenues with the objective of efficient prices and to provide incentive regulation – and it can be informed by general approaches under Part 4. However, BBM implementations vary depending on the statutory and market context. In the case of Part 6:
- The Commission is also required to make decisions that promote competition in telecommunications markets; and
- The approach to incentives and risk allocation must reflect the practical context within which regulation is being applied and specific and specific Part 6 requirements, e.g. to apply a revenue cap and wash-up mechanism.⁴⁵
83. We consider that the BBM approach is widely used internationally, well understood in New Zealand, and sufficiently flexible to be modified to address any particular implementation issues that arise.
84. Our view is that we should maintain our proposed approach to adopt a BBM approach to the regulation under Part 6 as set out in our proposed approach paper which recognises the need to take account of differences in the services and markets in Part 6 compared to Part 4.
85. We consider that specific submissions on the detail of the BBM approach should be addressed on a case by case basis as we develop the fibre IMs.

⁴⁴ In this paper, we refer to the Minister of Broadcasting, Communications and Digital Media as the Minister.

⁴⁵ Spark "Submission on new regulatory framework for fibre" (21 December 2018), page 11.

Relevance of the 2011 Government Policy Statement on the incentives for businesses to invest in ultra-fast broadband infrastructure

86. LFCs and Christchurch City Holdings Limited raised a further regulatory framework interpretation point relating to the application of s 19A in their submissions which was not considered in our proposed approach paper.
87. They submitted that we must give particular weight to the GPS gazetted in October 2011.⁴⁶

88. The LFCs submitted that:

The Commission in making determinations under Part 6 is required to have regard to “any economic policies of the Government that are transmitted ... to the Commission by the Minister”. As a result, the Commission must have regard to the Government Policy Statement that “the Government’s economic policy objective is that businesses have incentives to innovate and invest in new or upgraded ultra-fast broadband infrastructure for the long-term benefit of end-users.”

This requires that the Commission, in making decisions under Part 6, gives primacy to “the incentives to innovate that exist for, and the risks faced by, investors in new telecommunications services that involve significant capital investment and that offer capabilities not available to established services”.⁴⁷

89. Christchurch City Holdings Limited also submitted:

We note that section 21 of the Amendment Act requires that the Commission in the exercise of its powers under the new Part 6 must have regard to any economic policy of the Government that are transmitted in writing to the Commission by the Minister. The relevant policy statement is the Statement to the Commerce Commission Concerning Incentives for Businesses to Invest in Ultrafast Broadband Infrastructure dated 13 October 2011: “the Government’s economic policy objective is that businesses have incentives to innovate and invest in new or upgraded ultra-fast broadband infrastructure for the long- term benefit of end-users.

This requires that the Commission ensure that CCHL has the opportunity to earn profits that compensate for its cost of capital over time (taking into account its exposure to risk) – ie, to earn a ‘normal return’.⁴⁸

90. The core provisions of the policy statement are:

Government Policy Statement Incentives for businesses to invest in ultra-fast broadband infrastructure

This statement sets out the Government’s economic policy on ultra-fast broadband infrastructure investment in the context of businesses (including Local Fibre Companies) that are or may be regulated under Part 2 of the Telecommunications Act 2001.

⁴⁶ The policy statement is available at [https://www.dia.govt.nz//Pubforms.nsf/NZGZT/NZGazette155Oct11.pdf/\\$file/NZGazette155Oct11.pdf#page=96](https://www.dia.govt.nz//Pubforms.nsf/NZGZT/NZGazette155Oct11.pdf/$file/NZGazette155Oct11.pdf#page=96)

⁴⁷ Enable, Ultrafast Fibre and Northpower Fibre “Submission on new regulatory framework for fibre” (21 December 2018), page 3.

⁴⁸ Christchurch City Holding Ltd “Submission on new regulatory framework for fibre” (21 December 2018), paragraphs 24 and 25.

The provision of efficient ultra-fast broadband infrastructure requires that businesses have the confidence and incentives to make investments in new or upgraded ultra-fast broadband infrastructure.

Particular issues arise in the way services are or may be regulated under Part 2 of the Telecommunications Act 2001. The way in which the prices, revenues and/or quality of goods and services produced by these businesses is regulated or controlled can affect their incentives to invest in new or upgraded ultra-fast broadband infrastructure.

Economic Policy Objectives

The Government's economic policy objective is that businesses have incentives to innovate and invest in new or upgraded ultra-fast broadband infrastructure for the long term benefit of end users.

The Government considers that this objective will be achieved by:

1. regulatory stability, transparency and predictability giving businesses the confidence to make long-life investments;
2. regulation taking full account of the long-term risks to consumers of under-investment in new or upgraded ultra-fast broadband infrastructure.
3. ensuring that any price regulation proposed under Schedule 3 of the Telecommunications Act 2001, that may occur in the future, recognises that revenues, over the life of the assets, are sufficient to cover efficient operating costs and a normal return on, and recovery of, capital invested; and
4. ensuring any price regulation proposed under Schedule 3 of the Telecommunications Act 2001 takes into account the start-up risks associated with introduction of new technology.

91. The policy statement sets out the Government's policy intentions in relation to the regulation of businesses under Part 2 and Schedule 3 of the Act at the time of the investment in ultra-fast broadband (**UFB**). The GPS predates and does not address regulation under Part 6. The GPS was issued in 2011 to guide the Commission in the future regulation of fibre, but since then the UFB network has been substantially constructed. Furthermore, Parliament has now established a new regulatory framework for fibre in Part 6, which represents the current Government's response to the concerns addressed in the 2011 GPS and contains its own purpose statements. Within Part 6, s 211 expressly bars the Commission from commencing an investigation under Schedule 3 (and by extension the possibility of regulation under part 2) in relation to FFLAS.
92. In any event, we doubt that the GPS adds anything to the objective in s 162(a), which requires us to promote regulated fibre providers' "incentives to innovate and to invest, including in replacement, upgraded, and new assets".
93. Our view is therefore that the 2011 GPS on the incentives for businesses to invest in UFB infrastructure is not relevant to our decisions under Part 6.

Our power to set fibre IMs that do not directly relate to PQR or ID

94. Under s 176(1), there is a range of 'mandatory' IMs which we must determine by 1 January 2022 for ID and PQR (eg, cost of capital, asset valuation, cost allocation, tax, quality, regulatory processes and rules, capex IM).
95. Some submitters have suggested that we should make IMs to cover a number of 'additional' matters. For example, Vodafone submitted that it was essential we set an IM focussing on unbundling.⁴⁹
96. Vodafone suggested that this IM should cover: how equivalence of inputs obligations apply to price; how non-discrimination and equivalence obligations apply to non-

⁴⁹ Vodafone "Submission on new regulatory framework for fibre" (21 December 2018), paragraph 27.

price terms; and how a review of the unbundling product is triggered after the first regulatory period⁵⁰.

97. More generally, Chorus asserts that the purpose of IMs is to provide certainty across regulatory periods of the rules that apply in setting PQR and ID and that submitters such as Vodafone are asking us to set IMs that are beyond the scope of these matters. Chorus further submitted that a number of elements that are proposed, including equivalence of inputs (**EOI**) and non-discrimination obligations, are outside the purpose and function of IMs as set out in Part 6.
98. We agree with Chorus that one of the main focusses of the IMs is on the rules that apply in setting PQR and ID regulation. Parliament contemplated that the IMs would support PQR and ID regulation under subparts 2 to 6 of Part 6. This is reflected in s 170(2)(c) where the legislation specifically requires the Commission to specify the IMs that apply, s 175(a), which requires each IM to be applied by each regulated provider “in accordance with the relevant section 170 determination”, and s 175(b) which requires the Commission to apply the IMs when determining how regulation applies, including the prices or quality standards applying to FFLAS.
99. We further agree that we can only set IMs for matters that fit within the stated purpose of the IMs. Under s 174 the purpose of IMs is about promoting certainty around rules, requirements and processes applying to regulation or potential regulation under Part 6. Accordingly, before setting any additional IMs we would have to consider whether the rules, requirements and processes that we propose to set will apply to regulation or potential regulation under Part 6. However, we do not consider that our power to set IMs is limited to IMs directly related to or solely for purposes of PQR and ID regulation given the general reference to regulation under Part 6 in s 174 and s 175.
100. Our view is that subject to the mandatory obligations in s 166 (and any other mandatory obligations in the Act), we can determine any IMs where doing so would fit within the purpose in s 174. This would include IMs to support the matters in subparts 7 to 10 of Part 6 and not only IMs directly related to PQR and ID regulation. We further consider that s 178(2) enables us to determine additional IMs at any time after the implementation date of 1 January 2022. (However, we note that at this stage we only intend to determine the ‘mandatory’ IMs.)
101. We do not consider that we should set IMs to cover equivalence of inputs and non-discrimination as these are Part 4AA matters.
102. We further do not see a need to set IMs now for how a review of an unbundling product will be triggered.⁵¹ As we have previously indicated (and are maintaining in our emerging views) we are prioritising the mandatory IMs for PQR and ID. We will consider closer to the time whether any additional IMs might be needed. However,

⁵⁰ Vodafone “Submission on new regulatory framework for fibre” (21 December 2018), paragraph 30.

⁵¹ Currently, an unbundled fibre service has not been declared in regulations. The Governor-General can do so under section 229, upon recommendation by the Minister.

we note that s 209 is quite specific both as to the recurring timeframes for review and the matters to be considered. We are not presently persuaded that IMs are needed or an appropriate mechanism to provide this type of certainty for stakeholders.

Questions for stakeholders

- | | |
|----|--|
| Q1 | What are your views on our interpretation of end-users of FFLAS, and (a) whether or not persons can only be end-users when they are direct recipients of a telecommunications service rather than the recipients of a non-telecommunications service, and (b) when a retail service is “dependent” on a FFLAS? |
| Q2 | Is the 2011 GPS on the incentives for businesses to invest in ultra-fast broadband infrastructure relevant/irrelevant to our decisions under Part 6? |
| Q3 | Can we set IMs to support the matters in subparts 7 to 10 of Part 6, and not only IMs directly related to PQR and ID? |
| Q4 | Are there any other key issues that you consider should form part of our legal framework? |

Chapter 2: Key Economic Principles

103. This chapter focuses on the key economic principles that we have used to help us design the new regulatory regime for fibre networks. This chapter:
- 103.1 describes the role of economic principles in developing the fibre IMs;
 - 103.2 presents our emerging view on the economic principles that should be adopted for the Part 6 regime;
 - 103.3 discusses why the proposed principles are appropriate to apply in the fibre regime; and
 - 103.4 invites stakeholders' comments on the emerging view for economic principles in the Part 6 regime.

Summary of views

104. We intend to adopt the following three key economic principles to guide our design of the fibre IMs:
- 104.1 real financial capital maintenance (**FCM**);
 - 104.2 allocation of risk; and
 - 104.3 asymmetric consequences of over and under-investment.
105. We asked our expert advisory panel to provide an opinion on whether we should adopt an additional principle related to pricing given the requirement of s 166(2)(b) to promote workable competition, where relevant, for the long-term benefit of end-users of telecommunication services.^{52, 53} The panel's report has been published on our website.⁵⁴ We welcome stakeholders' views on the panel's report.
106. Based on the advice received from the advisory panel, stakeholders' submissions in response to our proposed approach paper, and our own analysis, our emerging view on additional economic principles is that:
- 106.1 we will not adopt an additional competition-related principle. We do not consider that any of the competition-related principles proposed by stakeholders will help us make better decisions that give effect to the purpose of Part 6. Further, we do not consider that any of these principles

⁵² Members of our expert advisory panel include Martin Cave and Ingo Vogelsang – see Commerce Commission "New regulatory framework for fibre - Invitation to comment on our proposed approach" (9 November 2018), Attachment D.

⁵³ In this chapter, the words 'price' and 'pricing' refer to the traditional meaning of the word and do not encompass 'revenues' (in contrast to the definition of 'price' within s 164 of the Act).

⁵⁴ Ingo Vogelsang and Martin Cave "Pricing under the new regulatory framework provided by Part 6 of the Telecommunications Act" (21 May 2019).

will increase regulatory certainty for stakeholders by providing more guidance on how we will make our decisions; and

- 106.2 we will not adopt an additional principle related to pricing. We consider that the legal pricing constraints that the Act imposes on Chorus will, at least in the initial regulatory period, sufficiently limit Chorus' ability to set prices in ways that could lead to long-term harm to competition or to detriment to end-users of telecommunication services. This view is consistent with the advisory panel's advice.

Introduction

107. The key economic principles are tools that can help us reach regulatory decisions that promote the purposes described in s 166(2).⁵⁵ For example, a principle that says 'allocate risks to those best placed to manage them' can guide our decisions on risk allocation in a way that creates incentives for suppliers to improve investment efficiency.
108. The economic principles can also help promote regulatory predictability by signalling to stakeholders how we are likely to approach relevant decisions. However, if the principles cease to be consistent with the purposes in s 166(2), or if they are not consistent with one or both of these purposes in a specific situation, we would be transparent with stakeholders that we could not continue to apply these principles.⁵⁶
109. Our choice of key economic principles for the Part 6 regime considered which principles will be most relevant and will provide useful guidance when we make decisions on the fibre IMs.

Context

Interaction with the purpose statements of the Act

110. Any economic principles we adopt are not an outcome we seek to give effect to. Rather, we will only apply the principles if they help us give effect to the purposes in s 166(2). This view is supported by 2degrees who noted in their submission that the economic principles adopted must not override the statutory purpose.⁵⁷

⁵⁵ In submissions, Spark and Trustpower support the view that the principles are a tool, not an answer to the statutory requirements. See Spark "Submission on new regulatory framework for fibre" (21 December 2018), paragraphs 59-61 and Trustpower "Submission on new regulatory framework for fibre" (21 December 2018), paragraphs 7.1.7-7.1.8.

⁵⁶ Some stakeholders, eg Spark, acknowledge in submissions that it cannot be assumed that the application of the economic principles will necessarily be consistent with the statutory purpose. See Spark "Submission on new regulatory framework for fibre" (21 December 2018), paragraph 56.

⁵⁷ 2degrees "Submission in response to the Commerce Commission's proposed approach on the new regulatory framework for fibre" (21 December 2018) page 11.

111. This view is also consistent with the position we expressed in the 2015-2016 Part 4 IM Review that the key economic principles are subordinate to the Act's purpose.⁵⁸

Decision-making framework

112. To form our emerging view on whether we should adopt any economic principles for the Part 6 regime, we considered the extent to which the economic principles will:
- 112.1 help us make and explain our decisions; and
 - 112.2 provide predictability to stakeholders.

How this decision fits into the wider context of the fibre regime

113. Adopting a set of principles to guide decisions we make on the fibre IMs will help us make individual decisions that are consistent with each other and with the requirement to best give effect to the purposes described in s 166(2) of the Act.
114. The relevance of any principles we adopt is likely to extend to developing and applying PQR and ID requirements.

Emerging views on key economic principles for the Part 6 regime

115. We intend to adopt the following economic principles when developing and implementing the Part 6 regime.⁵⁹
- 115.1 **Real financial capital maintenance (FCM):** a regulated supplier has the opportunity to earn a normal return on capital – that being profits that compensate for its cost of capital over time, considering its exposure to risk. Allowing regulated suppliers the opportunity, but not the guarantee, of earning normal returns over the lifetime of an investment provides it with a chance to maintain the financial capital it has invested, therefore maintaining incentives to invest.
 - 115.2 **Allocation of risk:** ideally, we allocate risks to suppliers or consumers depending on who is most able to manage the risk, unless doing so would be inconsistent with the Part 6 purpose. Appropriate risk allocation, and where relevant appropriate compensation for the risks carried, maintains incentives to invest and promotes efficient behaviour.
 - 115.3 **Asymmetric consequences of over and under-investment:** we apply FCM recognising any asymmetric consequences to end-users of regulated fibre services, over the long-term, of under-investment versus over-investment.

⁵⁸ See Commerce Commission "Input methodologies review decisions: framework for the IM review" (20 December 2016), paragraph X19.

⁵⁹ These are the same three principles that we considered had broad application across the Part 4 regime. For a detailed explanation of these principles and how they might apply in the context of Part 6 see Commerce Commission "New regulatory framework for fibre - Invitation to comment on our proposed approach" (9 November 2018), at paragraphs 6.18-6.43.

116. Each of the three principles can help us to promote the Part 6 purpose:
- 116.1 the FCM principle, in combination with the revenue cap, roll-over of the RAB and resets for each regulatory control period, can promote s 162. This is because:
 - 116.1.1 suppliers will have the opportunity, but not a guarantee, to earn a normal return on their investments, consistent with ss 162(a) and (d);
 - 116.1.2 suppliers will be rewarded for superior performance and penalised for poor performance, consistent with s 162(b); and
 - 116.1.3 efficiency gains can be shared with end-users when the price-quality path is reset—or via an incentive mechanism, if one is applied⁶⁰—consistent with s 162(c).
 - 116.2 The risk allocation principle also promotes the Part 6 purpose. Allocating risks to the parties best placed to manage them tends to replicate how the allocation would occur in workably competitive markets:
 - 116.2.1 suppliers should bear (at least some of) the costs associated with risks they are best placed to manage, to strengthen their incentives to manage these risks efficiently.⁶¹ This is consistent with s 162(a) and (b);
 - 116.2.2 if suppliers are not compensated for the risks they bear, this may have a detrimental impact on investment incentives, consistent with s 162(a).
 - 116.2.3 the principle of asymmetric consequences of under/over-investment can help give effect to s 162(a) and (b). In many cases, it involves trading off the costs to consumers of promoting investment (ie, higher prices) against any expected benefits associated with reducing the risk of under-investment (such as improved quality). At the same time, we are conscious that the dynamics of the markets regulated under Part 6 differ from the dynamics of those regulated under Part 4. This may imply that end-users are partially protected from the risk of under-investment by the existence, or potential entry, of competing services.

⁶⁰ Depending on the design, an incentive mechanism could equalise the incentive rate for suppliers to make investments within a regulatory period and/or could allow suppliers to retain the benefits of efficiency gains beyond the end of a regulatory period. For example, see Commerce Commission "Incentives for suppliers to control expenditure during a regulatory period: Process and issues Paper" (20 September 2013), and Commerce Commission "Amendments to input methodologies for electricity distribution services and Transpower New Zealand: Incremental Rolling Incentive Scheme" (27 November 2014).

⁶¹ This approach helps avoid the problems associated with moral hazard, ie a situation where a party will tend to take risks because the costs that could result will not be borne by that party.

Figure 1: Indicative example of allocation of catastrophic risk

Under a revenue cap with a wash-up mechanism, FFLAS suppliers are generally shielded from the risk that the demand for their services might be different from the expected take-up in any given period. In the long-term, however, FFLAS suppliers might face a risk that the demand for FFLAS does not allow them to recover their network costs. To the extent that there is no ex-ante reason to expect that the demand would be lower or higher than expected (ie, the risk is symmetric), we consider that the FFLAS suppliers should bear such demand risk, given they are best placed, and have the strongest incentive, to manage this risk (for example, by setting prices which encourage uptake).

However, in some cases, the demand risk FFLAS suppliers face might not be symmetric (depending on the underlying cause for the risk) and in such circumstances, it might be appropriate for the risk to be shared between suppliers and consumers. For example:

Natural disasters

In Part 4 regulation the risk of natural disasters was shared between Orion and consumers in our decision on Orion's customised price- path (**CPP**). We decided that Orion will receive *ex-post* compensation for additional net costs incurred in responding to catastrophic events but receive no additional compensation for lower-than-forecast revenues.⁶²

We considered that providing *ex-post* compensation for additional net costs would strengthen incentives to restore supply (benefitting consumers by enabling demand to be met). However, no additional compensation was provided for demand risk given that Orion was subject to a price cap (so bore this risk by default) and demand risk can be mitigated through investor diversification.⁶³

117. We consider that these three economic principles fit with our decision-making framework (at paragraph 112 above) because they:

117.1 *Help us make and explain our decisions.* These three key economic principles have a track record of usefulness in Part 4 regulation. We consider that the principles will provide a useful framework to guide our decisions under Part 6 within the context of the specific market circumstances for FFLAS and the statutory framework of the Act. Even though the principles' status means that they are not binding, proposals which deviate from these principles will raise the question as to how the proposal is better than any alternatives which are consistent with the principles. Further, frequent deviations from one or more of the principles may raise questions on their usefulness for the regime and might suggest that such principles should not be adopted.

117.2 *Provide predictability to stakeholders.* Stakeholders are familiar with these principles and supported their use in the Part 6 regime. These three economic principles can also help provide cross-sectoral consistency, which will assist the predictability of the regime.

⁶² Commerce Commission "Setting the customised price-quality path for Orion New Zealand Limited: Final reasons paper" (29 November 2013), Attachments B and C.

⁶³ For a diversified investor in Orion, the impact of the Canterbury earthquakes on demand would have had a relatively small effect on their portfolio return. Further, the practical effect of using the 75th percentile WACC (which applied at that time) was to provide a buffer for catastrophic events.

118. We considered not adopting any economic principles and relying solely on the purposes described in s 166(2) of the Act, but we think that the benefits of adopting these three principles outweigh any potential additional complexity they introduce in the regime given:

118.1 the principles provide additional clarity to stakeholders on the approach we would generally take when making decisions;

118.2 the principles can help promote the purposes in s 166(2) (see paragraph 116 above) and have proven useful in our experience in regulating markets under Part 4 of the Commerce Act; and

118.3 the principles do not bind our decisions and we will take them into account only to the extent that they assist us to best give effect to the purposes described in s 166(2) of the Act.

Stakeholders' views on adopting the Part 4 key economic principles into the fibre regime

119. In our proposed approach paper, we asked stakeholders for their views on how relevant the Part 4 economic principles are for the Part 6 regime and how the prospect of competition in FFLAS markets will affect the application of these principles.⁶⁴ The key messages from submissions were as follows.

119.1 All submitters that responded to the questions on economic principles considered that the three economic principles from Part 4 will provide useful guidance and supported their use in the Part 6 regime.⁶⁵

119.2 Submitters agreed that the application of the principles should take into account the specific characteristics of the telecommunications industry and in particular, the potential for competition and the dynamic nature of the industry.⁶⁶

⁶⁴ See Commerce Commission "New regulatory framework for fibre - Invitation to comment on our proposed approach" (9 November 2018), at page 83.

⁶⁵ See for example, 2degrees "Submission on new regulatory framework for fibre" (21 December 2018), page 11; Chorus "Submission on new regulatory framework for fibre" (21 December 2018), pages 23 and 59; Enable, Ultrafast Fibre and Northpower Fibre "Submission on new regulatory framework for fibre" (21 December 2018), page 11; Spark "Submission on new regulatory framework for fibre" (21 December 2018), paragraphs 57 and 63; Trustpower "Submission on new regulatory framework for fibre" (21 December 2018), paragraph 7.1.13; Vodafone "Submission on new regulatory framework for fibre" (21 December 2018), paragraphs 12-13; and Vocus "Submission on new regulatory framework for fibre" (21 December 2018), paragraph 65.

⁶⁶ See for example, 2degrees "Submission on new regulatory framework for fibre" (21 December 2018), pages 12-13; Chorus "Submission on new regulatory framework for fibre" (21 December 2018), paragraphs 103-127 and page 59; Enable, Ultrafast Fibre and Northpower Fibre "Submission on new regulatory framework for fibre" (21 December 2018), page 11; Spark "Submission on new regulatory framework for fibre" (21 December 2018), paragraph 63; Transpower "Submission on new regulatory framework for fibre" (21 December 2018), page 1; Trustpower "Submission on new regulatory framework for fibre" (21 December 2018), paragraphs 7.1.16-8.1.3; Vodafone "Submission on new regulatory

- 119.3 While there are no specific arguments against the FCM as a general principle, there is significant disagreement among stakeholders on how the FCM principle should be applied to potentially competitive markets and to FFLAS in particular.
120. The following diverging points were raised in respect to the application of the FCM principle to FFLAS:
- 120.1 LFCs suggested that the FCM should offer a guarantee of a normal return under ID. They argued that the circumstances of why the Part 4 regime did not guarantee normal returns to suppliers do not apply to FFLAS since costs and past performance are known, and thus the IMs for ID should be accurate enough to ensure a normal rate of return.⁶⁷
- 120.2 the RSPs argued that any application of the FCM principle should not dilute competitive incentives,⁶⁸ and that FCM should not be used to shield regulated suppliers from the effects of inefficiencies.⁶⁹
- 120.3 Vodafone pointed out that different FFLAS (eg, layer 1 assets vs potentially competitive layer 2 services) are likely to face different competitive constraints and might require different regulatory approaches.⁷⁰
121. Separately, 2degrees argued that the legislative requirements of s 177 of the Act that allow for initial financial losses to be included in the RAB and for a regime based on a revenue cap, rather than a price cap, have the effect of transferring risk from Chorus to RSPs and end-users. As such, these undermine the economic principle of risk allocation to the party that is best placed to manage it.⁷¹

Our response to stakeholders' views

122. We agree that the application of the key principles can be challenging given the potentially competitive nature of the sector. Specifically, for FCM, we asked our expert advisory panel to comment on whether the prospect of competition and deregulation undermines the FCM principle and if so, how can these be reconciled. The advice from the expert panel concluded that:

- 122.1 the ex-ante expectation of FCM is at the core of the new regime; and

framework for fibre" (21 December 2018), paragraphs 14-15; Vocus "Submission on new regulatory framework for fibre" (21 December 2018), paragraphs 13-14 and 65.

⁶⁷ Enable, Ultrafast Fibre and Northpower Fibre "Submission on new regulatory framework for fibre" (21 December 2018), paragraphs 18-20.

⁶⁸ For example, see Vodafone "Submission on new regulatory framework for fibre" (21 December 2018), paragraph 14.

⁶⁹ For example, see 2Degrees "Submission on new regulatory framework for fibre" (21 December 2018), pp. 3 and 12-13; and Vocus "Submission on new regulatory framework for fibre" (21 December 2018), paragraph 66.

⁷⁰ Vodafone "Submission on new regulatory framework for fibre" (21 December 2018), paragraph 14.

⁷¹ 2degrees "Submission on new regulatory framework for fibre" (21 December 2018), page 12.

- 122.2 the prospect of competition does not undermine the principle itself, as the application could be tailored depending on the state of competition in the market, eg:
- 122.2.1 where competition is non-existent or nascent, the regime should use the standard BBM approach, with no additional allowances to support competitive entry;
 - 122.2.2 where competition is on the way to becoming ‘effective’, the regime might have to be adjusted to allow for some additional compensation above a strictly cost-based BBM approach. This approach would have the effect of promoting entry and of recognising the additional competitive risks the regulated supplier is facing;
 - 122.2.3 however, such additional compensation could be provided through different approaches – a weighted average cost of capital (**WACC**) uplift is only one of them.⁷² We note that the panel concluded that, “the argument for uplifting the regulator-set WACC to compensate for the possible stranding of assets in a subsequent competitive period has not been conclusively made: and if it were made, it would be very challenging to find an operational method for making the adjustment”;⁷³ and
 - 122.2.4 once deregulation occurs, international regulatory practice has been to allow markets to operate freely and thus, not to offer regulatory support for an ex-ante expectation of FCM. In such case, it would be appropriate to remove the deregulated assets from the RAB.
123. The panel’s report on the FCM principle has been published on our website.⁷⁴
124. On balance, we consider that the principles are sound and that the potential challenges in applying them can be appropriately considered and addressed in individual regulatory decisions.⁷⁵ In specific circumstances, if we consider that the FCM principle or the allocation of risk principle would not best give effect to the purpose of Part 6, we will be transparent with stakeholders on the reasoning supporting this view.
125. We note 2degrees’ concerns that the requirements of s 177 of the Act undermine the allocation of risk principle. While s 177 limits our role in setting the rules for the

⁷² See discussion of asymmetric risk in Chapter 5: Cost of capital and risk, paragraphs 544-653.

⁷³ Martin Cave and Ingo Vogelsang “Financial capital maintenance and its role in fibre regulation in New Zealand” (21 May 2019), paragraph 3.15.

⁷⁴ Martin Cave and Ingo Vogelsang “Financial capital maintenance and its role in fibre regulation in New Zealand” (21 May 2019).

⁷⁵ For example, the application of the FCM principle might be tested by the potential need to reconcile the expectation of normal returns for FFLAS suppliers (including any potential ex-ante or ex-post compensation) with emerging competition and potential deregulation.

calculation of the initial value of fibre assets and thus, for applying the allocation of risk principle to this rule-setting, this is only one specific example where the allocation of risk principle could have been useful in guiding our decisions. We consider that there are many other situations where the allocation of risk principle will help us make or explain our decisions when setting the Part 6 regime. The principles will only be applied to the extent they assist us in giving effect to the legislative requirements of the Act and the purposes in s 166(2).

The need for additional economic principles

126. Since the three principles we intend to adopt for the Part 6 regime are mainly related to the promotion of the outcomes of workably competitive markets described in s 162, we considered how we should reflect the potentially competitive nature of the telecommunications sector and the requirements of s 166(2)(b). Broadly, the arguments can be split into the following.

126.1 Is there a need for a competition principle that elaborates on the requirement in s 166(2)(b) to promote competition in telecommunications markets when relevant?

126.2 Is there a need for a pricing principle that could be used practically in a range of ways in the regime for ID and/or PQR⁷⁶ that could promote efficient prices and could help protect or assist infrastructure- or access-based competition?

127. In this context, we asked our expert advisory panel to provide an opinion on whether there are additional principles that we should adopt for the Part 6 regime given the potentially competitive nature of the FFLAS markets, and in particular:

127.1 how to reflect the requirement in s166(2)(b) to promote competition when relevant; and

127.2 whether there is a need for pricing rules to promote pricing efficiency and/or to protect emerging competition.

128. The report of the advisory panel providing their views on pricing has been published on our website.⁷⁷ We welcome stakeholders' views on the report.⁷⁸

129. Beyond the rules the Act already imposes on Chorus, at this stage the advisory panel does not recommend that we adopt any of the pricing-related principles listed below:

⁷⁶ For example, pricing principles could be used to inform disclosures under ID or be more intrusive and inform prices set under PQR.

⁷⁷ Ingo Vogelsang and Martin Cave "Pricing under the new regulatory framework provided by Part 6 of the Telecommunications Act" (21 May 2019).

⁷⁸ To the extent that the panel's report comments on the approach for setting the prices for the unbundled layer 1 services, we note that this issue is outside the scope of the Part 6 IMs and will be addressed through a separate process. We therefore encourage stakeholders to submit unbundling-related material as part of that process.

- 129.1 *a principle requiring efficient pricing, such as Ramsey pricing*: would be undermined by the non-cost based pricing rules that the Act imposes on Chorus, such as geographically consistent pricing (at s 201);
- 129.2 *a principle requiring no foreclosure*: is not likely to add additional constraints on Chorus' prices given that layer 1 unbundling is subject to rules specified in the Act (at s 200) and that Chorus does not offer other downstream services;
- 129.3 *a principle requiring no pricing below costs (ie, no predatory pricing)*: is likely unnecessary given that Chorus is subject to a number of price constraints (eg, on anchor services) and given that predatory prices might be difficult to distinguish in practice from low prices due to competition;
- 129.4 *a principle requiring pricing between incremental and stand-alone costs*: while sound, such a principle would impose a significant monitoring burden on both Chorus and us given the detailed cost information at the service level that would have to be collected.

Stakeholders' views on the need for a competition principle

- 130. RSPs (2degrees, Spark, Vodafone, Vocus) agreed that the objective of promoting competition (per s 166(2)(b)) is a key differentiating factor between the Part 4 IMs and the Part 6 IMs. Spark, Vodafone and Vocus stated that a new principle is required to provide certainty about how this objective would be approached, while 2degrees appear to consider that the statutory requirement of 166(2)(b) is enough. Specifically:
 - 130.1 Spark suggested a new principle along the lines of “a preference for actual workable competition over theoretical replication of workable competition”;⁷⁹
 - 130.2 Spark also noted that there might be a need to state explicitly that “dynamic efficiency is more important than static efficiency”;⁸⁰
 - 130.3 Vodafone argued that a fourth principle “should focus on maximising competitive incentives on regulated fibre providers by ensuring there is an optimal level of competition”;⁸¹ and
 - 130.4 Vocus suggested a competition principle to: “promote as much competition as practicable, and apply as much regulation as necessary”.⁸²

⁷⁹ Spark “Submission on new regulatory framework for fibre” (21 December 2018), paragraphs 58 and 64. A similar argument is made by Vodafone – see Vodafone “Submission on new regulatory framework for fibre” (21 December 2018), paragraphs 3-5.

⁸⁰ Spark “Submission on new regulatory framework for fibre” (21 December 2018), paragraphs 58 and 64.

⁸¹ Vodafone “Submission on new regulatory framework for fibre” (21 December 2018), paragraph 13.

⁸² Vocus “Submission on new regulatory framework for fibre” (21 December 2018), paragraph 67.

Our emerging view on the need for an additional competition principle

131. At this stage we are not persuaded that a further principle on competition is necessary because:
- 131.1 we do not consider that any of the competition principles proposed would assist us in making or explaining our decisions as these principles do not provide additional guidance beyond the purposes described in s 166(2); and
 - 131.2 a preference for actual competition over the theoretical replication of workable competition⁸³ would always have to be evaluated against the requirement to best give effect to the purposes described in s 166(2). As such, it is unclear that adopting a competition principle would provide additional regulatory certainty for stakeholders.
132. We welcome further views from stakeholders on how any proposed competition principles would fit with our decision-making framework and would best give effect to the purposes in s 166(2).

Stakeholders' views on the need for a pricing principle

133. There is disagreement between stakeholders on whether a new pricing principle would be useful in the development and application of the fibre IMs. Generally, RSPs are in favour of a pricing principle, while Chorus and the other LFCs are against it.
- 133.1 Chorus and the other LFCs argued that the introduction of pricing principles into a market that is subject to rapid change and which already has significant constraints on pricing (geographic consistency, equivalence of inputs, obligations for unbundling, etc) has the potential to cause unnecessary disruption and distortion.⁸⁴ Chorus also argued that:
 - 133.1.1 pricing flexibility would be consistent with the requirement to promote workable competition;⁸⁵
 - 133.1.2a pricing mechanism would be complex to determine and uncertain in its effects;⁸⁶ and

⁸³ Or similar principles that would have the same overall implications for our decisions, such as a preference for dynamic over static efficiency or a preference for maximising the competitive incentives on FFLAS suppliers.

⁸⁴ Chorus "Submission on new regulatory framework for fibre" (21 December 2018), paragraphs 128 and page 60; Enable, Ultrafast Fibre and Northpower Fibre "Submission on new regulatory framework for fibre" (21 December 2018), pages 11-12; and Chorus "Cross-submission on new regulatory framework for fibre" (5 February 2019), paragraphs 10.2 and 22-27.

⁸⁵ Chorus "Submission on new regulatory framework for fibre" (21 December 2018), paragraph 118.

⁸⁶ Chorus "Cross-submission on new regulatory framework for fibre" (5 February 2019), paragraph 24.

133.1.3 the appropriate time to consider the introduction of pricing principles would be when the Commission could consider moving from a revenue control regime to a price control regime.⁸⁷

133.2 Spark supported pricing principles that promote efficiency and competition between services and note that Chorus and the other LFCs could be required to disclose how they comply with these.⁸⁸ Axiom on behalf of Spark argue that the lack of a pricing principle will result in significant regulatory uncertainty. They point to the fact that pricing efficiency might be more important for Part 6 than for Part 4. This is because the greater array of FFLAS products and the greater degree of customer responsiveness to price changes give Chorus more opportunities and incentives to price in ways that will foreclose infrastructure-based competition.⁸⁹

133.3 Trustpower also supported a pricing principle that will foster retail competition. They also suggest that the IMs should include a process for price structures to be amended in response to changes in market conditions.⁹⁰

133.4 Vodafone and 2degrees appeared neutral on the need for a stand-alone pricing principle:

133.4.1 2degrees noted that elements of pricing efficiency could be encompassed by the principle to promote competition;⁹¹

133.4.2 Vodafone submitted that setting a pricing principle would be complex. This is because the costs of delivering different fibre services are near identical and price discrimination would be mainly motivated by shifting network costs to those who can afford to pay for them.⁹²

134. We did not receive any submissions from stakeholders that contained specific suggestions on how a pricing principle for the Part 6 regime might be worded.

Our emerging view on the need for an additional pricing principle

135. In light of stakeholders' submissions and the advice from the advisory panel, our emerging view is that an additional principle on pricing is not necessary at this stage, because:

⁸⁷ Chorus "Cross-submission on new regulatory framework for fibre" (5 February 2019), paragraphs 23 and 27. We note that this will only be after the second regulatory period as explained in footnote 93.

⁸⁸ Spark "Submission on new regulatory framework for fibre" (21 December 2018), paragraphs 118-119.

⁸⁹ Axiom on behalf of Spark "Submission on new regulatory framework for fibre" (21 December 2018), pp. iii and 15-17.

⁹⁰ Trustpower "Submission on new regulatory framework for fibre" (21 December 2018), paragraphs 9.1.1-9.1.2.

⁹¹ 2degrees "Submission on new regulatory framework for fibre" (21 December 2018), page 13.

⁹² Vodafone "Submission on new regulatory framework for fibre" (21 December 2018), paragraphs 124-125.

- 135.1 the Act (at s 195) prevents us from specifying the prices that regulated suppliers can charge prior to the reset date for the regime (as declared under s 225) for any FFLAS other than anchor services and DFAS (as specified in 198(2)(d) and s 199(2)(d), respectively);⁹³
 - 135.2 Chorus is subject to a number of additional legal pricing requirements imposed by the Act (eg, geographic consistency of prices and price caps for anchor services and DFAS);
 - 135.3 these additional constraints on Chorus' prices, as well as the building blocks approach to the new regime, are likely to counteract the incentives for Chorus to set high prices that might be created by a pure revenue cap regime⁹⁴; and
 - 135.4 we received no submissions from stakeholders articulating a specific pricing principle that could be adopted into the regime.
136. We note that the adoption of a pricing principle might be more appropriate in subsequent regulatory periods given that market developments might require revisions to other aspects of the regime, eg a move from a revenue cap control to a price cap control.
137. We welcome stakeholders' views on the advisory panel's report and our emerging view regarding the need for a pricing principle. Where stakeholders consider that there is an argument for adopting an additional pricing principle, we welcome views on how such a principle:
- 137.1 could be worded; and
 - 137.2 would meet our decision-making framework (see paragraph 112) as well as give effect to the purposes in s 166(2).

Other potential economic principles raised by stakeholders

138. Vocus proposed two additional principles for adoption in the Part 6 regime:⁹⁵
- 138.1 *a prescription principle*: a test or principle for determining the extent to which individual IMs should be prescriptive or flexible. Vocus suggest considering

⁹³ The Minister must not recommend the reset date unless the Commission has, after a s 209 review, recommended that the order be made. The Commission may only carry out a s 209 review three years after the implementation date (and at intervals of no less than 5 years thereafter). Since the first regulatory period starts on the implementation date and lasts for a period of three years, the order for the reset date will not be able to be made before the second regulatory period has already commenced.

⁹⁴ Specifically, the so-called Crew-Kleindorfer effect predicts that a profit-maximizing single-product firm under a binding pure revenue cap (ie, in the absence of a building blocks approach to setting the revenue cap) will charge a price that exceeds the unconstrained monopoly price. See Ingo Vogelsang and Martin Cave "Pricing under the new regulatory framework provided by Part 6 of the Telecommunications Act" (21 May 2019), executive summary, paragraph 13 and section 2, paragraphs 14-15.

⁹⁵ Vocus "Submission on new regulatory framework for fibre" (21 December 2018), paragraph 67.

which elements of price-quality control will and will not require change and the exercise of judgement at each regulatory reset. They advocate for a more flexible approach to IMs for elements that are likely to require a reset at each regulatory period and a more prescriptive approach to 'set and forget' elements.

138.2 *a proportionate regulation principle*: where the larger the potential problems with a regulated supplier's practices, the broader the scope and more detailed the IMs will need to be.

139. Some submitters (eg, 2degrees) noted that transparency about the principles underpinning the Commission's decisions is important.⁹⁶
140. InternetNZ pointed out that the regulatory framework adopted should acknowledge that the definition of good outcomes can vary by stakeholder (eg, network owners would like fair returns for operating efficiently, while internet service providers (ISPs) would like predictable paths for improving fibre performance and prices).⁹⁷

Our emerging view on the need for other economic principles

141. We agree that transparency and proportionality are important features of regulation. We have previously applied a 'proportionate scrutiny' principle (ie, the level of scrutiny applied should be commensurate with the price and quality impact on consumers sought) when we reviewed the CPP requirements as part of the 2015-2016 IM review,⁹⁸ and when we reviewed the Transpower capex IM in 2017.⁹⁹
142. The 'proportionate scrutiny' principle is a balance we have always tried to achieve with our regulation. This principle is about ensuring that the time and cost that we and stakeholders spend on designing and applying regulation, and the resulting complexity of the rules we set, are commensurate in each case with the potential benefits to telecommunications end-users. This approach is consistent with promoting the purposes in s 166(2).
143. We do not consider it is necessary to explicitly adopt additional principles on transparency and proportionality for the purposes of supporting the regulatory decisions in Part 6. This is because we consider that these form part of regulatory best practices that we adhere to. Specifically:
- 143.1 we intend to be always clear about which, if any, economic principles underpin individual decisions in setting or applying the fibre IMs. Where appropriate, we will give due consideration to the issue of whether the

⁹⁶ See for example, 2degrees "Submission on new regulatory framework for fibre" (21 December 2018), page 11.

⁹⁷ InternetNZ "Submission on new regulatory framework for fibre" (21 December 2018), paragraph 1.10.

⁹⁸ Commerce Commission "Input methodologies review decisions. Topic paper 2: CPP requirements" (20 December 2016), paragraphs 125-146.

⁹⁹ Commerce Commission "Transpower capex input methodology review" (15 May 2017), paragraphs 83-87.

application of the principles might imply a different regulatory outcome for Chorus vs individual LFCs; and

143.2 individual decisions will consider whether the proposed regulation best serves the purposes in s 166(2) and is proportionate to the regulatory need it addresses.

144. We also consider that a separate principle on prescription is not necessary to best give effect to the purposes in s 166(2). As explained in our proposed approach paper,¹⁰⁰ some IMs might benefit from a less prescriptive approach than others. We consider that the long-term benefit of telecommunications end-users would be best served by allowing each regulatory decision in the Part 6 regime to consider separately the appropriate level of prescription that will best give effect to the purposes described in s 166(2) and to the requirements of s 174 to promote regulatory certainty.

Questions for stakeholders

- | | |
|----|--|
| Q5 | Are there challenges involved in applying the FCM principle to FFLAS markets that mean we should not adopt this principle into the Part 6 regime? If so, please elaborate on your concerns with specific references to FFLAS market characteristics/dynamics that would make the application of the FCM principle impractical. |
| Q6 | Do you consider there is an economic principle related to competition that would increase regulatory certainty and would inform our decision-making process over and above the purposes described in s 166(2)? If so, please elaborate on how such a principle would fit with our decision-making framework. |
| Q7 | What are your views on the advisory panel's recommendation that there does not appear to be a strong case for an additional pricing principle beyond the pricing rules the Act imposes on Chorus? Please explain any areas where you disagree with the panel's advice and elaborate on how any pricing principle you propose would fit with our decision-making framework. |

¹⁰⁰ Commerce Commission "New regulatory framework for fibre - Invitation to comment on our proposed approach" (9 November 2018), paragraphs 7.46-7.47.

Chapter 3: Asset valuation

145. This chapter focuses on the emerging views for the asset valuation IM. This chapter discusses:
- 145.1 the role of the asset valuation IM in the determination of the RAB;
 - 145.2 economic incentives that affect our decision making;
 - 145.3 our emerging views for asset valuation; and
 - 145.4 invites stakeholders to comment on the emerging views presented.

Summary of emerging views

146. The emerging views for the asset valuation IM are briefly summarised below and further explained throughout this chapter.
147. We intend to implement the following:
- 147.1 adopting certain high-level features for the asset valuation IM, which are similar in many respects to those used under Part 4, for the new fibre regime, including:
 - 147.1.1 a principles-based regime with general 'rules' (such as an asset being eligible to enter the RAB based on the definition of regulated services), but with specific rules prescribed where needed;
 - 147.1.2 relatively few process rules (eg, for recording asset-related data); and
 - 147.1.3 use of GAAP if consistent with regulatory objectives;
 - 147.2 taking a flexible approach to asset granularity, by allowing suppliers to determine the level of RAB disaggregation, but with rules for certain asset types to meet current and anticipated regulatory needs;
 - 147.3 developing IM rules that are consistent across Chorus and the other LFCs, unless a regulatory reason requires differing approaches;
 - 147.4 an asset will be eligible to enter the RAB of a supplier in the year in which the asset is first employed by that supplier in the provision of regulated FFLAS (ie, the year in which the asset is 'commissioned');

- 147.5 determine the initial regulatory value of an asset based on the cost of that asset, net of specified capital contributions.¹⁰¹ No revisions to the cost of assets will be permitted once the relevant assets have entered the RAB.
- 147.6 use a building blocks approach to calculate the initial loss asset at implementation date for Chorus and the other LFCs.¹⁰²
- 147.7 consider the need to set specific valuation rules for assets constructed or acquired by a supplier from related parties. Our emerging view is that rules similar to those in Part 4 are likely to be suitable, but these can be assessed further in light of additional information we intend to obtain about Chorus and the other LFCs' particular circumstances.
- 147.8 adopt an annual RAB roll forward calculation similar to that applied for Part 4 as follows:
- $$\text{Opening RAB value} - \text{Depreciation} + \text{Revaluations} + \text{Additions} - \text{Disposals} = \text{Closing RAB value}$$
- 147.9 adopt a straight-line depreciation method based on GAAP asset lives as the standard approach to regulatory depreciation for assets in the RAB. We are seeking stakeholders' views on whether departures from this treatment (eg, for special assets or circumstances) are warranted. We propose to determine a specific amortisation treatment of the initial loss asset.
- 147.10 index the RAB, including the initial loss asset, by revaluing it for movements in the consumer price index (CPI) as part of the RAB roll forward process, with the indexation amounts treated as regulated revenues (for real FCM).

Framework for making asset valuation decisions

Legal framework

148. We are required to set an asset valuation IM in accordance with section 177 of the Act.¹⁰³
149. In setting the asset valuation IM we are required to give effect to the purpose of Part 6 (s 162) to promote the long-term benefit of end-users of FFLAS and to consider the interests of all end-users in telecommunications markets where relevant (s 166(2)(b)).¹⁰⁴

¹⁰¹ See s 177(6). A capital contribution is one that is received by a regulated fibre service provider from 1 or more of the following: an access seeker, an end-user, any other person, as determined by the Commission; but, for the avoidance of doubt, does not include any Crown financing. A possible example would be upfront connection fees charged by suppliers to developers or end-users.

¹⁰² See s 177(2).

¹⁰³ Telecommunications Act 2001, s.176.(1)(a)(ii).

¹⁰⁴ See chapter 1 on the legal framework for more details

150. The rules that govern the method of valuing assets included in the RAB allow interested persons to assess the profitability of a regulated supplier under ID and allow us to set maximum prices and revenues under PQR.¹⁰⁵ The rules may also assist us and others in analysing efficiency and innovation through information available on the composition and value of assets employed by a firm.
151. Asset valuation can be one of the more challenging areas in implementing utility-style regulation, particularly where the regulatory objectives are unclear or where regulation is introduced part way through the lives of long-lived assets. However, the new regulatory regime for fibre under Part 6 of the Act incorporates a clear purpose statement that is very similar to that contained in Part 4. In addition, detailed rules are contained in s 177 which direct us to value the initial fibre assets at implementation date as follows:
- 151.1 assets constructed or acquired by Chorus or the LFCs prior to implementation date are valued at their depreciated cost; and
- 151.2 pre-UFB build assets for Chorus are valued at their depreciated cost derived from Chorus' general purpose financial statements.
152. Finally, the fibre networks in existence at the implementation date will mostly be comprised of newly built UFB assets. The costs of these assets have been the subject of significant scrutiny from Crown Infrastructure Partners (**CIP**) and are supported by accounting records. The rules in s 177 can thus be expected to remove considerable areas of debate over the valuation of the assets in the RAB.¹⁰⁶

Relevant economic incentives

153. The asset valuation IM will set rules consistent with the purposes of the Act and seek to address the potential for FFLAS supplier incentives that would not be in the long-term interest of end-users.
154. Such potential economic incentives could include:
- 154.1 Increase profits beyond efficient levels by arguing for -
- 154.1.1 favourable valuation rules for past investments to be included in the RAB
- 154.1.2 shorter asset lives to recover costs sooner.

¹⁰⁵ Asset valuation rules determine the level of the return on capital via application of the cost of capital, and the return of capital via depreciation (together referred to as 'capital costs').

¹⁰⁶ Which requires initial value of fibre assets to be based on cost.

Relevant economic principles

155. To help us reach a regulatory decision in the asset valuation IM, we propose adopting three economic principles that can help us reach regulatory decisions that promote the purpose of Part 6.¹⁰⁷ The three economic principles are: real FCM, allocation of risk, and recognising the asymmetric consequences of over- and under-investment.
156. The most relevant principle to asset valuation is real FCM. This economic principle seeks to ensure suppliers have incentives to invest, such as in innovation, efficiency and quality, while limiting their ability to extract excessive profits.

Part 6 fibre context: similarities and differences to Part 4 of the Commerce Act

157. The Part 6 regulatory context for fibre is similar in many respects to Part 4 which applies to electricity lines, gas pipelines and airports services sectors. As submitters have noted, however, the context for fibre networks has unique features and there are also specific regulatory requirements for Part 6.¹⁰⁸ We have considered these differences when deciding on the high-level approach to the asset valuation IM.
158. There are several similarities to the Part 4 context:
- 158.1 there is little or no competition in markets for all or most FFLAS, and limited immediate prospects for a substantial increase in competition for most services;
 - 158.2 the purpose of Part 6, IMs and ID are substantially similar to those of Part 4, and similar regulatory tools (ID and PQR) exist. The IMs for a regulated service are required to be consistent with the other IMs that relate to that service;
 - 158.3 there is considerable scope under both Part 4 and Part 6 for the Commission to develop regulation through the IMs and ID/PQR requirements;
 - 158.4 the economic principles we are proposing to use to guide implementation of Part 6 are similar to those adopted for Part 4;
 - 158.5 fibre networks have similar qualities to other utilities' networks regulated under Part 4 - characterised by lumpy initial investment in fixed assets followed by a relatively long period of cost recovery and a potentially high degree of infrastructure shared between different regulated services¹⁰⁹ and unregulated services; and
 - 158.6 there is significant variation in the size and nature of the firms subject to regulation, although all firms are required to comply with GAAP.

¹⁰⁷ See chapter 2, Key economic principles for more information.

¹⁰⁸ For example, see Spark "Submission on new regulatory framework for fibre" (21 December 2018), paragraphs 43 and 44, Transpower "Submission on new regulatory framework for fibre" (21 December 2018), page 1.

¹⁰⁹ Between electricity and gas, for example.

159. However, there are some significant differences to consider:
- 159.1 a more complex environment exists for the provision of fibre services stemming from rapid technological evolution, including the obligation to unbundle layer 1 from 2020¹¹⁰ and potential wireless substitutes for fibre;
 - 159.2 a requirement under s 166 (2)(b) of the Act to give effect “to the extent that [we] consider it relevant, to the promotion of workable competition in telecommunications markets for the long-term benefit of end-users of telecommunications services”;
 - 159.3 specific requirements in Part 6 legislation such as geographically consistent pricing, the provision of individually-priced regulated anchor services, DFAS, and provision of an unbundled service, initial loss asset, and a mandatory revenue cap with wash-up for initial regulatory periods; and
 - 159.4 a rapid and ongoing transition of end-users from a legacy (copper) network to a relatively newly-constructed fibre-to-the-premise (**FTTP**) fibre network.
160. We welcome submissions from relevant parties regarding our emerging views on this context.

Asset valuation IM emerging views

161. In the following section we will discuss our emerging views and seek submissions from interested parties addressing our questions.

Key issue 1: High-level features of the asset valuation approach

162. The promotion of workable competition in telecommunications markets for the long-term benefit of end-users of telecommunications services is, where relevant, a key consideration under Part 6. The dynamic environment under Part 6 impacts this consideration, with a new fibre network rollout, developing technology and the emergence of potential competition suggesting an approach that can accommodate ongoing change. We therefore propose a principles-based regime with more general 'rules' supplemented with detailed rules to meet specific requirements.
163. An example of a general 'rule' is that assets would be eligible to enter the RAB based on the definition of regulated services (see 'Key issue 4' below).
164. It appears impractical to produce prescriptive rules given the dynamic situation addressed by Part 6. More detailed rules can be developed to deal with certain situations, assets or legislative directions (eg, the initial loss asset) by exception.
165. We also propose that there will be relatively few process rules provided by the IM (eg, for recording asset-related data). This approach will:

¹¹⁰ This is a requirement under the NIPA.

- 165.1 recognise the information asymmetry that exists when developing the IM;
 - 165.2 reduce the risk of locking in processes that prove unworkable in practice; and
 - 165.3 allow the processes used for ID and PQR to be flexible in response to practical considerations.
166. This principles-based approach is also being considered in other IM topic areas, such as cost allocation, which will also help determine the value of the RAB required for ID and PQR.
167. We note that adopting high-level rules is similar to the approach taken for the Part 4 regime. Where appropriate, we are able to consider our Part 4 experience when developing the Part 6 IM. In addition, some suppliers regulated under Part 6 are already subject to Part 4 regulation, so a similar approach can reduce complexity and promote regularity certainty.

Determining initial RAB values

168. The asset valuation IM will set the valuation rules for determining the value of the initial RAB for Chorus and the other LFCs, however we do not propose that the IM contain details of the practical process for gathering data for this process.
169. Instead, we currently expect to work with Chorus and the other LFCs to undertake this and are considering two options for the process of establishing the initial RAB: a Commission-led or a supplier-led process.

Questions for stakeholders

Q8	What are your views on our approach to establishing the initial RAB values?
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Regulatory rules and GAAP

170. As a general matter, we are open to specifying GAAP rules as part of the asset valuation IM where they are consistent with relevant regulatory objectives. The statutory financial records currently maintained by suppliers are based on GAAP, so adopting GAAP can be a cost-effective approach - minimising compliance costs and reducing the complexity for suppliers given their finance staff will be familiar with the GAAP rules.
171. In Attachment B we have identified several areas where we expect regulatory objectives will drive a different approach to that applied under GAAP. This is not an exhaustive list, and we will continue to consider areas where GAAP may not achieve regulatory objectives. We also invite stakeholders to raise any areas of concern.
172. The issue of changes to accounting standards was raised in submissions. We will need to consider any changes to GAAP to determine whether following the GAAP approach under the revised standard will continue to meet regulatory requirements.

Key issue 2: Specification of asset granularity in the RAB

173. The issue of asset granularity (also referred to as the degree of 'RAB disaggregation') can be framed as:

What minimum level of specificity should be required for identifying assets and asset values in the RAB?

174. Examples would include whether to require assets to be recorded at the level of network subgroupings (eg, centralised infrastructure, backhaul, feeder and distribution infrastructure, other) or at more specific network levels (eg, exchanges, ducts, poles, fibres, cabinets, customer equipment etc). Assets can also be distinguished by criteria such as geographic location, customer type, access seeker type, vendor type, age and condition, or functional operation at layer 0, 1 or 2.

175. Chorus saw a need to consider practical requirements with the need for disaggregation:

In practice, there will need to be some degree of disaggregation to reflect different asset lives. However, this will need to be balanced against the practical need to aggregate to some degree to make the process workable.¹¹¹

176. While some submissions called for a more prescriptive approach to the asset valuation IM (for example Axiom¹¹²), there was also recognition that this must be practicable (Vocus¹¹³) if it is to help promote certainty.

177. A highly prescriptive approach to asset granularity is likely to be impractical, given competitive issues, technology evolution and complexity of services.¹¹⁴ The level of asset granularity will also need to address cost allocation requirements.

178. We have considered two approaches to asset granularity:

178.1 a totally flexible approach; and

178.2 a flexible approach with some minimum granularity implied.

179. Our approach is to prescribe some specific but limited disaggregation, with a principle that the RAB incorporates appropriate disaggregation to meet current and future needs. See Attachment C for potential disaggregation levels.

¹¹¹ Chorus "Submission on new regulatory framework for fibre" (21 December 2018), paragraph 163.

¹¹² Axiom on behalf of Spark "Submission on new regulatory framework for fibre" (21 December 2018), p 17.

¹¹³ Vocus "Cross Submission on new regulatory framework for fibre" (5 February 2019), paragraph 3.

¹¹⁴ In a dynamic environment with high degrees of uncertainty, highly prescriptive rules can quickly become unworkable.

Key issue 3: Should the IM be different for Chorus and the other LFCs?

180. The LFCs are all significantly smaller entities than Chorus, with much fewer potential end-users passed. We expect the LFCs to be subject to ID only at implementation date, while Chorus is expected to be subject to PQR and ID.
181. A key reason to have a different IM for ID between LFCs or between Chorus and the LFCs would be to potentially reduce the regulatory burden they face.¹¹⁵
182. The downsides to having differing IMs between LFCs or between Chorus and the LFCs include:
 - 182.1 complexity maintaining different IMs;
 - 182.2 lack of consistency and a reduced ability to compare ID results which could highlight lower levels of performance by some LFCs;
 - 182.3 determining what differences to allow and how these differences will actually reduce the burden on LFCs while delivering required regulatory outcomes; and
 - 182.4 a more complex transition to applying PQR to LFCs in the future, should that be deemed necessary.
183. We consider that the benefits of having a standard IM covering all entities outweighs the potential burden faced by these LFCs. This will ensure comparability between Chorus and the other LFCs and enable a smoother transition to PQR if that becomes necessary. Under Part 4, entities of differing sizes within the same regulated sector are subject to the same set of IMs.
184. A caveat to this decision is that, should it be deemed necessary in other IM topic areas to produce IMs that differ for Chorus and the other LFCs, then we will consider how those differences should be reflected in the asset valuation IM in order to achieve consistency.

Key issue 4: Composition of the RAB

185. We propose applying a high-level rule to determine which assets will be included in the RAB, with specific more detailed rules prescribed by exception only where needed to meet regulatory objectives.
186. The proposed rule is that assets are eligible to be included in the RAB if they are:
 - 186.1 constructed or acquired by a regulated supplier; and
 - 186.2 in the year in which they are first employed (ie, 'commissioned'), wholly or partly, in the provision of regulated FFLAS.¹¹⁶

¹¹⁵ For example, requirements could be simplified to minimise the investment required in existing systems to produce new data.

187. Assets to be included in the RAB will thus depend on the scope of services which are regulated. Chorus and the other LFCs will need to determine which of the services they offer are regulated, and which assets are employed, wholly or partly, in the provision of those services. The proportion of the total value of assets included within the RAB for ID or PQR purposes will be impacted by cost allocation.

Questions for stakeholders

Q9 What are your views on our approach to the composition of the RAB?

Key issue 5: Core valuation rules for initial RAB assets

Initial value of assets

188. Section 177 of the Act specifies the "initial value" of a fibre asset, to be used at implementation date, as the cost incurred by a regulated supplier in constructing or acquiring the fibre asset (net of capital contributions). It further specifies that, to avoid doubt, the initial value of fibre assets includes the costs incurred as a direct result of meeting specific requirements of the UFB initiative, and for both standard connections and non-standard connections.
189. We note that the Act directs that the cost of the asset is to be net of specified capital contributions. We propose to deduct the value of any contribution received from the cost of the asset before it enters the RAB. We note also that suppliers may have revalued their assets, effectively modifying the original cost, for GAAP or other accounting purposes. However, s 177 directs us to ignore those revaluations.
190. It should be noted that the asset valuation IM will not specify a 'dollar value' for the initial RAB, but, rather, the rules for determining it. As mentioned above, we expect to work with Chorus and the other LFCs on a process to determine the values.

Questions for stakeholders

Q10 Are any issues likely to arise from adjusting asset costs to take account of capital contributions or supplier revaluations?

Specific valuation rules for particular asset types

191. We will consider what departures from GAAP may be required for certain assets. We will need to identify these after obtaining information from Chorus and LFCs.¹¹⁷

Questions for stakeholders

Q11 What types of assets may require Chorus and the other LFCs to depart from GAAP?

¹¹⁶ We note that NZ IAS 16 at paragraph 55 says "(d)epreciation of an asset begins when it is available for use, ie when it is in the location and condition necessary for it to be capable of operating in the manner intended by management".

¹¹⁷ We note that s 177 (1)(b) specifies the use of GAAP for adjusting for depreciation and impairment losses (if any) at the implementation date.

No revisions to costs of assets that enter the RAB

192. We do not propose to undertake any review of costs for assets constructed pre-implementation, and we do not propose to revise the base cost of any asset once it is admitted to the RAB (eg, to reflect future standards of efficient build).
193. Vodafone, referring to the period pre-implementation date, think that in “most cases the actual costs faced by Chorus are a good approximation of efficient costs given the oversight of Crown Infrastructure Partners”.¹¹⁸
194. Chorus discuss efficiency of the roll out in their cross-submission. “We agree with other submitters that costs incurred as a result of the UFB initiative should be included at actual cost: this is expressly stated in section 177(5). As we note in our submission, we have a powerful incentive to pursue efficiency as a result of our status as a publicly listed company delivering on what is essentially a fixed price contract. The partnership between the Government and the industry should not be second guessed by imposing a backwards-looking efficiency test. This was the explicit policy choice made in the legislative review and by Parliament in passing the Act”.¹¹⁹
195. Though we recognise there may be some benefits of reviewing base costs of assets, such as protecting end-users from inefficient expenditure, we agree with submitters who expressed views that:
- 195.1 Chorus’ costs are a good approximation of efficient costs; and
- 195.2 we should not try and second guess the agreed contract by undertaking a review of the base cost of assets.
196. In addition, we also do not consider that the Act, which directs us to value assets at implementation at cost, allows us to apply a review of the initial value of fibre assets. We consider it implicit in s 177(1) that the initial value of fibre assets must be based on their actual costs, without regard to efficiency or any other considerations that are outside the scope of s 177.¹²⁰
197. Accordingly, we consider that we would be moving outside the constraints of the calculation framework in s 177 as Parliament intended it to be applied if we were to review costs when calculating the initial asset values.

¹¹⁸ Vodafone “Submission on new regulatory framework for fibre” (21 December 2018), paragraph 103.

¹¹⁹ Chorus “Cross-submission on new regulatory framework for fibre” (5 February 2019), paragraph 63.

¹²⁰ In essence, we consider that Parliament has decided that the best way to give effect to the objectives in s 166 in respect of the initial values of fibre assets is by requiring us to calculate the values based on the methodology set out in s 177.

Key issue 6: Core valuation rules for fibre assets added after implementation date

198. We propose to effectively extend the rule contained in s 177(1) by applying it to calculate the value of an asset added to the RAB after implementation date.
199. The rule relies on calculating the “cost” of an asset, net of any specified capital contributions and accounting depreciation. This is generally consistent with the approach under Part 4 where the “cost” of an asset is obtained using GAAP principles.¹²¹
200. For the avoidance of doubt, as for the cost of the pre-implementation assets, we do not propose making any revisions to the asset’s base cost once it is admitted to the RAB. We note that the base cost of assets will be subject to any treatment prescribed in the capex IM and cost allocation rules.

Assets repurposed for fibre use

201. There are expected to be some assets which are currently used (wholly) for purposes other than providing FFLAS, but which may be ‘repurposed’ wholly or partly, after the implementation date for use in FFLAS provision.
202. The issue as to what value these assets should enter the RAB with at that time arises because the original cost of the asset has been applied in the provision of an unregulated service for some period of time.¹²² To reflect that prior use from an economic perspective, only the current value (or ‘carrying value’) of the asset should enter the RAB at the time of repurposing and be eligible for recovery through fibre revenues.
203. We propose that the cost of the asset less capital contributions and any accumulated depreciation determined under GAAP is adopted as the value at which the asset should enter the RAB. Again, this is effectively an extension of the rule in s 177 of the Act to assets added to the RAB after the implementation date. It has the advantage of being simple for suppliers to understand and calculate using their existing accounting systems. We propose to ignore any revaluations previously undertaken.
204. An alternative would be to calculate the cost under GAAP and subtract accumulated regulatory depreciation at the point of entry to the RAB. However, this would require suppliers to track a regulatory value (including regulatory depreciation) for all assets that might be potentially applied to fibre at a later date. We would also need to account for the issue of regulatory revaluations.
205. Note that repurposed assets may be only partly used to provide FFLAS. The value of assets that are partly allocated to regulated services will have their total value

¹²¹ Spark and suppliers supported this view. See Enable, Ultrafast Fibre and Northpower Fibre “Submission on new regulatory framework for fibre” (21 December 2018) page 14, Spark “Submission on new regulatory framework for fibre” (21 December 2018), paragraph 82 and Chorus “Submission on new regulatory framework for fibre” (21 December 2018) page 62.

¹²² Or a service subject to different regulations.

recorded in an unallocated version of the RAB. Cost allocation rules are then applied to the unallocated RAB values, to establish the allocated RAB value for each asset. The allocated RAB will determine the amount of depreciation and return on capital for regulated FFLAS. The cost allocation chapter considers the issues around allocation of costs to regulated FFLAS.

Key issue 7: How should the losses asset be calculated?

206. The Act includes specific rules in relation to the initial loss asset for each of Chorus and the other LFCs. It sets out that:¹²³

206.1 Each regulated supplier is treated, as at the implementation date, as owning a fibre asset with an initial value equal to the financial losses, as determined by the Commission, incurred by the provider in providing fibre fixed line access services under the UFB initiative for the period starting on 1 December 2011 and ending on the close of the day immediately before the implementation date.

206.2 Section 177(3) sets out the following:

- (3) In determining the financial losses under subsection (2), the Commission—
 - (a) must take into account any accumulated unrecovered returns on investments made by the provider under the UFB initiative; and
 - (b) in respect of any Crown financing provided in connection with those investments, must refer to the actual financing costs incurred by the provider (or a related party)

207. There were a variety of submissions received on the calculation of losses.¹²⁴

208. Our emerging views are:

208.1 to use a building blocks approach to calculate the initial losses asset at implementation date for Chorus and the other LFCs;

208.2 that method 1,¹²⁵ subtract the face value of the Crown financing from the accumulated cost of UFB assets (ie, the 'investment' component of the formula) when applying the required rate of return for the relevant year, as outlined in our proposed approach paper, be used to reflect the actual costs of Crown financing. The Crown funded portion of the RAB, with no financing

¹²³ See s 177(2) and (3) of the Act.

¹²⁴ Vodafone, 2degrees and Spark were generally against awarding losses. For example, see Vodafone "Submission on new regulatory framework for fibre" (21 December 2018), paragraphs 80 to 82. L1 Capital supported awarding losses, see L1 Capital "Cross-submission on new regulatory framework for fibre" (5 February 2019) page 2.

¹²⁵ We set out two possible methods in the proposed approach paper for reflecting the actual costs of Crown financing in the calculation of financial losses. Even though both methods are capable of being consistent with s 177(3)b), which refers to the actual financing costs incurred by the provider (or a related party), method 1 is simpler to use, and easier for people to understand.

costs, will build up during the pre-implementation phase. Depreciation and revaluation will apply to the Crown funded amounts sitting within the main tangible RAB and the loss asset component of the RAB, allowing recovery of the nominal value;

- 208.3 to adopt a suitable treatment for those components of cost of capital, cost allocation and taxation as defined in those IM topic areas for the building blocks calculation for the 2011-21 loss period; and
 - 208.4 to progress the practical process for calculating the value of the initial loss asset as part of the overall process for calculating the initial RAB.
209. We note that our emerging view on the WACC to be applied to the loss calculation is that the same asset beta should apply in the pre-implementation period compared to the post-implementation period (see Chapter 5).
210. Our emerging view on the rate to be used to compound the returns to implementation date (to adjust annual losses to present value) is that the rate will be equal to WACC to be applied to the loss calculation (see paragraphs 521 to 523 of Chapter 5).

Key issue 8: Treatment of related parties

211. When a regulated supplier acquires assets from a related party there is a risk that asset prices are inflated, leading to inefficient investment and excessive profits. An example of a situation that could arise would be an asset acquired by a parent company that is then transferred to a related party LFC at a cost that is different to the original acquisition cost to the parent.¹²⁶
212. Submissions on our proposed approach paper raised concerns with transactions with other parties and how they are structured. For example, Spark was concerned that complex commercial arrangements with service companies needed to be focussed on:¹²⁷
- For example, Chorus has complex commercial arrangements with service companies for input services to FFLAS and non-FFLAS services. The Commission would need to ensure these input prices were efficient and didn't, for example, have the effect of inefficiently loading service company costs on to input services used for the fibre network.
213. We will consider the potential need to set specific valuation rules for assets constructed by or acquired from related parties. We expect that rules similar to those included in Part 4 and recently reviewed as part of the 7-year IM review process will be appropriate, but we will consider what changes in approach are

¹²⁶ Assets transferred between related parties lack the discipline of an arm's length transaction. While the value may be acceptable for GAAP, for regulatory purposes, we recognise the original historic cost.

¹²⁷ Spark "Submission on new regulatory framework for fibre" (21 December 2018), paragraph 83. Note that a regulatory view of related parties is often wider than that under GAAP.

necessary (if any) as we gain additional information on fibre suppliers' specific circumstances.

214. One important factor for us in setting the related party requirements for the asset valuation IM will be the ownership structure of the LFCs. In particular, it is important to note that Enable, Ultrafast and Northpower Fibre all have related parties that are electricity distribution businesses (**EDBs**), and that Enable's parent company also owns Christchurch International Airport.
215. We think these relationships between suppliers and related Part 4 regulated businesses support an approach that aligns as closely as possible with the Part 4 IMs. For example, if an LFC sells an asset to their EDB parent company, there will be rules under both the Part 4 and fibre IMs that apply to this transaction. It would make sense for the same principles to apply under both regimes, as this could:
 - 215.1 reduce regulatory burden; and
 - 215.2 encourage regulated businesses to transact with their related parties where it is efficient through economies of scale and scope.
216. Some indicative examples of transactions which would be considered acceptable because they are on 'arm's-length' terms are a regulated supplier:
 - 216.1 following an open tendering process;
 - 216.2 purchasing an asset using comparable pricing to that which third parties may purchase the same or substantially similar assets from the related party on substantially the same terms, including price; and
 - 216.3 confirming that independent market value, as at the date of acquisition as determined by an independent valuation, is not less than the cost.
217. Some indicative examples of transactions which on their own would not be considered as on arm's-length terms are a regulated supplier:
 - 217.1 undertaking internal sign-off that does not demonstrate objective and independent measurement (eg, internal manager of the supplier of the regulated service has verified the transaction as arm's length without ensuring there has been a consideration that reflects open market terms);
 - 217.2 entering long-term contracts with no review period or termination provisions; and
 - 217.3 having no documented procurement policy in place.

Key issue 9: Roll forward mechanism

218. A general expression for the annual building blocks allowable revenue for a regulated supplier can be represented as follows:

$RAB \times \text{Cost of Capital} + \text{Depreciation} + \text{Operating Expenditure} + \text{Tax} - \text{Revaluation Gains (or} + \text{Revaluation Losses)} - \text{Other income} = \text{Building Blocks Allowable Revenue}$

219. The value of the RAB at the end of each year is generally determined—or ‘rolled forward’ from the value at the start of the year—as follows:

$RAB \text{ (end of year)} = RAB \text{ (beginning of year)} - \text{Depreciation} + \text{Revaluations} + \text{Capital Additions} - \text{Capital Disposals}$

220. For each year within the regulatory period, the RAB will have an opening (beginning of year) and closing (end of year) value as per paragraph 219. The difference between these two values is made up of a decline in value due to depreciation, an uplift for revaluation, capital additions (ie, newly built or acquired assets) and capital disposals.
221. We think a one-year period for roll forward is appropriate for all suppliers. This would align with a requirement to provide annual ID. For PQR, the forecasting of the various building block components could also be on an annual basis, though the regulatory period will cover several years.¹²⁸ This approach is generally consistent with Part 4.
222. Capital additions will follow the valuation rules.¹²⁹ Disposals occur in respect of the sale or transfer of the asset by the regulated supplier and consist of removing the remaining value (sometimes termed the ‘carrying value’) of the asset in the year in which it is disposed of.¹³⁰
223. At this stage we do not see any reason for having other adjustments, such as lost or found assets, included in the roll forward formula. This is because the UFB assets which are expected to comprise the majority of the RAB (by value) have been built recently and records are being maintained (for example, for statutory and current regulatory purposes). However, should the need arise to include other adjustments, we could consider Part 4 approaches as appropriate.
224. The roll forward process interacts with cost allocation and the capex approval processes and the IMs that cover these areas. For example, cost allocation will apply to assets shared between FFLAS and non-FFLAS services and will impact the value of the asset in the allocated RAB. The capex IM will define rules that govern the value of

¹²⁸ Under s 207 the first regulatory period starts on the implementation date (1 January 2022 and is for three years). The duration of subsequent regulatory periods must be between three and five years.

¹²⁹ As discussed above, assets are eligible to be included in the RAB where they are constructed or acquired by a regulated supplier and employed in the provision of FFLAS. The value accorded to asset additions is generally the ‘cost’ incurred by the supplier in constructing or acquiring the asset determined under GAAP.

¹³⁰ Note that where a regulated supplier disposes of an asset, the closing RAB value of that asset, for the disclosure year in which the disposal occurs, is simply set to nil.

a newly built asset that is eligible to enter the RAB. We currently propose to follow the Part 4 approach.¹³¹

Key issue 10: How should depreciation be calculated for fibre assets?

225. When the useful life of an asset extends over more than one year, an annual depreciation allowance is applied. This recognises and allocates the recovery of the initial investment over the years of the expected life. Under the building blocks approach, depreciation is a key item that allows for the return of the original capital investment over time. The depreciation allowed each year can have a significant impact on the level of the MAR for that year.¹³²
226. Depreciation seeks to reflect the decline in value of an asset over time in a way that is broadly aligned with the consumption of the asset, all other things being equal. Ideally customers using the asset within a particular period of time should pay an appropriate amount for that usage. The depreciation method determines how the cost is allocated to customers over time to determine prices.
227. We propose to use a straight-line approach for depreciation of the tangible fibre assets and for amortisation of the intangible loss asset (see below), as it is simple, transparent, more easily understood and compared.¹³³
228. We note that s 197 of the Act refers to the potential use of depreciation (as well as other tools) by the Commission to adjust revenues or prices in order to minimise any undue financial hardship to a regulated supplier or to minimise price shocks to end-users (smoothing revenues and prices). If revenue or price smoothing is required, we would assess options for using depreciation as a tool to achieve this. Some options (with different pros and cons) would be:
- 228.1 a direct adjustment to total annual depreciation to either increase or decrease it for a particular period;
 - 228.2 adjusting (shortening or lengthening) asset lives for particular assets to 'shape' the depreciation profile; and
 - 228.3 using a different depreciation method for some or all assets.
229. Given that indexing also has the effect of delaying cash flows, it is also a smoothing mechanism.

¹³¹ Under Part 4 amounts spent in excess of those approved via the capex process are allowed into the RAB, but adjustments to the revenue path are made to reverse out some of the overspend. See chapter 7 on the Capex IM.

¹³² Note that the depreciation method for the initial asset values is set in s 177 (1).

¹³³ A supplier which has low but growing customers numbers might suggest the use of a lower depreciation rate initially, followed by a higher rate once more customers have been acquired. This has been the case for the initial rollout period. However, we consider straight-line depreciation is sufficient (ie, does not cause significant pricing distortions) in the circumstances where take-up is already over 50% and growing.

Asset lives

230. Chorus and the other LFCs already have a set of accounting lives for fibre assets which they currently use for GAAP reporting purposes, and which we are implicitly required to adopt when determining the initial value of the RAB under s 177.¹³⁴
231. We also propose using suppliers' accounting lives for fibre assets post-implementation as a proxy for useful life. There may be reasons to allow departures from these for special assets or circumstances if required. One potential example of a special circumstance would be shortening of asset lives to manage stranding risk, which we discuss in more detail in Chapter 5. Stakeholders are invited to comment on whether they see any potential need for changes from GAAP compliant asset lives.
232. We expect that there will be differences in the asset lives adopted under GAAP between suppliers. These differences are likely to have a minimal overall impact. However, if there are significant differences, we would reconsider our approach.
233. We note that suppliers review asset lives regularly and may shorten lives where they consider the remaining useful lives or recoverable values have diminished due to changes in technology, regulation or market conditions. We are considering what limits may need to be set for the shortening of asset lives for Part 6 purposes without seeking our approval. Chapter 5 discusses the issue of managing stranding risks, and outlines various options, including shortening asset lives. Reviewing asset lives is only one of several options to deal with stranding risks that we are considering.
234. We will monitor changes in asset lives via ID. Suppliers will be required to disclose, explain and outline the financial impacts of the changes to assets lives.

Questions for stakeholders

Q12	What are your views on the process for setting asset lives, and whether any limits on shortening asset lives are required?
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Amortisation approach for the loss asset

235. Each regulated supplier is treated as owning a fibre asset at the implementation date with a value equal to the financial losses incurred by the provider under the UFB initiative (see paragraph 206). As with assets in general, we need to consider how to treat this asset in terms of amortisation and revaluation.
236. We propose to apply straight-line amortisation to the loss asset. Given the loss asset is a special case, intangible asset, consisting of an amalgamation of various unrecovered building block costs, we need to determine what period to amortise it over. Our emerging view is that we will amortise the loss over a period equivalent to

¹³⁴ Section 177(1)(b) directs that we adjust cost "for accumulated depreciation and impairment losses (if any) recognised by the regulated fibre service provider (ignoring any accounting adjustment for Crown financing), as at the implementation date, under generally accepted accounting practice in New Zealand".

the weighted average life of the main (non-loss asset) RAB as at the implementation date.

237. We recognise other alternatives to setting the period over which the loss asset is amortised. Alternatives we have considered are:
- 237.1 amortisation over a fixed period of time, such as 15, 20 or 30 years; or
 - 237.2 a period consisting of a number of regulatory periods, such as 2, 3 or 4 periods; or
 - 237.3 allowing the loss asset to simply remain within the RAB, with no amortisation.

Questions for stakeholders

Q 13	What are your views on our approach to the amortisation of the loss asset and the period over which it should be amortised?
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Key issue 11: Revaluation of the RAB

238. We have considered the whether the RAB should be indexed to address the impacts of inflation. We propose to index the RAB, as this offers an ex-ante expectation of a real return and delivers an ex-post real return, but not in nominal terms (unless actual inflation equals forecast inflation). This is consistent with our principle of real FCM. This is also consistent with the approach used to RAB indexation under Part 4 (with the exception of Transpower).
239. This approach uses a nominal WACC along with indexation of the RAB and increases in asset value due to indexation are treated as income. The recognition of the revaluation gain as income avoids providing double compensation for inflation (ie, via both the WACC and the increase in asset value).
240. We propose to index the RAB using a CPI measure, with increases in asset value treated as income. We will use a forecast CPI for PQR and the actual CPI for ID.¹³⁵
241. The key reasons for using a CPI approach to revaluations, compared to other methods such as market value or producer price indexing, are as follows.
- 241.1 It avoids the time, cost and uncertainty of undertaking regular revaluations of a variety of assets if an alternative market value approach was used. Given the variety of methods that may underlie these revaluations they are open to dispute.
 - 241.2 Both alternative approaches would lead to uncertain cash flow impacts, as the relative movement between these approaches and CPI is uncertain. The age profile of the supplier's asset base will impact the effect on each supplier

¹³⁵ See paragraphs 248 to 251 for a discussion of the differences in asset valuation determinations between PQR and ID.

and can lead to counter-intuitive cash flow profiles, with lower revenues when the alternative index is increasing at a rate higher than CPI.¹³⁶

242. Despite our proposed approach there remains a risk that equity holders do not achieve a real return ex-post. This is because suppliers tend to issue debt that is fixed in nominal terms, whereas we provide an allowance for a real return, taking into account out-turn inflation. We concluded that this risk is small and symmetric, and suppliers have some control over it (eg, issuing inflation-indexed debt). Furthermore, eliminating this risk from a supplier perspective would mean exposing consumers to it, and we considered that suppliers are better placed to manage it than consumers.
243. We propose to index the total RAB. We have considered different approaches to indexation of the RAB, such as no indexation or indexation of the main RAB only, excluding the loss asset, which would remain unindexed. We would welcome views from submitters on indexation, including whether there should be a different approach for the loss portion of the RAB.
244. In summary, we will index the RAB for CPI inflation as part of the roll forward process. This will mean:
- 244.1 use of a nominal rate of return;
 - 244.2 indexation of the RAB using an appropriate CPI measure; and
 - 244.3 the increased RAB value due to indexation is treated as revenue in that year.

Questions for stakeholders

Q14	What are your views on our approach to the indexation of the RAB, including whether there should be a different indexation approach for the loss portion of the RAB?
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Key issue 12: Adjustments to the RAB values for deregulation

245. Section 210 of the Act allows the Commission, post-implementation date, to undertake a review of how one or more FFLAS are regulated. This may lead to deregulation of services with the removal of the service(s) from PQR. This then raises the issue of whether assets supporting deregulated services are removed from the RAB, in which case they will no longer be accounted for within the determination of allowed revenues.
246. The removal of assets from the RAB due to deregulation affects the risk of asset stranding that the suppliers face (or more specifically the risk that FFLAS are unable to fully recover the costs associated with particular assets). This issue is considered in more detail in the Chapter 5, where we have identified several options that could be used, singularly or in combination, to manage this risk, if required. These options are:

¹³⁶ See Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper December 2010, paragraph 4.3.80.

- 246.1 shortening asset lives;
 - 246.2 retaining assets in the RAB
 - 246.3 ex-ante compensation, for example via an ex-ante cashflow allowance or a WACC increment; and
 - 246.4 a ring-fenced compensation allowance.
247. Given, as outlined in Chapter 5, the uncertainty about the potential for competitive stranding risk, the most appropriate method may depend on what further evidence emerges on the magnitude of such a risk. Our emerging view is that we should rule out the retention of assets in the RAB post-deregulation. Please refer to Chapter 5 for a fuller discussion of these issues.

Questions for stakeholders

Q15 What are your views on removing assets from the RAB due to deregulation, and the process for determining the asset value that is removed?

Differences in asset valuation determinations for ID and PQR

248. The focus of PQR is setting a forward-looking price-quality path, using forecast information. On the other hand, ID will use past or historical information on actual performance.
249. Due to these differences between ID and PQR, one backward looking while the other is forward looking, asset valuation determinations will be different in some cases for each.
250. As an example of how the determinations will differ, consider indexation:
- 250.1 for PQR, the determination will require the application of forecast inflation values to the forecast RAB values over the future regulatory period to produce a forecast RAB value by year; and
 - 250.2 for ID, the determination will apply actual inflation rates to known RAB values from the past regulatory period to arrive at actual RAB values for each year of the completed regulatory period.
251. The different focus of ID and PQR can therefore be expected to result in different determinations.

Chapter 4: Cost allocation

- 252. This chapter sets out the following areas:
 - 252.1 Context to the cost allocation IM.
 - 252.2 Problem definition and our approach to developing the cost allocation IM.
 - 252.3 Our emerging views on the focus of the cost allocation IM on the following topics:
 - 252.3.1 Allocation of costs between FFLAS and other services.
 - 252.3.2 Allocation of costs between different types of FFLAS.
 - 252.3.3 Allocation of costs to help determine the valuation of the initial RAB.
 - 252.3.4 Cost allocation rules applicable to the calculation of past losses in the initial RAB.

Summary of emerging views

- 253. We are proposing a number of emerging views for the cost allocation IM:
 - 253.1 Allocation of costs between FFLAS and other services:¹³⁷
 - 253.1.1 We propose to broadly adopt the approach used in the Part 4 regime to fully allocate costs across a provider's regulated and non-regulated services. This includes recommendations on requirements to allocate directly attributable and non-directly attributable costs.
 - 253.1.2 We consider that the accounting-based allocation approach (**ABAA**) is most appropriate for shared costs including the use of causal allocators and propose to adopt the definition of a causal relationship that is used in the part 4 regime. We are proposing not to adopt the avoidable cost allocation methodology (**ACAM**) methodology and the optional variance accounting-based allocation approach (**OVABAA**) methodology.
 - 253.1.3 We propose that where a fibre provider uses a proxy allocator to allocate costs, the provider must explain why a causal relationship cannot be established and explain the rationale for the choice of proxy allocator.
 - 253.1.4 We are proposing to include an explicit requirement that suppliers must not double recover costs across Part 4 and Part 6 through cost allocation.

¹³⁷ When we refer to FFLAS we mean regulated FFLAS unless otherwise stated.

253.2 Allocation of costs between different types of regulated FFLAS:

253.2.1 Our current position is that there should not be prescriptive cost allocation IM rules for allocating costs between different types of regulated FFLAS. However, we do propose the use of directly attributable allocation and that suppliers identify shared costs based on certain characteristics including geographic coverage, individual products or product groups or level of network functionality.

253.2.2 We are seeking stakeholders' views on potential future situations that could support a requirement for suppliers to allocate costs between FFLAS.

253.3 Allocation of costs to help determine the valuation of the initial RAB:

253.3.1 We propose to adopt the same approach as proposed to allocate costs between FFLAS and other services to help determine the initial RAB (excluding past losses).

253.4 Cost allocation rules applicable to the calculation of past losses in the initial RAB:

253.4.1 We propose the following for the past losses fibre asset:

- (a) All costs (including operating costs and depreciation in accordance with section 177(1)(b)) that are directly attributable to the UFB initiative must be allocated to the UFB past losses.
- (b) All shared costs (including operating costs and depreciation in accordance with section 177(1)(b)) that relate to the UFB initiative must be allocated using ABAA.
- (c) ABAA is to be applied using consistent, objective, measurable and timely cost allocators when calculating the past losses.

254. We envisage that, under the ID requirements, the regulated suppliers will be required to apply the cost allocation IMs each year in preparing their ID schedules. For PQR it is envisaged that the regulated suppliers will apply the cost allocation IMs using data from the most recently published ID period and to apply it to the PQR regulatory period. This is a similar treatment to that adopted for Part 4.

Context

255. There are several contextual factors we must consider when developing the cost allocation IM.

Requirements of the Act

256. We are required by section 176(1)(a) of the Act to develop methodologies for evaluating or determining the following matters in respect of the supply of the fibre fixed line access services:

allocation of common costs (for example, between activities, businesses, access seekers, regulated services, or geographic areas).

257. The Act also states that the purpose of the IMs is to:

Promote certainty for regulated fibre service providers, access seekers, and end-users in relation to the rules, requirements, and processes applying to the regulation, or proposed regulation, of fixed lines access services.

258. The Act further provides for regulations to be made that will require suppliers to unbundle certain fibre services to enable competition for the provision of certain FFLAS services. This is relevant to cost allocation as the unbundled services are likely to be provided using shared assets and operational processes.

Problem definition and the role of cost allocation in a BBM approach

259. In our proposed approach paper, we raised the importance of the cost allocation IM and identified several issues and objectives that the IM should seek to address. We still consider these areas are relevant for the development of the cost allocation IM.
260. Regulated suppliers will often deliver multiple services, including regulated FFLAS and other regulated services, as well as non-regulated services. Regulated suppliers will often use shared assets and processes to deliver multiple services. We refer to costs that relate to multiple services (or types of services) as 'shared costs'. This sharing of costs can often enable efficient gains from achieving economies of scope.
261. Cost efficiencies from providing multiple services are relevant to the long-term benefit of FFLAS end-users as recognised in the s 162 purpose statement. Specifically, the way costs are allocated between services has a bearing on how efficiency gains from supplying more than one type of services together arise and are shared with end-users of regulated services over time.
262. Cost allocation methods are required to help determine how regulated suppliers must allocate asset values and operating costs between their regulated and non-regulated businesses. The cost allocation IM will play an important role in achieving the objectives of s 166 of the Act by:
- 262.1 limitation on regulated suppliers' ability to extract excessive profits such as through over recovery of shared costs;

- 262.2 enabling efficiency gains from providing multiple services to be shared with FFLAS end-users; and
- 262.3 helping to promote competition and mitigating the risk that regulated suppliers are restricting competition through misallocation of costs.
263. Allocating costs creates risks of misallocation of costs and enabling suppliers to potentially over-recover costs. Without rules that prevent cost-shifting (or misallocation), suppliers may be able to over allocate costs to the regulated service and hence cross-subsidise an unregulated service. This would increase the prices that can be charged for FFLAS and may lessen competition in the other market to the detriment of end-users. The over allocation of common costs could also lead to scenarios where suppliers (and related entities) double recover costs across multiple regulatory frameworks (such as Part 4 and Part 6).
264. The scenario above presents issues because FFLAS provides inputs into other potentially competitive markets and downstream services that potentially compete with the fibre network, eg, mobile and fixed wireless broadband, and potentially unbundled layer 2 services.

How the cost allocation IM links to wider fibre work programme

265. The IM has close interdependencies with the asset valuation IM, the ID and PQR programmes. The amendments to the Act also set out new requirements in the deregulation of the copper network (and regulated FFLAS) and the provision of unbundled services, DFAS and anchor services. The cost allocation IM may have implications for these areas.

Information disclosure

266. ID regulation will aim to ensure that sufficient information is readily available to interested persons to assess if the purpose of Part 6 is being met. This may include information that helps assess whether the cost allocation requirements in the IM are being properly applied. The publication of future ID disclosures can also act as a constraint or provides incentives for regulated suppliers to meet the objectives of the Act.
267. Additionally, the ID determination(s) will set the form and content of information that is made public.

Price-quality regulation

268. The PQR work programme will determine price-quality paths which will set the MAR and quality standards that apply during regulatory periods.¹³⁸ The cost allocation IM supports PQR by:

¹³⁸ Note that the Commission can choose to set maximum prices rather than maximum allowable revenue after the 2nd regulatory period.

- 268.1 setting the rules for how shared costs are allocated to = FFLAS. These rules will be used to calculate the value of the initial RAB; and
- 268.2 determining the ongoing rules for how FFLAS suppliers allocate shared costs to FFLAS. The allocation of shared costs going forward will impact the MAR.

Links with other input methodologies

- 269. The asset valuation IM will contain some of the rules for determining the initial RAB and the treatment of past losses. The cost allocation IM will need to be applied to help value both the initial RAB and the past losses fibre asset.
- 270. We have aimed to keep the recommendations of both IMs consistent. Hence, we are seeking to ensure that the cost allocation IM will be consistent with the asset valuation IM and its proposed high-level approach to the level of aggregation in the initial RAB and subsequent rollovers.

Market context

- 271. The telecommunication markets are dynamic in nature, which means there is potential for the development of new products and services, which could be a driver for investment. Chorus may also be subject to access-based competition from other telecommunications services. Competition may also be a driver for investment.
- 272. Fibre operators provide a more diverse mix of services using shared network infrastructure and shared processes (some regulated, others not). This compares to the provision of electricity, a product which cannot be differentiated in the same way.
- 273. For Chorus, the sharing of resources between the fibre and copper networks create complexities for cost allocation
 - 273.1 It is expected that the fibre services will replace the copper services in areas where fibre is available. However, while customers still receive copper-based services, cost allocation may impact relative prices between the two services. Stakeholders have raised concerns about potential misallocation of costs that could lead to FFLAS end-users facing inefficient prices.
 - 273.2 Dynamic shifting of asset usage between different type of FFLAS, other fibre, and copper services can mean simple allocators may not be appropriate for allocating costs between FFLAS and copper-based services.
 - 273.3 Cost allocation could create incentives on Chorus that affect the rate with which it migrates customers from copper to fibre in a way that is not in the long-term interests of end-users.

Our approach to developing the cost allocation IM

274. In preparing our emerging views, we considered the appropriate level of prescription we should use in drafting the cost allocation IM. We also considered the economic principles, presented earlier in this paper and the need for the cost allocation IMs to be durable.

Level of prescription

275. We have considered how prescriptive the cost allocation IM should be. Using either a more or less prescriptive approach will have advantages and disadvantages. How we will decide each issue will depend on our assessment of which decision best gives effect to the outcomes in s 162 (a) to (d) and the promotion of competition where relevant (s 166(2)(b)), as required by s 166.

276. When determining the level of prescription, we considered a number of factors including:

276.1 the specific market context including the level of asset and cost sharing in the FFLAS market;

276.2 the objectives in s 166 described above and the need to provide certainty about the regulation as required by s 174, including the ability for suppliers to estimate the material effects of the IMs;

276.3 the degree of certainty in market outcomes;

276.4 dynamic changes to the sector including customer take-up; and

276.5 technology change as well as the impact of future competition on FFLAS.

277. Submissions on the proposed approach paper differed on the question of how prescriptive our approach should be. The fibre services providers preferred less prescriptive approach to cost allocation, while the larger RSPs argued for a more prescriptive approach.

Application of economic principles to the cost allocation IM

278. Of the economic principles proposed earlier in this paper, we consider that real FCM is the most relevant to cost allocation. This is because the application of cost allocation may impact the level of reported costs and profitability of FFLAS over time. This in turn may impact the ability for investors to maintain financial capital over time.

Our emerging views on the cost allocation IM

279. This section covers our emerging views on the following topics relevant to the cost allocation IM:
- 279.1 allocation of costs between FFLAS and other services;
 - 279.2 allocation of costs between different types of FFLAS;
 - 279.3 allocation of costs to help determine the valuation of the initial RAB; and
 - 279.4 cost allocation rules applicable to the calculation of past losses in the initial RAB.

Allocating costs between FFLAS and other services

280. This section discusses our emerging view on how shared costs should be allocated between FFLAS and non-FFLAS. Non-FFLAS can include other telecommunications services, such as network assets and digital subscriber line (**DSL**) based broadband services, as well as non-telecommunications services like electricity distribution (eg sharing access to poles) or general property rental.
281. In the proposed approach paper, we proposed to allocate costs using the approach set out in the Part 4 regime to allocate costs between FFLAS and non-FFLAS. Under Part 4, regulated suppliers must:
- 281.1 fully allocate costs that are directly attributable to the regulated service; and
 - 281.2 allocate a portion of shared costs using causal or proxy allocators.
282. We also sought submissions on how to allocate costs between FFLAS and non-FFLAS services and noted how different approaches to this question may result in significantly different outcomes.

Our emerging view

283. We have reached several emerging views on the rules for allocating costs between FFLAS and other services.¹³⁹ We are still proposing to broadly adopt the less prescriptive approach used in the Part 4 regime to allocate costs between FFLAS and other services. Specifically, the recommendations are as follows.
- 283.1 All costs (asset values and opex) that are **directly attributable** to FFLAS supplied by the fibre provider must be allocated to FFLAS.
 - 283.2 All relevant costs (asset values and opex) that are **not directly attributable** to FFLAS should be allocated as shared costs.

¹³⁹ Other services means all other services the regulated entity supplies, excluding regulated FFLAS, but including other regulated services such as electricity distribution services, and other non-regulated services including non-regulated FFLAS.

- 283.3 Shared costs that relate to services regulated under Part 4 and Part 6 of the Telecommunications Act 2001 (**Part 6**) should not be over recovered (no double recovery).
- 283.4 Suppliers must allocate costs between FFLAS and other services using the ABAA over time. The ABAA approach would allow suppliers to choose the causal cost allocators and suitable proxy cost allocators if causal allocators are not available.
- 283.5 Use the Part 4 definition of a **causal relationship** when determining causal allocators. This will guide FFLAS suppliers to determine causal allocators that are based on cost drivers (cost allocators) and factors that influence utilisation of assets (assets allocators).¹⁴⁰
- 283.6 Where a supplier uses a proxy allocator to allocate costs, the provider must explain why a causal relationship cannot be established and explain the rationale for the choice of proxy allocator.
- 283.7 Suppliers will be precluded from using ACAM and OVABAA methodologies when allocating costs between FFLAS and other services. Our view (as expressed later in this chapter) is that these methodologies would not help achieve the objectives in s 166 of the Act.
- 283.8 When determining what cost and asset allocators to use, suppliers can decide what level of asset group, services or operating expense categorisation cost allocation is applied to, to reflect their individual business environment provided that, when relevant, consideration is also given to aligning with the categorisation for assets in the IM for asset valuation, applicability to geographic region or area, and for proxy allocators to reflect inputs into services.
- 283.9 Suppliers must not double recover costs shared across services regulated under Part 4 of the Commerce Act 1986 (Part 4) and Part 6 of the Telecommunications Act 2001 (Part 6).
284. We consider a less prescriptive approach to cost allocation best promotes the objectives in s 166 while still meeting the purpose of s 174. One of the main reasons is that a less prescriptive approach is better suited to an environment of high future uncertainty. We consider that uncertainty exists in relation to technology changes, take-up of FFLAS and the level of sharing between FFLAS and non-FFLAS, and also between FFLAS. In this context a less prescriptive approach is likely to be more

¹⁴⁰ In the EDB IMs, a causal relationship means, in relation to (a) operating costs, a circumstance in which a cost driver leads to an operating cost being incurred during the 18 month period terminating on the last day of the disclosure year in respect of which the cost allocation is carried out; and (b) regulated service asset values, a circumstance in which a factor influences the utilisation of an asset during the 18 month period terminating on the last day of the disclosure year in respect of which the asset allocation is carried out.

flexible and robust to future events and avoid issues of an overly prescriptive approach which may have unintended consequences, and potentially require bespoke solutions to address problems in their application.

285. However, we recognise that a less prescriptive approach may present some challenges to compliance, enforcement and in some situations uncertainty in ensuring the intended outcomes are achieved.

Options considered

286. We consider that the fully allocated cost methodologies used in the Part 4 regime are the most appropriate methodologies to consider for Part 6. Fully allocated cost approaches:

286.1 work well in conjunction with the building block methodology and in applying the economic principle of FCM; and

286.2 enable costs to be identified and allocated to different services. This will support the sharing of efficiencies with consumers by suppliers offering multiple services; and

286.3 are more appropriate than alternative approaches for ID purposes as they are easier to understand for stakeholders.

287. We considered the range of cost allocation methodologies used in Part 4 and assessed their applicability to the fibre sector including:

287.1 the accounting-based allocation approach;

287.2 the optional variance accounting-based allocation approach; and

287.3 the avoidable cost accounting methodology.

288. We also considered options for the type of allocators to use in specific situations for example:

288.1 whether to preclude suppliers from using certain proxy allocators when allocating shared costs; or

288.2 putting restrictions on the use of proxy allocators including requiring suppliers to show there was no appropriate causal allocators available.

Reasons for our emerging view

289. Our proposed approach to allocating costs between FFLAS and other services, aims to:

289.1 ensure suppliers have incentives to improve efficiency by offering multiple services and that FFLAS users share in those efficiency gains (s 162 (b) & (c) of the Telecommunications Act);

- 289.2 ensure costs are not over recovered due to double recovery (addressing concerns of regulated firms extracting excessive profits – s 162(d)); and
- 289.3 address potential risks to competition through the misallocation of costs to FFLAS.
290. In submissions on our proposed approach paper, several stakeholders supported the need for the cost allocation IM to determine the rules and processes for allocating costs between FFLAS and other activities including other regulated and non-regulated activities. Chorus and the other LFCs supported adopting an approach that was based on Part 4 and recommended that we allow regulated suppliers flexibility in determining how to allocate costs. Submissions from stakeholders also included views on which cost allocation methodologies from Part 4 would not be appropriate in a Part 6 context.
291. Requiring suppliers to allocate directly attributable and non-directly attributable costs is an essential component of a cost-based reporting regime. It is important that costs are allocated to support the purposes of the BBM style regime.
292. We consider that our emerging view on the rules for allocating costs between FFLAS and other services will help promote outcomes that are consistent with outcomes produced in workably competitive markets as required by s 162. ABAA supports the use of shared assets and processes which can be a source of efficiency gains and provides a mechanism to share these gains between end-users of FFLAS and other services. For FFLAS users, ABAA will ensure the customers of other services contribute to shared costs which will flow through to lower costs and hence lower prices for FFLAS while potentially not undermining competition in the markets for the other services.
293. Defining a causal relationship is a step that is required to allocate shared costs to specific activities. This will provide guidance to suppliers when allocating shared costs. Using the ABAA methodology and identifying causal and/or proxy allocators will enable suppliers to determine which cost drivers to use in allocating costs to FFLAS and other regulated and non-regulated services.
294. Frontier suggested that we consider strengthening the requirement to justify the use of proxy allocators.¹⁴¹ That is, the regulated supplier should be able to demonstrate that:
- 294.1 a causal relationship cannot be established; and
- 294.2 the proxy factor is appropriate.
295. In response to this point, we agree that it is better if suppliers use causal allocators rather than proxy allocators. However, we consider that it is impractical to require a

¹⁴¹ Frontier Economics on behalf of Vodafone, "Submission on new regulatory framework for fibre", 21 December 2018, page 21.

fibre provider to use a causal allocator if the required data set is unavailable (or unreliable), even if the causal relationship can be established. Hence our emerging view allows for the use of proxies should the causal allocators not be available. We note the point about having to justify the use of proxies, but also note that we will consider the disclosure of information about the proxies used when developing our ID requirements.

296. Spark suggested that that, where possible, we specify allocation methodologies for specific assets and that we carefully monitor disclosures to ensure that cost allocation approaches are appropriate.¹⁴² In response to this view we note that if we were to specify allocation methodologies for specific assets, the suppliers would have to apply these allocators, even if future evidence indicated that some of these allocator were inappropriate (eg, not causal). We intend to consider how to monitor compliance when developing our future ID requirements.

297. Frontier suggested we also consider how costs are identified to ensure that costs are not incorrectly classified as shared costs by Chorus as this would enable greater control by Chorus on how these are allocated.¹⁴³ We note this point and as it relates to how the IMs are implemented and expect to consider the issue when establishing the ID requirements and our approach to compliance. We also note that whether or not a cost is identified and reported as shared can depend on the level of aggregation. With a high level of aggregation, more costs are likely to be reported as shared costs, and hence subject to cost allocation.¹⁴⁴

298. Axiom suggested we adopt a methodology that:¹⁴⁵

enabled Chorus to recover an increasing proportion of the costs that are common across copper and fibre services from the latter as the migration progresses. For example, an allocation based on customer numbers, routing factors, etc., might facilitate this outcome.

299. Some submitters, including Vodafone and 2degrees, recommended that the fibre cost allocation IM should be prescriptive.^{146,147} Frontier suggested we should be cautious when considering the use of certain proxy allocators as these may cause

¹⁴² Spark, "Submission on new regulatory framework for fibre" (21 December 2018), paragraph 109.

¹⁴³ Frontier Economics on behalf of Vodafone, "Submission on new regulatory framework for fibre" (21 December 2018), pages 8, 20 - 21.

¹⁴⁴ For example, consider a suburb where half of Chorus' customers are on fibre and half on DSL. If the poles are pooled, then the poles are a shared cost, but if each pole is treated as a separate asset then some of the costs would be specific to FFLAS. In this scenario, cost allocation could split the cost of the pooled poles to get the same (or similar) outcome as if each pole was allocated or directly attributed individually.

¹⁴⁵ Axiom on behalf of Spark, "New regulatory framework for fibre", December 2018, page 27.

¹⁴⁶ For example, Vodafone, "Submission on new regulatory framework for fibre" (21 December 2018), pages 2 and 21.

¹⁴⁷ 2degrees, "Submission on new regulatory framework for fibre" (21 December 2018), page 16. 2degrees made its submission by reference to a 2010 submission from Telecom on the Part 4 IMs.

distortionary effects. Frontier identified the following as potential proxy allocators, but also noted the need to strengthen the justification of proxies:¹⁴⁸

299.1 Share of revenue.

299.2 Share of traffic.

299.3 Equi-proportionate mark-up (**EPMU**).

299.4 Share of customer numbers.

300. We decided against introducing prescriptive rules for how suppliers should allocate costs within the ABAA framework such as requiring suppliers to use specific allocators for certain costs or precluding the use of certain proxy allocators. We consider that suppliers are well placed to identify the causal factors for their particular business environment. We expect that our future ID regime and compliance activities will consider potential issues with suppliers' implementation of the cost allocation approaches including the justification for the choice of proxy allocators.
301. Spark submitted that double recovery should not occur and that it was inconsistent with the Part 4 and Part 6 purpose statements.¹⁴⁹ Frontier also submitted against allowing double recovery.¹⁵⁰ We agree that double recovery should be avoided and is not consistent with the purposes of Part 6 such as the need to reduce excessive profits.
302. We consider that one specific area of concerns for double recovery involving other services is when costs are shared across multiple regulated sectors. For example, the use of different cost allocation approaches in each sector could risk over recovery. To address this we included a proposal to make it clear that double recovery is not allowed between Part 6 and Part 4, which regulates several firms that are related to the regional LFCs. The proposal is worded to covers both cost allocation and related party transactions. We consider that this helps achieve the purpose of Part 6, particularly s 162 (d) that regulated suppliers are limited in their ability to extract excessive profits, as well as ensuring that efficiency gains from the use of shared assets are shared with FFLAS end-users.
303. Other aspects of over recovery include potential for double recovery with unregulated services (such as other telecommunication services) or that the common costs allocated to FFLAS exceed the stand-alone costs for FFLAS. Spark submitted that we should ensure that the later form of over recovery did not occur and suggested that we did checks for such over recovery (eg, using benchmarks).¹⁵¹

¹⁴⁸ Frontier Economics on behalf of Vodafone, "Submission on new regulatory framework for fibre" (21 December 2018), page 3 19, 21.

¹⁴⁹ Spark, "Submission on new regulatory framework for fibre" (21 December 2018), paragraphs 98-100.

¹⁵⁰ Frontier Economics on behalf of Vodafone, "Submission on new regulatory framework for fibre" (21 December 2018), page 10.

¹⁵¹ Spark, "Submission on new regulatory framework for fibre" (21 December 2018), paragraph 114.

While we consider that ideally neither of these forms of over recovery should occur, we do not consider that it would be appropriate to have prescriptive rules to address this risk. One reason for this is that such rules would apply to unregulated services. While we note Spark's suggestion about checking for over recovery, we consider this to relate to issues around monitoring compliance which we will consider separately.

Our recommendations on OVABAA and ACAM

304. OVABAA enables suppliers to choose to allocate a higher portion of costs to regulated services than would be achieved through the ABAA approach. The initial purpose of OVABAA in the Part 4 regime was to remove potential barriers a supplier may have to invest in unregulated services which may be in the long-term benefit of consumers.
305. At the implementation date, we expect that suppliers, particularly Chorus, will be offering other established regulated and non-regulated services (eg, copper-based services, and backhaul). This lends itself to an ABAA approach where costs are allocated using causal or proxy allocators.
306. Under Part 4 of the Commerce Act, IMs must not unduly deter investment by a supplier of regulated goods or services in the provision of other goods or services. The OVABAA cost allocation option was introduced into the Part 4 IMs to help achieve this outcome. There is no equivalent requirement in Part 6. However, we recognise that there may be situations where a OVABAA option could be used to support the introduction of innovative services that benefit end-users.
307. It is possible that some future non-regulated FFLAS services will be fibre or significantly fibre based and may be even close substitutes to FFLAS (for example G.fast¹⁵²) or offer the same service but be in a deregulated area. It is possible that any such future services will be able to compete effectively without being supported by high allocations of shared costs to regulated services, and that doing so may potentially lessen competition in those markets. We therefore consider that there is a risk that OVABAA could harm competition in a way that would be inconsistent with the requirement in section 166(2)(b)) to promote workable competition.
308. We also consider that the inclusion of OVABAA, could increase the complexity of the IMs and hence increase the costs to the regulated suppliers of applying the IMs. This is particularly so in light of comments in submissions that suggest that cost allocation for Part 6 will be complex and that subjective judgements, as can occur under OVABAA, may have a material impact on calculations.¹⁵³

¹⁵² G.fast is a technology that enables fast broadband speeds while still using the copper lead into the end-user premises.

¹⁵³ For example, Frontier Economics on behalf of Vodafone, "Submission on new regulatory framework for fibre" (21 December 2018), pages 13-22.

309. Our emerging view is the OVABAA methodology should not be included as an available methodology to use when allocating costs between FFLAS and other non-FFLAS services.
310. In response to our proposed approach paper, Axiom recommended that ACAM should not be an allowable option in the cost allocation IM.¹⁵⁴ We agree and are proposing that ACAM should not be included in the cost allocation IM as a methodology for regulated suppliers to use to allocate costs. ACAM was originally allowed under the Part 4 regime. However, it was removed from the IM as a cost allocation methodology for EDBs and gas pipeline businesses (GPBs) in the 2015/2016 IM review.
311. The main reason for including the ACAM methodology in the original Part 4 IM was to save suppliers the cost of changing their accounting systems when common costs were relatively modest. We do not expect this to be an issue with LFCs and Chorus. We consider that ACAM in most cases would not lead to outcomes comparable to outcomes in workably competitive markets.

Questions for stakeholders

Q16	What are your views on how costs should be allocated between FFLAS and other services?
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Allocating costs between different types of FFLAS

Problem definition

312. The allocation of common costs between different types of FFLAS can inform our assessment of the structure of FFLAS prices and whether it promotes the efficient outcomes for the long-term benefit of end-users. How prices are structured for different FFLAS may have impacts on competition from other services, such as mobile broadband, and layer 2 based competition from unbundlers.
313. We have focussed our analysis on whether we should allocate costs between FFLAS rather than how to allocate at this stage. Dependent on what happens with unbundling, suppliers may be required to allocate costs between layer 1 and layer 2 services to enable pricing for an unbundled service. Current disclosures show the suppliers can distinguish between many layer 1 and layer 2 costs. We may also consider delaying decisions relating to allocating costs between FFLAS and address this issue in cost allocation IMs to be set at a future date.

Emerging view on allocating costs between FFLAS

314. Our emerging view is that the cost allocation IM rules for allocating costs between different FFLAS should have a relatively low level of prescription to provide long-term certainty. We propose the following approach:

¹⁵⁴ Axiom on behalf of Spark, "New regulatory framework for fibre" (21 December 2018), page 27.

- 314.1 When costs are required to be determined in terms of a characteristic, such as geographic coverage, individual products or product groups, or a level of network functionality, then:
 - 314.1.1 costs that are directly attributable based on that characteristic must be allocated on that basis; and
 - 314.1.2 shared costs that relate to that characteristic must be identified.
- 315. We are interested in stakeholders' views on potential situations that would support a requirement for suppliers to allocate costs between FFLAS. For example, the following may be relevant circumstances:
 - 315.1 Where information is needed for cost-based reviews of the prices for anchor services and potentially for setting maximum prices for DFAS.
 - 315.2 Other reasons, such as:
 - 315.2.1 to prepare for removing assets from the RAB in the event of deregulation of certain FFLAS or geographic areas in subsequent regulatory periods;¹⁵⁵ and
 - 315.2.2 to distinguish between layer 2 and layer 0+1 costs after unbundling of layer 2.
- 316. In reaching this emerging view we considered the options of a more prescriptive approach and of not having an IM for allocations between FFLAS services.

Reasons for emerging view

- 317. In the proposed approach paper, we asked stakeholders for views on whether we should allocate costs between FFLAS. This issue split opinions between regulated suppliers and RSPs. RSPs favoured consideration of allocating costs between FFLAS and considered that allocation of costs between different fibre services will be important in relation to the promotion of competition.^{156, 157} In contrast, Chorus and the other LFCs did not support the allocation of shared costs between FFLAS.^{158, 159}

¹⁵⁵ By prepare, we mean "to set their accounting systems in a way that would make data available".

¹⁵⁶ For example, Axiom on behalf of Spark, "New regulatory framework for fibre" (21 December 2018), pages 25-26.

¹⁵⁷ For example, 2degrees, "Submission on new regulatory framework for fibre" (21 December 2018), page 16.

¹⁵⁸ Chorus, "Submission in response to the Commerce Commission's invitation to comment on its proposed on new regulatory framework for fibre dated 9 November 2018" (21 December 2018), paragraph 190.

¹⁵⁹ Enable, Ultrafast Fibre and Northpower Fibre, "Submission on new regulatory framework for fibre" (21 December 2018), page 16.

318. Frontier stated:¹⁶⁰

Beyond the issue of allocation of shared costs to regulated versus non-regulated services, the allocation of shared costs between different regulated fibre services will also influence outcomes. In particular:

- the impact of cost allocation on economic headroom between layer 1 and layer 2 services; certain stakeholders may favour allocating costs to layer 1 service to protect their position as suppliers of layer 2 services
- the anchor pricing approach may lead to preferences of infrastructure owners for certain allocations of shared costs, specifically those that allocate a large share of shared costs to anchor services.

319. We agree with Frontier, and also Axiom and Vodafone, that the approach to cost allocation between FFLAS may influence regulatory outcomes.¹⁶¹ Allocating costs to specific FFLAS may be necessary in the future to estimate individual products' costs and prices (eg for DFAS or anchor services price reviews). Equally, following the first regulatory period, cost allocation between FFLAS might be informative in case of concerns around pricing that may harm competition (eg cross-subsidising competitive products).

320. We have also considered how far we can go in requiring suppliers to report on costs at the geographic region level to support possible future deregulation. This would happen when a service switches from regulated FFLAS to deregulated FFLAS.

321. We expect that this issue will become more significant in the longer term as end-users' transition off copper and more FFLAS products are likely to be introduced (for example GPON unbundling, bitstream alternatives). In addition, the Commission has statutory requirements to conduct reviews of anchor product pricing, unbundling, and DFAS services. It may be prudent to consider now how the cost allocation IM, as well as ID and PQR, can support these longer-term requirements. Information collected through ID on costs as well as the approaches used by suppliers to allocate costs could help inform future cost-based reviews.

322. In saying this, we note we will need to ensure that the requirements we set in the IMs (or ID) relating to the supply or disclosure of information are consistent with the purposes of those instruments and the promotion of the objectives in s 166. If we require any information to perform our Part 6 functions where these criteria would not be met, we will be able to obtain such additional information using our information gathering powers under s 98 of the Commerce Act and s 221 of the Telecommunications Act.

¹⁶⁰ Frontier Economics on behalf of Vodafone, "Submission on new regulatory framework for fibre" (21 December 2018), page 10.

¹⁶¹ Vodafone, "Submission on new regulatory framework for fibre" (21 December 2018), page 22.

323. We consider that information collected through the new ID regime, including costs and the approaches used by suppliers to allocate costs, could help inform future cost-based reviews.
324. Chorus and the other LFCs do not support including rules for cost allocation between FFLAS in the cost allocation IM. We responded to this issue earlier in this section in explaining our reasoning. Chorus considers allocating costs between FFLAS.¹⁶²

Would be an overly complex and subjective exercise prior to RP1 given the extent of sharing on our network between FFLAS services. In addition, such an approach is not typical within a BBM – there is no precedent with EDBs or GPBs.

It is difficult to see how a methodology which informs cost-based pricing can be determined under a revenue cap. It's fundamentally incompatible given a revenue cap implies pricing freedom to achieve the MAR within a regulatory period

In addition, we have other constraints under the regime (anchor product and geographic consistent pricing), which are set irrespective of cost.

325. A limitation with introducing rules for allocating costs between FFLAS is that many FFLAS costs are shared between individual FFLAS products.¹⁶³ Without a clear causal driver, allocation rules may require subjective judgement for application even when based on established principles such as 'willingness to pay'. It is therefore unclear to what extent upfront rules for allocating costs between FFLAS would increase the regulatory certainty provided by the regime.
326. Hence the decision on how to allocate costs between FFLAS may be better determined in the future. This will allow for future analysis such the application of economic pricing principles that consider the future context.
327. Chorus submitted that, should we consider it necessary to allocate between different types of FFLAS, it would be inappropriate to do so "between now and RP1".¹⁶⁴ We agree with Chorus to the extent that should we decide to make decisions on the specifics of how to allocate common costs between FFLAS, it may not appropriate to do so early on in the regime.
328. Vodafone's submission presented unbundling of layer 1 of the fibre network as a situation where a FFLAS service will need to be priced.¹⁶⁵ Vodafone submitted several options as to how the service could be priced which raised questions as to the role of cost allocation and economic pricing principles (in this case an economic

¹⁶² Chorus, "Submission in response to the Commerce Commission's invitation to comment on its proposed on new regulatory framework for fibre dated 9 November 2018"(21 December 2018), paragraphs 192-196.

¹⁶³ In some cases there might be no material difference in the costs of providing low-end vs high-end products.

¹⁶⁴ Chorus, "Submission in response to the Commerce Commission's invitation to comment on its proposed on new regulatory framework for fibre dated 9 November 2018" (21 December 2018), paragraph 196.

¹⁶⁵ Vodafone, "Submission on new regulatory framework for fibre" (21 December 2018), pages 15-16.

replicability test). We consider that unbundling is an example of why decisions on how to allocate costs between FFLAS services should be considered in their own context and not as part of this cost allocation IM.

329. We therefore do not propose a more prescriptive approach. We consider that it would risk increasing compliance costs disproportionate to the benefits and may have unintended adverse consequences such as implying a degree of accuracy that may not exist in the absence of clear causal drivers, and being seen to predetermine the outcomes of any future review.

What is a product or cost for cost allocation purposes?

330. If in future there is seen to be value in allocating costs between FFLASs, then we consider that any allocation between FFLAS should be at a product family level and not a product variant level.¹⁶⁶ This reflects our understanding that often product families provided using common elements can have pricing differences that may reflect market demand factors, rather than a cost-plus pricing structure. By reducing the level of disaggregation, more costs will be directly attributed to product families and hence we will get the benefit of gaining insight of this dimension of cost structure. Further, products within product families are likely to face similar levels of (potential) competition and are more likely to be (reasonably) close substitutes from the end-users' perspective, thus limiting the scope for FFLAS suppliers to price strategically within a product family. This implies that there may be limited value in requiring cost allocation at a level deeper than a product family. We also expect it would be particularly complex for firms to split costs to this additional level of detail.
331. We understand that some costs have clearer causal relations with specific FFLAS families or regions than others. For example, splitters and distribution fibre may be identifiable with specific end-users on limited number of known products (eg, unbundled, bitstream), while other FFLAS costs or levels of aggregation may lack the same specificity in their causal relationship. For example, a specific duct may only support one product family, but if pooled with other ducts in the same suburb would become part of a common (pooled) asset since some of the other ducts support other types of FFLAS.
332. Both of the above have implications for the extent to which suppliers should be expected to apply the cost allocation IM, and hence the extent that costs are viewed as common between different FFLAS. It also has implications for later work on ID and any future analysis that applies economic pricing principles.
333. Our general expectation is that if cost allocation was applied between FFLAS, costs should be disaggregated to the level that supports product families (eg, all bitstream services as one family) and likely future regulatory scenarios such as unbundling or geographic deregulation.

¹⁶⁶ This means that closely related products would be grouped together. For example, two product variants that differed only in terms of down load speed (eg 100Mbps and 200Mbps) could be considered to be part of the same product family.

Questions for stakeholders

- | | |
|-----|---|
| Q17 | What are your views on how costs should be allocated between FFLAS, and the potential conditions we have identified? |
| Q18 | What is your view on whether some decisions relating to allocating costs between FFLAS could be addressed via cost allocation IMs to be set at a future date? |
| Q19 | What level of granularity in terms of product specificity and/or geography is appropriate to support cost allocation in the identified conditions? |

Cost allocation rules for determining the initial RAB (excluding past losses)

General explanation of topic

334. Cost allocation rules will be required to determine which portion of shared costs including assets should be allocated to the initial fibre RAB. We have identified two dimensions that should be addressed by the cost allocation IM. These are:

334.1 the cost allocation rules that apply to all assets' pre-implementation date including UFB assets, pre-UFB fibre assets, and non-UFB assets post 2011; and

334.2 the treatment of past losses where a decision about cost allocation would affect the portion of past losses that will be included in the valuation of the initial RAB. This issue is discussed in the following section.

Emerging view on cost allocation rules for determining the initial RAB (excluding past losses)

335. In establishing the initial RAB, our emerging view is that regulated suppliers must apply ABAA to every asset that is shared at the FFLAS vs other services level.

Reasons for our emerging views

336. The recent submissions drew a link between cost allocation and past losses, and submitters suggested we will need to explicitly and separately address the question of whether there should be a different approach to cost allocation for past losses (tied to asset valuation and economic principles). Vodafone went on to say shared costs should be attributed mainly to existing services and should not be included in the losses' calculation.¹⁶⁷ Frontier added that the relative prices of fibre and copper will affect the transition between these services.¹⁶⁸

337. Axiom submitted that in setting the initial RAB the Commission would need to allocate a portion of the costs of the assets that are used to provide other services. Axiom also submitted that if the full unallocated value of these shared assets was used for the initial RAB the outcome would not be consistent with the Part 6 purpose

¹⁶⁷ Vodafone, "Submission on new regulatory framework for fibre" (21 December 2018), pages 3, 30.

¹⁶⁸ Frontier Economics on behalf of Vodafone, "Submission on new regulatory framework for fibre" (21 December 2018), page 22

statements.¹⁶⁹ We agree with Axiom that we should develop cost allocation IMs for establishing the initial RAB and that this will help achieve the purposes of Part 6. As we noted earlier in this chapter, we consider that cost allocation helps avoid such double recovery that would potentially allow the supplier to make excessive profits, while allowing the efficiency gains from asset sharing to be shared with FFLAS end-users.

338. We consider that the cost allocation approach to determine the initial RAB for network assets should align with our proposed approach to future cost allocation decisions (post-implementation date). This is due to the mechanics of the first roll forward where the initial RAB must be rolled forward at the end of the disclosure year. If alternative approaches to allocation were applied this would create difficulties in reconciling the opening values in the first roll forward (ie, the initial RAB values) to the closing values, particularly for those assets which are shared.
339. We consider that a consistent approach would increase certainty, while having different approaches would add cost to industry and reduce usefulness to us and other interested persons as comparisons would be difficult. This will also support later cost allocation disclosures and analysis (eg, by products and later analysis of products and potentially different geographic views, such as unbundling, PQR, reviews and deregulation of some areas).
340. Chorus suggested that because valuing the initial RAB is a one-off exercise, cost allocation can be prescribed and is not reliant on the Commission determining a cost allocation IM. In response to Chorus' proposal for the initial RAB cost allocation rules to be more prescriptive than for later periods, we consider that in general this could create unforeseen consequences for the rollovers. For example, there could be difficulties reconciling the opening values in the first roll forward (ie, the initial RAB values) to the closing values, particularly for those assets which are shared.

Questions for stakeholders

Q20	What is your view on whether fibre suppliers must apply ABAA to assets that are shared at the FFLAS vs other non-FFLAS services level when establishing the initial RAB?
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Cost allocation rules applicable to the calculation of past losses in the initial RAB

Problem definition

341. The Act requires the initial RAB to include a fibre asset with an initial value equal to the financial losses incurred by the provider in providing FFLAS under the UFB initiative between the period of 1 December 2011 and the day before the implementation date.

¹⁶⁹ Axiom on behalf of Spark, "New regulatory framework for fibre" (21 December 2018), pages 22-23.

342. The valuation of this past losses asset will require cost allocation approaches to be applied. This will include considering issues such as the approach to allocating depreciation and operating expenses relating to assets that predated the UFB initiatives and those built considering the UFB initiative but also used for providing copper services or non-UFB fibre services.

Our emerging view

343. We are interested in stakeholders' views on the following proposals in relation to the allocation of costs that could be included in the past losses for the initial RAB:
- 343.1 All costs (including operating costs, impairment and depreciation in accordance with section 177(1)(b)) that are directly attributable to the UFB initiative must be allocated to the UFB past losses.
- 343.2 All shared costs (including operating costs, impairment and depreciation in accordance with section 177(1)(b)) that relate to the UFB initiative must be allocated using ABAA.
- 343.3 ABAA is to be applied using consistent, objective, measurable and timely cost allocators when calculating the past losses.
344. This approach is comparable to that proposed for allocation between FFLAS and other services but is being applied to determine costs for the UFB initiative rather than FFLAS. One difference is that the cost allocation is directly to depreciation, whereas under the building block model approach depreciation is normally calculated on the allocated RAB (ie, after the cost allocation has been applied).
345. We also consider that the past losses may be calculated with greater use of proxies than for future costs allocations. This may reflect the need to simplify some aspects of the cost allocation to reflect the availability (or absence) of past data.

Consideration of submissions

346. While several stakeholders commented in principle on past losses and/or cost allocation, not all of these submissions specifically addressed cost allocation in the context of past losses.
347. Several submitters suggested we will need to explicitly and separately address the question of whether there should be a different approach to cost allocation for past losses (tied to asset valuation and economic principles). Vodafone went on to say common costs should be attributed mainly to existing services and should not be included in the losses calculation. We note that this would effectively remove many of the assets used to provide FFLAS, provide disincentives for achieving efficiency gains from sharing prior to the implementation date, and is inconsistent with decisions for asset valuation to adopt a BBM in the EVP.
348. Frontier submitted that a prescriptive approach would be needed for past losses and that our approach would need to consider both network assets and operating expenses. Frontier also submitted that operating costs may include categories with

few directly attributable costs which would require a 'material allocation exercise' and that there is a risk of double recovery including of common costs recovered via the regulated copper prices.¹⁷⁰

349. Frontier also noted the amounts involved in these cost allocation exercises would be material and create strong incentives for over allocation to the past losses (and the initial RAB). Frontier submitted that simplifying assumptions for cost allocation to past losses may not be desirable and noted that some potential allocators such as revenue may not be 'useful'.¹⁷¹
350. At a high-level, Vodafone, who was supported by Spark, proposed an approach that would exclude shared costs, while Chorus submitted that shared costs should be included in the calculation of past losses.
351. Vodafone submitted that "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: shared costs should not contribute to any losses; ...".¹⁷²
352. In support of their position to exclude shared costs from the losses calculation, Vodafone advocated for the use of an OVABAA approach, "The optional variation to the accounting-based allocation approach (OVABAA) allows for shared costs to be adjusted if a new business venture would otherwise not be viable". Spark is supportive of this approach, though goes further saying the Commission "will need to address the double recovery that would result from applying regulatory pricing approaches in parallel and high returns observed by Vodafone over this period".¹⁷³
353. Chorus submitted the alternative view and supported the inclusion of shared costs in the initial loss and the use of causal allocators when possible.

Cost allocation arises in several components of the regulatory framework. The Commission needs to undertake separate but related backwards-looking cost allocation exercises to attribute fibre assets to the initial RAB, and to the UFB financial losses asset. Those exercises will differ slightly because the initial RAB relates to all assets that support FFLAS, whereas the financial losses asset is limited to assets that support UFB services. This latter allocation will have to address the build phase of the UFB initiative and potentially be limited by the availability of historical information relevant to allocation. Where possible, the Commission should undertake that allocation exercise based on causal allocators. Where appropriate causal allocators are not available, the Commission should adopt sensible proxies.¹⁷⁴

354. Chorus also comments regarding the suggested application of OVABAA:

¹⁷⁰ Frontier Economics on behalf of Vodafone, "Submission on new regulatory framework for fibre" (21 December 2018), pages 14-18.

¹⁷¹ Frontier Economics on behalf of Vodafone, "Submission on new regulatory framework for fibre" (21 December 2018), pages 18-19.

¹⁷² Vodafone, "Submission on new regulatory framework for fibre" (21 December 2018), paragraph 92.

¹⁷³ Spark, "Cross submission on new regulatory framework for fibre" (5 February 2019), paragraphs 47-51.

¹⁷⁴ Chorus, "Submission in response to the Commerce Commission's invitation to comment on its proposed on new regulatory framework for fibre dated 9 November 2018" (21 December 2018), paragraphs 38-39.

...on the basis that the fibre network is new and an additional service, therefore warrant any allocation of shared assets. This argument reflects a misunderstanding of the role of OVABAA, which is to permit a regulated business to recover the whole of its shared costs across all activities, while avoiding disincentivising the use of regulated assets to provide other services. OVABAA is applied by: determining a standard accounting-based allocation approach (ABAA) between the regulated and 'additional' service; and asking whether that allocation would render the additional service commercially non-viable. The submitter is reversing the approach by advocating for a lower initial allocation to the regulated (fibre) service. Moreover, there is no support for the proposition that FFLAS is non-viable under a standard allocation given that Chorus expects to recover the costs associated with FFLAS over the life of the assets.

355. We have noted Chorus' view that a supplier may be able to identify multiple possible causal or proxy factors and will consider it later in developing the draft IM determination and future ID determination. As explained below, we also factored it into our proposal that shared assets should be attributed using consistent, objective, measurable and timely cost allocators.
356. Chorus in discussion of the initial RAB, noted that it included past losses and was a 'backwards-looking' prescriptive exercise, in contrast to forward-looking cost allocations which it submitted required a more principled approach.¹⁷⁵

Reasons for our emerging view

Use of a more prescriptive approach

357. We agree with Chorus that the calculation of past losses for the initial RAB is a backwards-looking exercise, which may require a more prescriptive approach. Frontier also supported a more prescriptive approach.
358. We consider that a more prescriptive approach reflects that:
- 358.1 Past losses relate to past events where the specific context is known and there is little, if any, need to future proof it for unknown future events.
 - 358.2 It relates to a transitional period when there may be additional potential for uncertainty (eg, around level of sharing) and information asymmetry in applying cost allocation.
 - 358.3 The level of prescription should be reasonable in terms of compliance costs for the suppliers. This is based on a review of their current fibre ID disclosures and section 9A disclosures, as well as Telecom's past published accounting separation disclosures (a form of regulation that applied to both copper and fibre assets before the UFB initiative).^{176,177,178}

¹⁷⁵ Chorus, "Submission in response to the Commerce Commission's invitation to comment on its proposed on new regulatory framework for fibre dated 9 November 2018" (21 December 2018), paragraphs 180.

¹⁷⁶ The determinations for the current fibre ID specify the types of information that Chorus and the LFCs provide to us. The determinations can be found at <https://comcom.govt.nz/regulated->

- 358.4 There is potential for past losses, particularly in the case of Chorus to include a high shared cost element. This potential was noted in Frontier’s submission.
359. On the other hand, the recommendations sought to avoid being overly prescriptive or context specific, but rather focus on categorisations which should broadly capture all relevant costs. We consider that an overly prescriptive approach would be time consuming to prepare as it would need to consider numerous contexts and factors including many which may be subjective or involve information asymmetries (eg, what was the purpose of some investment, what was the counterfactual in the absence of the UFB initiative?).

Use of directly attributable and ABAA approach

360. We propose adopting an approach for past losses that uses a combination of direct attributions and ABAA because:
- 360.1 It is consistent with the approach to cost allocation of assets for the initial RAB.
- 360.2 It has a transitional and proportional effect (due to dynamic allocation) for shared costs that reflect that in 2011 UFB was incremental new investment, but by implementation date will be the core ongoing business. The need to consider this transitional impact was noted in Frontier’s submission.
- 360.3 It can apply to both Chorus and the other LFCs.
- 360.4 It is robust for use of fibre technology for non-UFB purposes including UFB initiated assets being used to provide other services and vice versa.
- 360.5 It is consistent with the economic principle of FCM, including in terms of ensuring that Chorus receives a return on its investment in reused and common copper assets, particularly during the later years of the loss period when some of the assets will be increasingly, if not fully, used to provide UFB services.
- 360.6 As the past losses will largely be calculated retrospectively, many of the reasons for using OVABAA or ACAM to create incentives to improve efficiency or reduce unwanted cross-subsidisation do not apply.

[industries/telecommunications/regulated-services/fibre-regulation/ultrafast-broadband-information-disclosure.](#)

¹⁷⁷ The findings for our 9A study into fibre services can be found on our website at https://comcom.govt.nz/_data/assets/pdf_file/0018/111087/Fibre-9A-study-report-17-December-2018.pdf. Refer to paragraphs 24-34 for discussion on the information that the regulated suppliers collect.

¹⁷⁸ Under accounting separation, Telecom applied an attribution methodology using its activity-based costing model. Details on the methods that Telecom used can be found at https://www.spark.co.nz/binarys/2010_regulatory_reporting_manualv2.pdf.

361. It is worth noting that the proposed approach could see the depreciation on some UFB initiative assets excluded for some years from the past losses. For example, if the asset was initially commissioned to support non-UFB services (eg, supporting copper-based broadband services). Equally the proposed approach could see the depreciation on some UFB initiative assets fully attributed to past losses, even if the asset was used for non-UFB purposes. As explained later this is linked to questions about the counterfactual, purpose of, and benefits from the investment.
362. The non-UFB assets for which depreciation may contribute to the past loss include both pre-2011 assets and post 2011 non-UFB initiative assets. The proposed approach of using ABAA for those assets will also result in those assets being fully attributed to the past loss if they are fully used (in a causal sense) for UFB purposes, as under ABAA a 100% allocation gives the same result as direct attribution.
363. We consider that for cost allocation to give effect to the Act's requirements, and also to apply the building block approach to past losses as proposed for asset valuation, IMs should not preclude shared costs or significant groups of shared costs as proposed by Vodafone.
364. Due to the level of sharing this could preclude to a material number of assets and operating costs for Chorus in particular. Hence this approach would not fulfil the intent of the requirement in section 177(3) (a) to take account of unrecovered returns on these assets. Section 177(3)(a) states:

In determining the financial losses under subsection (2), the Commission—

- (a) must take into account any accumulated unrecovered returns on investments made by the provider under the UFB initiative.

Timely, measurable and objective

365. Information gathered during the section 9A study into fibre, via the current fibre ID disclosures, and in the public domain (eg, annual reports and investor presentations), and views expressed in submissions (eg, Frontier) suggests that for Chorus the approach to cost allocation is likely to have a material impact on the size of its past loss value.^{179,180,181} This is consistent with Chorus' submission that noted the current level of sharing is 'extensive' and will 'substantively increase' and gave

¹⁷⁹ For example, Chorus 2017/18 financial statements reveals that the value of some classes of assets that are often shared is material (for example property and ducts, manholes and poles).

¹⁸⁰ The findings for our 9A study into fibre services can be found on our website at https://comcom.govt.nz/_data/assets/pdf_file/0018/111087/Fibre-9A-study-report-17-December-2018.pdf. Refer to paragraph 22..

¹⁸¹ For example, Chorus, "Investor Presentation: Investor Roadshow", 25 March 2019, slide 14 stated that there is a 'high degree of asset sharing' between fibre and 'other services', and Chorus, "FY16 Full Year Result Presentation", 29 August 2016, slide 7 that shows sharing of cabinets and feeder cable in the access network. These presentations can be found at <https://company.chorus.co.nz/investor-info#block-reference-presentations-view>.

examples of the dynamic nature of this sharing as customer transition to the UFB network.¹⁸²

366. The significance of this can be seen by considering how cost allocation could apply to the re-allocation of assets. For example, the level of sharing of some network assets could shift from near zero to well over 50%, if the cost allocator is based on end-user connections.¹⁸³ Frontier also noted this dynamic effect and the need for the allocations to change over time in its submission.¹⁸⁴
367. Our view is that the dynamic nature of asset and cost sharing should be accounted for in determining the past losses fibre asset and that cost allocation for past losses requires consideration of timeliness, measurability and objectivity. We therefore propose that the cost allocation calculations are undertaken for each year up to the implementation date when calculating the past losses fibre asset. Our view is that this will:
- 367.1 reduce the risk of material errors in calculating the cost allocation portion of the past losses asset that could occur from extrapolating the level of sharing from too few data points; and
 - 367.2 provide interested parties with confidence in how the past losses fibre asset was calculated due to the use of data that reflects when changes in the level of sharing occurred.
368. We consider this is preferable to relying on only a few 'snap shot' data points or estimates of the level of sharing. For example, an approach that only relied on two data points (ie, start of the UFB initiative and implementation date) may not accurately capture the financial effects on the past losses of 'when' and 'how' network assets are shared or reused.

Consistent use of cost allocators

369. To reduce the risk of gaming, we propose that the cost allocation for past losses is applied consistently. The transitional nature of the past losses period may create opportunity for gaming via the use of inconsistent allocators either over time or between otherwise comparable asset categories. One possible example of gaming may be the use of an allocator that gives weighting to forward planning for post-2011 investment, but the use of a different allocator for pre-2011 investment even though the later had been designed with excess capacity to allow for network growth. Another possible example would be the inconsistent use of cost allocators between the past losses calculation and the initial RAB.

¹⁸² Chorus, "Submission in response to the Commerce Commission's invitation to comment on its proposed on new regulatory framework for fibre dated 9 November 2018" (21 December 2018), paragraphs 187.1.

¹⁸³ This is based on public information showing the take up of UFB reaching 50%. For example <https://www.beehive.govt.nz/release/ultra-fast-broadband-uptake-hits-50-mark>

¹⁸⁴ Frontier Economics on behalf of Vodafone, "Submission on new regulatory framework for fibre" (21 December 2018), page 19.

370. A requirement for consistency should also help address the risk of double recovery, and potential greater use of proxies, both of which are discussed later in this chapter.
371. We consider that requiring cost allocation to be based on timely, consistent, objective and measurable allocators should help address the concerns that Frontier raised about the choice of allocators and over recovery. Frontier’s submission noted the need for consistency in cost allocation.¹⁸⁵

Timing and purpose of investment

372. One issue for cost allocation during the transitional past loss period is to determine the appropriate causal or proxy allocator for an asset where its initial deployment does not correspond to the long-term drivers for the investment and/or how it is subsequently redeployed. These decisions will influence whether a UFB asset should be fully or highly allocated to UFB past losses, and vice versa for pre-2011/non-UFB assets.
373. We understand that there may be situations supporting different ratios of cost allocation to recognise the causal factors of UFB initiative assets being used to provide non-UFB services, and vice versa. For example:
- 373.1 Situations where a UFB initiative asset is shared even though the fibre provider (or a related party) would not have otherwise invested in upgrading its existing network to provide non-UFB services (eg, the asset was shared for practical reasons such as convenience and the ability to share it was neither a causal driver for the investment nor a source of commercial benefit).
- 373.2 Situations where there was some benefit (eg, reduced maintenance and faults), but not enough to justify capital upgrades.
- 373.3 Situations where absent the UFB initiative, the fibre provider (or a related party) would have had to significantly upgrade its assets (eg, building new cabinets or poles to meet reasonable end-user or safety expectations).
374. We are interested in feedback on how these issues could be addressed in the cost allocation IM, including how to address potential issues around information asymmetry, assessing the causal factor for investments, and how to simplify the approach.

Use of proxies and annual cost allocations to simplify cost allocation

375. We recognise that as the past losses will be calculated retrospectively, the calculation will be impacted by the availability of data, and the inability to capture data that has already been lost.

¹⁸⁵ Frontier Economics on behalf of Vodafone, “Submission on new regulatory framework for fibre” (21 December 2018), page 2.

376. In our proposed approach paper, we sought submissions on how to simplify cost allocation in calculating past losses.¹⁸⁶ Frontier in response to our question stated that proxy allocators may be used in the absence of clear causal relationships.¹⁸⁷
377. We recognise that as the past losses will be calculated retrospectively, the calculation will be impacted by the availability of data, and the inability to capture data that has already been lost.
378. We consider that one option for potential simplification is to make greater use of proxy allocators than may normally occur. For example, the regulated suppliers are already preparing regulatory disclosures that include information on a range of network attributes, some of which may be suitable proxy cost allocators. Frontier gave examples of possible proxy allocators including several (eg revenue, customer numbers) that could be derived from existing regulatory disclosures and public information.
379. Another area for potential simplification is for attribution and allocation to be performed on an annual basis using dates that align with the reporting cycles that the regulated suppliers use for other purposes, such as current fibre ID, reporting to CIP, or statutory reporting, and for calculations to be done using to group assets. Apart from helping facilitate the use of existing data sets for cost allocation, it would reduce the complexity of the calculation relative to some other approaches which could require greater consideration of factors such as changes in asset usage occurred.
380. The use of proxies to simplify the pass loss calculations could also be facilitated by adopting a level of aggregation for assets and operating expenses that aligns with existing data and information disclosures. In general, higher levels of aggregation, are likely to see a higher level of costs being classified as shared costs than under disaggregated levels of aggregation.¹⁸⁸

Operating expenses

381. The options for the allocation of operating expenses seeks to ensure that all categories of operating expenses are covered, without having to develop category specific prescriptions. We consider that this approach which includes a requirement to using consistent, objective, measurable and timely cost allocators should help address the concerns raised in some submissions, such as Frontiers, about the problems in allocating shared operating costs.

¹⁸⁶ Commerce Commission, “New regulatory framework for fibre” (9 November 2018), paragraph 7.68.

¹⁸⁷ Frontier Economics on behalf of Vodafone, “Submission on new regulatory framework for fibre” (21 December 2018), page 19.

¹⁸⁸ For example, consider a suburb where half of Chorus’ customers are on fibre and half on DSL. If the poles are pooled, then the poles are a shared cost, but if each pole is treated as a separate asset then some of the costs would be specific to FFLAS. In this scenario, cost allocation could split the cost of the pooled poles to get the same (or similar) outcome as if each pole was allocated or directly attributed individually.

382. We consider that not being overly prescriptive for operating costs helps address the differences between Chorus and the other LFCs. For example, as the LFCs are legally separate from their EDB parents and largely focussed on providing UFB services, some operating costs (eg, senior management) which they consider to be directly attributable to the past losses, may be shared costs for Chorus.¹⁸⁹

Double recovery

383. As noted earlier, Spark's and Frontier's submissions also raised the question of whether the Commission should seek to avoid double recovery. The risk of double recovery can often emerge when multiple regulatory pricing principles are applied in parallel.

384. From comments at the December 2018 workshop and in submissions an example of this would be double recovery for the past losses calculations and from the pricing review undertaken as part of the final pricing principle (**FPP**) for copper-based broadband services (**UBA**) which will apply to overlapping time frames.

385. We consider that it would be impractical to fully ensure that in regard to UFB pass losses and the FPP for UBA there is no double or under-recovery, or to fully demonstrate it. Factors in reaching this view are:

385.1 Legislation proposes different methodologies for the FPP and Part 6, which creates an inherent risk of double or under-recovery, as well as making any reconciliation problematic. There is a specific inherent risk of some irreconcilability as the FPP was based on forecasts and a hypothetical efficient operator model, while the Part 6 past losses will be based on actual numbers from real networks.

385.2 Chorus provides other services that are neither UFB or UBA, but which draw on common costs.

386. However, we consider our proposed approach is the appropriate choice to reduce the risk of double or under-recovery as:

386.1 In principle, ABAA is compatible with the cost allocation approach used in the FPP, in that both approaches seek to assign shared costs in proportion to the cost allocator values;

386.2 ABAA is reasonably robust to changes in customer mix between UFB and UBA for general overhead style costs. For example, if a Chorus customer was to migrate from a UBA based service to Chorus UFB, at a high-level, ABAA would see the common cost being recovered via Part 6 (eg, into the past loss), rather than recovered via the revenue received on prices set by the FPP decision. We consider that this addresses the concern in Frontier's

¹⁸⁹ The related parties for the LFCs include firms that are regulated under Part 4 as electricity distribution businesses. For example, Northpower Fibre is related to Northpower Limited.

submission about the effect of the FPP model facilitating full recovery of some common costs.

387. We consider that our proposal to not have double recovery that¹⁹⁰ included double recovery between Part 6 and Part 4, should also apply to past losses and should help address a risk of double recovery involving the LFCs and their related parties.

Questions for stakeholders

- | | |
|-----|--|
| Q21 | What are your views on the allocation of costs that could be included in the past losses for the initial RAB? |
| Q22 | What are your views on the choice of allocators for UFB initiative network investment which was used for non-UFB purposes? |
| Q23 | What are your views on the use of proxy allocators and other approaches to simplify the past losses calculations? |

388. We are interested in feedback on how these issues could be addressed in the cost allocation IM, including how to address potential issues around information asymmetry and assessing what the causal factor for investments.

¹⁹⁰ Frontier Economics on behalf of Vodafone, "Submission on new regulatory framework for fibre" (21 December 2018), page 19.

Chapter 5: Cost of capital and risk

389. The chapter outlines our emerging views on decisions related to the cost of capital IM.
390. The cost of capital is the financial return investors require from an investment given its risk. Investors have choices and will not make investments unless the expected return is at least as good as the return they would expect to get from a different investment of similar risk.
391. There are two main types of capital—debt and equity capital. Both have a cost from the perspective of the entity that is seeking funds from investors. For debt, it is future interest payments. For equity, it is the expectation of dividend payments by the firm, and where profits are retained and reinvested, the expectation of larger dividend payments by the firm sometime in the future.
392. The WACC reflects the cost of debt and the cost of equity, and the respective portion of each that is used to fund an investment.
393. WACC is one of the key inputs under BBM regulation. The WACC estimate is used to calculate the allowed return on capital when setting price-quality paths. It can also provide a benchmark for assessing the profitability of FFLAS providers under ID regulation.
394. The IM itself does not set the precise WACC value applied to suppliers. It sets the methodology that we will apply when we determine the WACC for use in specific regulatory contexts (eg, prior to the start of a price-quality path). This approach enables us to use up-to-date market data to ensure that the most relevant information is used in determining each WACC estimate.
395. We also intend to set a methodology that determines both a vanilla and post-tax WACC. The type of WACC to use will depend on how the WACC is used in different regulatory contexts.
396. This chapter covers:
- 396.1 the context and framework for making WACC decisions;
 - 396.2 a summary of our proposed approach to estimating the cost of equity;
 - 396.3 a summary of our proposed approach to estimating the cost of debt; and
 - 396.4 other WACC issues.

Context and framework for making WACC decisions

Legal framework

397. The Act requires us to set a cost of capital input methodology in respect of FFLAS.¹⁹¹ In setting the cost of capital IM we are required to give effect to the purpose of Part 6 (s 162 of the Act) and to the extent that we consider it relevant, to the promotion of workable competition in telecommunications markets for the long-term benefit of end-users of telecommunications services (s 166(2)(b) of the Act).¹⁹² We consider the most relevant elements of the purpose when setting the WACC IM are:
- 397.1 Section 162(a) of the Act –suppliers having incentives to innovate and invest – our intention is to set a return high enough for a supplier to attract sufficient capital to undertake efficient investment; and
- 397.2 Section 162(d) of the Act – suppliers being limited in their ability to extract excessive profits – we do not want to set a WACC too high so that it enables suppliers to extract excessive profits, given the limited competition they face.
398. In setting the WACC IM we aim to strike an appropriate balance between these elements to meet the overall purpose. This is consistent with our approach in Part 4, for which we were giving effect to a similar purpose.¹⁹³
399. To the extent that we consider it relevant, we must make recommendations, determinations or decisions that we consider best give, or are likely to best give, effect to the promotion of workable competition in telecommunications markets for the long-term benefit of end-users of telecommunications services.¹⁹⁴
400. We consider that the promotion of workable competition in telecommunications markets is best given effect to by setting a WACC consistent with a workably competitive market. This approach allows alternative suppliers to provide services to the extent that they are more efficient and minimises the potential for a distortionary impact on competition from an alternative WACC.
401. The cost of capital IM seeks to ensure expectations are for a normal rate of return similar to that expected in workably competitive markets for activities of comparable risk, such that the purpose of Part 6 of the Act is met.¹⁹⁵
402. Because the actual cost of capital of regulated suppliers is not observable, we must estimate it. The cost of capital IM seeks to specify rules for the calculation of a reasonable and commercially realistic cost of capital given investors’ exposure to

¹⁹¹ Telecommunications Act 2001, s 176(1)(a)(i).

¹⁹² See Legal framework chapter for more details.

¹⁹³ Commerce Commission “Input methodologies (electricity distribution and gas pipeline services): Reasons paper” (December 2010), paragraphs H1.23-H1.25.

¹⁹⁴ Telecommunications Act 2001, s 166(2)(b).

¹⁹⁵ See Commerce Commission “New regulatory framework for fibre”, purpose of Part 6 paragraph 5.15.2, and FCM principle paragraphs 6.16-6.25.

risk. In turn this would ensure that the expectations of regulated suppliers for a real rate of return are consistent with s 162 of the Act and with the principle of FCM that we are proposing to adopt for the fibre IMs.

403. Section 166 of the Act directs us to consider each of these incentives in order to achieve the purpose of Part 6 of the Act to promote the long-term benefits of end-users in FFLAS markets (s 162) and to promote (where relevant) workable competition in telecommunication markets for the long-term benefit of end-users of telecommunications services (s 166(2)(b)).

Relevant economic incentives

404. Specifically, this IM will address the potential for FFLAS supplier incentives that would not be in the long-term interest of end-users.
405. A building blocks regulatory regime limits the price set by suppliers to their actual (or expected costs). As with other types of costs, under this type of regime suppliers have an incentive to provide arguments that support a high cost of capital as it will increase profitability. Similarly, RSPs and end-users (in some circumstances) may argue for a cost of capital that is too low.
406. It is important to manage the risks of setting the WACC either too high or too low because:
- 406.1 A high WACC could result in suppliers earning a return above their true cost of capital without providing efficiency gains or other benefits to consumers;
- 406.2 A high WACC could lead to over-investing by the supplier (ie, gold plating). Under this scenario, suppliers will increase investment above an efficient level because of the additional profit that they obtain from investment.¹⁹⁶
- 406.3 A low WACC could lead to under-investment. Ie, a supplier may not be able to obtain a return that provides sufficient compensation for investment and so efficient investment (that would be in the long-term interests of end-users) does not take place.
407. The risks of providing a WACC that it is either too high or too low can be significant because several of the WACC input parameters (eg, asset beta, tax-adjusted market risk premium) are unobservable and highly uncertain.
408. We consider a cost of capital IM that provides clarity on how the WACC will be determined reduces the risk of setting a WACC that is too high or too low. It provides an appropriate opportunity (including the right of merits appeal) for all stakeholders to contribute to an appropriate WACC methodology.
409. An additional risk is that our approach to setting the WACC fluctuates over time. This would reduce the confidence of investors in regulated suppliers and potentially raise

¹⁹⁶ Some constraints on over-investment may be provided by requirements in the Capex IM.

costs for consumers as they may require a higher return on their investment. The cost of capital IM will therefore also provide greater certainty to such investors, with a consequential impact on the costs borne by consumers.

Relevance of the overall economic principles

410. In considering this IM we are applying the three economic principles to help us reach regulatory decisions on WACC that place incentives on FFLAS providers to promote the purpose of Part 6 of the Act and s 166(2)(b) of the Act:¹⁹⁷
411. These principles are considered in setting the cost of capital IM:
- 411.1 Real financial capital maintenance (FCM) – We consider that if a regulated firm does not expect to make at least a normal return on its efficient incremental investments going forward, it would be unable to maintain the quality of its services and would have no incentive to invest further. We provide an ex-ante expectation of a real return rather than an ex-post real return to ensure a firm retains an incentive to operate efficiently with the ambition of outperforming the ex-ante expectation.
 - 411.2 Allocation of risk - In workably competitive markets, risks are allocated to the parties best able to bear them. An appropriate cost of capital will therefore need to reflect a regulated supplier's level of exposure to systematic risk.
 - 411.3 Asymmetric consequences of investment – We consider that there are potentially asymmetric consequences from mis-estimating WACC. We therefore consider whether setting a WACC above our best (mid-point) estimate is in the long-term interests of consumers. This aspect of the WACC is considered in more detail in paragraphs 551 to 581.

Level of prescription

412. We consider that providing a comprehensive methodology in the cost of capital IM provides greater certainty to stakeholders to determining an appropriate WACC and better meets the purpose of s 174 of the Act.¹⁹⁸ This is because:
- 412.1 the approach to setting WACC for a regulated supplier in NZ has become increasingly established over time, and, in particular, after the development of, and subsequent High Court judgment on, the Part 4 IMs. Therefore, there are unlikely to be strong reasons for frequent ongoing adjustments to a fibre cost of capital IMs over the short-term;
 - 412.2 the WACC is a material input to the calculation of allowable revenue and therefore greater prescription of the methodology is likely to provide increased certainty to investors in regulated suppliers; and

¹⁹⁷ See Key economic principles chapter, paragraphs 104 and 115.

¹⁹⁸ The application of s 174 is discussed in paragraphs 74 - 79.

412.3 several of the WACC input parameters (eg, asset beta, tax-adjusted market risk premium) are unobservable and highly uncertain. We consider fixing values for these parameters in the IM helps provide certainty to suppliers and consumers.

Our starting point is Part 4

413. WACC affects all sectors that we regulate and the use of a service-wide approach and the simplified Brennan-Lally Capital Asset Pricing Model (**SBL-CAPM**) in prior cost of capital decisions is our well-established approach (particularly the Part 4 IMs and the FPP under the Act).¹⁹⁹ We see no reason under Part 6 to take a different conceptual approach regarding the returns investors require between the relevant sectors.²⁰⁰
414. This approach has generally been supported by external parties in past consultation on WACC. External parties did not appeal the above approach in the last Part 4 IM review process and the FPP.²⁰¹
415. Our view is that the high-level approach to estimating WACC in the Part 4 IMs is also appropriate for the FFLAS IMs and we have considered the differences in the dynamics of telecommunications markets and the Part 6 statutory framework when compared to Part 4.²⁰²
416. However, we do note there are reasons why we may need to depart from this established approach in some areas, as described below.

Cost of equity

Summary of emerging views

417. Our emerging views on the cost of equity are:
- 417.1 we propose to calculate cost of equity using the SBL-CAPM;
 - 417.2 we propose to take a service-wide approach when determining the cost of capital IM for FFLAS;
 - 417.3 we propose to estimate the asset beta using our established Part 4 methodology with updated data; and
 - 417.4 we will estimate the tax-adjusted market risk premium (**TAMRP**) for the draft IMs decision.

¹⁹⁹ For example, in Part 4 we estimate WACC for regulated energy businesses and airports.

²⁰⁰ See Commerce Commission “New regulatory framework for fibre” (9 November 2018), paragraph 7.95.

²⁰¹ Commerce Commission “Input methodologies review decisions. Topic paper 4: Cost of capital issues” (December 2016); Commerce Commission “Cost of capital for the UCLL and UBA pricing reviews: Final decision” (15 December 2015).

²⁰² Commerce Commission “New regulatory framework for fibre” (9 November 2018), paragraph 7.96.

Context

418. The cost of equity is the return which the equity investor expects to obtain from the firm.²⁰³ Investors supplying capital will require that the price of the shares issued to them is such that the expected return is equal to the return they would expect to obtain on an alternative investment of equal risk.²⁰⁴
419. Estimating the cost of equity is not straight-forward and generally requires a financial model, such as the SBL-CAPM, which is widely used in New Zealand and was adopted by the Commission in all Part 4 IMs and used in the FPP.
420. To estimate the cost of equity using SBL-CAPM requires us to estimate the following input parameters:
- 420.1 the risk-free rate;
 - 420.2 the investor tax rate;
 - 420.3 the asset beta;²⁰⁵ and
 - 420.4 the TAMRP.

Emerging view 1: we propose to calculate cost of equity using the SBL-CAPM

421. We intend to use the SBL-CAPM to estimate the cost of equity in the fibre cost of capital IM.
422. Our reasons for preferring the SBL-CAPM relate to consistency with the NZ context and general support for the model.²⁰⁶

²⁰³ In the case of equity, the firm does not promise the return but instead the investor decides what amount of capital they are prepared to provide in return for a share in the firm. Such a share entitles the investor (i.e. shareholder) to a corresponding proportion of dividends and other returns provided to shareholders. Commerce Commission “Input methodologies (electricity distribution and gas pipeline services): Reasons paper” (December 2010), paragraph H1.3.

²⁰⁴ Commerce Commission “Input methodologies (electricity distribution and gas pipeline services): Reasons paper” (December 2010), paragraph H1.3.

²⁰⁵ Under the simplified beta leveraging formula for the SBL-CAPM (ie setting the debt beta to zero in the calculation), equity beta = asset beta/(1 - leverage). We consider any debt beta effects would be included in the estimated debt premium. See Commerce Commission “Input methodologies (electricity distribution and gas pipeline services): Reasons paper” (December 2010), paragraph H3.62; and Commerce Commission “Input methodologies review decisions. Topic paper 4: Cost of capital issues” (20 December 2016), paragraph 271.

²⁰⁶ These reasons are consistent with our reasons in Part 4 and specifically include consistency of modelling assumptions with the New Zealand tax system, wide use and acceptance in New Zealand, support for continued use at the Cost of Capital Workshop for the 2010 Part 4 IMs, and general and continued support from submitters on the 2010 Part 4 IMs Draft Reasons paper. See Commerce Commission “Input methodologies (electricity distribution and gas pipeline services): Reasons paper” (December 2010) at paragraph 6.4.19. See also Commerce Commission “Cost of capital for the UCLL and UBA pricing reviews: Final decision” (15 December 2015), paragraphs 128-129.

423. Our decision to use the SBL-CAPM model to estimate the cost of equity was upheld in the input methodology merits appeals to the High Court.²⁰⁷ We reconsidered the model during the IM review process and determined it remained the most appropriate model.²⁰⁸ SBL-CAPM also formed the basis for estimating cost of equity in the FPP unbundled copper local loop (**UCLL**) and UBA pricing reviews.²⁰⁹
424. During the IM review, we saw “limited value in undertaking substantive analysis in the IM review of alternatives to using the SBL-CAPM as the main underlying model used to estimate WACC.”²¹⁰
425. Stakeholder submissions on the proposed approach paper broadly indicate support for the use of SBL-CAPM.
426. LFCs supported using a WACC method to derive the cost of capital IM and acknowledged that the simplified Brennan-Lally CAPM has features which reflect the New Zealand market, and has widespread support in New Zealand.²¹¹ Christchurch City Holdings Limited (**CCHL**) did not raise specific concerns with the SBL-CAPM model.²¹²
427. Chorus and RSPs expressed support for the Commission’s common WACC methodology as a starting point.²¹³

Emerging view 2: we propose to take a service-wide approach when determining the cost of capital for FFLAS

428. We propose to estimate a service-wide cost of capital when determining the cost of capital IMs for FFLAS,²¹⁴ including a service-wide asset beta that will apply to all providers of FFLAS.
429. We consider there are three parameters in cost of capital estimation that could be estimated on a supplier-specific or service-wide basis – asset beta, leverage and debt

²⁰⁷ Wellington International Airport Ltd & Ors v Commerce Commission [2013] NZHC [December 2013], for example, paragraph 1646.

²⁰⁸ Commerce Commission “Input methodologies review: Update paper on the cost of capital topic” (30 November 2015), paragraphs 4.11-4.26.

²⁰⁹ Commerce Commission “Cost of capital for the UCLL and UBA pricing reviews: Final decision” (15 December 2015), paragraph 124.

²¹⁰ See Commerce Commission “Input methodologies review: Update paper on the cost of capital topic” (30 November 2015), paragraph 4.24.

²¹¹ Enable, Ultrafast Fibre and Northpower Fibre “Submission on new regulatory framework for fibre” (21 December 2018), page 16.

²¹² Christchurch City Holding Ltd “Submission on new regulatory framework for fibre” (21 December 2018), page 6.

²¹³ Chorus “Submission on new regulatory framework for fibre” (21 December 2018), page 15; Spark “Submission on new regulatory framework for fibre” (21 December 2018), paragraph 120; 2degrees “Submission on new regulatory framework for fibre” (21 December 2018), page 16; Trustpower “Submission on new regulatory framework for fibre” (21 December 2018), paragraph 23.1.1.

²¹⁴ Commerce Commission “New regulatory framework for fibre” (9 November 2018), paragraph 7.99.

- premium.²¹⁵ The term credit spread differential (**TCS**D) is not a parameter that impacts the WACC estimate but is additional compensation added to a supplier's allowed revenue that compensates for longer-term debt.²¹⁶
430. Here we focus on the asset beta parameter given its relevance to cost of equity but also because this is where submissions have focussed and because interdependencies between parameters have previously driven decisions on leverage and debt premium.
431. The CAPM model only compensates systematic risk, therefore, to support firm-specific asset betas we would need to be persuaded that systematic risk varies across the different fibre networks.
432. In general, submissions provide limited information and evidence on the risks faced by firms.
433. The general LFC view was that LFCs are exposed to higher risk than Chorus, and CCHL considers that LFCs face increased systematic risk relative to Chorus.²¹⁷
434. CCHL called for an LFC specific comparator sample on this basis, and Northpower considered that asset beta "should vary based on the level of risk and that the level of risk is not consistent across networks".²¹⁸ We note a general LFC view that a service-wide asset beta is inappropriate.²¹⁹
435. LFCs pointed to our previous openness to a supplier-specific approach to asset beta in relation to airport services under Part 4.²²⁰
436. RSPs generally were unpersuaded that the LFCs are exposed to higher systematic risk than Chorus and challenged the LFCs to demonstrate otherwise.²²¹

²¹⁵ Commerce Commission "Input methodologies (electricity distribution and gas pipeline services): Reasons paper" (December 2010), paragraph H2.82.

²¹⁶ See Commerce Commission "Input methodologies review: Update paper on the cost of capital topic" (30 November 2015), table 2.1 and footnote 20.

²¹⁷ Enable, Ultrafast Fibre and Northpower Fibre "Submission on new regulatory framework for fibre" (21 December 2018), paragraphs 25-26; Christchurch City Holding Ltd "Submission on new regulatory framework for fibre" (21 December 2018), paragraph 21.

²¹⁸ Christchurch City Holding Ltd "Submission on new regulatory framework for fibre" (21 December 2018), paragraph 22; Northpower "Fibre Submission on new regulatory framework for fibre" (21 December 2018), page 3.

²¹⁹ Enable, Ultrafast Fibre and Northpower Fibre "Submission on new regulatory framework for fibre" (21 December 2018), paragraph 25; Northpower "Fibre Submission on new regulatory framework for fibre" (21 December 2018), pages 3-4; Christchurch City Holding Ltd "Submission on new regulatory framework for fibre" (21 December 2018), paragraph 21.

²²⁰ Enable, Ultrafast Fibre and Northpower Fibre "Submission on new regulatory framework for fibre" (21 December 2018), paragraph 27 citing Commerce Commission, Review of Christchurch International Airport's pricing decisions and expected performance (July 2017 – June 2022): Final report – Summary and analysis under section 53B(2) of the Commerce Act 1986, 1 November 2018, paragraph A66.

²²¹ 2degrees "Submission on new regulatory framework for fibre" (21 December 2018), paragraph 17; 2degrees "Cross-submission on new regulatory framework for fibre" (5 February 2019), paragraph 8.1;

437. Chorus did not make definitive statements on systematic risk but did ask us to consider whether “It may also be appropriate... to take into account intra-sector factors which affect particular FFLAS providers differently in order to determine an individual cost of capital for the relevant providers”.²²²
438. We have commissioned Cambridge Economic Policy Associates (**CEPA**) to consider an appropriate asset beta for FFLAS, including the potential for a different asset beta to apply to LFCs because, for example, they are subject to different systematic risks.²²³ This report is published alongside this paper and we invite submissions on their report.
439. Based on their relative risk assessment, CEPA considers “that an asset beta that falls between the wholesale-only and integrated comparator groups would represent a reasonable estimate” for all FFLAS suppliers.²²⁴ In addition, we consider there is unlikely to be empirical data supporting a difference and so any firm-specific asset beta is likely to require an ad-hoc adjustment.
440. LFCs have submitted on the competition they face from a range of alternative services including the Chorus copper network (in the LFC areas), FWA and mobile networks, cable networks, and unbundling.²²⁵ LFCs also submitted on demand and stranding risk relating to competition and consider that “a sector-specific asset beta will result in a significant under-estimation of the demand risk and risk of economic stranding facing LFCs”.²²⁶
441. While we consider that “The allocation of demand risk, and the associated risk of economic stranding is likely to be particularly important in the context of FFLAS”, the presence of demand and stranding risks resulting from competition does not change our view that a service-wide asset beta is appropriate when determining the cost of capital.²²⁷
442. Demand and subsequent stranding risk can be systematic or non-systematic. Our view, consistent with CEPA’s view, is that we do not consider stranding risk from

Vodafone “Cross-submission on new regulatory framework for fibre” (5 February 2019), paragraphs 22-23; Spark “Submission on new regulatory framework for fibre” (21 December 2018), paragraph 120; Spark “Cross-submission on new regulatory framework for fibre” (5 February 2019), paragraphs 56-57.

²²² Chorus “Submission on new regulatory framework for fibre” (21 December 2018), paragraph 198.

²²³ Cambridge Economic Policy Associates (CEPA), “Cost of capital for regulated fibre telecommunication services in New Zealand: Asset beta, leverage and credit rating” (21 May 2019), page 4.

²²⁴ Cambridge Economic Policy Associates (CEPA), “Cost of capital for regulated fibre telecommunication services in New Zealand: Asset beta, leverage and credit rating” (21 May 2019), pages 5 and 43.

²²⁵ Enable, Ultrafast Fibre and Northpower Fibre “Submission on new regulatory framework for fibre” (21 December 2018), page 4; Northpower “Fibre Submission on new regulatory framework for fibre” (21 December 2018), pages 3-4; Christchurch City Holding Ltd “Submission on new regulatory framework for fibre” (21 December 2018), paragraph 21.

²²⁶ Enable, Ultrafast Fibre and Northpower Fibre “Submission on new regulatory framework for fibre” (21 December 2018), page 4; Northpower “Fibre Submission on new regulatory framework for fibre” (21 December 2018), pages 3-4; Christchurch City Holding Ltd “Submission on new regulatory framework for fibre” (21 December 2018), paragraph 21.

²²⁷ Commerce Commission, “New regulatory framework for fibre” (9 November 2018), paragraph 6.47.

competition between a supplier and other services is generally systematic in nature because, as CEPA notes:²²⁸

In particular, we do not consider stranding risk related to competition from alternative services to be systematic in nature. For example, the extent and speed of fibre up-take could be influenced primarily by the fibre providers' ability to connect new customers in a timely manner and perceptions regarding the quality of service offered over the fibre network, which are not influenced by the economic cycle. Further, an investor with a diversified portfolio would be able to mitigate the risk of switching by investing across a range of alternative providers. For similar reasons, we would also not consider obsolescence due to technological developments to constitute a systematic source of stranding risk.

- 443. On the evidence available, we do not consider that FFLAS firms face materially different levels of systematic risk and, therefore, we do not currently consider firm-specific asset betas are appropriate or required.
- 444. As demand and stranding risk can be systematic or non-systematic we recognise that there could potentially be different firm-specific (non-systematic) risks (competitive, demand, stranding risk) which may need to be considered separately, even if they do not necessitate a variation in asset beta. Any compensation or mitigation of these risks would need to be consistent with the long-term benefit of end-users of FFLAS.²²⁹
- 445. We are open to further evidence on these issues including both:
 - 445.1 further evidence that asset betas should be adjusted or separately estimated due to different systematic risks;
 - 445.2 evidence on firm-specific risk and the potential compensation for those risks when it is in the long-term interests of end-users.

Emerging view 3: we propose to estimate the asset beta using a similar methodology to Part 4

- 446. We propose to use a similar approach to asset beta estimation as in Part 4, including historic estimates of average betas and the six-step approach to estimate the asset (and equity) beta value.²³⁰ We consider that the same six-step approach to estimating the asset (and equity) beta value as the one outlined in the reasons paper

²²⁸ Cambridge Economic Policy Associates (CEPA), "Cost of capital for regulated fibre telecommunication services in New Zealand: Asset beta, leverage and credit rating", Draft Report (21 May 2019), page 30.

²²⁹ As described in clause 162 of the Telecommunications Act.

²³⁰ This will be consistent with the approach outlined in the reasons paper supporting the Part 4 IMs and in the UCLL/UBA FPP Decision. See Commerce Commission "Input methodologies (electricity distribution and gas pipeline services): Reasons paper" (December 2010), paragraph H8.14; and Commerce Commission "Input methodologies review decisions. Topic paper 4: Cost of capital issues" (December 2016), paragraph 266. This is also consistent with the approach in in the UCLL/UBA FPP Decision, see Commerce Commission "Cost of capital for the UCLL and UBA pricing reviews paper" (15 December 2015), paragraphs 33-36.

supporting the Part 4 IMs²³¹ and in the UCLL/UBA FPP decision²³² is likely to be appropriate for the Part 6 IMs.

446.1 *Step 1*: identify a sample of relevant comparator firms. This could include:

446.1.1 New Zealand firms providing the service in question (FFLAS);

446.1.2 New Zealand firms from industries with a similar risk profile;

446.1.3 overseas firms providing a similar service; and

446.1.4 overseas firms from industries with a similar risk profile.

446.2 *Step 2*: estimate the equity beta for each firm in the sample.

446.3 *Step 3*: de-lever each equity beta estimate to get an estimated asset beta for each firm in the sample.

446.4 *Step 4*: calculate an average asset beta for the sample.

446.5 *Step 5*: apply any adjustments for regulatory differences or differences in systematic risk across services to the average asset beta for the sample.

446.6 *Step 6*: re-lever the average asset beta for the sample to an equity beta estimate using the Commission's assumed notional leverage.

447. Our convention is to refer to the six-step approach to estimating asset (and equity) beta and we estimate the asset beta in the first five steps.

448. We consider that this six-step approach is appropriate for estimating the asset beta for FFLAS under the new regime for the following reasons.

448.1 The approach is generic and was not developed to reflect the specific characteristics of the Part 4 sectors (as was evidenced by its adoption in the UCLL and UBA FPP decision).

448.2 The approach was developed through a comprehensive consultation process involving a range of stakeholders (including Telecom prior to structural separation).

448.3 The cost of capital IMs for Part 4 as determined in 2010 were subject to a merits review by the High Court. The court upheld the methodology for estimating WACC specified in the cost of capital IMs.²³³

²³¹ See Commerce Commission "Input methodologies (electricity distribution and gas pipeline services): Reasons paper" (December 2010), paragraph H8.14; and Commerce Commission "Input methodologies review decisions. Topic paper 4: Cost of capital issues" (December 2016), paragraph 266.

²³² Commerce Commission "Cost of capital for the UCLL and UBA pricing reviews paper" (15 December 2015), paragraph 33-36.

- 448.4 Given the similarities in the legislation between Part 4 of the Commerce Act 1986 and Part 6 of the Act (and particularly the purpose statements in s 52A of the Commerce Act 1986 and s 162 of the Act), our view is that the high-level approach to estimating WACC (and specifically, the asset beta) in Part 4 is also appropriate for FFLAS. We are not aware of any reason to take a different conceptual approach in estimating the returns investors would require in different sectors.
- 448.5 We do not consider that the additional requirement to promote, where relevant, workable competition in telecommunications markets for the long-term benefit of end-users of telecommunications services in s 166(2)(b) of the Act has material implications that would require a different approach to estimating the asset beta for FFLAS from the one adopted in the Part 4 cost of capital IM.
- 448.6 This approach is familiar to stakeholders and adopting a consistent approach with the one adopted in Part 4 will provide stakeholders with further regulatory certainty in respect to the asset beta calculations underlying the WACC for FFLAS.
- 448.7 We received no submissions from stakeholders on our proposed approach paper that challenged specifically the Part 4 methodology for estimating the asset beta (in response to Q23 and Q24 which invited comments on our proposed approach to use the Part 4 cost of capital IM as a starting point for the cost of capital IM for fibre).
449. We note that CEPA has estimated the asset beta for FFLAS providers in line with our approach, using the five steps to estimate asset beta (but not the sixth step, which is to re-lever the equity beta).²³⁴
450. In their report CEPA states: “We have estimated the asset beta for the fibre providers in line with the process followed by the Commission in the Part 4 Cost of Capital IM.”²³⁵
451. At this stage we are not aware of any specific characteristics of the FFLAS markets that would invalidate the adoption of this six-step approach for FFLAS, but we remain open to stakeholders’ views.

Asset beta comparator and estimate

452. We have considered whether to develop a comparator sample for FFLAS or whether to use the sample used in the FPP decision.

²³³ See *Wellington Airport & others v Commerce Commission* [2013] NZHC 3289, page 493-514.

²³⁴ Cambridge Economic Policy Associates (CEPA) “Cost of capital for regulated fibre telecommunication services in New Zealand: Asset beta, leverage and credit rating” (21 May 2019), page 16.

²³⁵ Cambridge Economic Policy Associates (CEPA) “Cost of capital for regulated fibre telecommunication services in New Zealand: Asset beta, leverage and credit rating” (21 May 2019), page 16.

453. We consider it is appropriate to estimate an asset beta for FFLAS based on a comparator sample developed specifically for the FFLAS providers because some of the risk characteristics of FFLAS might be fundamentally different from those of the Chorus activities evaluated at the time of the UCLL / UBA FPP decision.
454. We agree with submitters' views that we should estimate an asset beta specifically for FFLAS which incorporates the appropriate risks faced by FFLAS providers.²³⁶
455. As part of their report CEPA has provided views on appropriate comparators and the resultant asset beta range for FFLAS of 0.42 – 0.51.²³⁷
456. We welcome views on CEPA's approach asset beta estimation, and particularly any views on the comparator firms selected and the data period which is used to estimate the asset beta.

Emerging view 4: we will estimate a value for TAMRP for the Draft IMs Decision

457. We plan to specify a value for the TAMRP in the cost of capital IM for the Part 6 regime. We intend to engage Dr Martin Lally to provide an updated estimate of the TAMRP in New Zealand based on the most recent available data in advance of the Draft IMs Decision. We will consult with stakeholders on the value estimated by Dr Lally in due course.
458. The market risk premium (**MRP**) represents the additional return, over and above the risk-free rate, that investors expect to compensate them for the risk of holding a portfolio of average risk (ie the same risk as the market portfolio). Under the SBL-CAPM, the MRP is adjusted for tax on equity returns faced by investors and hence becomes TAMRP.
459. As the TAMRP represents the average market risk, it should be the same across all sectors in New Zealand.
460. Dr Martin Lally last estimated the TAMRP in New Zealand at our request for the UCLL / UBA FPP decision in 2015 and concluded that the TAMRP value is 7% (rounded to the nearest 0.5%).²³⁸ This value was further tested by stakeholder submissions in the 2016 IM review of the Part 4 IMs and after considering the

²³⁶ Christchurch City Holding Ltd "Submission on new regulatory framework for fibre" (21 December 2018), paragraph 22.

²³⁷ Cambridge Economic Policy Associates (CEPA) "Cost of capital for regulated fibre telecommunication services in New Zealand: Asset beta, leverage and credit rating" (21 May 2019), pages 6 and 43.

²³⁸ Commerce Commission "Cost of capital for the UCLL and UBA pricing reviews paper" (15 December 2015), paragraphs 172-192. For a full discussion of the TAMRP estimation methods used by Dr Lally see also Commerce Commission "Input methodologies (electricity distribution and gas pipeline services): Reasons paper" (December 2010), paragraphs 6.5.4-6.5.18 and Appendix H7.

additional evidence presented, we concluded that on balance the 7% value continues to apply.^{239,240}

461. We considered adopting a value of 7% for the TAMRP in the cost of capital IM for the fibre regime given that this parameter:
- 461.1 should be consistent across all sectors in New Zealand (including with the value specified in the Part 4 IMs); and
 - 461.2 is a relatively stable parameter and we consider that the 7% value is still representative of market conditions in New Zealand.
462. The parameter would then apply until the next review of the Part 6 IMs (potentially in 2027), by which time it will have last been estimated twelve years previously.
463. Our emerging view, however, is to estimate the TAMRP for the draft IM decision to ensure that the parameter is relevant until this review. A current estimate that uses the latest available data will best give effect to the purpose of Part 6 of the Act by ensuring that regulated suppliers earn a normal rate of return consistent with the outcomes produced by workably competitive markets.
464. We note that an updated estimate of the TAMRP may result in a temporary inconsistency between the value adopted in the Part 4 IMs and the cost of capital IM we will specify for the Part 6 regime. We will be considering whether there would be any benefit from carrying out future reviews in tandem with the Part 4 cost of capital IM and if so how.
465. We also considered not including a specific value for the TAMRP in the cost of capital IM for the Part 6 regime and instead incorporating a methodology for estimating the TAMRP at each regulatory reset. However, we concluded that including a specific TAMRP value best gives effect to the IMs purpose under s 174 of the Act to promote certainty for suppliers, access seekers and end-users in relation to the rules, requirements and processes applying to the regulation of FFLAS.
466. We welcome stakeholders' views on whether it is appropriate to adopt a specific value for the TAMRP in the cost of capital IM for the Part 6 regime. We remain open to alternative approaches that would best give effect of the Act's purpose and our decision-making framework, and to procedures or processes we can adopt to ensure that the TAMRP value is consistent between the different sectors we regulate going forward.

²³⁹ Commerce Commission "Input methodologies review decisions. Topic paper 4: Cost of capital issues" (December 2016), paragraphs 490-533.

²⁴⁰ The 7% value of the TAMRP is also stated as a fixed parameter in the calculation of WACC in our guidelines for Part 4, see Commerce Commission "Guidelines for WACC determinations under the cost of capital input methodologies" (30 April 2018), table 7.

Questions for stakeholders

- Q24 What are your views on our approach to estimating a service-wide cost of capital, including a service-wide asset beta that will apply to all providers of FFLAS?
- Q25 What are your views on CEPA's approach to estimating asset beta, particularly on the comparator firms selected and the data period which is used to estimate the asset beta?
- Q26 Should we adopt a specific value for the TAMRP in the cost of capital IM for the Part 6 regime?

Cost of debt

Summary of emerging views

467. Our emerging views on the cost of debt are:
- 467.1 the risk-free rate should be set using a prevailing rate consistent with the term of the regulatory period;
 - 467.2 an appropriate credit rating is BBB+;
 - 467.3 the debt premium should be set using an historical average approach using a 5-year term for the debt premium and a TCS should apply if suppliers issue debt that has an average tenor greater than 5 years;²⁴¹ and
 - 467.4 the allowance for debt issuance costs should use the value determined during the 2016 IM review, adjusted for the term used for the risk-free rate.
468. Our emerging views on the cost of debt are also summarised in Table 1 at the end of the cost of debt section.

Context

469. Under the Part 4 IMs, we estimate the cost of debt by observing the interest rate paid by the New Zealand Government, and the additional premium corporate borrowers pay to compensate investors for the additional risks of lending to them (relative to the Government). We also allow for the costs of issuing debt (for example, to cover roadshows and legal fees), and the cost of entering interest rate swaps to shorten the term of part of the cost of debt and better align it to the length of the regulatory period.²⁴²

²⁴¹ We note this 5-year term for the debt premium is not necessarily consistent with the term of the risk-free rate, which we propose to match with the regulatory period.

²⁴² Commerce Commission, "Input methodologies review decisions. Topic paper 4: Cost of capital issues" (December 2016), paragraph 34.

470. Our estimate of the cost of debt comprises three parameters:²⁴³

- 470.1 the risk-free rate;
- 470.2 the debt premium; and
- 470.3 debt issuance costs.

Emerging view 5: the risk-free rate should be set using a prevailing rate consistent with the term of the regulatory period

471. We intend to set the risk-free rate in a similar way to Part 4; this includes:

- 471.1 using the return on NZ Government bonds as a proxy;
- 471.2 using prevailing rates;
- 471.3 using a 3-month determination window;
- 471.4 matching the term of the risk-free rate to the regulatory period.

Emerging view 5A: use the return on NZ government bonds as a proxy for the risk-free rate

472. We propose a risk-free rate estimation using the return on New Zealand Government NZ dollar denominated nominal bonds as the proxy for the risk-free rate.

473. We consider that a good risk-free rate proxy should be (i) virtually free of risk, (ii) liquid, (iii) free of restrictions on trade, and (iv) not have characteristics other than its returns distribution that attracts or discourages investors.²⁴⁴

474. We consider that benchmark New Zealand Government bonds best fulfil these conditions.²⁴⁵

Emerging view 5B: use prevailing rates in the risk-free rate estimation

475. We propose a risk-free rate estimation using prevailing, and not historical, rates on New Zealand Government bonds.

476. We consider that prevailing rates better achieve the Part 6 purpose and the potential dynamic efficiency benefits of investment. We also consider that prevailing rates are

²⁴³ Commerce Commission, "Input methodologies review decisions. Topic paper 4: Cost of capital issues" (December 2016), paragraph 35.

²⁴⁴ These characteristics are consistent with our conditions in Part 4 which are explained at Commerce Commission "Input methodologies (electricity distribution and gas pipeline services): Reasons paper" (December 2010), paragraph H4.4.

²⁴⁵ Our reasons are consistent with our reasons in Part 4 which are explained at Commerce Commission "Input methodologies (electricity distribution and gas pipeline services): Reasons paper" (December 2010), paragraphs H4.8-H4.9. This approach is also consistent with the FPP approach, see Commerce Commission "Cost of capital for the UCLL and UBA pricing reviews: Final decision" (15 December 2015), paragraphs 47-52.

appropriate because suppliers can seek to manage volatility in the risk-free rate by using the interest rate swap market.²⁴⁶

Emerging view 5C: use a 3-month determination window in the risk-free rate estimation

477. We also propose that the risk-free rate is estimated based on a three-month average of prevailing interest rates at the time each WACC determination is made.
478. We used a 3-month window in the Part 4 IMs, rather than a 1-month window, because we considered that using a 1-month determination window may have distortionary effects if there are significant hedging activities by regulated suppliers.²⁴⁷
479. This may be less of an issue for fibre, given we expect that Chorus is the only supplier likely to be on a price-quality path (assuming the hedging windows do not coincide with other sectors). However, we intend to keep a 3-month determination window for fibre to protect against anomalous market conditions and for consistency with the Part 4 IMs.

Emerging view 5D: match the term of the risk-free rate to the regulatory period

480. We propose to match the term of the risk-free rate to the regulatory period, resulting in a 3-year risk-free rate for the first regulatory period, followed by a 3 to 5 year risk-free rate, dependent on the length of future regulatory periods.²⁴⁸
481. Our reasons for this view include ensuring a normal rate of return, regulated suppliers' power to reset prices, and the availability of interest rate swaps; more specifically:²⁴⁹

²⁴⁶ These reasons are consistent with our reasons in Part 4 which are more explained at Commerce Commission, "Input methodologies review decisions. Topic paper 4: Cost of capital issues" (December 2016), paragraphs 85 and 87-88. This approach is also consistent with the FPP approach, see Commerce Commission "Cost of capital for the UCLL and UBA pricing reviews: Final decision" (15 December 2015), paragraphs 59-62.

²⁴⁷ This reason is consistent with Part 4 reasons which are explained at Commerce Commission, "Input methodologies review decisions. Topic paper 4: Cost of capital issues" (December 2016), Table X1 and paragraphs 117, and 85-137 for wider explanation. In the FPP we used a one-month average, see Commerce Commission "Cost of capital for the UCLL and UBA pricing reviews: Final decision" (15 December 2015), paragraphs 7-8 and 47-52.

²⁴⁸ For FFLAS, "The initial regulatory period will be three years, followed by regulatory periods of 3-5 years." Commerce Commission "New regulatory framework for fibre - Invitation to comment on our proposed approach" (9 November 2018), figure 3.2.

²⁴⁹ These reasons are consistent with our Part 4 reasons which are explained more fulsomely in our reasons papers. For Part 4 reasons relating normal rate of return see Commerce Commission "Input methodologies (electricity distribution and gas pipeline services): Reasons paper" (December 2010), paragraphs H4.31-H4.34 and H4.52; for Part 4 reasons relating to regulated suppliers' power to reset prices see paragraphs H4.39-H4.40 and H4.54; for Part 4 reasons relating to the availability of interest rate swaps see paragraphs H4.41-H4.51 and H4.55.

- 481.1 matching the term of the risk-free rate to the term of the regulatory period ensures there is no expectation that regulated suppliers will earn profits that are greater (or lower) than a normal rate of return; this is supported by the fundamental concept in finance that the interest rate applied to a set of cash flows should reflect the risk, and the term, of those cash flows;²⁵⁰
- 481.2 regulated suppliers can reset their prices at the end of each regulatory period to reflect changes in the risk-free rate if this has altered the cost of capital, accordingly, suppliers' prices should not reflect a premium for the uncertainty of risk-free rates beyond the length of the regulatory period;²⁵¹
- 481.3 firms can use interest rate swaps to shorten the interest rate re-pricing period or hedge the risk-free rate component of their debt portfolios, leaving the debt premium component matched to the term to maturity that the debt was originally issued for.²⁵²
482. Setting the term of the risk-free rate equal to the term of the regulatory period ensures that regulated suppliers are compensated for the risk they are exposed to during the regulatory period and that regulated suppliers can have the expectation of earning a normal return in the long run.²⁵³
483. Matching the term of the risk-free rate to the regulatory period, as applied in Part 4 IMs²⁵⁴ and the FPP UCLL and UBA pricing reviews²⁵⁵, is the Commission's established approach. The approach was also supported by the High Court when considered during the IM merits appeals²⁵⁶ and reviewed in 2016 as part of the IM review process.²⁵⁷
484. An alternative option could be a 5-year risk-free rate even for the initial 3-year regulatory period. However, we consider that this approach could over-compensate regulated suppliers, given the availability of the swap market and that efficient use

²⁵⁰ Commission "Input methodologies (electricity distribution and gas pipeline services): Reasons paper" (December 2010), paragraphs H4.31- H4.34.

²⁵¹ Commerce Commission "Input methodologies (electricity distribution and gas pipeline services): Reasons paper" (December 2010), paragraphs H4.39-H4.40 and H4.54.

²⁵² Commerce Commission "Input methodologies (electricity distribution and gas pipeline services): Reasons paper" (December 2010), paragraphs H4.41- H4.46.

²⁵³ These reasons are consistent with our Part 4 reasons which are explained more fulsomely at Commerce Commission "Input methodologies (electricity distribution and gas pipeline services): Reasons paper" (December 2010), paragraphs H4.31-H4.59.

²⁵⁴ Commerce Commission "Input methodologies review decisions. Topic paper 4: Cost of capital issues" (December 2016), paragraph 536; Commerce Commission "Input methodologies (electricity distribution and gas pipeline services): Reasons paper" (December 2010), paragraphs H4.29 and H4.52.

²⁵⁵ Commerce Commission "Cost of capital for the UCLL and UBA pricing reviews: Final decision" (15 December 2015), paragraphs 53-54.

²⁵⁶ In the IMs merits appeals judgment, the High Court agreed with the principle that "...the term of the risk-free rate should be aligned to the regulatory term to avoid over and under compensation". Wellington International Airport Ltd & Ors v Commerce Commission [2013] NZHC [December 2013], paragraph 1287.

²⁵⁷ Commerce Commission, "Input methodologies review decisions. Topic paper 4: Cost of capital issues" (December 2016), paragraph 536.

of interest rate swaps to reduce costs is viable for a 3-year period. A rate consistent with a 5-year risk-free rate includes compensation for 2 years beyond the end of the regulatory period. This period affects the risk-free rate determined at the next reset.

485. We note previous Commission decisions to match the term of the risk-free rate to short regulatory periods where necessary, and the difference in the length of the first regulatory period with respect to the DPP.²⁵⁸
486. LFCs, Chorus, and RSPs have submitted on the term of the risk-free rate, however, no submitters covered the issue of regulatory periods of 3 to 5 years.

Emerging view 6: An appropriate credit rating is BBB+

487. We intend to set the credit rating in a similar way to Part 4; this includes a notional Standard and Poor's (S&P) long-term credit rating of BBB+.
488. We propose a notional credit rating because we consider that if suppliers' actual credit ratings were used, there may be an incentive for them to increase leverage, leading to adverse implications for end-users.²⁵⁹
489. We also consider that it is in the long-term interest of end-users to have a supplier with a healthy credit rating.
490. We propose BBB+ as an appropriate credit rating for an efficient regulated fibre supplier because this provides an adequate margin above S&P's minimum long-term credit rating considered to be investment grade BBB-.²⁶⁰
491. This safety margin protects against the possibility that economic downturns or shocks can lead to financial distress, but also provides suppliers with flexibility over the level of leverage and the choice of debt instruments. An appropriate investment grade credit rating would also ensure an efficient operator satisfactory access to debt capital markets at reasonable costs.²⁶¹
492. Our reasons here are consistent with those in Part 4 for energy businesses and we are not aware of any reason why an efficient telecommunications business should have a lower rating than an energy business.

²⁵⁸ See Commerce Commission "Input methodologies (electricity distribution and gas pipeline services): Reasons paper" (December 2010), paragraph H4.29.

²⁵⁹ This reason is consistent with our Part 4 reason at Commerce Commission, "Input methodologies review decisions. Topic paper 4: Cost of capital issues" (December 2016), paragraph 252.

²⁶⁰ This reason is consistent with our Part 4 reasons, see Commerce Commission, "Input methodologies review decisions. Topic paper 4: Cost of capital issues" (December 2016), paragraph 254.

²⁶¹ These reasons are consistent with our Part 4 and FPP reasons. See Commerce Commission, "Input methodologies review decisions. Topic paper 4: Cost of capital issues" (December 2016), paragraphs 253-254; and Commerce Commission "Cost of capital for the UCLL and UBA pricing reviews: Final decision" (15 December 2015), paragraph 93.

493. Our proposal to use a long-term credit rating of BBB+ is consistent with the comparator sample used to determine asset beta. CEPA has provided a preliminary recommendation for a notional long-term credit rating of BBB/BBB+ for FFLAS.²⁶²

Emerging view 7: the debt premium should be set using an historical average approach and a TCSD

494. We intend to set a 5-year debt premium using a historical averaging approach. We also intend to apply a TCSD if suppliers issue debt that has an average tenor greater than 5 years.

Emerging view 7A: historical average (not prevailing rate) to estimate the debt premium

495. We favour this historical averaging approach, using debt premium estimates across five years, to protect suppliers and end-users against significant temporary changes in the debt premium.²⁶³

496. Applying a similar methodology to that in Part 4 would involve historical averaging across five years²⁶⁴ and obtaining debt premium estimates in two tranches:²⁶⁵

496.1 for future years from corporate bond rates over a 12-month determination window;

496.2 for previous years, from averaging debt premium estimates that we would need to determine retrospectively.²⁶⁶ In practice this would involve calculating debt premium for each of last 5 years when estimating WACC and then taking the average of these.

Emerging view 7B: 5-year debt premium with a TCSD similar to that in Part 4

497. We recognise that, unlike the risk-free rate which can be hedged, the greater debt premium on long-term debt cannot be hedged economically.²⁶⁷

²⁶² Cambridge Economic Policy Associates (CEPA), “Cost of capital for regulated fibre telecommunication services in New Zealand: Asset beta, leverage and credit rating” (21 May 2019), page 48.

²⁶³ Our reasons are consistent with our reasons in Part 4 with are explained more fulsomely at Commerce Commission, “Input methodologies review decisions. Topic paper 4: Cost of capital issues”, paragraphs 138-149, table 1 and attachment G. In the FPP we used a prevailing approach, see Commerce Commission “Cost of capital for the UCLL and UBA pricing reviews: Final decision” (15 December 2015), paragraphs 75-76 and 63.3.

²⁶⁴ Commerce Commission “Input methodologies review decisions. Topic paper 4: Cost of capital issues”, paragraph 147.

²⁶⁵ Our Part 4 approach is discussed at Commerce Commission, “Input methodologies review decisions. Topic paper 4: Cost of capital issues”, paragraph 78.2.

²⁶⁶ There are different ways to obtain this historical data considering practical constraints. For background see Commerce Commission “Input methodologies review decisions. Topic paper 4: Cost of capital issues”, paragraphs 154-156.

²⁶⁷ This view is consistent with our view in Part 4, see Commerce Commission “Input methodologies (electricity distribution and gas pipeline services): Reasons paper” (December 2010), paragraph H5.5.

498. We consider that it may be appropriate to reflect the wide divergence of debt management practices of regulated suppliers, in other words to adjust for the actual term of debt issued by firms and compensate for the greater debt premium some regulated suppliers incur on their debt portfolio.
499. We have considered alternative options for the term of the debt premium:²⁶⁸
- 499.1 debt premium longer than 5 years (no TCSD),
 - 499.2 5-year debt premium with the existing TCSD,
 - 499.3 3-year debt premium and a revised TCSD.
500. Advantages of a debt premium longer than 5 years (no TCSD) include reduced complication in calculating the debt premium and avoiding potential incentives on firms to issue longer-term debt to obtain higher revenue than a TCSD allowance could create, even in circumstances in which it is not efficient to do so.
501. Shorter terms with a TCSD have the advantage of ensuring that suppliers are not rewarded for the cost of longer-term debt without the benefits of issuing longer-term debt.
502. On balance, we propose the 5-year debt premium with a TCSD on the basis that:
- 502.1 It provides a compromise approach, providing a middle ground when considering the advantages and disadvantages of the different options;
 - 502.2 It is a pragmatic option, where consistency with Part 4 allows for relatively straight-forward implementation and does not require changes if the length of the regulatory period changes.
503. We note the inconsistency with respect to the risk-free rate term that we propose, however, we see no particular reason why they should be the same and small benefit in aligning the two.
504. Chorus submitted that the leverage and debt premium needs to consider the regulatory and contractual framework for FFLAS under the UFB initiative, but no detail is given on how.²⁶⁹ We are interested in receiving any further information on this point.

²⁶⁸ These options are: debt premium longer than 5 years (no TCSD), 5-year debt premium with the existing TCSD, 3-year debt premium and a revised TCSD. In Part 4 we use a five-year estimate for the original term, with TCSD. Commerce Commission, "Input methodologies review decisions. Topic paper 4: Cost of capital issues" (December 2016), paragraphs 84.4, 189, 190-192. In the FPP we used a seven-year term to maturity and no TCSD, see Commerce Commission "Cost of capital for the UCLL and UBA pricing reviews: Final decision" (15 December 2015), paragraph 77-89.

²⁶⁹ Chorus "Submission in response to the Commerce Commission's invitation to comment on its proposed approach to the new regulatory framework for fibre dated 9 November 2018" (21 December 2018), paragraph 203.2.

Emerging view 7C: use the Part 4 approach to comparators in the hierarchy of bonds

505. We intend to apply a similar hierarchical approach to comparators in our estimation of the ‘annual’ debt premium (for the historic average) as Part 4. We also intend to use the same qualifying issuer characteristics in the hierarchy of bonds.
506. We propose the hierarchical approach to bond selection to address the small number of bonds with a S&P long-term credit rating of BBB+ that are publicly traded in New Zealand.²⁷⁰
507. Consistent with the Part 4 approach, we propose to exclude the following from the hierarchy of bonds:
- 507.1 foreign currency denominated bonds²⁷¹;
- 507.2 bonds issued by entities operating predominantly in the banking or finance industries²⁷².
508. We intend to place a restriction on bonds issued by entities with 100% government ownership.²⁷³ We consider that yields on 100% government-owned bonds are likely to behave differently and have lower debt premiums than other equivalent bonds.²⁷⁴

Emerging view 7D: regard to NSS curve

509. Consistent with the Part 4 approach, we propose to have regard to the Nelson-Siegel-Svensson (**NSS**) curve approach when determining the debt premium.²⁷⁵ We

²⁷⁰ Our reasons are consistent with our reasons in Part 4 explained more fulsomely at Commerce Commission “Input methodologies (electricity distribution and gas pipeline services): Reasons paper” (December 2010), paragraphs 6.3.25 and H5.4; and at Commerce Commission, “Input methodologies review decisions. Topic paper 4: Cost of capital issues” (December 2016), paragraphs 250-257.

²⁷¹ Commerce Commission “Electricity Distribution Services Input Methodologies Determination 2012” (as of 31 January 2019), paragraph 2.4.4 (6)(a). This is also consistent with the FPP, see Commerce Commission “Cost of capital for the UCLL and UBA pricing reviews: Final decision” (15 December 2015), paragraph 96.1.

²⁷² Commerce Commission “Electricity Distribution Services Input Methodologies Determination 2012” (as of 31 January 2019), pages 38-39.

²⁷³ Our reasons are consistent with our reasons in Part 4, see Commerce Commission, “Input methodologies review decisions. Topic paper 4: Cost of capital issues” (December 2016), paragraph 68.2.2.; Commerce Commission, “Input methodologies review. Update paper on the cost of capital topic” (November 2015), paragraph 2.37. See also Commerce Commission “Electricity Distribution Services Input Methodologies Determination 2012” (as of 31 January 2019), clauses 2.4.4(7)(e)-2.4.4(8)(a).

²⁷⁴ Our reasons are consistent with our reasons in Part 4 at Commerce Commission, “Input methodologies review decisions. Topic paper 4: Cost of capital issues” (December 2016) at table X1 and paragraphs 163-164.

²⁷⁵ Commerce Commission, “Input methodologies review decisions. Topic paper 4: Cost of capital issues” (December 2016), table X1 and paragraph 78.3.2. For our determination see Commerce Commission “Electricity Distribution Services Input Methodologies Determination 2012” (as of 31 January 2019) at paragraph 2.4.7 (7)-(8), pages 81-82. In the FPP we did not use a curve-fitting approach, see Commerce Commission “Cost of capital for the UCLL and UBA pricing reviews: Final decision” (15 December 2015), paragraph 96.2.

consider that the NSS curve has been a useful secondary measure of the debt premium in Part 4 as it reduces reliance on judgement.²⁷⁶

Emerging view 8: we intend to provide an allowance for debt issuance costs using the estimate determined during the Part 4 IM review

- 510. We consider that fees and costs associated with prudent debt issuance and refinancing costs are legitimate expenses that should be compensated for.
- 511. We intend to provide an allowance for debt issuance costs using the estimate determined during the Part 4 IM review.²⁷⁷ The allowance for debt issuance costs was 20 bps (0.20%) p.a. for the cost of debt with a 5-year term but may need to be adjusted upwards (on a % p.a. basis) for a 3-year regulatory period.
- 512. The estimate for debt issuance costs includes an allowance for the costs of entering interest rate swaps and this is likely to be slightly higher (on a % p.a. basis) for an efficient firm, subject to a 3- year regulatory period, which uses interest rate swaps to match the term of the risk-free rate to the regulatory period.²⁷⁸
- 513. We consider that some degree of hedging activity by suppliers can be beneficial to end-users as it can enable suppliers to both reduce their risk exposure and lower interest costs (to the extent that it reduces the term over which suppliers have fixed interest payments).²⁷⁹

Questions for stakeholders

- | | |
|-----|--|
| Q27 | What are your views on our methodology for setting the risk-free rate? |
| Q28 | What are your views on our methodology for setting the debt premium? |
| Q29 | What are your views on using a TCSD? |
| Q30 | What are your views on a long-term credit rating of BBB+? |

²⁷⁶ Commerce Commission, “Input methodologies review decisions. Topic paper 4: Cost of capital issues”, paragraph 162.2.

²⁷⁷ Commerce Commission, “Input methodologies review decisions. Topic paper 4: Cost of capital issues” (December 2016), pages 46-56.

²⁷⁸ Commerce Commission, “Input methodologies review decisions. Topic paper 4: Cost of capital issues” (December 2016), table X1, paragraphs 78.5 and 193-196.

²⁷⁹ Commerce Commission, “Input methodologies review decisions. Topic paper 4: Cost of capital issues” (December 2016), paragraph 40.

Table 1: Summary of FPP and Part 4 approaches to cost of debt, and our proposal for fibre

	FPP approach 2015²⁸⁰	Current Part 4 approach, updated 2016²⁸¹	Proposed approach for fibre
Risk-free rate	<ul style="list-style-type: none"> • term of risk-free rate matched to regulatory period (5 years) • prevailing rates • one-month average or ‘determination window’ • New Zealand Government bonds as proxy 	<ul style="list-style-type: none"> • term of risk-free rate matched to the standard regulatory period (5 years) • prevailing rates • three-month average or ‘determination window’ • New Zealand Government bonds as proxy 	<ul style="list-style-type: none"> • term of risk-free rate matched to regulatory period (3 years, then 3 to 5 years) • prevailing rates • three-month average or ‘determination window’ • New Zealand Government bonds as proxy
Debt premium	<ul style="list-style-type: none"> • seven-year term to maturity • no TCSD • prevailing approach • no curve-fitting approach <p>bond sample:</p> <ul style="list-style-type: none"> • S&P long-term credit rating of BBB+²⁸² 	<ul style="list-style-type: none"> • five-year term to maturity • with TCSD • simple historical average • regard to NSS curve <p>bond sample:</p> <ul style="list-style-type: none"> • S&P long-term credit rating of BBB+ (Transpower, EDBs, GPBs), 	<ul style="list-style-type: none"> • five-year term to maturity • with TCSD • simple historical average • regard to NSS curve <p>bond sample:</p> <ul style="list-style-type: none"> • S&P long-term credit rating of BBB+

²⁸⁰ Commerce Commission “Cost of capital for the UCLL and UBA pricing reviews: Final decision” (15 December 2015).

²⁸¹ Commerce Commission “Input methodologies review decisions. Topic paper 4: Cost of capital issues” (December 2016), table X1 and chapter 3.

²⁸² Commerce Commission “Cost of capital for the UCLL and UBA pricing reviews: Final decision” (15 December 2015), paragraphs 63.5, 90-95, and footnote 48.

	<ul style="list-style-type: none"> excludes foreign currency denominated bonds restriction on using bonds issued by majority Crown/local authority owned entities²⁸³ 	<ul style="list-style-type: none"> or A- (airports) excludes foreign currency denominated bonds a restriction on using bonds issued by entities with 100% government ownership 	<ul style="list-style-type: none"> excludes foreign currency denominated bonds a restriction on using bonds issued by entities with 100% government ownership
TCSD	<ul style="list-style-type: none"> No TCSD 	<ul style="list-style-type: none"> TCSD for energy businesses, no TCSD for airports 	<ul style="list-style-type: none"> TCSD
Debt issuance costs	<ul style="list-style-type: none"> 25bps (0.25%) p.a.²⁸⁴ 8bps allowance for swap costs²⁸⁵ 	<ul style="list-style-type: none"> 20 bps (0.20%) p.a.²⁸⁶, including an allowance for swap costs of 3-4bps²⁸⁷ 	<ul style="list-style-type: none"> 20 bps (0.20%) p.a., including an allowance for swap costs of 3-4bps, for a 5-year regulatory period; with an appropriate adjustment for 3 or 4 year regulatory periods²⁸⁸

²⁸³ Commerce Commission “Cost of capital for the UCLL and UBA pricing reviews: Final decision” (15 December 2015), paragraphs 100-106.

²⁸⁴ Commerce Commission “Cost of capital for the UCLL and UBA pricing reviews: Final decision” (15 December 2015), paragraph 107.

²⁸⁵ Commerce Commission “Cost of capital for the UCLL and UBA pricing reviews: Final decision” (15 December 2015), table 1, paragraphs 7 and 112-122.

²⁸⁶ Commerce Commission, “Input methodologies review decisions. Topic paper 4: Cost of capital issues” (December 2016), paragraph 196.

²⁸⁷ Commerce Commission, “Input methodologies review decisions. Topic paper 4: Cost of capital issues” (December 2016), table X1 and paragraph 203.

²⁸⁸ For a technical discussion see Commerce Commission “Cost of capital for the UCLL and UBA pricing reviews: Final decision” (15 December 2015), paragraphs 108-109.

Other Key issues affecting WACC

514. We have identified the following key issues for WACC, on which we are most interested in stakeholder views.

514.1 WACC for losses calculation;

514.2 WACC uplift and asymmetric risk;

514.3 WACC applied to ID.

Issue 1: The WACC applied for the losses calculation

Our emerging view

515. Our emerging views on the WACC for the losses calculation are:

515.1 To apply the same asset beta when determining the WACC in both the pre and post-implementation periods.

515.2 A risk-free rate estimate based on a rolling average approach is likely to be most appropriate as this limits the potential impact of anomalous market conditions during the pre-implementation period.

515.3 We consider actual financing costs of Crown financing are likely to be nil.

515.4 We will not use actual leverage assumptions when determining a WACC for the pre-implementation period, instead we will use the same notional leverage used to determine a WACC estimate in the post-implementation period.

Problem definition

516. A key difference in developing the fibre IMs with respect to Part 4 IMs is the requirement to compensate fibre businesses for accumulated losses prior to the implementation date (1 January 2022).²⁸⁹ This raises some issues in relation to WACC as:

516.1 a WACC is required to determine the 'benchmark' allowable revenue using a BBM approach (against which the losses will be calculated). In particular, we need to consider;²⁹⁰

516.1.1 the appropriate compensation for systematic risk (ie, asset beta); and

516.1.2 an appropriate term for the risk-free rate.

²⁸⁹ Telecommunications Act 2001, s 177.

²⁹⁰ Commerce Commission "New regulatory framework for fibre - Invitation to comment on our proposed approach" (9 November 2018), paragraph 7.67.

- 516.2 a time value of money adjustment is required, once the value of the accumulated losses has been determined, so that the losses can be recovered in the future.
517. To help develop our approach on this topic we commissioned Dr Martin Lally to provide advice on the appropriate WACC that should be applied to the loss calculation. Dr Lally's report has been published alongside our emerging views paper and his key conclusions are:²⁹¹
- 517.1 The rate applied for the allowed cost of capital should be the same as the rate used for compounding the returns to the implementation date;
- 517.2 In respect of the risk-free rate and the debt premium, the appropriate choices for the cash flows in any given year are the rates prevailing at that point for the period from then until the commencement of regulation. Thus, if regulation commences in 2022, net cash flows incurred in (say) 2015 should be compounded forward using (inter alia) the seven-year risk-free rate and DRP prevailing in 2015.
- 517.3 The systematic risks faced by a supplier in the pre-regulatory period differ from those faced following implementation of regulation;
- 517.4 Properly estimating an asset beta for the pre-regulatory period would be difficult given a lack of comparators;
- 517.5 The natural choice would be to use the asset beta used from the commencement of regulation; and
- 517.6 The simplest means of dealing with fees associated with Crown financing would be to add them to the operating expenditure estimate used to determine losses.
518. We encourage stakeholders to submit on Dr Lally's report on the cost of capital for the loss calculation.

Systematic risk during the loss period

519. We agree with Dr Lally's view that the systematic risk prior to the start of the regulatory period is likely to exist, however, the systematic risk in pre-regulatory period may be different to the risk during the regulatory period.
520. However, we also note the difficulties in estimating systematic risk precisely, and particularly for the unique circumstance of the pre-regulatory period faced by suppliers prior to the implementation date.

²⁹¹ Dr Martin Lally "The cost of capital for fibre network losses" (21 May 2019).

521. Our emerging view is to apply the same asset beta when determining the WACC in both the pre and post-implementation periods.
522. In response to the proposed approach paper, Vodafone suggested a cost of debt approach should be applied when adjusting any losses to present value at the implementation date.²⁹²
523. However, Vodafone’s suggestion is inconsistent with the approach put forward by Dr Lally which suggests:
- 523.1 the allowed cost of capital and the rate used to adjust to present value should be the same; and
- 523.2 the appropriate rate should include some compensation for systematic risk.
524. We are interested in any further views on this.

Term of the risk-free rate for the loss calculation

525. Chorus suggested that the period from 2011 to implementation date should be treated as a single regulated period, and thus a risk-free rate estimate based on a 10-year term, rather than a 5-year term should be used.²⁹³ It considers this would be broadly consistent with our previous approach, in which we have aligned the term of the risk-free rate with the term of the period.²⁹⁴
526. RSPs disagreed with Chorus in cross-submissions about using a 10-year risk-free rate. 2degrees and Spark both referred to the Part 4 and FPP decisions which considered that a 5-year rate was more appropriate and they suggested no new arguments had been raised.²⁹⁵ However, we note that the reasons for using a 5-year risk-free rate in the Part 4 IMs is in order to match the regulatory period.²⁹⁶ There is no equivalent regulatory period prior to the implementation period so there is potentially less rationale for applying a 5-year risk-free rate in these circumstances.
527. In most market circumstances a 10-year rate would result in a higher risk-free rate and thus a higher WACC. We have previously applied a 5-year rate consistent with the length of a regulatory period on the basis that even if longer-term debt was

²⁹² Vodafone “Submission on new regulatory framework for fibre” (21 December 2018), paragraph 111.

²⁹³ Chorus “Submission on new regulatory framework for fibre” (21 December 2018), paragraph 170.1.

²⁹⁴ Commerce Commission “Input methodologies review decisions. Topic paper 4: Cost of capital issues” (December 2016), paragraph 536. Commerce Commission “Input methodologies (electricity distribution and gas pipeline services): Reasons paper” (December 2010), paragraph H4.29 and H4.52.

²⁹⁵ 2degrees “Cross-submission on new regulatory framework for fibre” (5 February 2019), section 8.2; Spark “Cross-submission on new regulatory framework for fibre” (5 February 2019), paragraph 11.

²⁹⁶ Commerce Commission “Input methodologies review decisions. Topic paper 4: Cost of capital issues” (December 2016), paragraph 536. See also Commerce Commission “Input methodologies (electricity distribution and gas pipeline services): Reasons paper” (December 2010), paragraphs H4.32 and H4.52.

issued, firms can re-price longer-term debt for each new period using the swap market.²⁹⁷

528. However, it is not clear that the period from 2011 to the implementation date could be considered a single regulatory period, given the limited knowledge of the future regulatory approach at the start of the period. Dr Lally suggested that the most appropriate approach would be:²⁹⁸

In respect of the risk-free rate and the DRP, the appropriate choices for the year t cash flows are the rates prevailing at that point for the period from then until the commencement of regulation. Thus, if regulation commences in 2022, net cash flows incurred in (say) 2015 should be compounded forward using (inter alia) the seven-year risk-free rate and DRP prevailing in 2015.

529. As most of the Chorus investment has been new investment across the period, we consider it may potentially be more appropriate for a staggered (or average approach) to estimating an appropriate WACC. For example, one option could be to apply a rolling average approach, based on the risk-free rate determined in each year of the pre-implementation period. This rolling average approach could use a fixed term (eg, 5 years), or the term could be updated each year to be consistent with the numbers of years until the implementation date, as described by Dr Lally.
530. Dr Lally also suggested a simplification could be possible if it was assumed that most net cashflows have occurred in one year.²⁹⁹
531. An alternative option might be to determine an allowed WACC based on the rate that we would have applied *if* the suppliers had been subject to regulation from 2011 to 2022. In that circumstance we would determine a WACC based on the assumed length of price-quality paths prior to the regulatory period. However, given the option of 3- or 5-year price-quality paths there remains uncertainty over how long any price-quality path would have been and when it would have started.
532. A risk-free rate estimate based on a rolling average approach is likely to be most appropriate as this limits the potential impact of anomalous market conditions during the pre-implementation period. The details of the regulatory rules that determine the regulatory allowance would not have been known at that stage and therefore FFLAS providers would have been unable to use interest rate swaps to mitigate the risk of anomalous market conditions.
533. We are open to further evidence on how the risk-free rate is determined for the pre-implementation period.
534. In addition to the risk-free rate we also need to consider the appropriate term and approach for the debt premium. We intend to make this as consistent as possible

²⁹⁷ Commerce Commission, "Input methodologies review decisions. Topic paper 4: Cost of capital issues" (December 2016), paragraphs 87-88.

²⁹⁸ Dr Martin Lally "The cost of capital for fibre network losses" (21 May 2019), pages 6-7.

²⁹⁹ Dr Martin Lally "The cost of capital for fibre network losses" (21 May 2019), page 7.

with our approach post-implementation, however we are interested in any issues that need to be considered when applying our approach to the loss period for the debt premium.³⁰⁰

Cost of government financing

535. As part of the building blocks approach to determine the losses we will need to consider the actual financing costs incurred by the suppliers from Crown finance. This is required by the Act.³⁰¹
536. We proposed in the initial fibre paper two different methods to adjust for Crown financing from the implementation date.³⁰² A similar Crown financing adjustment is required as part of the loss calculation.³⁰³
537. The Act requires ‘actual’ financing costs to be taken into consideration when calculating losses,³⁰⁴ and more generally when determining the maximum revenues or the maximum prices for a price-quality path.³⁰⁵
538. Our assumption in the proposed approach paper was that the actual cost of government financing is nil.
539. However, some submissions questioned whether the ‘actual’ cost of government financing is zero:

539.1 For example, Chorus suggested that:³⁰⁶

We will demonstrate that Crown financing is not costless. In addition to transaction costs, Crown financing came with obligations on the phasing and specification of the roll out, management step in rights, restrictions on our ability to compete with copper services in other LFC areas and penalties for failing to meet connection targets. Some of these obligations and risks are compensated by the UFB financial loss calculation (e.g. building ahead of demand), but others are not (e.g. ex-ante risk of penalties).

540. Trustpower had a different view and suggested in their cross-submission that:

Finally, in relation to Crown financing costs, we don’t accept Chorus’ argument that the Crown financing was not costless due to step in rights, restrictions on Chorus’ decisions to invest and compete with copper, ex-ante risk of penalties, etc. Section 170(2) requires the Commission to reflect “the actual financing costs” incurred by the provider. We do not consider that contractual rights of the Crown and restrictions on Chorus are in the nature of actual financing costs, such as interest or dividends.

³⁰⁰ For FPP we applied a debt premium with a 7-year term to maturity. Commerce Commission “Cost of capital for the UCLL and UBA pricing reviews: Final decision” (15 December 2015).

³⁰¹ Telecommunications Act 2001, s 177.

³⁰² Commerce Commission “New regulatory framework for fibre - Invitation to comment on our proposed approach” (9 November 2018), paragraph 7.73.

³⁰³ See Asset valuation chapter, paragraph 206.2.

³⁰⁴ Telecommunications Act 2001, s 177 (3)(b).

³⁰⁵ Telecommunications Act 2001, s 171(2).

³⁰⁶ Chorus “Submission on new regulatory framework for fibre” (21 December 2018), paragraph 176.

541. We remain of the view that the actual financing costs of Crown financing is likely to be zero. This is consistent with the approach we intend to take for Crown-financed assets when in determining the initial asset value.³⁰⁷ As suggested by Dr Lally, any fees and additional costs that are considered to be associated with Crown financing could be incorporated into the operating expenditure allowance.
542. Pat Duignan also noted that it may be appropriate to use a firm's actual leverage when determining the benefit of Crown financing and we should potentially use the same leverage assumptions in determining the WACC for the pre-implementation period, used to determine the allowable revenue.³⁰⁸
543. We disagree that we will need to use actual leverage assumptions when determining a WACC for the pre-implementation period. Our emerging view is that we can split the assets commissioned in the pre-implementation into two tranches.
- 543.1 A tranche of UFB assets from which we propose to subtract the face value of the Crown financing from the accumulated cost of those assets when applying the required rate of return for the relevant year. This is consistent with our emerging view to use Method 1 of the proposed approach paper and is described in more detail in the Chapter 3.³⁰⁹
- 543.2 A remaining tranche of UFB assets for which we will determine a return based on a benchmark capital structure, consistent with the WACC methodology described above and using the same notional leverage used to determine a WACC estimate in the post-implementation period.

Issue 2: WACC uplift and asymmetric risk

544. A WACC uplift is an increase to our mid-point WACC when we consider that it would better promote the long-term benefits of end-users and therefore be more consistent with the purpose of Part 6 of the Act.^{310 311}
545. Consideration of a WACC uplift is important because there could be reasons why a return that is equal to our best estimate of the WACC (ie, our 'mid-point estimate') does not result in a supplier expecting to earn a normal return.
546. Three categories of reasons have been suggested as a rationale for applying a WACC uplift for the businesses that we regulate.³¹²

³⁰⁷ See Asset valuation chapter, paragraph 208.2.

³⁰⁸ Pat Duignan "Submission on new regulatory framework for fibre" (21 December 2018), page 3.

³⁰⁹ See Asset valuation chapter, paragraph 208.2.

³¹⁰ We could also apply decrease to the WACC (ie, a downlift), if we considered it better the purpose of Part 6.

³¹¹ Telecommunications Act 2001, s 162.

³¹² The WACC uplift described here covers any uplift made to the final mid-point WACC estimate. We have also considered and applied adjustments to asset beta (eg, for gas businesses). These asset beta adjustments can consider similar or related risks if they are deemed to be systematic risks.

- 546.1 Asymmetric consequences of under-investment;³¹³
- 546.2 Type I asymmetric risk – infrequent events that could produce large losses (eg, catastrophic events);³¹⁴ and
- 546.3 Type II asymmetric risk – risk of competitive entry/expansion (eg, asset stranding through technological innovation, other competitive effects).
547. In the Part 4 IMs and FPP decision, we have generally focussed on considering the asymmetric consequences from under-investment as the rationale for providing a WACC uplift. This is the rationale that underpins the choice of 67th percentile (of the estimated WACC range) in the energy sector.³¹⁵
548. To date we have not provided any ex-ante compensation for asymmetric risks under Part 4 or in recent telecommunications WACC determinations. Instead we have tended to consider it more appropriate to provide compensation (or mitigation) for these risks by other means (eg, reducing asset lives or allowing the reconsideration of a price-quality path).³¹⁶
549. However, as noted in the proposed approach paper, providing appropriate risk allocation and compensation for type II asymmetric risks (ie, asset stranding) may be more challenging for FFLAS due to the greater threat of competition relative to the sectors we regulate under Part 4.³¹⁷
550. As explained in the following paragraphs, our emerging views are that:
- 550.1 we have seen limited evidence that there are likely to be material asymmetric consequences of under-investment for FFLAS and, therefore, we do not consider that an uplift is required for this reason, however we welcome any further evidence on this issue;

³¹³ Examples of asymmetric consequences can *potentially* include the high cost of network outages and accelerated deployment of innovative telco services.

³¹⁴ We have previously defined Type I and Type II asymmetric risks when setting the original IMs. See Commerce Commission “Input methodologies (electricity distribution and gas pipeline services) reasons paper” (22 December 2010), paragraph H12.4.

³¹⁵ Commerce Commission “Amendment to the WACC percentile for price-quality regulation for electricity lines services and gas pipeline services. Reasons paper” (30 October 2014), paragraphs 3.9 and 3.36.

³¹⁶ One potential exception is our view in the Orion CPP decision where we stated “The practical effect of using the 75th percentile WACC (determined under the IMs) is to provide a buffer against the financial impact of catastrophic events”. See Commerce Commission “Setting the customised price-quality path for Orion New Zealand Limited: Final reasons paper” (29 November 2013).

³¹⁷ Commerce Commission “New regulatory framework for fibre - Invitation to comment on our proposed approach” (9 November 2018), paragraphs 6.46 and 6.47-6.50.

- 550.2 we do not consider any further compensation is required for Type I catastrophic risk given the potential for appropriate ex-post compensation mechanisms to be developed as part of the price-quality path;³¹⁸
- 550.3 we consider that type II risks of asset stranding is a potential risk for FFLAS of unknown magnitude. If we conclude that this type of risk is material, there are several options (or combination of options) that could be used to manage this risk. These options could include:
- 550.3.1 ability to shorten asset lives and bring forward compensation;
- 550.3.2 retention of assets in the RAB after stranding;³¹⁹
- 550.3.3 ex-ante compensation allowance. This could be provided as an:
- (a) ex-ante cashflow allowance; and
 - (b) increment to the WACC.³²⁰
- 550.3.4 ring-fenced ex-ante compensation allowance. For example, any compensation would be ring-fenced and only kept by suppliers to the extent that stranding does occur.³²¹

Uplift for consequences of under-investment

Our emerging view

551. We consider the analytical framework used in previous WACC uplift assessments is appropriate for considering the potential asymmetric consequences of under-investment for FFLAS.³²²
552. The framework illustrates the significant cost of the uplift. At this stage we do not consider the benefits from mitigating under-investment outweigh this cost, particularly given FFLAS are new networks and the availability of alternative technologies is likely to mitigate the impact of any outages on end- users.

³¹⁸ For example, the ability to reconsider the price-quality path following a catastrophic event and a revenue cap with wash-up mechanism.

³¹⁹ Note that this would only mitigate the risk of stranding to the extent that it applies to a sub-set of assets, rather than the full RAB. If the full RAB was at risk of stranding, the retention of assets in the RAB provides no benefits to mitigate that risk.

³²⁰ Strictly speaking this would not be part of the WACC as it would not be providing compensation for systematic risk. However, adding an increment to the WACC may be a practical mechanism for providing compensation for asymmetric risk.

³²¹ There are several ways to strengthen or weaken such ring-fencing. For example, it could range from an IM requirement for suppliers to return money to suppliers in the event that stranding does not occur to a separately held fund that would only pay out to suppliers once stranding has occurred.

³²² Commerce Commission "Amendment to the WACC percentile for price-quality regulation for electricity lines services and gas pipeline services" (30 October 2014), Chapter 2; and Commerce Commission "Final pricing review determination for Chorus' unbundled copper local loop service" (15 December 2015), Chapter 5.

553. Any under-investment in FFLAS is also less likely to be ‘hidden’ compared to the energy sector. We expect the under-investment would show up in performance standards more quickly. This means greater reliance can be placed on quality standards and enforcement to mitigate the negative impact of under-investment without the significant cost of an uplift.
554. We are open to further evidence on this.

Decision-making framework for the WACC uplift and Part 4 precedent

555. Any WACC uplift that we apply to FFLAS will be set at a level that seeks to ensure the purpose of Part 6 of the Act is met.³²³
556. We have previously indicated that we intend to take the Part 4 IMs as a starting point in determining the WACC applied to FFLAS.³²⁴ For this issue, Part 4 provides a clear framework for the assessment and high-level quantification of a WACC uplift (due to asymmetric consequences of under-investment).
557. This framework focuses on assessing the direct costs and expected benefits of any uplift using a consumer welfare standard. We used the framework when determining a WACC uplift for electricity lines services and gas pipeline services and considered it best met the purpose of section 52A of the Commerce Act 1986.³²⁵
558. We also used a similar framework in the FPP decision when considering whether an uplift best met the purpose of section 18 of the Act (ie, promotion of competition in telecommunications markets for the benefit of end-users of telecommunication services). In that context, we also considered it was most relevant to use a consumer welfare standard.³²⁶
559. In both cases, we also considered that total welfare could also be taken into account where it incorporates long-term benefits to end-users not otherwise captured by a more static consumer welfare measure.³²⁷
560. Given our previous approach to determining a WACC uplift has been considered appropriate to meet both section 18 of the Act and section 52A of the Commerce Act 1986, we expect a similar approach to assessing a WACC uplift would be used for FFLAS to meet the similar purpose statements (s 162 and s 166 (2)(b) of the Act that relate to the regulation of FFLAS).

³²³ Telecommunications Act 2001, s 162.

³²⁴ Commerce Commission "New regulatory framework for fibre - Invitation to comment on our proposed approach" (9 November 2018), paragraph 7.93.

³²⁵ Commerce Commission "Amendment to the WACC percentile for price-quality regulation for electricity lines services and gas pipeline services – Reasons paper" (30 October 2014), Attachment A.

³²⁶ Commerce Commission "Final pricing review determination for Chorus' unbundled copper local loop service" (15 December 2015), paragraph 611.

³²⁷ Commerce Commission "Cost of capital for the UCLL and UBA pricing reviews: Final decision" (15 December 2015), paragraph 245.

561. However, although we consider we have strong precedent in the appropriate analytical framework, Part 4 precedence may have less relevance when applying that framework. The appropriateness of any uplift depends on the specific context of the regulated service.³²⁸
562. In summary, we consider that there are two main questions to answer:
- 562.1 Should a WACC uplift be applied; and
 - 562.2 At what level should it be.
563. The costs and benefits of any WACC uplift will be considered as part of this assessment:
- 563.1 The direct costs of an uplift will be relatively straight-forward to estimate by multiplying the WACC uplift by the RAB over the relevant period.
 - 563.2 The benefits are likely to be more difficult to estimate and will depend on our expectation of how a firm's behaviour differs, due to the existence (or not) of an uplift.

Previous analysis of an uplift for telecommunication services

564. Determining whether there is any reason to depart from the mid-point requires consideration of whether there is asymmetry in terms of the expected losses from under-estimating and over-estimating WACC (given that the actual WACC is not observable, so must be estimated).
565. If the expected losses are broadly symmetric, then we should apply the mid-point WACC estimate. However, if the expected losses are asymmetric, there may be a case for selecting a WACC percentile estimate that reflects this asymmetry. Even if such an asymmetry is identified, consideration needs to be given to whether a WACC uplift is the best tool to address the asymmetry.
566. Several of the same issues that were previously identified during the FPP process appear relevant when assessing the appropriateness of an uplift for FFLAS. At that time, we considered there were several reasons why there was a limited case for a WACC uplift to incentivise additional investment in Chorus's UBA/UCLL copper service:³²⁹
- 566.1 the localised nature of potential outages on the UBA/UCLL network meant that outages are likely to affect a smaller number of end-users than for energy services;

³²⁸ Different assessments of uplift have been applied to different Part 4 sectors.

³²⁹ Commerce Commission "Cost of capital for the UCLL and UBA pricing reviews: Final decision" (15 December 2015), paragraph 266.

- 566.2 the presence of substitutes (eg, mobile networks) reduces the impact on end-users on any outages; and
 - 566.3 competitive pressure from the other networks may also help generate investment incentives, reducing the need for any WACC uplift.
567. Our emerging view is that a similar assessment could be made for FFLAS.

Consideration of submissions

568. Submissions to the fibre issues paper on the WACC uplift focussed on the asymmetric consequences of under-investment. A range of views were given on why the consideration of an uplift would be different for FFLAS compared to the FPP:

568.1 Chorus noted that the move to a RAB approach had changed the context in comparison to the FPP decision and strengthened the link between an uplift and investment.³³⁰

568.2 Chorus also considered the increased quality of and speed of fibre reduced the ability for mobile services to be an effective substitute.³³¹

568.3 Enable and Ultrafast agreed with Chorus in their cross-submission but also noted that the impact of outages was not the only reason given for an uplift in Part 4. They noted the risk of under-investment in other areas and referred to our acknowledgment that quality standards could not be relied on by end-users to provide sufficient protection. This is particularly the case when quality standards are still developing.³³²

568.4 The LFCs also noted how there may need to be an uplift to compensate for errors not captured in the percentile, “such as the risk of model error, or incremental risks within regulatory periods around parameters such as the risk-free rate.”³³³

569. In contrast, RSPs focussed on the precedent that had been set in Part 4 and the FPP decision and suggested that no uplift is justified:³³⁴

569.1 Vodafone noted that there would be limited impact from investment in reliability of layer 1 services from an uplift and mitigation was better provided via a quality incentive scheme.³³⁵

³³⁰ Chorus “Submission on new regulatory framework for fibre” (21 December 2018), paragraph 125.1.

³³¹ Chorus “Submission on new regulatory framework for fibre” (21 December 2018), paragraph 125.2.

³³² Enable and Ultrafast Fibre “Cross-submission on new regulatory framework for fibre” (5 February 2019), paragraph 5.7.

³³³ Enable and Ultrafast Fibre “Cross-submission on new regulatory framework for fibre” (5 February 2019), paragraph 5.4 (2).

³³⁴ Vocus “Submission on new regulatory framework for fibre” (21 December 2018) , paragraph 40; and Trustpower “Submission on new regulatory framework for fibre” (21 December 2018), paragraphs 7.1.14-7.1.16.

569.2 And for layer 2, Vodafone suggested that competition will provide more appropriate investment incentives.³³⁶

569.3 Axiom (for Spark) also argued that no uplift was required on the basis that both the chance and cost of outages will be lower for FFLAS than for Part 4 businesses because:³³⁷

569.3.1 The network is brand new and less susceptible to failure

569.3.2 Any outage of the fibre network would not give rise to costs of a similar magnitude to that seen in the event of a power outage.

569.4 2degrees also suggested in cross-submission that:³³⁸

For example, Vogelsang's observation "... irrespective of what the Commission decides on the uplift question, the UFB is committed and hence the benefits from UFB will emerge anyway" holds equally, if not more so, for fibre compared to copper.

570. The submissions outlined by stakeholders above illustrate a mixed view on the justification for an uplift. We consider there may be some stronger reasons to justify a WACC uplift (for the asymmetric consequences of investment) for FFLAS compared to the FPP decision, ie,

570.1 the move to a RAB approach, provides a more direct link between investment and revenues; and

570.2 FFLAS arguably have less potential for substitution by other services, given the high-speed nature of the service.

571. However, even with this change, there remains a significant amount of uncertainty over the direct impact of an uplift on investment new services, versus the counterfactual of no uplift. We have previously considered the link between the WACC uplift and the level of investment by regulated suppliers when amending the WACC percentile that applies to energy suppliers.³³⁹

572. An opposite argument could also be made that the fibre network is new and already providing significant quality of service to users, so reducing the potential benefits of inducing further/investment innovation.

573. We also consider that under-investment in FFLAS is also less likely to be 'hidden' compared to the energy sector. We expect the under-investment would show up in performance standards more quickly. Chorus and the other LFCs note in submissions

³³⁵ Vodafone "Submission on new regulatory framework for fibre" (21 December 2018), paragraph 78.

³³⁶ Vodafone "Submission on new regulatory framework for fibre" (21 December 2018), paragraph 78.2.

³³⁷ Axiom on behalf of Spark "Submission on new regulatory framework for fibre" (21 December 2018), page 19-20.

³³⁸ 2degrees "Cross-submission on new regulatory framework for fibre" (5 February 2019), page 19.

³³⁹ Commerce Commission "Amendment to the WACC percentile for price-quality regulation for electricity lines services and gas pipeline services – Reasons paper" (30 October 2014), paragraph 5.87.

that quality standards do not fully mitigate the risk of under-investment.³⁴⁰ Although the risk may not be fully eliminated, we still consider that greater reliance can be placed on quality standards and enforcement (compared to the energy sector). This mitigates (at least to some extent) the negative impact of under-investment without the significant cost of an uplift.

574. Ultimately, the key test is not whether an uplift is more or less justified than for UCLL/UBA under an FPP, but instead whether an uplift is justified at all, weighing up the costs against the expected benefits in light of section 166(2) of the Act. There is limited new information on this, and so at this stage we consider that there is no evidence to justify any uplift.
575. Chorus have suggested that they will provide further evidence on the justification for an uplift.³⁴¹ We intend to consider any evidence they provide on this, using the existing quantitative framework and may require external advice in considering any input assumptions that they use.
576. The existing (Oxera) approach to assessing the asymmetric consequences of under-investment was used in the WACC percentile amendment project (for energy businesses) and the FPP (for UBA/UCLL) services.³⁴² It is a well understood framework that can be simplified to a model the we are able to apply to FFLAS. It requires two specific inputs:
- 576.1 The annual net loss from any under-investment (as a proportion of the size of the RAB); and
- 576.2 A margin of error term (ie, how far below the true WACC would the regulatory WACC need to be, before under-investment actually occurs).
577. Applying this for FFLAS would require an estimate for each of these inputs. We are interested any further evidence stakeholders have on the magnitude of these estimates.
578. Spark also noted in their submission that we need to consider the differences between PQR and ID regulation when considering the uplift, given our suggestion for airport services that there is a weaker link between WACC and investment.³⁴³ Enable and Ultrafast responded in their cross-submission noting that a key reason for the

³⁴⁰ See for, example: Enable and Ultrafast Fibre “Cross-submission on new regulatory framework for fibre” (5 February 2019), paragraph 5.7.

³⁴¹ Chorus “Cross-submission on new regulatory framework for fibre” (5 February 2019), paragraph 88.

³⁴² For details on the Oxera approach that was applied to energy businesses see: Commerce Commission “Amendment to the WACC percentile for price-quality regulation for electricity lines services and gas pipeline services” (30 October 2014), paragraph 3.15.1; Oxera “Input methodologies, Review of the ‘75th percentile’ approach, Prepared for New Zealand Commerce Commission” (23 June 2014); Oxera “Oxera review of submissions: the appropriate WACC percentile, Prepared for the New Zealand Commerce Commission” (17 July 2014); and Oxera “Review of expert submissions of the input methodologies, Prepared for New Zealand Commerce Commission” (27 October 2014).

³⁴³ Spark “Submission on new regulatory framework for fibre” (21 December 2018), paragraph 121.b.

weakened link for airport services was the presence of unregulated revenues from complementary activities, which are not present for FFLAS services.

579. We described in the IM review decision for airports that there is potentially a weaker link between an uplift and investment for companies subject to ID.³⁴⁴ We also described in the same paper the impact of unregulated revenue streams was a key reason why we thought any uplift for airports is likely to be weaker than for energy businesses. Any decision on uplift needs to consider various factors which can include both the type of regulation and the context of the service that is being regulated.
580. Spark noted that in assessing the WACC percentile for FFLAS we need to consider the impact of section 166(2) (b) of the Act, which requires us to consider the promotion of workable competition in telecommunications markets for the long-term benefit of end-users. A requirement of this type was not present for Part 4.³⁴⁵
581. As noted in paragraphs 555 to 563 we consider the assessment framework used for the FPP decision and for the WACC percentile project for energy services covers our requirement to make recommendations, determinations or decisions that we consider best gives, or are likely to best give, effect to the purpose of Part 6 of the Act and the promotion of workable competition in telecommunications markets for the long-term benefits of end-users of telecommunication services under section 166(2) of the Act.

Compensation for asymmetric risks type I

Our emerging view

582. We expect to provide a similar approach to cover catastrophic risk as is applied in Part 4, ie:
- 582.1 Ex-ante allowance for insurance costs and earthquake preparation costs as part of the operational expenditure in the BBM;
 - 582.2 Assets damaged or destroyed by natural disasters can remain in the RAB;³⁴⁶
 - 582.3 Revenue cap with a wash-up that potentially provides the ability to share some demand risk with suppliers (as applicable for suppliers of electricity distribution services and suppliers of gas transmission services);³⁴⁷ and

³⁴⁴ Commerce Commission "Input methodologies review decisions. Topic paper 6: WACC percentile for airports" (December 2016).

³⁴⁵ Spark "Submission on new regulatory framework for fibre" (21 December 2018), paragraph 121.b.

³⁴⁶ The final decision on Orion's CPP outlines how damaged or destroyed assets, which are not disposed of, can be retained in the RAB and a supplier can continue to earn a return on and of capital for those assets. See Commerce Commission "Setting the customised price-quality path for Orion New Zealand Limited: Final reasons paper" (29 November 2013), paragraph B10.2.

- 582.4 A catastrophic event mechanism in the price-quality path IMs, that allows us to reconsider a price-quality path following a catastrophic event and may allow a supplier to recover efficient net costs following that catastrophic event.³⁴⁸
583. Given these mitigation mechanisms, we do not propose that any uplift is required to the WACC due to the type I asymmetric risks. We have also previously outlined how we consider the magnitude of any catastrophic risk will be relatively small to a diversified investor, given the generally localised nature of catastrophic events, and the potential for some corresponding upside risk.³⁴⁹
584. The Act specifies how the wash-up mechanism for the revenue cap must operate from the second regulatory period onwards and until future regulatory periods commencing after the 'reset date'.³⁵⁰ It appears that the Act requires all revenues to be washed up.³⁵¹ If the design of the revenue cap washes up all revenues, suppliers would not need to be compensated for the risk of catastrophic events (because all of the risk would be borne by end-users), but we may need to consider separately their incentives to prepare for catastrophic events.³⁵²
585. If we decided to recommend the implementation of a price cap in a future regulatory period,³⁵³ we would not expect there to be a full wash-up for demand risk and therefore Chorus would be exposed to demand risk until the next reset following a catastrophic event. We would not expect to provide any additional compensation under these circumstances, consistent with our approach in setting the Orion CPP and for DPPs under a weighted average price cap.³⁵⁴

³⁴⁷ Commerce Commission "Input methodologies review decisions. Topic paper 1: Form of control and RAB indexation for EDBs, GPBs and Transpower" (20 December 2016), paragraphs 150-159.

³⁴⁸ For example, as introduced for EDBs, prior to the 2015-2020 DPP. Commerce Commission "Input methodology amendments for electricity distribution services: Default price-quality paths" (27 November 2014), paragraphs 11.1-11.30.

³⁴⁹ In the Orion CPP we noted how there could be both positive and negative demand shocks. Examples given for EDBs were the 2011 Rugby world cup and a cold winter. See Commerce Commission "Setting the customised price-quality path for Orion New Zealand Limited" (29 November 2013), paragraph X19.

³⁵⁰ Telecommunications Act 2001, s 196.

³⁵¹ Telecommunications Act 2001, s 196(2).

³⁵² The revenue cap for EDBs, introduced as part of the 2016 IM Review, limits the amount of revenue that can be 'washed up' through the revenue cap to 20%. This was due to concerns about the impact on incentives to prepare for catastrophic events if all revenue was washed up. Commerce Commission "Input methodologies review decisions. Topic paper 1: Form of control and RAB indexation for EDBs, GPBs and Transpower" (20 December 2016), paragraphs 150-159.

³⁵³ Following a 'price-quality review' under s 209 of the Telecommunications Act 2001 and a recommendation by the Minister of Broadcasting, Communications and Digital Media under s 225 of the Telecommunications Act 2001.

³⁵⁴ Commerce Commission "Setting the customised price-quality path for Orion New Zealand Limited" (29 November 2013).

Compensation for asymmetric risks type II

Our emerging view

586. We previously considered this type of threat was less relevant for regulated suppliers and noted that under a building blocks approach there was the ability to compensate for type II risks (eg, competitive or technological stranding) by adjustments to regulatory cash flows (eg, the use of flexible depreciation profiles or retention of stranded assets in the RAB).³⁵⁵
587. Technological progress and the threat from competition means that the ability to compensate FFLAS may be lower than for Part 4 businesses. However, the magnitude of this risk remains uncertain and is likely to require further investigation.
588. The ability to shorten asset lives is likely to be an appropriate first step in considering this issue. However, this may not fully mitigate the risk of expecting a normal return, particularly if there are constraints on the amount of revenue that Chorus is able to recover in the short-term, as it grows the connections on its network.
589. Therefore, we may need to consider additional compensation for asset stranding risk – although as noted above, if there are short-term constraints on the amount of revenue it can recover, this compensation might only be obtained in the medium-term.
590. Several options are outlined below on how compensation for this risk (if it was deemed to be significant) could be implemented.
591. After assessing the options, we consider that providing a fixed amount of ex-ante compensation (via a WACC uplift) would be easiest to implement but results in a significant challenge in estimating the magnitude of any ex-ante compensation. We also consider clear separation of compensation for this type of risk (from, for example, the asymmetric consequences of under-investment) is appropriate. This is the case, even if the compensation is translated into an uplift to the WACC for illustrative or implementation purposes
592. Other options are more costly to administer but reduce the chances of either significant windfalls to suppliers or the risk that Chorus is being significantly undercompensated for its investment.
593. We consider we should rule out the retention of assets in the RAB post-deregulation due to the difficulties in implementing such an approach and the potential for distortions on investment decisions.

³⁵⁵ Commerce Commission “Input methodologies (electricity distribution and gas pipeline services): Reasons paper” (December 2010), paragraph H12.1.

Asset stranding

594. This type of risk is often characterised as ‘asset stranding’. Asset stranding is an event which is related to irreversible investments. Where an investment is committed in expectation of the returns made from that investment, asset stranding occurs when the actual returns are less than necessary to compensate for the initial investment due to ‘other’ events.

595. Asset stranding risk can cover a variety of events and has previously been described by Dr Martin Lally.³⁵⁶

Stranding is the circumstance in which a demand shortfall prevents a business from recovering certain costs from either the intended or other customers.

596. There may be several reasons for such a demand shortfall (eg, technological obsolescence, greater competition) but the distinction between these types of risks can often be blurred, for example technological advancements can increase risks of greater competition as well as making existing technology redundant (or expensive) which combine to cap the upside of revenues.

597. The asymmetry of the risk matters, if the useful lifespan of an asset may be longer than expected or shorter than expected with equal probability, then a supplier will expect a normal profit despite the risk of asset stranding with no additional adjustment to either the WACC or cash flows to reflect this risk.

598. Asset stranding can be either:

598.1 Fully stranded – This typically relates to no further revenue being generated by those assets; and

598.2 Partially stranded – where the assets continue to be incrementally profitable to operate but will not recoup initial investment cost.³⁵⁷

599. The requirement for compensation for both types of assets are similar. It is the revenue generated by the assets over their life time which matters, not whether it stops abruptly within its expected life or generates less than expected over its entire expected life.

600. For regulated network businesses the existence of the RAB disconnects the value of an asset from the revenue it generates. For example, an asset used to provide services to a smaller number of customers than expected may be ‘economically’ stranded (ie, the revenue associated with the customers that use the asset is not

³⁵⁶ Martin Lally "The Weighted Average Cost of Capital for Gas Pipeline Businesses" (September 2004), page 33.

³⁵⁷ One example of a partially stranded asset may be an asset in a geographic area that has been deregulated. The supplier may be able to use it to provide services in a competitive market, but revenues associated with the asset may not be sufficient to enable the supplier to recoup the cost the initial investment.

sufficient to recover the full cost of the investment). However, the asset is not necessarily stranded in a revenue sense because the full cost of the investment is in the RAB and can therefore be recovered across the whole of the customer base.

601. The retention of assets in the RAB in this way, mitigates the risks to suppliers of economically stranded assets. The proposed rules for asset valuation allow suppliers to retain assets in the RAB until they are disposed of.³⁵⁸ This provides compensation for assets that continue to be used to provide the regulated service, even when they have become either fully or partially stranded.³⁵⁹
602. Despite the ability to use the retention of assets in the RAB to protect against stranding, there remains a residual stranding risk due to the potential stranding of the whole asset base. At a certain tipping point, regulated end-users may not be able to pay for all regulated assets. A supplier attempting to raise prices to do so may result in the so-called utility 'death spiral' which hastens the stranding of asset base.³⁶⁰
603. The potential for competition (and deregulation) for certain services also provides an additional complication when considering asset stranding risk. If an area or type of service is deemed to be subject to competition and therefore deregulated, then a supplier's assets providing those deregulated services may be:
 - 603.1 Not stranded – If the value of the asset in the competitive market is greater or equal to their RAB value
 - 603.2 Partially stranded – The value of the asset in the competitive market is less than their remaining value in the RAB but greater than zero
 - 603.3 Fully stranded – The value of the asset in the competitive market is zero.
604. The potential outcome for each asset is likely to dependent on several factors including where and how competition develops, the process for deregulation and the type of asset.
605. As a result, an approach that retains assets in the RAB once they have been stranded or partially stranded may not be appropriate in the event of deregulation.

³⁵⁸ See Asset valuation chapter, paragraph 222. An asset is only 'disposed' once it is sold or transferred.

³⁵⁹ In Part 4 this was considered to be the only practical approach to ensure suppliers can receive a return on capital invested. Commerce Commission "Input methodologies (electricity distribution and gas pipeline services) reasons paper" (22 December 2010), section E11.

³⁶⁰ The 'death spiral' tipping point would be where a network loses enough customers to make getting the remainder to pay infeasible. This could result in a situation where the network can no longer recover costs. See Commerce Commission "Input methodologies review decisions. Topic paper 4: Cost of capital issues" (December 2016), paragraph 426. For a technical discussion see Commerce Commission, "Input methodologies review decisions. Topic paper 3: The future impact of emerging technologies in the energy sector" (20 December 2016), paragraph 98.3.

Consideration of submissions

606. The risk of competitive stranding was brought up by several stakeholders.
607. Chorus considered that stranded assets should be retained in the RAB and suppliers should also be compensated ex-ante for competitive substitution.³⁶¹
608. The LFCs also mentioned the risk of stranding from competition at a high-level, but note that they are open to how this might be compensated for in different ways.^{362, 363}

LFCs look forward to working with the Commission through the consultation process to identify the most effective way (whether through a margin on the rate of return, reduced asset lives, front-loaded depreciation or other mechanism) to ensure the economic stranding risk is appropriately identified and allowed for.

609. L1 Capital noted the risks to Chorus may depend on the policy approach taken for wireless competition.³⁶⁴
610. In response to Chorus, Vodafone suggested that the risk of stranding has been overplayed and that Chorus are asking to be compensated twice.³⁶⁵

Chorus has requested that they are shielded from the risk of asset stranding by allowing them to retain stranded assets in their RAB. They have also asked for a boost to their cost of capital to compensate for stranding risk. This would result in a significant double-counting; they can't have it both ways. In fact, there needs to be significantly more evidence to suggest that any compensation at all is required for the stranding risk.

611. 2degrees also considered that accelerated depreciation is inappropriate for FFLAS:³⁶⁶

2degrees considers that while accelerated depreciation may be appropriate in mature regulated markets, it would make no sense in a market, like fibre broadband, where uptake is relatively low, and efficiency will be enhanced by encouraging greater take-up and asset utilisation. Accelerated depreciation in a nascent market would also be inconsistent with outcomes of a workably competitive market. We do not believe that early or accelerated cost recovery in an emerging or developing market, such as the markets for fibre services, is consistent with replicating outcomes in a workably competitive market. This would seem to be a clear and obvious difference between the electricity and fibre markets.

612. As with the submissions on the asymmetric consequences of under-investment, there has been limited evidence provided to us that evaluates the magnitude of any

³⁶¹ Chorus "Submission on new regulatory framework for fibre" (21 December 2018), page 23.

³⁶² Enable, Ultrafast Fibre and Northpower Fibre "Submission on new regulatory framework for fibre" (21 December 2018), page 4.

³⁶³ Christchurch City Holding Ltd "Submission on new regulatory framework for fibre" (21 December 2018), page 21.

³⁶⁴ L1 Capital "Cross-submission on new regulatory framework for fibre" (5 February 2019), page 3.

³⁶⁵ Vodafone "Cross-submission on new regulatory framework for fibre" (5 February 2019), paragraph 6.

³⁶⁶ 2degrees "Submission on new regulatory framework for fibre" (21 December 2018), page 13.

stranding risk or the factors that might affect the size of the asymmetric risk from competition.

613. Pat Duignan however noted that:³⁶⁷

The likelihood of economic stranding of the actual fibre links to residential premises would seem to depend on the requirement for increase in bandwidth tapering off. At present demand for faster links appears insatiable but the interest in ever-faster links could turn out to be temporary rather than continuing in the long run.

614. In general, we consider that asset stranding risk is a potential risk for investors, but we are uncertain on the size of such a risk. It appears to depend on several factors that will affect future competitive development.

615. In practice, we consider there are several ways in which compensation or mitigation for stranding risk could be provided, some of which may not require the determination of appropriate risk compensation on an ex-ante basis. These options include

615.1 ability to shorten asset lives and bring forward compensation;

615.2 retention of assets in the RAB after stranding;

615.3 ex-ante compensation allowance. This could be provided as an:

615.3.1 ex-ante cashflow allowance; and

615.3.2 increment to the WACC.³⁶⁸

615.4 ring-fenced ex-ante compensation allowance. For example, any compensation would be ring-fenced and only kept by suppliers to the extent that stranding does occur.³⁶⁹

616. We discuss each of these in turn.

Option 1 – ability to shorten asset lives and bring forward compensation

617. Chapter 3 notes how we intend to provide flexibility to suppliers in determining asset lives.³⁷⁰ This would enable suppliers to accelerate depreciation if they considered an asset was at risk of being stranded. This ability to accelerate depreciation may be

³⁶⁷ Pat Duignan "Submission on new regulatory framework for fibre" (21 December 2018), pages 1-2.

³⁶⁸ Strictly speaking this would not be part of the WACC as it would not be providing compensation for systematic risk. However, adding an increment to the WACC may be a practical mechanism for providing compensation for asymmetric risk.

³⁶⁹ There are several ways to strengthen or weaken such ring-fencing. For example, it could range from an IM requirement for suppliers to return money to suppliers in the event that stranding does not occur to a separately held fund that would only pay out to suppliers once stranding has occurred.

³⁷⁰ See Chapter 3, paragraphs 230-234.

sufficient to provide an ex-ante expectation of a normal return, and there would be no requirement to do anything further to compensate for stranding risk.

618. We also note that suppliers currently assume asset lives consistent with GAAP, based on the expected useful life of the asset. Therefore, they are may already implicitly account for the degree of stranding risk that they currently face.

Option 2 – Retain assets in the RAB

619. An alternative would be to allow suppliers (to the extent possible) to retain all stranded assets in the RAB.
620. The Part 4 approach currently allows assets to be retained in the RAB until they are disposed of and even if demand for the service associated with those assets has fallen.
621. One option would be to expand the criteria of assets that would be retained in the RAB, eg, retention of assets in the RAB, even when they are no longer used to provide a regulated service (eg, following deregulation).
622. In general, we do not favour expanding the criteria for the retention of assets in the RAB beyond the current approach used in Part 4.
623. Firstly, it may result in less efficient investment decisions as a supplier may have less incentive to ensure assets will be used to provide the regulated service over the long-term and end-users of FFLAS may end up paying for assets that are not required.
624. Secondly, there is likely to be complexities associated with any future deregulation of specific services and the assets associated with those deregulated services. It is unlikely that remaining end-users of the regulated service will accept the retention of assets in the RAB from deregulated services. For example, even if we allow it from a regulatory perspective, there may be a risk that there would be consumer or political pressure to remove the assets associated with the deregulated service.
625. In addition, regardless of the political risk, at a certain tipping point, the remaining regulated end-users may not be able to pay for all the regulated assets. A supplier attempting to do so may result in the so-called utility 'death spiral' which hastens the stranding of the remaining assets as described in paragraph 602
626. Given these factors, it seems unlikely that a supplier would consistently be able to retain assets in the RAB after a deregulation decision. This minimises the potential to use this approach as a compensation mechanism for stranded assets in deregulated areas.
627. Generally, we considered that keeping assets in the RAB as compensation for stranding risk is unlikely to be feasible (beyond our existing Part 4 approach), however our proposed treatment of assets that are stranded due to competition

effects will need to be considered as part of any decision to grant ex-ante compensation.

- 628. An alternative would be to move away from the Part 4 approach and only retain assets in the RAB to the extent that they continue to provide a regulated service. ie, removing assets from the RAB as soon as they become economically stranded.
- 629. We consider this would only be appropriate if appropriate separate compensation is provided (eg, via ex-ante compensation). As noted by Vodafone above it is important to ensure that there is not 'double-counting' for stranding risk, whether we use one, or a combination of methods to mitigate or compensate for asset stranding risk.³⁷¹ It may also be difficult to identify objectively when an asset is deemed to be economically stranded, and thus needs to be removed from the RAB.

Option 3 – Provide ex-ante compensation

- 630. An alternative could be to provide ex-ante compensation of stranding risk through the revenue allowance in the price-quality path.
- 631. The main advantage of ex-ante compensation is that the risk is placed on the supplier, so it has a strong incentive to manage these risks (to the extent they can). It also avoids potentially substantial price shocks to end-users (equivalent to end-users insuring against the event). It also prevents 'death spiral' issues - namely that if asset stranding is occurring due to competing services, increasing the price in the face of asset stranding will hasten the network's demise. The primary disadvantage is the asymmetry of information in calculating the extent of compensation. This can lead to over and under compensation to the supplier.
- 632. To some extent, compensation of this type may already occur through the WACC. Where a risk is common to the type of industry, and the risk has at least some elements of systematic risk – then this should be captured in asset beta estimates within the WACC. Any additional compensation provided in cash flows would be specifically related to stranding risk that is not captured in the cost of capital.
- 633. Compensation could either be provided through a specific allowance in the revenue path or by an increment (or uplift) to the WACC. Compared to a specific cash flow allowance, the advantage of a WACC increment is that it is arguably an easier approach to implement, without the need for additional cash flow allowances. The main disadvantage is that it is not strictly part of the cost of capital and can lead to confusion in what the WACC is providing compensation for.
- 634. As part of the FPP, we developed a framework that determined the appropriate compensation (ie, the increment on the WACC) consistent with a given assumption

³⁷¹ Vodafone "Cross-submission on new regulatory framework for fibre" (5 February 2019), paragraph 6.

of the level of network stranding risk.³⁷² This framework could also be used to consider the appropriate magnitude of ex-ante compensation for FFLAS providers.

Option 4 – Ring-fenced ex-ante compensation allowance

635. A further option may be to allow ex-ante compensation, but only allow for it to be retained by suppliers following an event which results in assets becoming ‘stranded’.
636. One mechanism to achieve this may be through a compensation fund is where some revenues are held separately and are released in the event of assets being stranded (eg, following deregulation). This is similar to systems of ex-ante compensation and requires an assessment of how much funds will be needed and therefore, the likelihood they will be needed. However, given such funds can be topped up (or down), the accuracy of this assessment is not so vital.³⁷³
637. There may also be different options for how such a fund could be set up that would strengthen or weaken the degree of ‘ring-fencing’. For example:
- 637.1 compensation could be held by the supplier, but tracked by the regulator so that future price-quality paths could be appropriately adjusted; or
- 637.2 a separate fund could be created that would be administered by an independent party.
638. The advantage of such an approach is that the supplier will not benefit from these revenues unless assets are stranded and therefore, the money can be returned to end-users in the event asset stranding has not occurred. It will also mitigate the risk the regulator reneges on the ‘deal’ in the event of asset stranding.
639. In the context of FFLAS, one example of how this approach could operate would be to link it to the process for deregulation. For example, all assets could be retained in the RAB (whether technologically stranded or not). Upon deregulation, assets could be compensated by the fund. The compensation could be determined based on the following formula:
- regulatory valuation of the asset – value of the asset in a deregulated market
640. The value of the asset in a deregulated market would need to be estimated at the point of deregulation so that the value of the compensation can be determined.
641. If the deregulated market asset value is higher than the regulatory value, then the compensation amount could potentially be negative.

³⁷² For further details see Commerce Commission "Further draft pricing review determination for Chorus' unbundled copper local loop service" (2 July 2015), paragraphs 1361-1362.

³⁷³ A similar approach was proposed by in the original IMs to compensate for type I risks. See Commerce Commission "Input methodologies (electricity distribution and gas pipeline services) reasons paper" (22 December 2010), paragraphs H12.10-H12.11

642. The advantage of this option is that it provides protection for Chorus if their assets become stranded and it is infeasible to retain them in the RAB, but without the need for fixing the ex-ante compensation up front and the potential for significant misestimation in doing so.
643. The disadvantage is that it adds some administrative complexity to the regime, requires future assessments of asset values in a deregulated market (at the point of deregulation) and relies on a clear regulatory promise that funds will be paid out in the event of deregulation.
644. There may also need to be a limit on the proportion of any asset that can be compensated through this mechanism. For example, we may not want to provide full compensation for stranding risk in circumstances when assets are built by Chorus just prior to deregulation, given the potential for this protection to distort investment decisions by both Chorus and potential competitors.

Summary

645. After considering the options, we consider that providing a fixed amount of ex-ante compensation (via a WACC uplift) would be easier to implement but results in a significant challenge in estimating the magnitude of any ex-ante compensation.
646. Other options are more costly to administer but reduce the chances of either significant windfalls to suppliers or the risk that Chorus is being significantly undercompensated for its investment.
647. Our emerging view is that we should rule out the retention of assets in the RAB post-deregulation due to the difficulties in implementing such an approach and the potential for distortions on investment decisions.
648. Therefore, depending on the level of risk we would expect that a combination of the methods described above.
649. The FFLAS providers continue to invest in fibre assets, suggesting that the risk of significant stranding of large numbers of assets in the short to medium term is unlikely. No FFLAS supplier has suggested that investment is unlikely to continue without a WACC uplift, which could be expected if they did not have an ex-ante expectation of a normal return.
650. Given the uncertainty about the potential for competitive stranding risk, we consider that the most appropriate method may depend on whether further evidence emerges on the magnitude of such a risk.

Other submissions related to uplift

651. Vodafone submitted that Chorus has high actual leverage of approximately 76%. Consequently, the use of the SBL-CAPM and benchmark leverage gives them a relatively high WACC compared to a corresponding WACC estimated using the standard CAPM and Chorus' actual leverage. Vodafone have estimated the effect as

an impact of 0.4 percentage points and suggest that this margin is more than enough to compensate for any asymmetric risk that end-users may face, and therefore no WACC uplift is required.³⁷⁴

652. Although Chorus's actual leverage may, in practice, result in a lower cost of capital, our WACC methodology determines our best estimate of a notional cost of capital for an efficient FFLAS supplier. This approach ensures that there are no distortions to the incentives for firms to minimise their cost of capital.
653. In addition, although Chorus's actual leverage is higher, and this may lead to a lower WACC estimate using a standard CAPM, we note:
- 653.1 We have determined that the SBL-CAPM is the model that best allows to estimate a WACC for a regulated supplier in NZ (ie, provides a better estimate than the standard CAPM); and
- 653.2 Even using the standard CAPM, Chorus's higher leverage does not necessarily result in a lower cost of capital. For example, the higher leverage may have an impact on their credit rating, affecting the debt premium on their issued debt.

Issue 3: Approach to WACC for ID

654. We consider that an ID WACC will be required in some form so that we are able to undertake profitability assessments in the future for the LFCs.³⁷⁵
655. The approach we take in ID more generally, and how we ensure that enough information is readily available to interested persons to assess whether the purpose of Part 6 is being met,³⁷⁶ may affect our approach to setting WACC for ID. For example, a strong focus on profitability in ID may require a WACC related to a specific period, whereas a lower focus on profitability may mean a broader WACC range is more suitable.
656. Another alternative may be not to specify a mechanism in the IMs requiring us to determine a separate ID WACC determination.

Preferred methodologies

657. Our emerging view is that we do not consider a default annual WACC for ID is required and alternative options should be considered.

³⁷⁴ Vodafone "Cross-submission on new regulatory framework for fibre" (5 February 2019), paragraphs 17-21.

³⁷⁵ The WACC estimate can provide a benchmark for assessing the profitability of FFLAS providers under information disclosure regulation. See Commerce Commission "New regulatory framework for fibre - Invitation to comment on our proposed approach" (9 November 2018), figure 3.2 and paragraph 7.92.

³⁷⁶ Under s 186 of the Telecommunications Act 2001, the purpose of information disclosure regulation is 'to ensure that sufficient information is readily available to interested persons to assess whether the purpose of [Part 6] is being met'.

Options considered

658. We are considering different options to WACC for ID:
- 658.1 not to specify a mechanism in the IMs requiring us to determine a separate ID WACC and use WACC set for the price-quality path as the starting point for profitability assessments for all FFLAS suppliers;
 - 658.2 an approach consistent with our approach to airport services under Part 4 whereby a WACC can be determined consistent with the price setting periods on regulated suppliers – A default WACC would be the WACC set for price-quality paths;

Reasons for preferred methodologies

659. We note that the current approach for Part 4 may not be optimal. The annual ID WACC determinations published every year under Part 4 have not yet featured in our assessments of supplier performance.
660. Instead, when undertaking a profitability assessment:
- 660.1 For airports, we have assessed profitability against a forward-looking WACC at the start of each (5-year) pricing period;³⁷⁷ and
 - 660.2 For both exempt and non-exempt EDBs, we have undertaken a backwards-looking profitability assessment, based on the WACC determined at the start of the previous price-quality path.³⁷⁸

Questions for stakeholders

- Q31 What are your views on our approach to WACC for the losses calculation?
- Q32 What are your views on our approach to WACC uplift and potential asymmetric risks?
- Q33 Should a separate WACC for ID be specified and, if so, what should be the frequency and period be for ID WACC determinations?
- Q34 How should the WACC be specified in the IMs for information disclosure (ID) and should a separate WACC be specified for Information disclosure?

³⁷⁷ See, for example: “Review of Auckland International Airport’s pricing decisions and expected performance (July 2017 – June 2022)” (1 November 2018).

³⁷⁸ Commerce Commission “Profitability of Electricity Distributors Following First Adjustments to Revenue Limits” (8 June 2016).

Chapter 6: Quality Dimensions

661. This section consists of discussion about the input methodology for quality dimensions (**quality IM**) and is structured as follows:
- 661.1 discussion of the role of the quality IM within the wider regulatory context;
 - 661.2 discussion of how the fibre market context affects how we set the quality IM;
 - 661.3 emerging view on our approach to setting the quality IM, including the level of detail we propose to use; and
 - 661.4 emerging view on the quality dimensions we propose to include in the IM.
662. We have set out specific consultation questions throughout this section but are generally interested in stakeholders' views on how fibre quality should be regulated through the regulatory tools we have available.

Summary of views

663. Our emerging views on the quality IM can be summarised as follows.
- 663.1 *The level of detail used to set the quality IM should be up to CEPA's level 3.* This would involve setting out a list of quality dimensions, as well as a list of possible quality measures linked to the dimensions, in the IM determination. We consider that this approach gives adequate certainty to fibre providers as to how quality regulation will be applied, but still allows us enough flexibility to set quality standards and measures via PQR and ID.
 - 663.2 *CEPA's suggested quality dimensions should be included in the IM.* This includes ordering, provisioning, switching, faults, availability, performance, and an overarching dimension of customer service. Our view is that these adequately cover all relevant quality dimensions of fibre at this stage of development of the network.

Introduction

664. As discussed in our proposed approach paper, the Act requires an input methodology to be set for quality dimensions.³⁷⁹ The term "quality dimensions" is defined in the Act as "measures of the quality of fibre fixed line access services, and may include (without limitation) responsiveness to access seekers and end-users."³⁸⁰

³⁷⁹ Telecommunications Act 2001, s 176(1)(b).

³⁸⁰ Section 164(1).

665. As we outlined in our proposed approach paper, the quality IM seeks to address the following economic problem:³⁸¹

Where there is little or no competition and prices / revenues are capped, there is a risk that a regulated firm's incentives to provide the quality that consumers' demand may be weakened. As such, one of the input methodologies of our new regulatory regime is to provide incentives for fibre service providers to "supply fibre fixed line access services of a quality that reflects end-user demands".

666. Once the quality IM has been determined, it will be applied in setting the information about quality that must be disclosed by suppliers under ID regulation, as well as the quality standards that apply under PQR. We discuss the terms **quality dimensions, quality measures** and **quality standards** from paragraph 729.

667. As part of our early work on fibre regulation, we commissioned a report from CEPA which undertook a preliminary analysis of:³⁸²

667.1 the potential scope of "quality dimensions" for fibre services;

667.2 relevant international experience in this area; and

667.3 applicability to economic regulation in the New Zealand context.

668. We published the CEPA report alongside our proposed approach paper, which set out some of our thinking on the quality IM and outlined the advice we had received from CEPA. We asked stakeholders the following questions.

668.1 What are your views on CEPA's advice on the approach to setting the quality dimensions input methodology?

668.2 What specific factors of the telecommunications environment do you think are relevant to setting IMs for quality dimensions?

669. We received a number of submissions and cross-submissions about quality on our proposed approach paper which largely aligned with our initial views, but also raised some specific factors for us to consider. Submitters were particularly supportive of CEPA's concept of quality dimensions as stages of a fibre service lifecycle, as well as the suggested level of detail the IM could contain versus that set in PQR and ID determinations. These submissions have helped to inform our analysis of issues relevant to the quality IM, and how the quality IM might work in practice.

Regulatory context

670. We have considered the role of the quality IM within the regulatory framework for fibre, including how the quality IM interacts with:

³⁸¹ Commerce Commission "New regulatory framework for fibre – Invitation to comment on our proposed approach" (9 November 2018), page 105. page 105.

³⁸² Cambridge Economic Policy Associates "Quality dimensions of wholesale fibre telecommunications services" (1 November 2018).

- 670.1 the s 162 purpose statement, as well as s 166(2)(b);
 - 670.2 PQR and ID;
 - 670.3 the capex IM;
 - 670.4 the possible description of services in the regulations for anchor services, DFAS, and unbundled fibre services;
 - 670.5 retail service quality (**RSQ**) regulation; and
 - 670.6 existing fibre industry agreements, including the quality metrics in the Network Infrastructure Project Agreements (**NIPAs**) and wholesale service agreements (**WSAs**) (together the **UFB agreements**).
671. We consider the primary role of quality regulation within the wider fibre regime is to incentivise regulated fibre providers to supply fibre services of a quality that reflects end-user demands. Fibre end-users make price-quality trade-offs when making decisions about which service is best for them, so we interpret “quality that reflects end-user demands” as “the quality end-users are willing to pay for”, as demand is generally linked to price.
672. In general, submitters on our proposed approach paper agreed that the quality IM should mitigate the risk of regulated suppliers lowering their network expenditure and allowing quality to degrade below end-users’ demands.
673. Quality regulation can also be used to help identify poor asset management or performance that could arise.
674. Specifically, the role of the quality dimensions IM is to help give regulated suppliers certainty as to how the quality standards under PQR will be set, and how the quality measures that must be reported on under ID will be set.

Interaction with sections 162 and 166(2)(b)

675. In making decisions about how we will set the quality IM, we will adhere to the legal framework of the fibre regime and consider how the IM can help achieve the outcomes set out in the s 162 purpose statement, as well as the competition matters we must consider under s 166(2)(b).
676. We consider the main way the quality IM can achieve the s 162 purpose is by helping ensure regulated fibre providers deliver the service quality that end-users demand. Our view is that quality regulation is just one component of the framework that, combined with other regulatory instruments, will achieve the outcomes in the purpose statement.
677. In making decisions under Part 6, s 166(2)(b) states that we must also consider, to the extent relevant, “... the promotion of workable competition in telecommunications markets for the long-term benefit of end-users of telecommunications services.”

678. The quality IM has a role in promoting competition in telecommunications markets (eg, by ensuring the quality of input services reflects access seekers' demands). In addition, having more flexibility in setting quality standards may also help promote competition (eg, by allowing suppliers to sell a lower quality service at a lower price). The IM should provide the necessary flexibility to adjust PQR and ID requirements as competition evolves.

Interaction with PQR and ID

679. The purpose of IMs is to promote certainty as to how rules, requirements and processes will apply to fibre regulation. For the quality IM, this means providing certainty as to how we will set quality regulation via PQR and ID. Part of our task in setting the quality IM will be to think about which quality dimensions are most at risk of being neglected by regulated fibre providers, and which regulatory tools are best able to drive quality incentives.

680. As we explain in our emerging view from paragraph 738, we propose to include a list of quality dimensions in the IM that would inform the quality measures applied under ID, and quality standards under PQ. We would decide how each of these dimensions would apply in the PQR and ID determinations.

681. The quality IM will underpin the quality standards we set via PQR. The Act stipulates that a PQR determination must specify "...the quality standards that must be met by a regulated fibre service provider".³⁸³ These quality standards "may, subject to any relevant IMs, be prescribed in any way the Commission considers appropriate (such as targets, bands, or formulae)".³⁸⁴ As such, the quality IM will be set in a way that anticipates these standards.

682. Under PQR, the quality standards for Chorus may have performance-based financial incentives linked to them, such as penalties, rewards or compensation. We may also set out reporting requirements in the PQR determinations.

683. The IM will also set out some of the quality measures that will eventually need to be reported on via ID. The quality information required to be disclosed under ID may then include "quality performance measures and statistics", as set out in s 188(2)(i) of the Act. Section 188(2)(g) also states that ID requirements may include plans and forecasts about quality and service levels.

684. The purpose of ID in relation to quality will be to make information available to interested parties about how regulated suppliers are performing. For example, the information disclosed under ID might illuminate the fact that a fibre provider is slow to rectify faults, provides a faster service than others with fewer interruptions, or has high scores on installation experience surveys.

³⁸³ Telecommunications Act 2001, s 194(2)(c).

³⁸⁴ Section 194(4).

685. As pointed out in the joint submission by Enable, Ultrafast and Northpower: “Quality standards are relevant to PQ regulation only. Quality measures are relevant to ID regulation, and should be the focus of the quality IM for ID purposes.”³⁸⁵ We agree with this point; however, the quality measures reported on for ID could also be assessed by interested parties against the quality standard that Chorus must adhere to. This would allow comparisons to be made between Chorus and the other LFCs’ performance. The information collected through ID could also be used to feed into future quality standards that will be set for Chorus via PQR.
686. As outlined in Chapter 7 from paragraph 856, we received submissions on our proposed approach paper suggesting there may be a need for ‘transitional arrangements’ for PQR in the first regulatory period.
687. Chorus suggested not setting targets for quality regulation (as part of the price-quality path) for the first regulatory period as a potential transitional arrangement.³⁸⁶ Vodafone responded in its cross-submission that not including quality standards in the first regulatory period would be inappropriate, as it may put significant industry work to date (such as work to improve fibre installation processes) at risk.³⁸⁷
688. As set out in the Chapter 7, our emerging view is that we should consider the use of some transitional arrangements for the first regulatory period. For example, we could lead the process of setting the quality standards for PQR, which may be largely based on the quality requirements currently in place in the UFB agreements. In contrast, the enduring solution for future regulatory periods beyond the first may include stakeholders (including Chorus) proposing additional standards for us to consider including in the price-quality paths. We expect these processes to be set out between our quality dimensions and regulatory processes and rules IMs.
689. We are seeking views on this example of a first period transitional approach under Q59, set out in Chapter 7.

Interaction with capex IM

690. We are also required to set an IM for capital expenditure (**the capex IM**), which will provide the rules and processes that Chorus will need to follow in order to apply for capex to be approved, and how we will evaluate these applications.
691. We recognise that there is a potential interaction between the capex IM and quality IM. For Chorus, the quality IM underpins quality standards required for the fibre network, and the capex IM deals with the investment required to deliver a certain level of quality. We also note the possibility that the quality standards set upfront for a regulatory period may need to be revisited during that period if capex is

³⁸⁵ Enable, Ultrafast Fibre and Northpower Fibre “Submission on new regulatory framework for fibre” (21 December 2018), page 16.

³⁸⁶ Chorus “Submission on the new regulatory framework for fibre” (21 December 2018), paragraph 23.

³⁸⁷ Vodafone “Cross-submission on new regulatory framework for fibre” (5 February 2019), paragraph 34.

subsequently approved that would have a material impact (eg, substantial upgrades to the network).

692. Quality regulation can mitigate the incentives to reduce expenditure at the expense of quality. Considering the impact of capex on quality is one way in which we could determine the 'appropriateness' and 'reasonableness' of proposed expenditure. The capex IM will also aim to mitigate the risk of Chorus over-investing and over-forecasting expenditure. This is discussed further in Chapter 7.
693. We are interested in views on how detailed the quality IM needs to be to help regulated fibre providers estimate their expenditure requirements in order to meet the quality standards.

Interaction with prescribed service regulations

694. Part 6 of the Act also allows the Governor-General, on the recommendation of the Minister, to make regulations declaring a FFLAS to be a regulated fibre service. This applies to an anchor service, DFAS, and an unbundled fibre service. The Act stipulates that a regulated supplier who is subject to PQR must provide a regulated fibre service if it has been declared.
695. These regulations may prescribe, among other things, a description of the service, and within this, describe the technical specifications and other circumstances in which the service must be supplied.³⁸⁸
696. The regulated fibre services will have quality aspects that relate to the quality IM, PQR and ID. Keeping this in mind, we think it is important that:
- 696.1 the quality IM encompasses comprehensive quality dimensions that address the quality aspects of the regulated fibre services; and
- 696.2 quality standards and measures under PQR and ID complement and are consistent with the quality requirements of the regulated fibre services.
697. In Chorus' submission, they emphasised the importance of us adopting "a coherent approach to the various instruments regulating quality", including anchor service regulation, DFAS and unbundled fibre regulation. This would involve ensuring "quality matters are regulated by the instrument that is best suited to regulate that aspect of quality", "consistency between quality instruments" and "no duplication between quality regulating instruments".³⁸⁹
698. We agree with Chorus' point and consider our emerging view on our approach to setting the quality IMs to be coherent.

³⁸⁸ Sections 227(3)(d), 228(3)(2), 229(3)(d).

³⁸⁹ Chorus "Cross-submission on the new regulatory framework for fibre" (1 February 2019)", paragraph 95.

Interaction with RSQ

699. As well as considering how the quality IM will work within the fibre regulatory framework, we are also considering the crossover between wholesale and retail service quality. As outlined in the proposed approach paper, there are mechanisms to regulate quality via the IM in Part 6, but also via our new powers regarding consumer matters under Part 7.³⁹⁰
700. Part 6 of the Act aims to make sure wholesale fibre services are supplied at the level of quality that end-users and access seekers expect. In addition, Part 7 of the Act aims to improve RSQ so that it reflects the demands of end-users, including retail fibre end-users.³⁹¹
701. RSQ means “...the quality of retail service provided to an end-user of the service, including in relation to... customer service and fault service levels, installation issues, contract issues, product disclosure, billing, the switching process and related information, service performance, speed, and availability.”³⁹²
702. While the definition of RSQ includes examples of aspects of quality that could be regulated, the sections of Part 6 dealing with quality do not.
703. There may be crossovers between the sections of the Act regarding aspects of quality, as well as the mechanisms for intervening to regulate quality and collect information on quality.
704. In terms of aspects of quality, the main interaction between Part 6 and Part 7 will be on the aspects that affect fibre end-users and can be controlled, to some extent, by the wholesale fibre provider. Submitters on our proposed approach paper highlighted this interaction.
- 704.1 In submission on the proposed approach paper, TUANZ pointed out that “the service quality that end-users perceive will be based on the end to end service experience. This will be made up of actions from the retailer as well as the wholesaler. We will need to ensure it takes a careful overview of both the current IM as well as the Retail Service Quality work”.³⁹³
- 704.2 In its cross-submission, Chorus agreed with this statement from TUANZ and made the point that the quality of service provided by regulated networks must allow RSPs to meet their obligations to consumers under the RSQ code.³⁹⁴

³⁹⁰ “Invitation to comment on our proposed approach”, paragraph 7.109.

³⁹¹ For more information see Commerce Commission “Telecommunications retail service quality framework paper” (30 November 2018).

³⁹² Telecommunications Act 2001, s 5.

³⁹³ TUANZ “Submission on new regulatory framework for fibre” (21 December 2018), paragraph 26.

³⁹⁴ Chorus “Cross-submission on the new regulatory framework for fibre” (1 February 2019), paragraph 103.

705. Any quality regulation we set using the regulatory instruments in Part 6 (quality dimensions IM, quality standards set under PQR, and quality measures specified under ID) will acknowledge the degree of wholesale control. We discuss this in greater detail from paragraph 720.
706. Similarly, the regulatory interventions available under Part 7 (Commission RSQ code and review of industry RSQ codes) will also need to adhere to this principle of controllability. There is less risk of this intervention affecting wholesale fibre providers in the case of the RSQ code, which can only bind RSPs. Such a code will not contradict or undermine quality regulation imposed under the fibre regulatory framework, and vice versa.
707. The other way in which our powers to regulate quality may crossover relates to information collection. Under Part 6, we will eventually be collecting information on quality from fibre providers via ID. In addition, we will be seeking information about quality from access seekers and end-users, so that the quality dimensions we select and the quality measures and standards we set reflect their expectations.
708. The Act also gives us the power to require the supply of information to support our functions of monitoring and reporting on RSQ, in addition to our existing information gathering powers under s 9A. As part of exercising these new powers, we will look to use a number of different methods to collect that data, including consumer surveys or requests for information from telecommunications service providers.
709. Any stakeholder engagement or information collection we conduct will aim to not over-burden industry participants and efficiently use our resources.

Interaction with UFB agreements

710. The fibre providers each entered into a NIPA with CIP as part of the UFB Initiative. The NIPAs, along with undertakings to the Crown require the fibre providers to make WSAs available to RSPs.³⁹⁵ The WSAs are currently standard form contracts approved by CIP under the NIPAs.
711. The UFB agreements currently govern and regulate the quality of the network and services that fibre providers make available to RSPs and, by implication, end-users. The agreements prescribe quality requirements, including service level targets and service payments or rebates for failure to achieve them.
712. After implementation date, the parties will no longer be bound by the quality requirements in the NIPAs, and we, rather than CIP, will have the primary responsibility for regulating the quality of the network and services offered by regulated fibre providers. We note the undertakings discussed above remain in effect, requiring fibre providers to provide services under a WSA, and in certain cases on an equivalent and non-discriminatory basis.

³⁹⁵ Required by the deeds of open access undertakings for fibre services, pursuant to section 156AD of the Telecommunications Act 2001.

713. In its submission on the proposed approach paper, Chorus argued that the "heavily negotiated" NIPA reflects "competitive market outcomes" regarding network design and quality standards, and that the WSAs with access seekers are subject to ongoing CIP approval mechanisms.³⁹⁶ They noted that the agreements include key elements of service quality of the fibre network secured through the agreed network design.
714. We acknowledge Chorus' comments and agree that the quality requirements in the UFB agreements will assist us in setting the quality IM, PQR and ID. However, we also note that these agreements were commercial arrangements, carefully negotiated and drafted in a way that is effective for their intended purpose. Our task is to consider how quality regulation will apply in the new fibre regime under Part 6 of the Act, taking into account the Part 6 purpose statement.
715. The UFB agreements are highly prescriptive in relation to quality. In contrast, our emerging view on our approach to setting the quality IM is less prescriptive. However, we would expect to see a higher level of prescription under PQR, ID and also within the regulated fibre services we discussed at paragraph 694. This level of prescription would be somewhere between the highly prescriptive UFB agreements, and the less prescriptive quality IM. In **Table 3** we have used examples of the quality requirements from the UFB agreements to illustrate our proposed level of prescription for the quality IM, PQR and ID under the fibre regime.
716. In addition, we need to consider the fact that the quality IM will apply to Chorus and the other LFCs in different ways. The quality dimensions will apply to both Chorus and the other LFCs via ID requirements, but only Chorus will be subject to quality standards under PQR. Once the NIPAs lapse on the implementation date, we will not have direct control over the quality of the LFCs' services that they offer under the WSAs.

³⁹⁶ Chorus "Submission on the new regulatory framework for fibre" (21 December 2018), paragraph 20.

Questions for stakeholders

- Q35 What are your views on the role of the quality IM within the wider regulatory framework for fibre? Please explain any additional contextual factors we should consider.
- Q36 How detailed should the quality IM be to help regulated fibre providers estimate their expenditure requirements in order to meet the quality standards?
- Q37 With reference to the provisions of the WSA and NIPA referred to below in **Table 3** and **Attachment D**, what level of detail do you think is appropriate to include in the quality IM? Which aspects of these agreements do you think have or have not worked well?

Fibre market context

717. As well as considering the role of the quality IM in the regulatory context, we must also consider the commercial realities faced by fibre providers, and how these might affect how we set the quality IM. We consider the most relevant factors of the fibre market context for us to consider in setting the quality IM to be:
- 717.1 the incentives fibre providers have in relation to quality, and how these incentives might change in the face of increased competition in telecommunications markets; and
- 717.2 the quality dimensions that can be controlled by wholesale fibre providers, as opposed to those dimensions that RSPs have more control over.

Incentives in relation to quality

718. It is also useful to consider the fibre providers' incentives in relation to the various aspects of quality, and how these might be affected by increased competition in telecommunications markets. Increases in competition, including the threat of competition, will generally tend to place incentives on fibre suppliers to supply the quality that end-users demand. Therefore, the depth of regulation set via PQR and ID could be reduced as competitive constraints take over.
719. We think there are different quality incentives for different services:
- 719.1 for services where there is no competition and little or no likelihood of competition, Chorus and the other LFCs may have an incentive to let quality degrade in the absence of regulation; and
- 719.2 for services where there is, or is likely to be, competition, Chorus and the other LFCs will likely have an incentive to supply the quality that end-users demand in order to remain competitive.

Wholesale and retail control

720. As outlined above, our view is that it only makes sense to include “quality dimensions” for the purposes of the IM that can be controlled (at least to some extent) by the wholesale fibre provider.
- 720.1 Our view is that there will be aspects of the end-user’s experience that can be largely controlled by the RSP, such as billing, contract issues, and product disclosure, and that these are unlikely to interact with quality regulation under Part 6.
- 720.2 There will also be aspects of quality that the wholesale and retail fibre providers are both able to control to varying degrees or have to work together to control. This could include customer service, faults, installation, the switching process, service performance, speed and availability.
721. We are interested in stakeholders’ views as to the degree of control wholesale and retail fibre providers have over aspects of quality. We expect submissions to provide additional insight to our findings from the s 9A fibre study, summarised as follows.³⁹⁷
- 721.1 Enable and Chorus both stated that they can control aspects such as the performance of their own network infrastructure and equipment, as well as the training of their own technicians. They claim that they cannot control civil construction contractors working around their network causing outages, nor parts of the customer experience RSPs are responsible for (such as communication or network issues).
- 721.2 Ultrafast stated that they can directly control quality issues such as asset loss, fibre installation, and the quality of reinstatement of any disturbed areas or sections of the end-user’s property where they perform the required installation works. However, they also stated they cannot control issues such as end-user equipment, nor the plan or service that an end-user is subscribed to or offered or supplied by their RSP.
722. While a wholesale fibre provider cannot control a network outage caused by a third party, it does have control over the fault repair or service restoration time.
723. One example of how the degree of control can differ is customer service, which will largely be controlled by the RSP given they tend to deal directly with end-users. Wholesale fibre providers may have more control over customer satisfaction as it relates to installation appointments and fault rectification, but still need to work with RSPs throughout these processes.

³⁹⁷ Commerce Commission “Fibre 9A study report” (17 December 2018).

Questions for stakeholders

- Q38 What are your views on the role and function of the quality IM within the commercial environment for fibre? Please explain any additional contextual factors we should be considering.
- Q39 How should the quality IM ensure regulated fibre providers supply the quality end-users and access seekers demand, considering the relatively rapidly changing demands and expectations?
- Q40 How do the incentives to provide a level of quality that access seekers and end-users demand differ among Chorus and the other LFCs?
- Q41 How should the quality IM account for the possibility of increased competition and the resulting changes to incentives faced by fibre providers?
- Q42 To what extent do you consider the following quality dimensions can be controlled by wholesale fibre providers: ordering, provisioning, switching, faults, availability, performance, customer service?
- Q43 What other quality dimensions can be controlled, in whole or in part, by wholesale fibre providers?

Approach to setting quality IM

724. One of the main issues we face in implementing the new fibre regime is the balance between flexibility and certainty in a dynamic environment. As noted by 2degrees in their submission: "[t]he increased importance of competition to, and the fast-changing nature of, the telecommunications environment are key factors that will be relevant to setting IMs for quality dimensions".³⁹⁸
725. End-user demands tend to evolve over time as telecommunications technology changes. For example, the quality dimensions that were deemed to be important in the build phase of the UFB roll out, such as provisioning and installation, may become less important to end-users as more move to fibre.
726. Our view is that the quality IM should be flexible, so that regulatory instruments can keep up with changes in the fibre market. The quality IM should also be predictable and future-proofed against changes in technology, so that fibre providers and other stakeholders have certainty over how regulation will apply. Vocus expressed a similar view to this in its submission; that in determining the extent to which IMs should be prescriptive or flexible we should consider "...which elements of price-quality control will require change and the exercise of judgement at each regulatory reset, and

³⁹⁸ 2degrees, "Submission in response to the Commerce Commission's invitation to comment on its proposed on new regulatory framework for fibre", (18 December 2018), page 18.

which will not”.³⁹⁹ We are interested in stakeholders’ views as to how much detail we should include in the IM in order to strike this balance.

727. In addition, when we make PQR determinations we may choose to set quality standards in a way that anticipates future changes. For example, we could set a quality standard that is a moving average of the industry.
728. We consider quality regulation should be targeted and proportionate, recognising the factors affecting service quality. To do this, quality dimensions could be applied to PQR and ID in different ways. An example of this in Part 4 is asset management plans, which are required from EDBs as part of the ID regime, but not via PQR.
729. We also propose to use CEPA’s suggested “best practice” characteristics when selecting dimensions and determining how the regulation will be applied:⁴⁰⁰

The IM could also set out the ‘best practice’ characteristics that any quality standards or metrics should meet. For example, best practice characteristics might specify that standards should be relevant for the desired outcome, measurable, verifiable, within the control of the service provider and should not place a disproportionate burden on the service provider.

Key terms relating to the quality IM

730. Before explaining the approach we propose to employ, it is useful to define key terms. In particular, it is necessary to explain what is meant by quality “dimensions”, “measures” and “standards” and how they might differ from one another. The way these terms are defined or included in the Act leaves some scope for interpretation. We have used the plain meaning as a starting point to define each term, which is largely in line with CEPA’s approach:⁴⁰¹

We draw a distinction between ‘quality dimensions’, ‘quality metrics’ and ‘quality standards’. We define quality metrics as specific indicators or measures of service quality that sit within each dimension, while quality standards represent specific targets that a regulated business is required to achieve.

731. In general, we see **quality dimensions** as encompassing the categories or aspects of quality that will be included in the IM, with quality measures sitting under each dimension if relevant. Quality metrics and measures could be used to provide more granularity to overarching quality dimensions, depending on the level of detail that is required for each dimension.
732. As discussed from paragraph 738, our proposed approach is to set a list of **quality dimensions** in the quality IM that will underpin ID and PQR regulation.
733. CEPA use the term metrics in describing the levels of prescription we might use in setting the IM. We think **quality metrics** and **quality measures** are largely

³⁹⁹ Vocus “Submission on new regulatory framework for fibre” (21 December 2018), paragraph 67.

⁴⁰⁰ “Quality dimensions of wholesale fibre telecommunications services”, page 11.

⁴⁰¹ “Quality dimensions of wholesale fibre telecommunications services”, page 9.

interchangeable terms. We also think they are more detailed than dimensions in that they set out a system or form of measurement for a particular aspect of quality.

734. In line with CEPA's level 3, we think a quality metric describes *what* is measured, whereas a quality measure describes *how* it is measured. For example, connection satisfaction could be a customer service metric, as illustrated in **Table 3**. The IM could then stipulate how these surveys must be conducted, such as by setting out that end-users must be asked:
- 734.1 "Based on your experience overall, how satisfied are you with the process of installing fibre broadband with (insert RSP)? Using a scale of 1 to 10, where 1 means extremely dissatisfied and 10 means extremely satisfied."
- 734.2 "And how much do you agree or disagree that (insert RSP) and (insert regulated supplier) worked together well to ensure everything went smoothly."
- 734.3 "Overall, how much effort did you personally have to put forth to have fibre broadband installed at your home?"
- 734.4 "Overall, how satisfied were you with the job the technician did installing your new fibre broadband connection?"
- 734.5 "How was the level of contact and communication you received throughout the whole process?"
735. Under ID, we could set the **quality measures** and stipulate how this should be measured and reported on, and collect that information. As discussed from paragraph 738, we also propose to include some possible quality measures in the quality IM.
736. We see **quality standards** as prescribing the particular *level* of quality that PQR regulation will require Chorus to meet, tied to their price or revenue path.
737. To clarify these terms, **Table 2** shows where these various terms are applied in the Act, as well as their Part 4 equivalents (where applicable).

Table 2: Quality-related terms used in legislation

Term	Section	Telco Act extract	Section	Commerce Act extract
Quality dimensions	164(1)	Quality dimensions “...means measures of the quality of fibre fixed line access services, and may include (without limitation) responsiveness to access seekers and end-users”.	N/A	N/A
Quality measures	188(2)(i)	“Information required to be disclosed may include (without limitation) 1 or more of the following...quality performance measures and statistics”.	53C(2)(i)	“Information required to be disclosed may include (without limitation) any or all of the following...quality performance measures and statistics”
Quality standards	194(2)(c) 194(4)	A PQR path must specify “...the quality standards that must be met by a regulated fibre service provider” “Quality standards may, subject to any relevant input methodologies, be prescribed in any way the Commission considers appropriate (such as targets, bands, or formulae).”	53M(3)	“Quality standards may be prescribed in any way the Commission considers appropriate (such as targets, bands, or formulae) and may include (without limitation)— (a) responsiveness to consumers; and (b) in relation to electricity lines services, reliability of supply, reduction in energy losses, and voltage stability or other technical requirements”

Emerging view: level of detail in quality IM should be up to CEPA's level 3

738. In terms of how prescriptive the quality IM should be, CEPA framed this as four hierarchical levels, as set out below.⁴⁰²
- 738.1 Level 1: “sets out broad principles that guide the Commission in setting the PQR and ID determinations. For example, the IM could specify that under PQR, quality standards should be set to ‘ensure that fibre providers are incentivised to provide service levels that meet the demands of end-users’, or ‘ensure that fibre providers have appropriate incentives for innovation and investment”.
- 738.2 Level 2: “sets out ‘narrower’ principles for each quality dimension. For example, the IM might specify that under PQR, quality standards should be set for the provisioning and fault repair quality dimensions. The IM would then set out principles to guide how the Commission would establish the quality metrics and standards that would apply under these dimensions”.
- 738.3 Level 3 “sets out the nature of the metrics relating to the quality dimensions that are deemed relevant. For example, the IM might specify that under the ID regime, there must be a quality metric to measure how soon end-users are connected following a connection request. The IM could also set out how metrics should be measured. For example, this might include details on how the data would be gathered, and whether there would be any exclusions (for example, if an end-user failed to attend a connection appointment)”.
- 738.4 Level 4 “sets out specific standards that apply for the PQR/ID regimes. For example, the IM could contain actual regulated quality standards that would apply automatically in future PQR determinations (for example, ‘the maximum time for new connections is 30 days’). In the ID context, this might involve specifying particular benchmark targets”.
739. **Table 3** provides examples of quality “dimensions”, “measures” and “standards” and sets out examples of how these terms could be applied to Part 6 using sample information taken from the UFB agreements. The idea is to illustrate the categories and the level of detail we propose to include in the IM (ie, quality dimensions and measures). We are looking for feedback on the quality dimensions and measures in **Table 3** and whether the suggested level of prescription is appropriate for the quality IM.
740. While the table provides examples of quality dimensions and measures, these will be affected by specific exemptions, caveats and rules. As explained in paragraph 738.3, this could include exclusions for situations where an end-user failed to attend a connection appointment. There could also be exceptions relating to force majeure events, or for situations where a fault is caused by end-user equipment. These would be appropriately reflected against the relevant quality standard or measure applied

⁴⁰² “Quality dimensions of wholesale fibre telecommunications services”, page 11.

under PQR or ID. However, we are interested in stakeholders' views as to whether these sorts of exceptions should also be covered in the quality IM.

741. It is also important to note that the quality standards included in **Table 3** are based on agreements such as the NIPA and WSA, but that we do not propose to include quality standards in the IM. The quality standards will be set via PQR, which we will consult on separately. However, we are interested in stakeholders' views as to how these UFB agreements have worked in ensuring the quality of fibre has met the demands of access seekers and end-users.
742. We are also interested in views on whether all or only some of the quality dimensions and measures covered in the UFB agreements should be reflected in the fibre regime. We set out more detail on these agreements in **Attachment D** and discuss in paragraph 754.
743. We consider up to CEPA's level 3 to be the appropriate degree of prescription to use in setting the quality IM. This would involve setting out the following in the IM determination:
- 743.1 a list of CEPA's suggested quality dimensions (ordering, provisioning, switching, faults, availability, performance customer service – see discussion from paragraph 750); and
 - 743.2 a list of possible quality measures linked to the dimensions, as illustrated in **Table 3**.
744. We propose to apply all of the quality dimensions set out in the IM to ID and PQR. However, only some of the quality measures may be applied to ID and PQR, since methods of measuring fibre quality dimensions may change. Different or more detailed quality measures may be required for ID and PQR reporting purposes, some of which may be measures that were not set out in the quality IM. We are looking at the UFB agreements for guidance and seeking stakeholder views on what these quality measures should be.
745. Our emerging view is that this approach provides adequate certainty to fibre providers as to how quality regulation will be applied, but still provides enough flexibility to set quality standards and measures via PQR and ID. We are interested in stakeholders' views on this emerging view.
746. Specifically, we are interested in stakeholders' views as to whether the IM should cover quality measures. If so, we are open to any suggestions as to which quality dimensions should also have quality measures set out in the IM, and what these quality measures should be.
747. We only propose to include quality measures in the quality IM where it makes sense to do so. For example, a fibre connection will always need to be installed, therefore it might make sense to prescribe how fibre providers must measure the quality of the installations they carry out.

748. We agree with the point raised in the joint submission by Enable, Ultrafast and Northpower that “The imposition of quality measures should involve a cost/benefit trade-off – ie, what can be measured, in a cost-effective way, which leverages existing systems and processes, and which is of value to end-users.”⁴⁰³ To the extent possible, the quality measures set out in the IM and ID determinations will align with reporting systems regulated fibre providers use. We are interested in feedback from stakeholders as to how we can achieve this aligned approach.
749. Once we have set the quality IM, we may set different quality measures and standards in the ID and PQR determinations for different purposes. For example, we may wish to break down reporting requirements by geographic areas, or by types of end-users (such as business or residential) or access seekers. We may also differentiate by service such as layer 1 and layer 2, as different services face different levels of competition. This would allow us to better tailor the regulatory instruments to achieve the purpose of Part 6.

⁴⁰³ Enable, Ultrafast Fibre and Northpower Fibre “Submission on new regulatory framework for fibre” (21 December 2018), page 17.

Table 3: Examples of quality dimensions, metrics, measures, and standards from UFB agreements

Quality dimension	Quality metrics and measures (example only) ⁴⁰⁴	Quality standards (example only from UFB agreements)
Customer service	Connection satisfaction must be measured via quarterly connection satisfaction surveys. The results of these surveys must be published, broken down by service, RSP and geographic area.	Fibre connections – customer satisfaction – RSP The Company must achieve a Connection Satisfaction Score of xx% or more in a Quarterly Connection Satisfaction Survey.
Ordering	Time to complete order must be measured as the number of business days following the company’s receipt of a properly completed request from the RSP.	RSP establishment (a) Layer 1 RSP: xx days. (b) Layer 2 RSP: xx days. Onboarding (overlaps with provisioning) (a) Signing of WSA: xx days. (b) Set up of OSS/BSS: xx days. (c) Training: xx days. (d) Physical set up: xx days. (e) Build required: xx days. (f) Establish co-location: xx days. (g) Test and commission: xx days.
Provisioning	Time to provision service must be measured as the number calendar days from receipt of order to completed connection.	Fibre provisioning (a) Residential individual: xx days. (b) Residential aggregate: xx% a month meet the individual service levels. (c) Business individual: xx days. (d) Business aggregate: xx% a month meet the individual service levels. (e) NBAP individual: xx days. (f) NBAP aggregate: xx% a month meet the individual service levels.
Switching	Time to disconnect must be measured as the number of days it takes for a disconnection to be completed following the company’s receipt of a properly	Disconnections (a) Individual: xx days. (b) Aggregate: xx% a month meet the individual service levels. Bandwidth upgrade of layer 2 service

⁴⁰⁴ Examples of “quality metrics” are in bold font, while the rest of the description in that column describes the “quality measure” (ie, how that particular metric must be measured).

	completed order.	<p>(a) Individual: xx days.</p> <p>(b) Aggregate: xx% a month meet the individual service levels.</p>
Faults	Maximum downtime must be measured as the maximum length of time that an end-user is without a UFB service, measured from the time that a fault is detected, either by an end-user fault report or by a network surveillance system, to the time the fault is resolved and the UFB service is restored.	<p>Layer 1 and 2 faults</p> <p>(a) Fibre faults reported before/after xx am/pm are restored by xx am/pm.</p> <p>(b) Acknowledge fault report within xx minutes/hours.</p> <p>(c) Give notice of fault rectification time within xx minutes/hours.</p> <p>(d) Repair fault within service level.</p> <p>(e) Notify fault rectification within xx minutes/hours of it being resolved.</p> <p>Planned and unplanned outages</p> <p>(a) Planned outage notified xx days in advance.</p> <p>(b) Unplanned outage notified within xx minutes/hours.</p>
Availability	Average downtime must be measured by dividing the sum of the downtime for all end-users within the relevant POI area in the availability period that is caused by a fault in the layer 1 dark fibre by the average total number of end-users within the POI Area over the availability period	<p>Layer 1 service availability</p> <p>(a) Average downtime: ≤ xx hours.</p> <p>(b) Maximum downtime: ≤ xx hours.</p> <p>(c) Enhanced: Enhanced service level available at additional cost.</p> <p>Layer 2 service availability</p> <p>(a) Average downtime: ≤ xx hours per end-user per fault.</p> <p>(b) Maximum Downtime: ≤ xx hours.</p> <p>(c) Enhanced: Enhanced service level available at additional cost.</p>
Performance	Frame delay and frame loss must be measured over a five-minute interval (24 hours per day). Frame delay and frame delay variation must be measured in milliseconds, and frame loss must be measured as a percentage.	<p>Layer 2 traffic</p> <p>End-user traffic for P2P UFB1 bitstream service</p> <p>Committed information rate: Frame delay must be: ≤ xx mS / Frame delay variation must be: ≤ xx mS / Frame loss must be: ≤ xx%.</p> <p>Excess information rate: Frame delay must be: xx / Frame delay variation must be: xx / Frame loss must be: ≤ xx%.</p>

Questions for stakeholders

- Q44 How detailed should the quality IM be? What are your views on which of CEPA's levels of detail is appropriate to use in setting the IM?
- Q45 Should quality measures be included in the IM? Which quality dimensions should be linked to measures? How should these quality measures be specified?
- Q46 Should some exceptions, such as when an end-user fails to attend a connection appointment, be included in the PQR quality standards or ID quality measures? In other circumstances would exceptions be more appropriate in the quality IM? Please provide any examples.
- Q47 How should quality regulation reflect the different factors that affect service quality? What are your views on whether reporting requirements should be broken down by geographic areas, or types of end-users, access seekers or services?

Quality dimensions

750. We are considering which quality dimensions to include in the IM, and how, so that fibre quality meets end-user demands.
751. Submitters on our proposed approach paper made several useful suggestions on what quality dimensions we might include in the IM. For example, Spark suggested the IM could cover quality dimensions:⁴⁰⁵
- 751.1 at a network level, such as avoiding systemic outages;
 - 751.2 relating to Chorus' operating efficiency and approach, including how regulated suppliers interact with access seekers; and
 - 751.3 directly impacting end-user service quality, such as provisioning connection commitments.
752. We are interested in a wide range of views on which quality dimensions end-users consider to be important or problematic and are interested in stakeholder views on this. In addition to our usual formal consultation process, we are looking to conduct surveys and other consumer engagement to find out what end-users expect of their fibre providers.
753. One example of consumer engagement could be to establish a consumer panel to "...provide additional insight to assist the Commission in considering what quality end-users expect for their fibre services",⁴⁰⁶ as suggested by Trustpower. If direct engagement with consumers is not possible due to time constraints, Trustpower suggested we engage with end-user representatives such as Consumer NZ. We think these are valid suggestions from Trustpower and are looking at how we can best

⁴⁰⁵ Spark "Submission on new regulatory framework for fibre" (21 December 2018), paragraph 126.

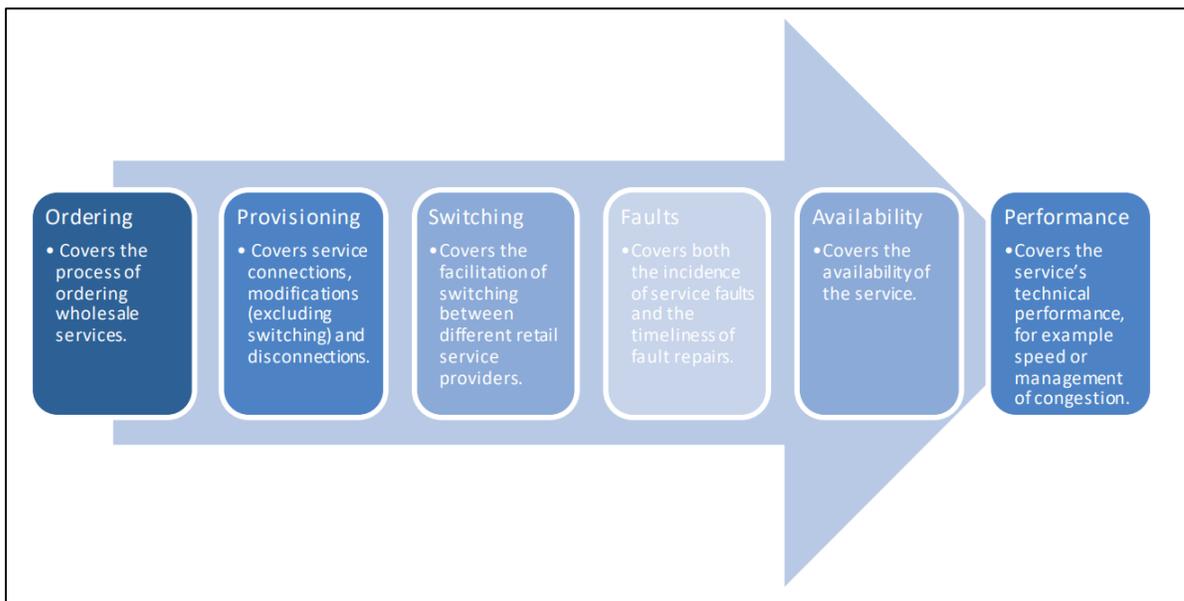
⁴⁰⁶ Trustpower "Submission on new regulatory framework for fibre" (21 December 2018), paragraph 26.1.3.

engage in order to set a quality IM that reflects end-user expectations. We will meet with consumer representative groups shortly to discuss our emerging views and how we can engage in future.

Emerging view: CEPA’s suggested quality dimensions should be included in the IM

754. Our emerging view is to include six broad categories identified by CEPA as quality dimensions in the IM. Our view is that these adequately cover all relevant quality dimensions of fibre. As illustrated by **Figure 2**, CEPA framed quality dimensions as stages of a fibre service lifecycle, which consists of ordering, provisioning, switching, faults, availability and performance.

Figure 2: Quality dimensions of a fibre service lifecycle



755. We also propose to include CEPA’s suggestion of overarching dimension of customer service. We are interested in stakeholders’ views as to whether there are any other general dimensions that cover the full fibre service lifecycle that are not reflected in our current list of seven quality dimensions.

756. **Table 3** helps to illustrate how each of CEPA’s suggested quality dimensions may apply in practice, since these dimensions can already be found in the UFB agreements (though these will be adapted for the purposes of the quality IM).

757. **Attachment 4** also shows the parts of the NIPA and WSAs that cover fibre quality to show how much detail they include and provide context for how our quality regulation approach may differ.

758. We are seeking feedback from stakeholders on the definitions of each of CEPA’s dimensions, whether any of the proposed quality dimensions should be changed or removed, or whether any dimensions should be added to this list.

758.1 With reference to the list of quality requirements we have looked at in the UFB agreements, as set out in **Table 3** and **Attachment D**, we are interested in views as to and whether there should be additional quality dimensions. For example, stakeholders may wish to comment on whether the quality IM should cover fibre network specifications or operations.

758.2 We are interested in views on whether the framing of quality dimensions as part of a fibre service lifecycle covers all elements, including “access to” and “interconnection with” the fibre network.⁴⁰⁷

758.3 We are also interested in views as to whether “consultation with access seekers and end-users” should be included as a quality dimension that will apply to PQR or ID. This would involve the IM anticipating some form of regulatory mechanism that requires the fibre providers to consult with their stakeholders on quality matters. This could be one way in which the quality IM could capture responsiveness to access seekers and end-users.

Questions for stakeholders

- | | |
|-----|---|
| Q48 | Which quality dimensions are most important to end-users and access seekers? |
| Q49 | What are your views on the quality dimensions suggested by CEPA: ordering, provisioning, switching, faults, availability, performance, and customer service? Should any dimensions on this list be added, changed or removed? What are your views on how these terms should be defined? |
| Q50 | What are your views on CEPA’s concept of the fibre service lifecycle and its applicability to all aspects of fibre quality? Should other aspects of quality such as network operations or network specifications be covered by the quality IM? If so, how? |
| Q51 | How should the quality IM reflect “access to” and “interconnection with” fibre networks? |
| Q52 | Should fibre providers’ consultation with stakeholders be a quality dimension? If not, should the extent of consultation be addressed in a different way? |

⁴⁰⁷ Telecommunications Act 2001, s 5 defines FFLAS as “a telecommunications service that enables access to, and interconnection with, a regulated fibre service provider’s fibre network”.

Chapter 7: Capex IM

759. This chapter sets out the following areas:
- 759.1 context to developing the capex IM;
 - 759.2 problem definition and our approach to developing the capex IM;
 - 759.3 our emerging view on the key aspects of the capex IM;
 - 759.4 our emerging view on some additional incentive mechanisms relating to expenditure (total expenditure forecasting approach and additional expenditure efficiency incentives); and
 - 759.5 our emerging view on the use of ‘transitional arrangements’ to be used for PQR in the first regulatory period.

Summary of views

760. There are many parts of our regime that will affect the incentives around expenditure. The capex IM is a key tool we have in controlling capital expenditure incurred by suppliers and the incentives around both forecasting and incurring that expenditure. The capex IM process helps ensure businesses provide accurate forecast of capex and have incentives to invest efficiently.
761. We require additional information to ensure we are designing the capex IM in a way that best promotes the purpose of Part 6.
762. In developing our emerging view on the capex IM, we have drawn on our experience from developing and implementing the Transpower Capex IM. This experience provides us with a framework to apply to the IM for fibre. We consider the requirements below should be included in the fibre capex IM.
- 762.1 **Customer consultation** - a requirement for the regulated supplier to consult with its customers during the development of its capex proposal.⁴⁰⁸
 - 762.2 **Stakeholder consultation** - a requirement for the Commission to consult with stakeholders during the evaluation of the capex proposals and prior to the price-quality path determination.
 - 762.3 **Independent verification** - a requirement for the regulated supplier to have an independent verification of their proposal undertaken prior to submitting a capex proposal.⁴⁰⁹

⁴⁰⁸ This is a requirement for EDBs making a CPP application and is not a requirement for Transpower.

⁴⁰⁹ Note that there is no requirement on Transpower to conduct an independent verification of a capex proposal in the Transpower capex IM. However, for its latest base capex proposal Transpower voluntarily undertook an independent verification of its proposal.

- 762.4 **Process and timeframes** - we consider the Transpower Capex IM provides a reasonable starting point for developing the content on process and timeframes for the fibre capex IM.
763. We have considered options for content in the capex IM. This would place requirements on both regulated suppliers subject to PQR, as well as the Commission. The following are areas where we have not yet reached emerging views and we seek views from stakeholders.
- 763.1 **Information requirements** - for capex proposals from Chorus in the capex IM.
- 763.2 **Evaluation criteria** - that we will use to assess proposals in the capex IM.
- 763.3 **Contingent project mechanisms** - potential mechanisms that enable a regulated provider to apply for additional capex for specific reasons set out in the capex IM.
764. We have identified some potential issues that are unique to fibre regulation and Chorus's operating environment. We will need to consider these issues when developing the rules for the capex IM and how we assess capex proposals.
- 764.1 Proposals for capex that involve **spend on both FFLAS and non-FFLAS**.
- 764.2 Proposals for capex for **assets that are likely to become competitive**.
- 764.3 Proposals for capex that seek approval for **expenditure that is less than we think is the efficient level to promote competition** in other markets.
765. There are also some additional issues that relate to PQR that we have included discussion on. Although these areas are not necessarily matters within scope of the capex IM, we have included them in this chapter as they are related to our approach to regulating suppliers under price-quality regulation.
- 765.1 **Total expenditure approach** - we do not propose to adopt a total expenditure (**totex**) approach at this stage.
- 765.2 **Additional expenditure efficiency incentives** – we are seeking views on the appropriate form of any additional incentives we set.
- 765.3 **Transitional arrangements for PQR in the first regulatory period** – we are seeking views on our approach to considering where transitional arrangements are appropriate.
766. For the areas of emerging views, we will use stakeholder feedback to inform our development of a draft decision.

Context

767. There are a number of contextual factors we must consider when developing the capex IM, including:

- 767.1 the requirements of the Act;⁴¹⁰
- 767.2 the risks associated with expenditure and the role of the capex IM;
- 767.3 how the capex IM links to PQR and ID regulation;
- 767.4 our previous regulatory experience in developing rules for capex; and
- 767.5 the market context.

Requirements of the Act

768. Section 176 of Part 6 of the Act sets out the required content of the IM for capex projects:

Methodologies for capital expenditure projects, including the following:

- i. requirements that must be met by the regulated fibre service provider, including the scope and specificity of information required, the extent of independent verification and audit, and the extent of consultation and agreement with other parties (including access seekers or end-users); and
- ii. the criteria the Commission will use to evaluate capital expenditure proposals; and
- iii. time frames and processes for evaluating capital expenditure proposals, including what happens if the Commission does not comply with those timeframes.

769. We must consider both the purpose of IMs (s 174) and the required content of the IMs (s 176) when determining the capex IM. This is in addition to our consideration of s 162 and s 166(2)(b).⁴¹¹

770. In drafting our emerging views for the capex IM, we have considered how to best give effect to the purpose and requirements contained in Part 6 of the Act. To achieve the requirements of the Act, we have considered the IMs under the Part 4 regime that address assessment and approval of capital expenditure. While the IMs in Part 4 were designed for different sectors, we consider there are lessons relevant to the fibre sector on how to assess and approve capex proposals. We will continue to consider how the differences between the sectors regulated under Part 4 and Chorus should be reflected in the fibre capex IM.

771. In response to our proposed approach paper, the LFCs sought confirmation that the capex IM would apply only to Chorus and not to the LFCs.⁴¹² The capex IM approval process is only relevant to regulated suppliers that are subject to price regulation.

⁴¹⁰ In particular the purposes in s 166 and s 174 and the requirements in s 176 of the Telecommunications Act.

⁴¹¹ Section 166 requires us to make decisions which best give or is likely to best give effect to the purpose in s 162 and the promotion of workable competition in telecommunications for the long-term benefit of end-users where relevant.

⁴¹² Enable, Ultrafast Fibre and Northpower Fibre “Submission on new regulatory framework for fibre” (21 December 2018) page, 13.

Our expectation is that Chorus is the only provider that will be subject to price regulation for the first period.

The role of the capex IM and risks associated with expenditure evaluation approaches

772. In our proposed approach paper, we suggested adopting a similar approach to what is used in setting CPPs and individual price-quality paths (**IPPs**) under Part 4. More specifically, we proposed using similar process, information requirements and evaluation criteria to assess capital expenditure proposals from Chorus.
773. Under Part 4, capex approval processes provide a series of ex-ante controls to ensure the resulting MAR for the period is at efficient levels and is sufficient to meet the quality that customers demand.⁴¹³ Both the CPP and IPP processes require regulated suppliers to submit a proposal that contains the expected capex requirements for an upcoming regulatory period.
774. The supplier's capex proposal is assessed by us using criteria described in the relevant IMs.⁴¹⁴ Through the evaluation process, we determine the maximum capex allowance for regulated suppliers during that regulatory period. The capex allowance determines the revenue (associated with capex) that suppliers can recover during the period. However, once the allowance is set, a supplier is free to invest as it likes during the period, subject to meeting any other required constraints (eg, quality standards, approval processes in the capex IM for specific projects).
775. The Transpower Capex IM contains an additional ex-ante capex approval mechanism for major capex projects. Transpower can apply for funding of major capex for enhancement and development projects over \$20 million within a regulatory period. Transpower can apply for major capex projects at any stage in the regulatory period, with separate information requirements and evaluation criteria applying than for base capex proposals submitted prior to the regulatory period. When capex is added through the major capex mechanism, this adds to the value of the RAB and so increases the revenue it can charge consumers.⁴¹⁵
776. Setting an ex-ante allowance requires the regulated supplier to forecast its capex requirements for the regulatory periods. This introduces an incentive for regulated service providers to over-forecast the level of capex in submissions to achieve a higher capex allowance for the period.
777. We want to incentivise regulated suppliers to forecast accurately while acknowledging that there will inevitably be some risk in capex forecasts. There is a

⁴¹³ Transpower's Capex IM also includes rules and processes for proposing and setting quality standards. For fibre providers, quality standards will be determined by the quality IM.

⁴¹⁴ The Commerce Commission may utilise external consultants to support the evaluation of the capex proposal. In the CPP regime, an applicant is required to seek an independent verifier to verify the proposal prior to submission to the Commission. The report can be an input into the evaluation of the proposed capex.

⁴¹⁵ As capex is added to the RAB, the MAR increases by the additional return on and of capital associated with the expenditure.

risk that capex investment proposed prior to the regulatory period may not turn out to be the appropriate investment during the control period once new information becomes available.

778. We acknowledge that the regulated supplier will be best placed to run these processes and make decisions on investment. These decisions may involve deferring capex to later regulatory periods. Deferral of projects (even if efficient) presents a risk that consumers may end up paying more for the same investment if an allowance for a particular investment is included in the capex for one regulatory period and following deferral, also the following regulatory period.
779. Setting an ex-ante capex allowance also introduces an incentive on suppliers to outperform the capex allowance during the regulatory period. There are several ways that a supplier can outperform an ex-ante capex allowance including:
- 779.1 by improving efficiency and delivering capex at a lower value than its forecasts;
 - 779.2 by investing in less assets than the forecast capex allowance provided for; and
 - 779.3 by reducing the level of quality standards.
780. The Transpower Capex IM and CPP rules and processes contain quality standards and related quality incentives. This introduces an incentive on suppliers to invest a level of capex to meet its quality standards.
781. The supplier's asset management approach will be reflected in the forecasts and the efficiency of its investment (capex) decisions. Therefore, incentivising the regulated supplier to continue to develop its asset management approach could result in improvements in its capex proposals, ultimately resulting in an improvement in the price-quality path for end-users. Our experience with the capex IM in the Part 4 regime has shown it to be a useful tool for encouraging improvements in asset management practices as well as improving the robustness of information underlying expenditure forecasts.
782. Our view is that the above risks are likely relevant when assessing expenditure proposals for regulated suppliers. We intend to design the capex IM to mitigate the risks of over-forecasting and inefficient investment. This mitigation will be achieved by setting criteria that scrutinises the capex forecasting approach, ensuring forecasts are as accurate as possible, and efficient levels of investment are provided for.
783. There are other factors that will affect regulated suppliers' incentives relating to capex forecasting and spend.
- 783.1 The level at which we set the **cost of capital** will impact incentives for investment by Chorus in its asset base. Set at the wrong level, the cost of capital may mean Chorus has incentives to under- or over-invest in its network during the price-quality path.

783.2 The **quality dimensions** IM will introduce an incentive to ensure a minimum expenditure to maintain a level of prescribed quality. The capex IM could incentivise Chorus to not under-invest in the fibre network; however, we expect this role to be limited. In the following section on our emerging views for the capex IM, we discuss ways which the capex IM can manage under-investment such as by linking the capex investment to quality standards or another specific objective.

783.3 The rules for **cost allocation**, specifically between FFLAS and non-regulated services, may impact the incentives for expenditure on assets that provide both FFLAS and non-FFLAS products.

783.4 Any additional expenditure incentive (such as the incremental rolling incentive scheme (**IRIS**)) that affects the overall strength of the incentive to improve efficiency and the timing of expenditure.

How the fibre capex IM links to price-quality regulation and information disclosure

784. **Price-quality regulation:** In the utility-style regime that we are developing, forecast capex values would typically be included in the price-path calculations at two decision points:

784.1 the determination of a forward-looking price-quality path (3-5 years);⁴¹⁶ and

784.2 additional requests of capex proposed during a price-quality path period.⁴¹⁷

785. One of the decisions that the Commission will need to make is the appropriate level of detail and scrutiny at these two decision points. The variation of assessment criteria and scrutiny approaches is discussed below in our emerging view section.

786. **Information disclosure regulation:** The process to set the approved forecast capex is not required for ID regulation, therefore the capex IM is not expected to directly underpin the setting of ID regulations. However, we may decide to collect information through the ID regulations that relate to capital expenditure and/or asset management planning information where it promotes the purpose of ID. This information could also be useful to assist in the evaluation of capex proposals under price-quality regulation.

787. As the capex IM will only directly apply to PQR, our assumption is that, for the first regulatory period, the IM will only apply to Chorus.

Previous regulatory experience

788. As touched upon throughout this chapter, we have previously set an IM for capex for Transpower under Part 4. This input methodology was originally developed in 2012,

⁴¹⁶ Section 207 of the Telecommunications Act 2001 states the first regulatory period lasts for three years. Subsequent regulatory periods must be between three to five years.

⁴¹⁷ Note that under the Part 4 regime, the majority of capex is approved prior to the regulatory period.

two years following the development of the other IMs for Transpower. The IM was then updated following a review in 2018.⁴¹⁸

789. We have also set IMs for customised price-quality paths, which includes requirements on applicants to provide capex information.

Market context

790. Understanding the market context is important as it may impact the drivers for investment for regulated suppliers. This would in turn impact the type of information we would expect to receive in a capex proposal (eg, the assessment criteria and information we request to assess capex proposals, as well as the potential need for provisions such as contingent project mechanisms).⁴¹⁹
791. Over the last decade, the extent of fibre access networks in New Zealand has expanded significantly, with more than \$3 billion invested since 2011, largely because of the UFB initiative.
792. Given this recent investment in networks, it is unlikely in the short- to medium- term that there would need to be the same level of investment in replacement / maintenance work. This is potentially different from other sectors we regulate such as electricity lines or gas pipelines. However, the large investments in assets during the UFB rollout will eventually need to be replaced and financed.
793. The telecommunications markets are dynamic in nature, which means there is potential for the development of new products and services, which could be a driver for investment. Chorus may also be subject to access-based competition from other telecommunications services such as fixed wireless services. Competition may also be a driver for investment.

Question for stakeholders

Q53 What are your views on how we have identified the risk associated with expenditure, and the role of the capex IM in managing those risks?

⁴¹⁸ The Transpower capex IM and past amendments and clarifications can be found here: <https://comcom.govt.nz/regulated-industries/input-methodologies/transpower-ims>

⁴¹⁹ Contingent project mechanisms means the rules and processes in the capex IM that enable the regulated supplier to access funding for additional projects that were not included in the original ex-ante capex allowance.

Our approach to developing the capex IM

794. We have been considering our approach to developing the capex IM, including our previous experience in developing similar rules to support the design of the capex IM, the appropriate level of prescription we should use in drafting the rules, as well as the information sources we will draw upon to help develop the capex IM.

Part 4 approach to approving capex under the individual price-quality path provides a useful framework

795. We consider that the Transpower Capex IM provides a useful framework for assisting with the design of the capex IM for suppliers of regulated FFLAS.^{420, 421} We consider that certain features from the Transpower Capex IM are applicable to the fibre sector.

796. At its core, the Transpower Capex IM provides rules and processes that help us test that:

796.1 Transpower makes appropriate investment decisions;

796.2 Transpower is incentivised to commission assets that enter the RAB at an efficient level of costs; and

796.3 proposed capex reflects Transpower's internal processes and asset management approach.

797. In addition to the overall function of Transpower's Capex IM, we consider the following key features of the Transpower Capex IM are applicable:

797.1 **A large proportion of base capex is approved ex-ante for the regulatory period.**

797.2 **Processes relating to the submission and evaluation of a base capex proposal including requirements on the Commission to consult during the evaluation of the supplier's capex proposal.**

797.3 **Independent verification requirements.** There are currently no formal requirements in Transpower's Capex IM to independently verify their proposal. We note that Transpower voluntarily agreed to commission an independent verifier (IV) report to submit along with their expenditure proposal for the upcoming IPP.

797.4 **Principle of proportionate scrutiny.** The Transpower Capex IM contains mechanisms that enable the Commission to scrutinise different components of Transpower's proposal depending on the materiality of spend or the type

⁴²⁰ Commerce Commission "Transpower Capital Expenditure Input Methodology Determination 2012 (Principal Determination)" (1 June 2018).

⁴²¹ We also note the rules and processes for determining a customised price-quality path for electricity and gas distribution businesses may also provide useful precedents for the fibre capex IM.

of capex. These mechanisms are the identified programme provisions and the major capex application requirements.

797.5 **Contingent project mechanisms** to address uncertainty with timing and cost. This includes the major capex project and listed project mechanisms.

797.6 **Information requirements and assessment criteria.**

798. We go into further detail later in this chapter on the applicability of the above key features.

799. It is important that we continue to consider the key differences between the two sectors, including the regulatory framework, when designing the fibre capex IM. We will consider our obligation to promote workable competition in telecommunication markets for the long-term benefit of end-users where relevant.

Level of prescription

800. We have a choice about how prescriptive the capex IM should be. Durability is likely to be an important consideration when determining how prescriptive the capex IM should be. We consider that the capex IM should be able to account for:

800.1 changes in technology;

800.2 market conditions (ie, unforeseen changes in the competitive environment);

800.3 internal changes to suppliers' business operations and internal asset management and governance systems where this is not inconsistent with the purposes in s 166 and s 174.

801. The Commission's experience with Transpower's Capex IM and IPP is that it is useful to have a clear vision of how the regime and regulated supplier will evolve in the medium to long-term. This vision can include aspects of suppliers' asset management systems and governance approach, as well as external factors that may affect the achievement of the purpose of Part 6.

802. We have a range of available levers to ensure the regime remains durable. This includes reviewing the IM and making amendments as the need arises. We also have a legislative obligation to review the suite of IMs every seven years.

803. In addition to reviewing the capex IM, we could use a less prescriptive approach to set the IM which may better future proof the IM. We note that Transpower's Capex IM on balance does not prescribe specific standards or asset management approaches that Transpower should adhere to. Rather the capex IM seeks information on the approaches and methodologies used by Transpower to develop capex proposals and describes the criteria used to evaluate these. We intend to continue to explore this issue and potential options to develop the IM as we work towards a draft decision.

Our information sources to help develop capex IM

804. To design the processes and rules included in the capex IM, we will need to understand the regulated provider's unique operating environment and business model. This will allow us to effectively design the capex IM so that it is fit for purpose and best promotes the purposes in s 166 of the Act.
805. We already have a body of knowledge to help inform our thinking from the following sources:
- 805.1 current ID, and our previous experience working with Chorus;
 - 805.2 the s 9A fibre study; and
 - 805.3 consultation responses and engagements to date with Chorus on its fibre capex.
806. We consider that there are areas where we need more information. We have begun bilateral discussions with Chorus to gather more information to support development of the capex IM. We will make such information available during our IM setting process, taking account of the need to protect Chorus' commercially sensitive information and the need for stakeholders to have access to such information to make properly considered submissions.

Our emerging view on key aspects of the capex IM

Overview of core components of capex IM

807. The capex IM is required to include three core components that relate to the proposal and assessment of capital expenditure values to be included in the price-quality paths.
- 807.1 **Information requirements** - requirements that must be met by the regulated supplier, including the scope and specificity of information required, the extent of independent verification and audit, and the extent of consultation with other parties (including access seekers or end-users).
 - 807.2 **Evaluation criteria** - the criteria the Commission will use to evaluate capital expenditure proposals.
 - 807.3 **Timeframes and processes** - for evaluating capital expenditure proposals.
808. We consider the three core components listed above to be a useful way of organising our thoughts on the capex IM and seeking stakeholder views. We have developed a number of emerging views on the three core components to be set out in the capex IM. Following feedback on our proposed approach paper we have also developed an emerging view on whether we should require expenditure forecasting to be done on a totex basis. We have also identified a number of options to be included in the capex IM.

Evaluation criteria and information requirements

809. We consider it useful to consider evaluation criteria and information requirements together. Our initial view is that the evaluation criteria should be the starting point for determining what information requirements are set. This is because we see the primary role of the information requirements is to enable the Commission to gather information from Chorus to evaluate the proposed expenditure.
810. The information requirements should help address information asymmetries between us and Chorus when assessing capex and reveal Chorus' approach to forecasting and developing capex proposals. The scope and specificity of the information requirements should also primarily be assessed by their ability to enable the Commission to assess capex proposals.
811. There may be some assessment and information requirements that we do require Chorus to meet. We may assess whether a capex proposal meets a specific investment test. For example, the Good Electrical Industry Practice (**GEIP**) is used in the electricity distribution and transmission IMs under Part 4. This implies a certain standard should be met when developing an expenditure proposal. We could also require regulated suppliers to meet some other form of expenditure objective or cost/benefit test when submitting capex proposals.
812. Under the Act, we are required to consider consultations and the extent of independent verification and audit in the capex IM. Consultation requirements may help incentivise the right behaviour and help address certain risks associated with expenditure. For example, in the Transpower Capex IM, Transpower is required to consult with interested parties on potential investment options and consider alternative solutions if available.
813. Requiring Chorus to consult with stakeholders (including access seekers and end-users) on its capex plans may enable better investments to be made by illuminating how certain investments will achieve end-user demands.
814. There is a trade-off relating to consultation requirements. The materiality of expenditure may affect the degree of consultation. We consider there are key questions, including regarding the role and timing of consultation and the extent of independent verification and audit that should be addressed, including:
- 814.1 what consultation requirements there should be;
 - 814.1.1 during the development of the proposal;
 - 814.1.2 during the evaluation of the capex proposal; and
 - 814.2 who should conduct the consultation (ie, the regulated provider or us).
815. Our emerging view is that the capex IM will contain consultation requirements during our evaluation of capex proposals and prior to the price-quality path determination. This requirement would be similar to the requirements in the Transpower Capex IM. We are interested in stakeholders' views on any additional

consultation requirements including whether Chorus should be required to consult its customers prior to submitting a capex proposal.

816. We have used the independent verification process in the Part 4 regime for both CPP and IPP proposals. In the Part 4 CPP regime, an application for a CPP needs to have been assessed by an independent verifier. For Transpower's recent base capex proposal,⁴²² Transpower voluntarily agreed to conduct an independent verification of its proposal. The terms of reference for the verification were agreed between Transpower and the Commission.
817. The role of the IV is to scrutinise key components of the regulated supplier's proposal for its upcoming regulatory price-path ahead of it being submitted to us for approval. In the CPP process, an independent verifier will deliver a report which forms part of the applicant's submission and is considered in the evaluation of the CPP application.
818. We consider that the IV processes have enhanced the process for submitting and evaluating capex proposals as well as the overall quality of our price-quality determinations. The benefits of an IV process that we have found through our experience include:
- 818.1 providing a process of peer review and challenge from an independent third party on the information supporting the capex proposal by scrutinising the capex thereby enhancing the quality of the proposal;
 - 818.2 enabling us to better focus our scrutiny during our evaluation on areas that are less likely to meet the expenditure outcome, consistent with the proportionate scrutiny principle;⁴²³
 - 818.3 identifying issues we may want the regulated supplier to focus on as it continues to improve its asset management and planning processes; and
 - 818.4 improving the consultation process by providing additional targeted assessment of the capex proposal for stakeholders to consider.
819. The IV process can be perceived as costly, time consuming and an intensive process prior to submitting a capex proposal. It can be argued that the level of complexity and materiality of the capex proposal may not always justify the use of an IV process. We note that an IV process could be tailored to reflect the materiality of the capex proposal in question.
820. Our emerging view is that there should be a requirement in the capex IM for the regulated supplier to conduct an independent verification of their proposal prior to submitting a capex proposal.

⁴²² Transpower submitted a base capex proposal its third regulatory control period on 28 November 2018.

⁴²³ Commerce Commission "Input methodologies review decisions. Topic paper 2: CPP requirements" (20 December 2016), page67

Different evaluation criteria may be required depending on the nature of the investment

821. Evaluation criteria will enable the Commission to assess expenditure proposals and allow appropriate forecast expenditure to help develop revenue calculations. The capex IM should provide certainty to regulated suppliers, access seekers and end-users about this process.
822. Different types of capital expenditure may require different evaluation criteria (and thus different information requirements). This variation of evaluation criteria may depend upon factors such as:
- 822.1 the materiality of expenditure (and therefore the level of scrutiny required);
 - 822.2 how certain the timing of the expenditure requirement is; and
 - 822.3 the nature of the investment (eg, expanding/enhancing the network versus replacing and/or maintaining the network which may be more recurrent in nature).
823. Chorus may seek capex through the evaluation process that effects competition in the FFLAS and the wider telecommunications market. For example, Chorus may seek to invest in fibre assets in LFC areas or compete with non-FFLAS services that rely partially on fibre (such as FWA services). It may be prudent to consider how certain types of expenditure will affect competition and include assessment criteria in the capex IM to account for these situations.⁴²⁴

Additional areas specific to fibre regulation

824. We have identified some additional potential issues that we will need to consider when developing the rules for the capex IM. These potential issues may also be drivers for how we may vary evaluation criteria. These are caused by some issues that are unique to fibre regulation. We intend to engage further with stakeholders on the following issues as our thinking develops:
- 824.1 **Proposals for capex that involve spend on both FFLAS and non-FFLAS.** Chorus operates a network that delivers both FFLAS and non-FFLAS (eg, copper) in some areas. We expect there will be a level of common capex that is associated with both types of service. This introduces a question as to what the scope of Chorus' capex proposal (and hence our assessment for expenditure) should be for this regime. For example, should we require proposals to cover capex that is common to FFLAS and copper services, or only capex that relates FFLAS.
 - 824.2 **Proposals for capex for assets that are likely to become competitive.** Chorus could propose capex that would involve investing in assets that could become competitive in the near future (for example, assets that are either delivering a

⁴²⁴ For a major capex project application, the Commerce Commission can assess any competition effects from a proposed major capex project investment option from Transpower.

service that is subject to competition and/or in a geographic area that is competitive). This raises the question of whether it is appropriate for us to approve a regulatory allowance (via the capex IM process) for assets that are competitive with other services that are not regulated. We note there may be a link between capex assessments associated with assets subject to competition and our role in conducting deregulation reviews under s 210 of Act.

- 824.3 **Proposals for capex that seek approval for expenditure that is less than we think is the efficient level to promote competition in other markets.** In our proposed approach paper, we set out an example of how we might practically promote competition as per s 166.⁴²⁵ This example was on potentially including criteria within our IMs for considering the promotion of workable competition in layer 2 services when assessing capex proposals. The example noted that we could feasibly approve capex at a higher level than a regulated supplier requested in order to promote competition in layer 2 services. It is worth noting that under the Part 4 regime, the capex IMs do not enable us to direct suppliers on how to spend their capex allowance (as mentioned above).

Mechanisms in Part 4 IMs that enable proportionate scrutiny of different types of capex

825. Transpower's Capex IM contains mechanisms that enable proportionate scrutiny of different types of capex as well as contingent mechanisms to enable Transpower to apply for and access additional capex.
- 825.1 **Identified programmes.** These are base capex projects and programmes that are agreed upon by Transpower and us prior to submitting a base capex proposal. Identified programmes have specific information requirements and evaluation criteria that is different from other capex in the proposal.
- 825.2 **Major Capex Projects (MCPs).** We have described MCPs earlier in the paper, in paragraph 775. The different information requirements and evaluation criteria for MCPs enable us to apply greater scrutiny to large enhancement and development projects.
- 825.3 **Listed project mechanism.** The listed project mechanism enables Transpower to apply for additional funding for large replacement and refurbishment capex projects over \$20 million. Transpower must indicate what listed projects it may apply for in a base capex proposal and Transpower may only apply for this additional funding in the upcoming regulatory period. There are separate information requirements and evaluation criteria for listed projects.
826. The fibre capex IM could apply similar mechanisms that allow Chorus to apply for contingent expenditure and enable us to assess different types of expenditure

⁴²⁵ Commerce Commission "New regulatory framework for fibre – Invitation to comment on our proposed approach (9 November 2018) page 90.

proposals. We expect Chorus's expenditure for the short-to-medium term to mostly consist of smaller replacement capex projects, with some expenditure required to upgrade layer 2 equipment to meet demand. While Chorus will eventually need to replace assets that were built as part of the UFB initiative, we do not expect Chorus to undertake large capex projects in way Transpower currently does.⁴²⁶

827. The expenditure drivers may also be different for Chorus than they are for Transpower. This may mean that contingent project mechanisms based on investment drivers may be more appropriate than expenditure thresholds based on value. An example of this type of contingent project mechanisms in the Transpower Capex IM is the base capex allowance adjustment mechanism for enhancement and development capex. If we were to introduce a mechanism like this, it would mean Chorus could access additional capex for different types of capex as the investment need arises and potentially with less scrutiny from us.
828. We consider that any contingent project mechanism should only be as complex as it needs to be. A contingent project mechanism could mean additional costs for the regulated supplier and require evaluation and administrative support from the Commission. Any additional regulatory processes should be commensurate to the value of additional funds being sought.
829. There may be different degrees of uncertainty relating to cost and timing of capex projects for Chorus than for Transpower. This may mean the factors that drive uncertainty in projects are easier or more difficult to account for and forecast in the fibre sector. There may be less or more of a need for introducing such controls in the fibre capex IM.

How evaluation criteria could mitigate the risks associated with capex proposals

830. Several information requirements and evaluation criteria could be applied to assess a capex proposal submitted by a supplier. Options to evaluate expenditure could include:
 - 830.1 a requirement to meet an **expenditure objective** similar to the requirement set for EDBs when making a CPP application. In the IM for EDBs, the expenditure objective is the capital and operating expenditure that reflect the efficient costs that a prudent supplier would require to:
 - 830.1.1 meet or manage the expected demand for electricity distribution services, at appropriate service standards, during the CPP regulatory period and over the longer term;
 - 830.1.2 comply with applicable regulatory obligations associated with those services;

⁴²⁶ Note that this is our expectation for the first regulatory period. Chorus may need to undertake large investment projects in the medium to longer term.

- 830.2 assessment criteria that consider whether the investment is the most efficient solution including whether Chorus's input costs are efficient;
 - 830.3 whether proposed capex is on the basis of the least whole of life costs of maintaining assets;
 - 830.4 information on economic analysis or cost benefit analysis conducted on the proposed expenditure;
 - 830.5 testing the reasonableness of the process and approach used to develop a capex proposal. This could include considering Chorus asset management practices and governance approach to developing the capex proposal;⁴²⁷ and
 - 830.6 considering the deliverability of the capex proposal during the regulatory period and previous experience of delivering capex.
831. Requirements to conduct external audit, independent verification and potentially some form of market testing may also reduce the risk of Chorus over-forecasting by enabling a third-party view on the appropriateness of processes, systems, and costs used in the development of the forecasts.

Timeframes and processes for evaluating capital expenditure proposals

832. In the IPP and CPP regimes, the rules for process and timeframes for capex proposals relate to areas such as application dates, consultation timeframes and requirements, and evaluation process steps and timeframes.
833. Transpower's Capex IM includes the following key timeframes relating to the submission and evaluation of a base capex proposal:⁴²⁸
- 833.1 Transpower must submit a proposal 18 months prior to the start of the upcoming regulatory period; and
 - 833.2 the Commission must publish a determination on the expenditure proposal 8 months prior to the start of the upcoming regulatory period.
834. Our emerging view is that the rules for process and timeframes should enable an effective evaluation of a capex proposal and be realistic for Chorus to achieve. We consider the Transpower Capex IM provides a reasonable starting point for developing the process and timeframes for the fibre Capex IM.

⁴²⁷ This could include the methodology used to develop the expenditure forecasts as well as Chorus's internal processes to develop their capex proposal.

⁴²⁸ The Transpower capex IM distinguishes between a base capex proposal and a major capex project application which has different processes and requirements.

Questions for stakeholders

- Q54 What are your views on the three areas of focus for the content of the capex IM (Information requirements, evaluation criteria and timeframes & processes)?
- Q55 What are your views on the three issues unique to fibre regulation that we have identified? Are there any others we should be considering?
- Q56 What are your views on the need to vary our approach depending on the type of capex that we are assessing?

Additional issues related to price-quality regulation

835. In our proposed approach paper, we asked stakeholders for their views on two areas that relate to PQR:

835.1 the potential use of a totex approach to forecasting; and

835.2 the need for additional efficiency incentives for expenditure.

836. We also received stakeholder responses on the topic of potentially using transitional arrangements for PQR in the first regulatory periods.

837. Although these topics do not necessarily form part of the capex IM approval processes, we have included them here for discussion as they are related to our approach to regulating the suppliers subject to PQR.

Consideration of operational expenditure as part of capex approvals

838. In our proposed approach paper, we asked stakeholders for their views on the merits of consideration of a totex approach to forecasting expenditure. A totex approach is where capital and operational forecasts would be submitted and assessed together, as opposed to separate building blocks included in the price-quality path.

839. There were no strong views for implementing a requirement for a totex forecasting approach. Some RSPs suggested we should investigate the use of a totex approach in the future. 2degrees stated that implementing a totex approach should be done cautiously and would take approximately two to three years to implement properly.⁴²⁹ 2degrees also suggested that it might be appropriate to postpone implementation to the second regulatory period.⁴³⁰ Chorus was against introducing a totex approach on the grounds that:

⁴²⁹ 2degrees, "Submission in response to the Commerce Commission's invitation to comment on its proposed on new regulatory framework for fibre", (18 December 2018), pages 19-20.

⁴³⁰ 2degrees, "Submission in response to the Commerce Commission's invitation to comment on its proposed on new regulatory framework for fibre", (18 December 2018), pages 19-20.

We are unlikely to face significant capex-opex trade-offs which the totex regime was designed to neutralise, and the risk of regulatory error if applied to our new network is insufficiently understood.⁴³¹

840. Our emerging view is that operational expenditure (**opex**) should be considered in the PQR rules and processes determination. We do not intend to develop a separate opex IM at this stage. This approach is similar to the approach used to assess opex for Transpower's IPP. In Transpower's case, the Commission issues an information gathering notice to ensure Transpower submits an opex proposal along with the base capex proposal. The information requirements and evaluation criteria described in the notice are often similar to the capex requirements prescribed in the capex IM.
841. A totex approach has been considered for the upcoming default price-quality (**DPP**) path under Part 4 of the Commerce Act. We decided not to implement a totex approach for the upcoming DPP.
842. We see value in having symmetrical incentives on regulated suppliers to invest in capex and opex. We will consider the best method for achieving this outcome in the draft determination including whether or not to include an incentive mechanism. It is worth noting that without a mechanism such as the base capex incentive and incremental rolling incentive mechanisms used in the Part 4 regime, there may be a difference in natural incentives for opex and capex by year during the control period and between each other. This may result in incentives for fibre providers to favour capex investment solutions over opex or vice versa.
843. Our emerging view is that we will not introduce a totex approach at this stage. The benefit from such a regime does not appear to us to justify the additional resources required (including time) to develop a different regime. We see this as an ongoing consideration and will review our position if additional information on the benefits of a totex approach are presented to us. For more information on the issue of expenditure incentives, refer to the chapter on rules and processes for PQR in this document.
844. We are seeking feedback on our emerging view to not pursue a totex approach for the fibre regime.

Additional expenditure efficiency incentives

845. By setting a maximum allowable revenue in a price-quality path, we introduce an incentive for the regulated supplier to outperform that path and make efficiency gains. Efficiency gains feed through to prices at the reset and lead to better outcomes for consumers through lower prices in the long run.

⁴³¹ Chorus, "Submission in response to the Commerce Commission's invitation to comment on its proposed new regulatory framework for fibre dated 9 November 2018", (21 December 2018), page 67.

846. As we set out in our proposed approach paper, we may wish to introduce additional incentive mechanisms for expenditure in addition to setting the maximum price-quality path.⁴³²
847. Overall, stakeholders were supportive of the need for an additional incentive mechanism but noted that the design of (effective) incentive mechanisms is a significant workstream that may be best deferred to the second regulatory period. The individual submissions on this topic are summarised below.
848. Chorus argued that development of incentives mechanisms should be deferred for further consideration in anticipation of the second regulatory period because:
- 848.1 the design and implementation of incentive mechanisms will be a significant workstream;
 - 848.2 they are not essential to the implementation of price-quality regulation for the first regulatory period, as demonstrated by later application of incentives in Part 4;
 - 848.3 an additional incentive mechanism is unlikely to be a material driver of Chorus' behaviour in the short (three year) initial regulatory period; and
 - 848.4 Chorus' network is still in the build phase and has not yet transitioned to an 'operate and maintain' phase. Chorus argued that the significant risk of forecasting variance and the benefits that would accrue from a longer period to understand the baseline and improve forecasting would justify the deferral of any incentive schemes to the second regulatory period.⁴³³
849. 2Degrees⁴³⁴ noted that the choice of whether incentive schemes should be implemented from the first regulatory period might come down to time constraints and the extent to which the Commission can leverage off existing Part 4 precedent. They pointed to the fact that previous incentive mechanisms were initially applied only to Transpower before being extended to other regulated suppliers.
850. Trustpower submitted that it:⁴³⁵
- 850.1 supports forward-looking efficiency incentives on regulated suppliers;
 - 850.2 supports the Commission in considering whether the incentive structures that have been previously adopted for regulated businesses under Part 4 drive optimal outcomes for end-users and should be adjusted within the fibre regulatory regime (to the extent possible);
 - 850.3 notes there might be a limited understanding of the incentives under Part 4 within distribution businesses and that this raises concerns on whether the incentives have been effective in the most recent regulatory period; and

⁴³⁵ Trustpower "Submission on new regulatory framework for fibre" (21 December 2018), paragraph 28.

- 850.4 acknowledges that the development of a quality dimensions IM may mean that the incentive mechanisms are less relevant within the fibre regulatory regime to the extent that minimum quality standards are achieved.
851. If we choose not to introduce any additional incentive mechanisms, then the savings that a regulated supplier can gain through efficiency will vary over time (within regulatory periods). In other words, the 'natural incentive' on the regulated supplier to make efficiency gains will tend to decrease over the regulatory period. We could introduce an additional adjustment mechanism to ensure that the incentive rate remains constant throughout a period.
852. The form of any mechanism will vary depending on the outcome we are seeking to incentivise and the administrative complexity of implementing such a mechanism. If we do decide to introduce an additional incentive mechanism on supplier expenditure, we consider there are different options on the form that the mechanism could take. Different options we could implement include:
- 852.1 Introduction of a within period and between period rate adjustment to ensure constant retention factors:** This option would be applied for opex and would include adjustment mechanisms to allow for the suppliers to appropriately retain the benefits of permanent opex efficiency gains beyond the end of a regulatory period. This would ensure a constant retention factor for any efficiency savings.⁴³⁶ This type of mechanism is currently applied to EDBs and Transpower and requires a mechanical link between future opex forecasts and actual opex over the previous regulatory period.
- 852.2 Introduction of a 'simplified' additional incentive mechanism:** A criticism of the existing IRIS mechanism that is applied to EDBs and Transpower is that it is complex to understand and administer. Therefore, an alternative could be to introduce a simplified approach, which does not provide a mechanical link between future opex forecasts and actual opex. This type of approach is likely to improve the time consistency of expenditure incentives relative to having no expenditure incentives. However, the assessment of any achieved or expected efficiency gains when opex allowances are set (by us) prior to the price-quality path would affect the final out-turn level of efficiency savings retained by suppliers.
853. In a paper published for IPART, CEPA explain two alternative options for this type of 'simplified' opex expenditure incentive mechanism which reduce the incentive strength that applies to opex in different years of the price-path.⁴³⁷ However, the

⁴³⁶ A mechanism like this exists in our regulation of Part 4 businesses, the Incremental Rolling Incentive Scheme – IRIS. For more information on IRIS see Commerce Commission "Incentives for suppliers to control expenditure during a regulatory period: Process and issues Paper" (20 September 2013); Commerce Commission "Amendments to input methodologies for electricity distribution services and Transpower New Zealand: Incremental Rolling Incentive Scheme" (27 November 2014).

⁴³⁷ For more details see: CEPA "Advice on efficiency carryover mechanisms: Independent Pricing And Regulatory Tribunal (IPART) (12 February 2016). Available at: <https://www.ipart.nsw.gov.au/files/sharedassets/website/shared-files/investigation-legislative->

simplification of the mechanism means that there are certain situations (eg, just prior to a price reset) when the retention factor can increase or decrease relative to the standard rate.

854. Our emerging view is that we will look to include an additional incentive mechanism within the IMs. Our view is that there are benefits to having the option to include a mechanism to ensure that the efficiency incentive for expenditure can be controlled over time. We welcome views on which of the two forms of the mechanisms we have listed we should have in the IM.
855. We note that we could choose to include one of these approach within the IMs and then assess whether it is appropriate to apply that approach when determining the price-quality path. That is, the inclusion of an expenditure incentive mechanism within the IMs does not necessarily mean that we would apply the mechanism for the first regulatory period.

Transitional arrangements for price-quality regulation in the first regulatory period

856. In response to our proposed approach paper, Chorus raised the potential need for transitional arrangements to be used for PQR in the first regulatory period (1 January 2022 – 31 December 2024). Chorus argued that the main driver for these transitional arrangements was the time-pressure to develop a proposal on PQR for the Commission to assess as part of the price-quality determination process.
857. The examples of potential arrangements that Chorus provided included:⁴³⁸
- less granular or prescriptive information requirements for the price-quality path;
 - less scrutiny being applied to proposed expenditure;
 - other optional mechanisms to be used, for example, resetting forecasting annually;
 - make any independent verification requirements voluntary for the first regulatory period; and
 - deferring the implementation of some elements of the regime (such as consultation requirements for proposals and additional incentive mechanisms) to RP2.
858. Cross-submissions included some additional views from stakeholders on this matter, including Vocus' view that any transitional arrangements should not be agreed through some sort of a bilateral arrangement between the Chorus and the Commission; and instead should be consulted on through public processes.⁴³⁹

[requirements-water-metropolitan-water-sydney-water-corporation-pricing-investigation-commencing-from-1-july-2016/consultant_report_-_cepa_-_advice_on_efficiency_carryover_mechanisms_-_february_2016.pdf](#)

⁴³⁸ Chorus "Submission on new regulatory framework for fibre" (21 December 2018), paragraphs 75 & 241

⁴³⁹ Vocus "Cross-submission on new regulatory framework for fibre" (1 February 2019), paragraph 13

859. Our emerging view is that there may be value in considering the use of some transitional arrangements for the first regulatory period. We propose to only use transitional arrangements where the benefits of doing so outweigh the risk of delaying implementation of the regime. An example of such a benefit would be that inclusion of the arrangements would better promote certainty of our approach for the first regulatory period.
860. We think transitional arrangements will be most beneficial where Chorus will need significant lead time to adhere to new requirements we set, such as those involving expenditure forecasting and network quality improvement proposals. In practice, we may include different requirements on Chorus during the first regulatory period versus the future enduring requirements. One example is set out below, as well as another set out in the Chapter 6, paragraphs 686 – 689.
861. **Example of a first period transitional approach for regulated supplier’s PQR proposal** - The supplier proposals we receive relating to setting the initial price-path could have less requirements for industry and consumer consultation compared to the future enduring solution. Any transitional arrangements we set for lowering the requirements will need to be considered alongside the other processes we have for setting the first price-quality path. For example, if the supplier’s proposal is independently verified, we could tailor the scope of the verification report on the consultation processes undertaken in developing the proposal. We expect these processes to be set out between our capex and regulatory processes and rules IMs.
862. We note transitional arrangements for the first period is a topic that will span both our input methodology determinations, as well as the process we will undertake to set the price-quality path for the first regulatory period.

Questions for stakeholders

Q57	What are your views on not pursuing a total expenditure (totex) forecasting approach for the fibre regime at this stage?
Q58	What are your views on the options for additional expenditure efficiency incentives we have set out?
Q59	What are your views on our proposed approach for setting transitional arrangements for PQR in the first regulatory period?

Chapter 8: Treatment of taxation

863. This chapter sets out the following areas:
- 863.1 our emerging views in respect of the tax methodology that should be applied through ID and PQR; and
 - 863.2 our preliminary views with regards to the approach to setting initial tax asset values and other considerations relating to the tax impact of determining initial losses.

Summary of views

864. We prefer to use a tax cost approach that provides us with the ability to track changes in tax costs over time and to reflect the true effect of tax transactions on the regulated supplier.
865. All other things being equal, it is desirable for the tax costs disclosed by a supplier in each disclosure period to be more (rather than less) reflective of the tax obligations matching the costs and revenues attributable to that period. It is also desirable for the tax cost to reflect the cash tax costs imposed by the Inland Revenue Department (**IRD**) for period. We therefore prefer the tax payable approach for ID purposes.
866. This methodology is also preferable given its relative simplicity (when compared to the modified deferred tax approach used in Part 4), its ease of understanding, and its greater transparency under ID.
867. We prefer that returns are disclosed on a post-tax WACC basis as this is likely to be the approach most familiar to interested persons. Our preliminary view is that prices for Chorus should also be set using this approach, to allow for maximum transparency of performance.
868. We consider it is appropriate that the level of debt attributed to the regulated part of the business should be based on the 'benchmark' level of leverage used in calculating the WACC. This ensures that the treatment is consistent with the post-tax WACC.
869. Our emerging view is that the initial regulatory tax asset value should equal the lesser of:
- 869.1 the value recognised under tax rules for the relevant assets (or share of assets) used to supply the regulated services; and
 - 869.2 the initial RAB value.
870. When establishing the value of initial losses as at implementation date, our preference is that the tax methodology outlined in our final tax IM decision would be applied retrospectively in this calculation.

871. Our emerging view is also that past tax losses should not be carried forward or included in the calculation of the value of loss asset as we expect that by implementation date, tax losses from the fibre rollout will have been used by Chorus and the other LFCs to offset profits in other parts of the business or group.

Context

872. This section discusses the requirements of the legislation and the relevant economic principles that will be considered in our discussion of our preliminary views on the treatment of tax.
873. It also outlines how we have considered this topic in the past and how our preliminary views on the treatment of tax interrelate with other IMs for fibre.

Requirements of the Act

874. Section 176 (1)(a) of the Act sets out the required content of the IM for the treatment of taxation:

The input methodologies relating to fibre fixed line access services must include, to the extent applicable to the type of regulation under consideration,—

- (a) methodologies for evaluating or determining the following matters in respect of the supply of the fibre fixed line access services:
 - (i) cost of capital:
 - (ii) valuation of assets, including depreciation, and treatment of revaluations:
 - (iii) allocation of common costs (for example, between activities, businesses, access seekers, regulated services, or geographic areas):
 - (iv) treatment of taxation; How the fibre Tax IM links to price-quality regulation and information disclosure

875. The treatment of taxation will affect the way regulated fibre providers subject to ID regulation will provide information. This is because it determines the way in which the regulated supplier discloses information about their tax costs and thus affects their disclosed profitability. For Chorus, who will also be subject to PQR, the treatment of taxation will affect the size of the regulatory allowance for tax costs included in the price-quality path, and thus the overall return and/or timing of the revenues it is likely to realise.

Relevant economic principles

876. In keeping with the regulatory framework principles, the approach to tax should be consistent with a firm expecting to earn normal returns over the lifetime of their assets. A regulated supplier should expect to be able to recover the tax costs that are attributable to the supply of the regulated service over this period. This ensures that suppliers continue to have incentives to invest. It is, however, important to constrain

the over recovery of tax costs, in order to be consistent with limiting suppliers in their ability to extract excessive profits.⁴⁴⁰

877. One of the key economic principles to consider when discussing the treatment of tax will be the concept of FCM as some tax approaches may not be net present value (NPV) neutral.

Previous regulatory experience

878. We have previously considered the development of an IM for the treatment of taxation as part of the regulation of energy and airport sectors under Part 4.⁴⁴¹ We also considered the treatment of tax in the telecommunication industry as part of our determination of the FPP for the setting of prices for Chorus's UCLL and UBA services.⁴⁴²

How this decision fits into the wider context of setting IMs for fibre

879. When setting the tax IM, we must consider the overlap this has with other IMs, particularly:

879.1 cost of capital; and

879.2 asset valuation (including the treatment of initial losses).

880. Our analysis includes consideration of the impact of potential decisions relating to cost of capital and asset valuation on our proposed tax methodology. We also consider the treatment of taxation in the determination of initial losses.

Our emerging view: Taxation methodology

881. We prefer to use a tax cost approach that provides us with the ability to track changes in tax costs over time and to reflect the true effect of tax transactions.
882. All other things being equal, it is desirable for the tax costs disclosed by a supplier in each disclosure period to be more (rather than less) reflective of the tax obligations matching the costs and revenues attributable to that period, and for the tax cost to reflect the cash tax costs imposed by the IRD for period. We therefore prefer the tax payable approach for ID purposes.
883. This methodology is also preferable given its relative simplicity, its ease of understanding, and its greater transparency under ID.
884. We prefer that returns are disclosed on a post-tax WACC basis as this is likely to be the approach most familiar to interested persons. Our preliminary view is that prices

⁴⁴⁰ Telecommunications Act 2001, s 162(d).

⁴⁴¹ For example, Commerce Commission "Input Methodologies (Electricity Distribution Businesses): Reasons Paper" (22 December 2010), Chapter 5.

⁴⁴² Commerce Commission "[2015] NZCC 38 Final pricing review determination for Chorus' unbundled bitstream access service" (15 December 2015), Attachment L

for Chorus should also be set using this approach, to allow for maximum transparency of performance.

885. We consider it is appropriate that the level of debt attributed to the regulated part of the business should be based on the 'benchmark' level of leverage used in calculating the WACC. This ensures that the treatment is consistent with the post-tax WACC.

Problem definition

886. Tax costs are one of the main types of costs facing all regulated suppliers. They are therefore a key part of any assessment of regulated supplier profitability. Compensation for these costs must also be provided when price-quality paths are set.
887. A tax IM is intended to promote certainty for regulated suppliers, access seekers, and end-users in relation to the way that tax costs are to be treated for ID purposes and for PQR.⁴⁴³
888. At its core, Part 6, is an ID regime which is in effect for all suppliers, with PQR leveraging off ID for a subset of suppliers (ie, Chorus only). To be effective, ID regulation should retain consistency with pricing decisions we make in respect of suppliers subject to PQR, and with pricing decisions by those suppliers who are not. Leveraging off existing GAAP and IRD rules to a large extent means more unusual events can be readily dealt with, as existing rules dealing with those circumstances will already exist.⁴⁴⁴
889. Although we may make some simplifications when setting price-quality paths (eg, using an aggregate RAB to set prices), ID maintains the detailed asset register record, for both regulatory asset and regulatory tax asset purposes. This means that subsequent price resets start off with a more accurate base of information, reflecting the actual outcomes that have happened during the preceding regulatory period.
890. The ability to track changes in tax costs using records already familiar to preparers of regulatory accounts, and which reflect the true effect of tax transactions, enables a 'squaring up' at the end of each regulatory period for price-quality path regulation which can better ensure businesses are properly compensated (but not overcompensated) in the future for their actual tax costs.
891. There are two main approaches to establishing tax costs that we have previously used under Part 4 which could be used to estimate the tax costs facing each regulated supplier under Part 6 of the Act; the tax payable approach and the modified deferred tax approach.

⁴⁴³ Telecommunications Act 2001, s 174.

⁴⁴⁴ We note that within regulated suppliers, the ID regime is typically managed by accountants familiar with GAAP and IRD rules.

892. A third option would be to calculate revenues for price-quality paths on a pre-tax basis such that no tax cost needs to be determined. This approach was used during the FPP and will be discussed separately to the tax cost approaches in this chapter.
893. Determining the tax costs (either the actual tax paid or income tax expense) associated with the supply of a regulated service is not always straight-forward. Chorus has a combined copper, fibre, and other related services business.⁴⁴⁵ This is expected to make the appropriate estimation of tax to be attributed to fibre services problematic. For LFCs, the use of tax paid may be complicated by ownership structures including the inherent tax implications of any changes to ownership.
894. Tax is paid to IRD on a whole of -business basis, and therefore the tax costs associated with the supply of a particular type of regulated service for a supplier like Chorus cannot be determined directly.
895. Whole of business tax costs could be attributed to the supply of regulated services in the same manner as other operating costs (ie, by applying the cost allocation IM to the tax costs associated with the supplier as a whole). However, tax costs arise because of many other operational and capital decisions made by regulated suppliers which may have varying tax effects. Applying a tax cost allocation methodology would therefore be likely to result in an allocation of tax costs that is inconsistent with the other costs allocated to the regulated services.
896. Tax costs associated with the supply of a particular type of regulated service must consequently be calculated by applying the corporate tax rate to regulatory taxable income. Regulatory taxable income is the total regulatory income less expenses associated with the supply of a particular type of regulated service. These expenses are allocated to each regulated service by applying the cost allocation IM but adjusting for any revenue or expenses not recognised as assessable or deductible under tax legislation (eg, revaluation gains or losses) and for timing differences (where expenditure or income is recognised under tax rules in a different period than under regulatory rules).

Tax cost approaches

897. Suppliers providing services in workably competitive markets will generally expect their revenues to cover the tax costs that arise because of their business decisions.
898. However, the exact time at which suppliers recover tax costs in workably competitive markets will vary according to supply and demand conditions prevailing at the time (or as determined by longer-term pricing arrangements), and which phase of the investment lifecycle the business is in (eg, the start-up loss making phase). Many permutations for cost recovery are therefore potentially valid, given the particular context, provided suppliers have the opportunity to earn an adequate level of profitability over time (ie, after having met their tax obligations to the relevant tax authority).

⁴⁴⁵ Other related services include backhaul and co-location.

899. In setting initial tax asset values at the outset of the regime, we need to be careful to avoid the creation of any windfall gains or losses for suppliers. This is because the tax asset values at implementation date will diverge from the regulatory asset values due to differences in the depreciation that has been applied. This is particularly significant for short lived assets (eg, layer2) which will be subject to higher diminishing value rates under tax rules.
900. Finally, the treatment of taxation can affect incentives to acquire assets. The tax treatment of transactions going forward should recognise that, in workably competitive markets, the efficiency gains from those transactions, assuming such gains eventuate, will be shared with consumers over time. Tax benefits from paying too much for assets may outweigh economies of scope and scale. Because of this, tax asset values EDBs have been capped to RAB value under Part 4.

Interdependencies with other IMs when estimating tax costs

901. There is an overlap with WACC as the treatment of interest for tax purposes is dependent on the WACC methodology and parameters that we will specify in the IMs and what type of return we are reporting under ID. For example, if we are using a post-tax WACC to set prices, an adjustment for deductible interest will be required. Discussion of the potential WACC methodologies that may be applied is included at paragraphs 931 to 934.
902. The WACC also includes leverage assumptions that may also be used in any tax calculation as the proxy for interest paid for tax purposes, and the cost of debt as the average deductible interest rate paid (ie, the RAB x leverage x cost of debt). This is discussed in paragraphs 935 to 937.
903. Finally, there is a link between the tax calculation and asset valuation in that our decision about whether to index the RAB will impact the formula used in the tax calculation. If we decide to index the RAB, then we will generally need to make an adjustment for the tax effect of revaluations. The treatment of revaluations for tax purposes is discussed in paragraph 915.1.

Formula for estimating tax costs

904. The generic expression for estimating tax costs under ID, subject to potential adjustments, is:

Total regulatory income

– Depreciation deduction for regulatory tax purposes

– Other deductions and adjustments for regulatory tax purposes (eg, deductible operating expenditure, interest)

= Regulatory taxable income × Corporate tax rate

= Regulatory tax expense

905. There are two main approaches that could be used to estimate the tax costs facing each regulated supplier. Although the generic formula is very similar in each case, the individual terms differ, particularly the depreciation deduction for tax purposes.

905.1 The 'tax payable' approach relies on regulatory tax depreciation. This form of depreciation is conceptually similar to the allowable deduction for depreciation used in calculating the tax payable to the IRD but rather than using the tax asset value, depreciation is calculated by applying tax rules to the regulatory tax asset value.

905.2 The other approach is a variant of the 'tax expense' approach and relies on regulatory depreciation (ie, depreciation of the RAB consistent with the IM for the valuation of assets). This approach is implemented with a deferred tax balance adjustment to the RAB value before the return on capital is determined (ie, the 'modified deferred tax' approach used in Part 4) where the deferred tax balance reflects the cumulative difference between the annual tax payable and tax expense amounts.

906. There are a number of ways in which these high-level approaches can be implemented in practice.

Difference between tax payable and deferred tax approach

907. The 'tax payable' approach relies on regulatory tax depreciation. The regulatory tax depreciation is underpinned by tax rules, with some modifications.

908. The tax payable approach comes closest to approximating the cash flows a supplier would need to meet its tax obligations to the IRD for any given period. As noted above, this corresponds to the use of regulatory tax depreciation as a deduction for regulatory tax purposes (as opposed to regulatory depreciation). The approach therefore aligns with suppliers' expectation to earn profits similar to what would be expected in a workably competitive market.

909. The deferred tax approach, as specified in NZ IAS 12 for financial reporting purposes, incorporates a tax expense that consists of current tax payable plus a deferred tax

component to reflect the depreciation timing difference. A deferred tax asset or liability is then recorded in the accounting balance sheet. In order to be equivalent in NPV terms to the tax payable approach, the deferred tax approach must be implemented with the deferred tax asset or liability adjustment to the RAB value. This adjustment corrects for the over-or under compensation for tax costs in present value terms that would otherwise arise.

910. Depending on the asset valuation methodologies used, additional adjustments can be applied to smooth the effect of the tax charge calculated using the deferred tax method applied to the opening deferred tax balance (the difference between the regulatory asset value and regulatory tax values at the outset of implementation), and future revaluations of the regulatory asset values. This is achieved by amortising them over the residual lifetime of the relevant assets.
911. While the use of the modified deferred tax approach implies a different distribution of tax costs across time to that of a tax payable approach, it is NPV neutral. The modified deferred tax approach ensures NPV-equivalence with the tax payable approach by:
 - 911.1 determining the asset value used for assessing profitability under ID regulation, or for setting allowable revenues under PQR, as the RAB value plus the deferred tax balance;
 - 911.2 adjusting the RAB value using the cumulative differences between the supplier's estimated 'tax payable' to the IRD in each period and the regulatory tax allowance calculated using the modified tax expense calculation;
 - 911.3 amortising any future revaluations over the residual lifetime of the assets;
 - 911.4 and amortising the difference between the initial RAB and the initial regulatory tax asset value over the residual lifetime of the assets at the date the initial values are set.⁴⁴⁶
912. The modified deferred tax approach has been used for EDBs and gas distribution businesses (**GDBs**) under Part 4 of the Commerce Act. The net effect on a supplier's cash flow of the modified deferred tax approach could be positive or negative relative to the tax payable approach. This is because the difference between regulatory depreciation (excluding depreciation on revaluations) and regulatory tax depreciation will depend on the average age of assets in the RAB.

⁴⁴⁶ The regulatory asset value and the tax asset value may diverge if the asset has been revalued, or if the regulatory asset value has been roll-forward using a depreciation methodology that varies from the IRD's specified depreciation method. The amortisation of the difference between the initial RAB value and the initial regulatory tax asset value is taken to regulatory profit/(loss), with a record being kept of the unamortised differences. The modified deferred tax approach has been argued to have some desirable dynamic efficiency properties in respect of cashflows associated with new investment, which is relevant to s 162, and the initial adjustment without amortisation could potentially result in price shocks for consumers when the approach is first introduced.

913. Regulated suppliers with an older asset base may be comparatively less well off, in cash flow terms, under the modified deferred tax approach than under the tax payable approach. The two approaches are nevertheless equivalent in NPV terms to suppliers.
914. We note that a deferred tax approach is the mandatory approach under GAAP for most medium to large enterprises in NZ. Therefore, this approach will be familiar to firms (and auditors) and those who analyse and compare financial statements between entities. However, as indicated above at paragraph 911, the deferred tax approach required for regulatory purposes to achieve NPV neutrality with tax payable must be implemented with an adjustment to the RAB for the value of the deferred tax balance.

Regulatory depreciation vs tax depreciation

915. As noted above, one difference between the two tax methodologies is the use of regulatory depreciation or tax depreciation. The key features of these two types of depreciation are outlined below.
- 915.1 Regulatory depreciation is the building block that provides a business with a return of the efficient level of capital used to supply regulated services to the business.
- 915.2 Tax depreciation is calculated on the value of the tax asset using tax rules. In calculating taxable income, the business is allowed a deduction for tax depreciation.
916. Under New Zealand tax law, the level of tax depreciation for an asset is unlikely be the same as the level of regulatory depreciation for that asset in a particular year. The most obvious reason for the disparity is the difference between the methods of depreciation that are used. The IRD allows both straight-line and diminishing value depreciation, but for cashflow reasons diminishing value is commonly adopted by businesses.
917. Differences in the depreciation charges produced by the two methods of depreciation occur in each year until the asset reaches the end of its useful life or is written off.
918. Similarly, the depreciation rates will be affected by the assumptions used to determine an asset's useful economic life. The prescribed lives of standard assets may be different under tax rules than under regulatory requirements.
919. Differences in regulatory and tax depreciation rates that are attributable to the type of depreciation used and the asset lifetime assumptions do not, however, cause a difference in the total amount of depreciation that is realised in nominal terms over the lifetime of an asset. If the opening value of the tax asset is the same as the RAB value, then the difference is simply a matter of timing.

920. There are factors that can cause a difference in the total value of depreciation when one approach is compared to the other in nominal terms.

920.1 *Revaluations.* Tax rules do not allow for asset revaluations, whereas revaluations of the RAB may occur through indexation. The consequence of this is typically that the amount of capital returned to businesses through regulatory depreciation in the presence of revaluations over the lifetime of the asset will exceed the cumulative value of tax depreciation deductions recognised by the IRD during that time.

920.2 *Acquisitions through asset purchases.* Tax rules require that the tax book value of an asset to be reset to the acquisition price when sale and purchase transactions occur. In contrast, regulatory rules maintain the existing regulatory tax value of an asset in the RAB when it changes ownership. This is because using the new purchase price to determine the value of the RAB, and thus the future return on and of capital, would not be consistent with the asset producing normal returns over its lifetime.

Conclusion

921. At this time, we prefer the tax payable approach to determining tax costs because it most closely replicates a supplier's tax obligations to the IRD in each year and is relatively simple compared to other tax cost methods. However, we recognise that the deferred tax methodology would be an acceptable approach to the determination of tax costs under Part 6 of the Act.

922. We also recognise that the tax payable approach also makes it less likely that the terms of PQR would need to be reopened in the event of assets being traded with tax depreciation clawback consequences.⁴⁴⁷

Pre-tax approach to setting price-paths

923. In implementing a building blocks approach, a key choice for regulators is whether to apply a pre-tax WACC or a post-tax WACC approach. This choice defines whether the provision for tax is:

923.1 implicitly included in the pre-tax cost of capital (ie, a pre-tax WACC is used, in which case the differences between financial and tax accounts are ignored entirely), meaning that no distinct building block for tax is necessary,⁴⁴⁸ or

⁴⁴⁷ If the sale of assets is at a price that is higher than the current tax book value of the seller, then IRD tax rules assume the seller has effectively over-claimed on its past tax depreciation deductions. The IRD recognises the income that arises from the sale of an asset above its tax book value up to the level of the depreciation already claimed as 'depreciation recovery income', and this income is taxable at the standard corporate tax rate (this is known as tax depreciation clawback). This may cause firms to face substantial tax costs in a single period.

⁴⁴⁸ Under this methodology, the post-tax cost of equity is multiplied by a generic tax "wedge" to derive a pre-tax cost of equity.

- 923.2 excluded from the cost of capital, in which case a post-tax WACC is used, and a regulatory tax allowance is explicitly provided for as one of the building blocks that makes up the regulated revenue.⁴⁴⁹
924. When using a pre-tax approach, a post-tax WACC value must be transformed to a pre-tax basis. This can be challenging because simple analytical transformations (eg, only taking into account the corporate tax rate) often materially over-estimate the resultant pre-tax WACC.
925. The use of a pre-tax approach implies an expectation of effective tax rate can be calculated for each of the suppliers to which it has been applied. The effective tax rate differs from the corporate tax rate due to the use of diminishing value depreciation, timing differences, application of tax losses and other tax adjustments. Effective tax rates for suppliers can vary over time and can also vary across suppliers depending on whether entities are in tax loss positions.
926. During the FPP, we used a pre-tax revenue approach to setting prices using the total service long run incremental cost (**TSLRIC**) based pricing model.⁴⁵⁰ This was because, internationally, TSLRIC models for UBA and UCLL still typically used a pre-tax approach when deriving the tilted annuity capital charge (comprising a return on and return of the hypothetical efficient operator's asset value).⁴⁵¹
927. The TSLRIC concept is a methodology that bases prices on the economic costs that would be incurred in providing the service. Economic costs are generally considered to be the forward-looking costs that are incremental to the service in question and efficiently incurred over the long run.⁴⁵²
928. It was appropriate to use a pre-tax revenue approach for the FPP, as we were using a TSLRIC approach to set price and the methodology was only being applied on the basis of a hypothetical efficient operator for a single regulatory period. However, under the new regulatory framework for fibre, our tax methodology will need to be appropriate for all regulated fibre providers under both PQR and ID regimes over time.
929. At this time, we consider that the use of a pre-tax revenue approach is not our preferred approach to the tax IM for fibre for the following reasons:

⁴⁴⁹ Note we set both a vanilla and a post-tax WACC, the former of which is used for price path setting purposes under Part 4.

⁴⁵⁰ When using a pre-tax revenue approach, the annuity is adjusted for the tax depreciation timing difference. This approach assumes there are no other differences between the statutory tax rate and the supplier's effective tax rate.

⁴⁵¹ Commerce Commission "[2015] NZCC 38 Final pricing review determination for Chorus' unbundled bitstream access service" (15 December 2015), Attachment L

⁴⁵² Baumol, Ordovery and Willig (1996, page 3) state that "economic costs are long-run costs that reflect forward looking efficient investment, including a return on capital consistent with competitive capital markets". Affidavit of William J. Baumol, Janusz A. Ordovery, and Robert D. Willig (1996), Attachment to Comments filed by AT&T on May 14, 1996 in FCC Docket 96-98.

- 929.1 we are setting prices for Chorus using a building block methodology rather than TSLRIC;
 - 929.2 using an approach that sets an explicit tax cost is more transparent under ID, as interested persons will be able to make comparisons for post-tax returns between Chorus and LFCs and notional tax costs will be transparently disclosed;⁴⁵³ and
 - 929.3 the previously noted challenges of appropriately transforming a post-tax approach to a pre-tax approach especially where the WACC or annuity may be applied to a number of suppliers.⁴⁵⁴
930. We also note that any departure from a recognised accounting method for setting prices, like the pre-tax revenue approach, would entail establishing a method for appropriately disclosing the outcomes of such an approach under ID. This means that any analytical simplifications may require additional bespoke ID rules to deal with unusual or one-off events that have significant tax impacts.

Vanilla versus post-tax WACC

931. The IRD calculates a firm's tax liability after deducting debt interest expenditure from gross revenue (ie, there is an 'interest tax shield' resulting from debt financing). This should therefore be recognised irrespective of the tax approach that is used.
932. When tax is provided in a separate building block for revenue setting purposes then there are two options available.
- 932.1 Option 1 is to estimate the tax costs facing business as if it had no debt (ie, assessing an unleveraged tax liability). In this case, the cost of capital would need to be calculated in such a way that recognises that the business realises tax benefits through leverage that are not reflected in the estimate of the firm's tax costs. An adjustment of this nature results in a 'post-tax' WACC. A cost of capital such as this is comparable to the measures commonly used by financial analysts when assessing the profitability of a business.
 - 932.2 Option 2 is to estimate the tax costs facing the firm in a way that recognises that they realise tax benefits through leverage (ie, by estimating the 'levered tax liability'). Under this approach, an assessment of the firm's cost of capital would be free of any tax adjustments. The resultant WACC is consequently known in New Zealand as a 'vanilla WACC'. This ensures that the tax estimate more accurately reflects the business's tax liabilities to the IRD. It therefore arguably represents a more transparent approach for regulatory purposes.

⁴⁵³ ID should provide interested persons the opportunity to better understand an LFCs profitability and whether Chorus/LFCs are limited in the ability to extract excessive profits consistent with s 162(d) of the Telecommunications Act.

⁴⁵⁴ Note that while the WACC will not be applied by LFCs to set prices, it will likely be used as a benchmark to assess whether LFCs have been limited in their ability to earn excessive profits.

933. Our preliminary view is that, for ID purposes, suppliers should disclose returns on the basis of a post-tax WACC. This is because interested persons in New Zealand are likely to be more familiar with a post-tax WACC than a vanilla WACC.
934. When setting prices, either WACC approach can be adopted.⁴⁵⁵ However it is simple to reconcile the two approaches when using notional debt costs. Therefore, we prefer to use the post-tax WACC to set prices for PQR to provide consistency with the way tax is treated under ID. This allows for more transparent comparisons between forecast and actual returns.

Using notional interest costs when determining regulatory net income

935. Given that the allocation of debt costs is not covered by the cost allocation IM, a decision is required on the way in which, and thus how much, debt interest should be allocated to a particular type of regulated service when making an assessment of regulatory net income. This is because debt is typically issued on a consolidated (ie, whole group) basis.
936. A simple way to address this problem is to use a proxy deduction for interest, found by multiplying the interest rate on debt capital by a 'benchmark' leverage ratio and by the value of the RAB.
937. Our preliminary view is that the level of debt attributed to the regulated part of the business should be based on the 'benchmark' level of leverage used in calculating the WACC. This ensures that the treatment is consistent with two main ways in which the WACC can potentially be calculated (ie, 'vanilla' WACC, and 'post-tax' WACC).

Implications for price-quality regulation and information disclosure requirements

938. Under PQR, we would apply the post-tax WACC when setting prices for Chorus. As part of a price reset for Chorus, we will also need to estimate the suppliers tax costs for the pricing period. This will require information on regulated tax assets.
939. Under ID regulation, the IM for the treatment of taxation only applies to the way in which profitability is reported by suppliers. Interested persons require this information to assess whether the Part 6 purpose is being met.⁴⁵⁶

Considerations with regards to revenue smoothing

940. The tax payable approach seeks, to the extent practicable, to model the annual tax liabilities to the IRD that are associated with the provision of regulated services. In doing so, when calculating the profit measure used to estimate tax, it substitutes the calculation of regulatory depreciation and with an estimate of tax depreciation.

⁴⁵⁵ We use a vanilla WACC to set prices for EDBs, GPBs and Transpower. Under ID EDBs, GPBs and Transpower are required to disclose returns using both the vanilla and post-tax WACC.

⁴⁵⁶ Telecommunications Act 2001, s 186.

941. While we are recommending the use of straight-line depreciation to roll forward the RAB, it is still possible that our regulatory depreciation allowance will be based on a non-standard economic depreciation that reflects decisions to apply revenue smoothing (eg, when setting the Chorus price-path).
942. We consider that the tax payable approach can appropriately reflect the tax cost of the supplier even where non-standard regulatory depreciation approaches are used.

Questions for stakeholders

- Q60 Is presenting tax as a building block in its own right is the most transparent approach to presenting tax costs? Please provide the reasons for your view.
- Q61 What are your views on adopting the tax payable approach?
- Q62 What are your views on estimating debt costs using an assumed level of leverage?
- Q63 Should prices be set for Chorus using a post-tax WACC? Please provide the reasons for your view.
- Q64 Should the returns under ID be disclosed using a post-tax WACC? Please provide the reasons for your view.

Our emerging view: Setting of the initial regulatory tax asset values

943. Our preliminary view is that the initial regulatory tax asset value should equal the lesser of the value recognised under tax rules for the relevant assets (or share of assets used to supply the regulated services), and the initial RAB value.
944. When establishing the value of initial losses as at implementation date, our preference is that the tax methodology outlined in our final tax IM decision would be applied retrospectively in this calculation.
945. Our preliminary view is also that past tax losses should not be carried forward or included in the loss asset calculation. We expect that that by implementation date, tax losses from the fibre rollout will have been used by Chorus and the other LFCs to offset profits in other parts of the business or the LFCs' own tax profits.

Setting the value for initial regulatory tax asset values

946. The establishment of the initial regulatory tax asset value is comparable to the establishment of the initial RAB value. Both decisions have an effect on the profits that will be earned in future on investments made in the past. As indicated in paragraph 899, we must be careful to avoid the creation of windfall gains or losses when setting the initial tax asset values.
947. Changes in initial regulatory tax asset values have similar effects to changes in regulatory asset values. In the case of the regulatory tax asset value, however, lower values are more beneficial to suppliers. This is because a lower value implies that deductions for tax depreciation will be lower in future and would therefore result in a higher estimate of a supplier's tax allowance under PQR and tax costs under ID.

948. The size of the effect of a change in the tax asset value (on prices) is smaller than the effect caused by a change in RAB values. The reason for this is that the effect of a change in regulatory tax asset values on regulatory allowances and costs is determined by the corporate tax rate. A one dollar decrease in the regulatory tax asset value will lower tax depreciation deductions by one dollar in future, meaning that the supplier will be assessed as paying tax of 28c at the current corporate tax rate on one more dollar of revenue.
949. A potential starting point for establishing the initial regulatory tax asset value is to use the equivalent actual tax book value for the same assets as recognised under tax rules. This avoids the creation of initial windfall gains or losses at the start of the regime.
950. However, we consider it reasonable to adjust regulatory tax asset values downward where the initial RAB value is lower than the equivalent actual tax book value for the same assets recognised under tax rules. This treatment ensures that there is not an obvious difference between the way regulatory tax asset values are established initially with the way that they will be treated during future transactions. Eliminating obvious differences also means that we do not have to look at any past transactions in detail.

Setting the value for initial losses

951. The Act requires us to consider the value of initial losses by Chorus and LFCs for the period of the UFB roll out up to implementation date.⁴⁵⁷ These initial losses are expected to be determined by applying a building blocks approach for the years reflecting the UFB roll out period up to the implementation date.⁴⁵⁸
952. In respect of the calculation of the value of initial losses that have been experienced by Chorus and the other LFCs, we would expect that any tax methodology outlined in our final IM decision would be applied retrospectively to determine the value of initial losses as at implementation date. That is, whatever tax methodology is to be applied to supplier cash flows ex-ante would also be applied to the determination of losses up to the start of the regime.

Consideration of tax losses

953. A tax loss arises when a company's taxable net profit falls below zero in a particular year. Should the tax payable for the current year be less than zero, under IRD rules this tax loss will generally be carried forward to the following year to offset that year's tax liability (or to accumulate with next year's tax loss). Hence, the current year's actual tax payable amount will be zero.
954. We expect that there would be an overall tax loss (ie, overall negative sum of tax allowances) for the 11 years of the UFB roll out period to date. This is because regulatory losses may have been made for all years (ie, regulated costs exceeded

⁴⁵⁷ Telecommunications Act 2001, s 177

⁴⁵⁸ See the Chapter 3 paragraph 208

regulated revenues). Even if a regulatory profit existed for some years then the corresponding tax profits may have been offset by the tax from other years in that period.

955. The treatment of tax losses can be managed effectively by either the tax payable or deferred tax approaches.
956. Where the regulated supplier cannot utilise any tax losses in the current year of the regulatory period then the regulated supplier may carry those tax losses forward. If a deferred tax method were to be implemented, a regulated supplier should not recognise the deferred tax loss asset if it did not expect to utilise the loss.
957. In order to preserve FCM over the life of the assets, the benefit of these losses would need to be carried forward if the business has had no opportunity to utilise these losses over the UFB rollout period up to the implementation date. For the purpose of the treatment of taxation IM, there are two approaches we could take to the utilisation of tax losses prior to the start of the regulatory period.
- 957.1 We could assume that any past tax losses generated on the services have already been used to offset profits in other parts of the company in the year that the tax loss was incurred.⁴⁵⁹ Under such an assumption, the losses on regulate services prior to the control period can be ignored for purposes of calculating the regulatory tax allowance going forward.
- 957.2 Alternatively, we could assume that past tax losses have not been able to be fully utilised to date and these losses should be rolled forward to provide tax relief to the regulated supplier in future periods. This may be particularly appropriate in relation to LFCs, since those businesses are primarily fibre only.⁴⁶⁰
958. There is reason to expect that by implementation date, much of the tax losses from the fibre rollout will have been used by Chorus, and the other LFCs (or the LFCs' parent companies) to offset profits in other parts of the business or group.
- 958.1 Chorus has multiple profit-making business units that any tax losses associated with the UFB roll out could have been offset against. A review of Chorus 2018 annual report suggests this is the case as the group pays income tax.⁴⁶¹
- 958.2 The LFCs' current ownership structures provide a number of ways that these losses could benefit the wider group, particularly for Enable and Ultrafast.

⁴⁵⁹ Such an assumption would be consistent with the way tax losses are expected to be treated during the regulatory period and with our approach to tax losses under Part 4.

⁴⁶⁰ If we were to determine there were taxes to be carried forward for Chorus or the LFCs, we would also need to consider what would happen to these losses if some services were to be deregulated at a future date. If deregulation were to occur, then it is possible that a portion of the carried forward tax losses would need to be removed.

⁴⁶¹ See <https://company.chorus.co.nz/file-download/download/public/1882>, page 31

Enable has already reported the use of subvention payments to allow related entities to utilise tax losses.⁴⁶² There is also the possible future use of the tax losses before the implementation date as noted in Northpower Fibre's annual report.⁴⁶³

959. On the basis that it is probable that suppliers will have be able to utilise tax losses related to the fibre roll out by the implementation date, our preliminary view is that past tax losses should not be carried forward.

Questions for stakeholders

- | | |
|-----|---|
| Q65 | What are your views on establishing the initial regulatory asset value using the lesser of the assets' actual tax book value established using IRD rules and the RAB? |
| Q66 | Have tax losses from the fibre rollout been utilised by Chorus and the other LFCs to offset profits in other parts of the business or group, meaning that tax losses should not be carried forward or included in the calculation of initial losses? Please provide the reasons for your views. |

⁴⁶² See <https://www.enable.net.nz/assets/Annual-reports/Enable-Annual-Report-2017-compressed.pdf>.

⁴⁶³ See <https://northpower.com/media/documents/NP-Group-Annual-Reports/Northpower-Annual-Report-2018-Web-PDF-2.pdf>.

Attachment A: Glossary of terms

ABAA	Accounting-based allocation approach
ACAM	Avoidable cost allocation methodology
BBM	Building blocks model
Capex	Capital expenditure
CIP	Crown Infrastructure Partners
CPI	Consumer Price Index
DFAS	Direct Fibre Access Services
DPP	Default price-quality path
DSL	Digital subscriber line
EDBs	Electricity distribution businesses
EOI	Equivalence of inputs
EPMU	Equi-proportionate mark-up
FAC	Fully allocated cost
FCM	Financial capital maintenance
FFLAS	Fixed fibre line access services ⁴⁶⁴
FPP	Final pricing principles for UBA and UCLL
FTTP	Fibre to the premises
FWA	Fixed wireless access
GAAP	Generally accepted accounting principles
GDBs	Gas distribution businesses
GEIP	Good electrical industry practice
GPS	Government policy statement
ID	Information disclosure
IMs	Input methodologies
IPP	Individual price-quality path
IRD	Inland revenue department
IRIS	Incremental rolling incentives scheme
IV	Independent verifier
LFCs	Local fibre companies ⁴⁶⁵
NIPA	Network Infrastructure Project Agreements
MAR	Maximum allowable revenue
MCP	Major capex project
MRP	Market risk premium
NPV	Net present value
Opex	Operating expenditure
OVABAA	Optional variance accounting-based allocation approach
Part 4	Part 4 of the Commerce Act
Part 6	Part 6 of the Telecommunications Act 2001
PQR	Price-quality regulation
Proposed approach paper	New regulatory framework for fibre - Invitation to comment on our proposed approach (9 November 2018)

⁴⁶⁴ FFLAS means regulated FFLAS unless otherwise stated or otherwise appears from the context.

⁴⁶⁵ When referring to LFCs we mean Enable Networks Limited, Northpower Fibre Limited, Northpower LFC2 Limited and UltraFast Fibre Limited. We note that Chorus is also considered an LFC. However, if referring to all of the regulated fibre service providers including Chorus we will use the term suppliers or Chorus and the other LFCs.

RAB	Regulated asset base
RSPs	Retail service providers, eg Spark, Vodafone
RSQ	Retail service quality
Section 166(2)	Sections 166(2)(a) and 166(2)(b) ⁴⁶⁶
S&P	Standard and Poor's
Suppliers	Regulated fibre service providers
TAMRP	Tax-adjusted market risk premium
TCSD	Term credit spread differential
The Act	Telecommunications Act 2001
Totex	Total expenditure
TSLRIC	Total service long run incremental cost
UBA	Unbundled bitstream access
UCLL	Unbundled copper local loop
UFB	Ultra-fast broadband
WACC	Weighted average cost of capital
WSA	Wholesale service agreements

⁴⁶⁶ All references to the purposes of s 166(2) in this paper include the purposes in both s 166(2)(a) and s 166(2)(b)

Attachment B: Regulatory areas which may derive a different approach than applied with GAAP

Area	Example and potential reason for departure from GAAP
Capital contributions	If the capital contribution does not reduce the cost of the asset under GAAP, the asset in question enters the RAB value at cost (measured in accordance with GAAP), reduced by the amount of the capital contribution received.
Purchase of assets from other regulated suppliers	Where a regulated supplier buys an asset from another regulated supplier or where a regulated supplier buys an asset from a related party, the buyer must add the asset to its RAB value at the asset's equivalent value in the RAB value of the seller. The asset base from which a return can be earned should not be affected by the sale price.
Capitalisation of financing for works under construction	Setting limits on the financing rate that can be applied. This removes any potential incentive for a regulated supplier, when applying GAAP, to finance new works irrespective of whether the funds are priced on the most competitive terms.
Income earned during construction	Income earned in relation to assets while they are works under construction must be deducted from the cost of the asset (where such a reduction is not already made under GAAP, and where the revenue has not otherwise been reported as income under ID) for the purpose of establishing its RAB value.
Finance and operating leases	Need to determine whether we align with the latest GAAP treatment of operating leases, allowing them to be included in the RAB.
Easements	For example, the entity may incur holding costs of land on which it establishes an easement prior to sale. The calculation of costs may be limited to a rate no higher than the regulatory weighted average cost of capital (WACC). Easement assets are not depreciated (other than fixed life easements).
Network spares	These only include network spares as additions to the RAB value where they are held in appropriate quantities, considering the historical reliability of the equipment and the number of items installed on the network.
Land	May be valued at historical cost in an entity's accounts as per GAAP. However, NZ GAAP has its own rules for revaluation and we may adopt one of these measures or we may adopt a different measure. For example, the market value alternative use approach is used to revalue land in the case of airports, because the value of land in workably competitive markets will broadly reflect its highest value in an alternative use.

Attachment C: Potential disaggregation categories for the RAB

1. Current disaggregation levels are likely to be:
 - 1.1 Split of assets by layer 1, layer 2, DFAS, Anchor and other (etc). May be required for “cost-based” prices.
 - 1.2 Standard split of assets by general type (eg building, feeder fibre, cabinet, distribution fibre, ONT). This will aid future analysis. For example, under ID it may be informative to consider the levels of investment in different categories of assets by each entity.
 - 1.3 Records to capture appropriate geographic data for each asset (eg for deregulation).
 - 1.4 Customer types (mass market residential and business, P2P) for ID purposes.
2. Further potential disaggregation that may be considered include:
 - 2.1 Identifying assets held as spares, to allow an assessment of whether levels are efficient and fit for purpose.
 - 2.2 Unbundling assets, to inform considerations of cost.
 - 2.3 FFLAS assets that are not UFB assets, to allow a consideration of the level of investment in addition to the that originally specified.
 - 2.4 Assets shared with other parties, for cost allocation.
 - 2.5 Capitalised 'customer retention' costs⁴⁶⁷, to understand the impact of these “costs” on the RAB.
 - 2.6 Specified costs that are of interest (eg system upgrade costs to meet ID requirements).
3. A decision on the further specific disaggregation will be made once further information is available on the elements of the proposed RAB. We will consider how to structure requirements so that compatibility with LFC's existing accounting systems can be achieved whenever practical.

⁴⁶⁷ Chorus has a note within its accounts that under NZ IFRS 15, Chorus capitalises customer retention costs of obtaining a contract, including customer incentives, when they are incremental and, if they are expected to be recovered, it amortises them consistently with the pattern of revenue for the related contract.

Attachment D: Quality standards covered by the NIPA and WSAs

Network requirements (some examples)

- (a) Dark fibres will comply with ITU-TG.652D and optionally with ITU-T G.657A.
- (b) Dark fibres terminated with SC APC or LC APC type connectors.
- (c) For GPON services the ports on the ONU will comprise a minimum of: 4 Ethernet ports, and two voice ports.
- (d) Central office to not serve more than 50 premises passed.
- (e) POI must not support more than 50,000 layer 2 end-users.
- (f) The network must comply with best industry standards, practices and laws.

Service requirements (some examples)

The Wholesale Services Agreements have detailed service descriptions (agreed and released with CIP). Some specific examples of service requirements include:

- (a) Bitstream service external fibre must comply with ITU-T specification G.652D or 657A.
- (b) Bitstream service, internal building fibre cables must meet appropriate fire regulations i.e. be Flame-Retardant, Non-corrosive, Low Smoke, Zero Halogen (FRNC/LSZH).
- (c) Bitstream ONT supports 4 x UNI, 2 x ATA voice ports, optional additional ports including RF overlay port and wifi.
- (d) Splitter performance, 1:32 = $\leq 17\text{db}$; 1:16 = $\leq 14\text{db}$; 1:8 = $\leq 11\text{db}$; 1:4 = $\leq 7.3\text{db}$; and 1:2 = $\leq 4.0\text{db}$.
- (e) ATA voice port RJ11. Analogue interface compliant with PTC 220.
- (f) Co-location: Footprint in the central office will have a minimum size of 600 x 400mm and a minimum height that will accommodate a 2,200mm ETSI rack.

RSP establishment

- (a) Layer 1 RSP: xx days.
- (b) Layer 2 RSP: xx days.

Onboarding

- (a) Signing of WSA: xx days.
- (b) Set up of OSS/BSS: xx days.
- (c) Training: xx days.
- (d) Physical set up: xx days.
- (e) Build required: xx days.
- (f) Establish co-location: xx days.
- (g) Test and commission: xx days.

Fibre access service, new connection transfer, other service transfer, move address, relinquishment

- (a) Acknowledge receipt within xx hours.
- (b) Provide notification of rejection within xx hours.
- (c) Notify start date within xx hours.
- (d) No faults within xx days of completion.
- (e) Service request completed within notified start date.
- (f) Notify change of start date within xx hours.
- (g) Complete automated pre-qualification order within xx hours.
- (h) Complete manual pre-qualification order within xx days.
- (i) Confirm completion of service request within xx hours.

Bitstream new connection, change plan, relinquishment, handover connection

- (a) Acknowledge receipt within xx hours.
- (b) Provide notification of rejection within xx hours.
- (c) Notify start date within xx hours.
- (d) No faults within xx days of completion.
- (e) Service request completed within notified start date.
- (f) Notify change of start date within xx hours.
- (g) Acknowledge new service requests within xx hours.
- (h) Complete manual pre-qualification order within xx days.
- (i) Confirm completion of service request within xx hours.

Co-location

- (a) Co-location request/order acknowledged within xx hours.
- (b) Notification of rejection within xx days.
- (c) Provide quote within xx days.

Fibre provisioning

- (a) Residential individual: xx days.
- (b) Residential aggregate: xx% a month meet the individual service levels.
- (c) Business individual: xx days.
- (d) Business aggregate: xx% a month meet the individual service levels.
- (e) NBAP individual: xx days.
- (f) NBAP aggregate: xx% a month meet the individual service levels.

Layer 2 provisioning

- (a) Residential individual: At the same time as fibre connection or independently within xx days.
- (b) Residential aggregate: xx% a month meet the individual service levels.
- (c) Business individual: At the same time as fibre connection or independently within xx days.
- (d) Business aggregate: xx% a month meet the individual service levels.
- (e) NBAP individual: At the same time as a connection, or independently within xx days of order.
- (f) NBAP Aggregate: xx% a month meet the individual service levels.
- (g) Premises which require a truck roll or not capable of remote activation, xx days.
- (h) POI installation: Median time between order date and completion of installation in POI no greater than xx days for simple orders, and xx days for complex orders.
- (a) Weekly installation report: xx days for simple order; and xx days for complex orders.
- (b) Jeopardy management: Simple orders not completed within xx days and complex orders not completed within xx days.

Multicast provisioning

- (a) Access seeker: xx days/months.
- (b) End-user: xx days.
- (c) Aggregate: xx% a month meet the individual service level.

RF overlay

- (a) Access seeker: xx days.
- (b) End-user: xx days.

Co-location space

- (a) Site audit: xx days.
- (b) Build: Complete build within quoted time.
- (c) Confirmation: Within xx days of completing build.
- (d) New interconnection point: Space, racks, power, tie cable within xx days.
- (e) Existing interconnection point: Space, racks, power, tie cable within xx days.
- (f) Tie cables: Additional tie cables within xx days.
- (g) MOFDF: Service Orders within xx days.

Multi dwelling units

- (a) First: Complete pre-requisite steps, install the fibre connection and common infrastructure within xx days.
- (b) Subsequent: Subsequent orders in the same MDU considered standard orders.

General

- (a) Installations: Carried out in accordance with ordering and booking systems and connection processes.
- (b) Consents: Obtain all consents required for access, rights and installation.
- (c) Integrated Test Facility: Provide an integrated test facility centre for testing service functionality, operation and performance.
- (d) Interoperability: Network interoperates with best industry practice with interconnected networks.
- (e) Customer Installation Experience: A connection satisfaction score of xx% a quarter.

OSS/BSS system

- (a) OSS/BSS system available 24/7. A seamless electronic interface to support the delivery of its services in a nationally consistent manner.

Processes and documentation

- (a) Systems and processes for consistency of service, identify and eliminate problems, continual service improvement and disaster recovery.

Disconnections

- (a) Individual: xx days.
- (b) Aggregate: xx% a month meet the individual service levels.

Bandwidth upgrade of layer 2 service

- (a) Individual: xx days.
- (b) Aggregate: xx% a month meet the individual service levels.

Fibre access service, new connection transfer, other service transfer, move address, relinquishment

- (a) Acknowledge receipt within xx hours.
- (b) Provide notification of rejection within xx hours.
- (c) Notify start date within xx hours.
- (d) No faults within xx days of completion.
- (e) Service request completed within notified start date.
- (f) Notify change of start date within xx hours.
- (g) Complete automated pre-qualification order within xx hours.
- (h) Complete manual pre-qualification order within xx days.
- (i) Confirm completion of service request within xx hours.

Bitstream new connection, change plan, relinquishment, handover connection

- (a) Acknowledge receipt within xx hours.
- (b) Provide notification of rejection within xx hours.
- (c) Notify start date within xx hours.
- (d) No faults within xx days of completion.
- (e) Service request completed within notified start date.
- (f) Notify change of start date within xx hours.
- (g) Acknowledge new service requests within xx hours.
- (h) Complete manual pre-qualification order within xx days.
- (i) Confirm completion of service request within xx hours.

Layer 1 and 2 faults

- (a) Fibre faults reported before/after xx am/pm are restored by xx am/pm.
- (b) Acknowledge fault report within xx minutes/hours.
- (c) Give notice of fault rectification time within xx minutes/hours.
- (d) Repair fault within service level.
- (e) Notify fault rectification within xx minutes/hours of it being resolved.

Bitstream

- (a) Consumer services restored by the end of the day following the day on which the fault is reported.
- (b) Enterprise service faults reported before/after xx am/pm are restored by xx am/pm.

B2B portal

- (a) 99.5% availability.
- (b) P1 Faults - xx min/hour response, xx hour restoration.
- (c) P2 Faults - xx min/hour response, xx days restoration.

Enhanced service level (at a cost)

Technician on site within xx hours of a fault being logged.

Co-location

- (a) Fault report receipt acknowledged within xx minutes.
- (b) Notification of expected restoration time within xx hours.
- (c) Resolve fault within notified restoration time.

Planned and unplanned outages

- (a) Planned outage notified xx days in advance.
- (b) Unplanned outage notified within xx minutes/hours.

Layer 1 service availability

- (a) Average downtime: \leq xx hours.
- (b) Maximum downtime: \leq xx hours.
- (c) Enhanced: Enhanced service level available at additional cost.

Layer 2 service availability

- (a) Average downtime: \leq xx hours per end-user per fault.
- (b) Maximum Downtime: \leq xx hours.
- (c) Enhanced: Enhanced service level available at additional cost.

Co-location

- (a) BAU escort within xx days of request.

Layer 2 traffic

End-user traffic for P2P UFB1 bitstream service

CIR: Frame delay must be: $\leq xx$ mS / Frame delay variation must be: $\leq xx$ mS / Frame loss must be: $\leq xx\%$.

EIR: Frame delay must be: xx / Frame delay variation must be: xx / Frame loss must be: $\leq xx\%$.

End-user traffic for P2P UFB2 bitstream service

CIP primary: Frame delay must be: $\leq xx$ mS / Frame delay variation must be: $\leq xx$ mS / Frame loss must be: $\leq xx\%$.

CIP secondary: Frame delay must be: $\leq xx$ mS / Frame delay variation must be: $\leq xx$ mS / Frame loss must be: $\leq xx\%$.

EIR: Frame delay must be: xx / Frame delay variation must be: xx / Frame loss must be: $\leq xx\%$.

End-user traffic for GPON UFB1 bitstream services

CIR: Frame delay must be: $\leq xx$ mS / Frame delay variation must be: $\leq xx$ mS / Frame loss must be: $\leq xx\%$.

EIR: Frame delay must be: xx / Frame delay variation must be: xx / Frame loss must be: $\leq xx\%$.

End-user traffic for GPON UFB2 bitstream services

CIR primary: Frame delay must be: $\leq xx$ mS / Frame delay variation must be: $\leq xx$ mS / Frame loss must be: $\leq xx\%$.

CIP secondary: Frame delay must be: $\leq xx$ mS / Frame delay variation must be: $\leq xx$ mS / Frame loss must be: $\leq xx\%$.

EIR: Frame delay must be: xx / Frame delay variation must be: xx / Frame loss must be: $\leq xx\%$.

Performance reporting and escalation

- (a) Regular reporting each month, reporting on performance against service levels, including cause of faults including procedure taken to correct faults.
- (b) A reporting and escalation procedure for RSPs in relation to fault rectification.

General

- (a) Provide safe access to premises.
- (b) Safe and secure operating environment and equipment.
- (c) Protect RSP equipment.
- (d) At RSP premises exercise due care and skill and comply with all policies and procedures.
- (e) Obtain all consents, licences and permissions to provide services.
- (f) Services provided with reasonable care and skill.
- (g) Services meet specifications and service levels.
- (h) Provide all resources including HR, equipment, software, premises, and facilities.
- (i) Personnel and sub-contractors suitably qualified, with skills, expertise and qualifications, operate with due care skill and diligence.
- (j) Accurate and complete records kept in accordance with best industry practice.
- (k) Develop regime for the continuous improvement of services over time.
- (l) The network delivers layer 1 services on an equivalence basis.
- (m) Systems support provision of layer 1 services on equivalence basis.