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Chorus' transitional initial price-quality regulatory asset base as at 1 January 2022 – Final Decision

Reasons paper

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Associated documents

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19 August 2021	-	Amended Notice of Intention (Amending the Notice of Intention dated 29 April 2021 – Proposed Amendments to the Input Methodologies for Fibre – potential August 2021 amendments)
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Commerce Commission

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Contents

List of abbreviations

Abbreviation	Definition
ABAA	Accounting-based allocation approach
BBM	Building blocks model
Capex	Capital expenditure
CBD	Central business district
CIP	Crown Infrastructure Partners Limited
CNO	Customer and Network Operations
CRT	Chorus Regional Transport
CTO	Chief Technology Office
DCF	Discounted cash flow
DFAS	Direct Fibre Access Service
DPS	Decision packet settlement
DSL	Digital subscriber line
ESA	Exchange service areas
FAR	Fixed asset register
FCM	Financial capital maintenance
FFLAS	Fibre fixed line access services
FLA	Financial loss asset
FPP	Final pricing principle
FTE	Full time equivalent
FY	Financial year
GAAP	Generally accepted accounting practices
GIS	Geographic information system
GPON	Gigabit passive optical network
HSNS	High Speed Network Service
IAV	Initial asset value
ICABS	Intra-Candidate Areas Backhaul Service
ID	Information disclosure
IM	Input methodology
ISAM	Intelligent services access manager
LFC	Local fibre company
MBIE	Ministry for Business, Innovation, and Employment
NBV	Net book value
NGA	Next generation access
NPC	Net Personnel Costs
NSS	Nelson-Siegel-Svensson
OFDF	Optical fibre distribution frame

ONT	Optical network terminal
Opex	Operating expenditure
POI	Point of interconnection
PON	Passive optical network
PONFAS	PON fibre access services
PQ	Price-quality
PQP1	First PQ period (1 January 2022 to 31 December 2024)
PQP2	Second PQ period (starting 1 January 2025)
PSTN	Public switched telephone network
PUP	Process Update Paper
RAB	Regulatory asset bases
RBI	Rural Broadband Initiative
RFI	Requests for information
RONZ	Rest of New Zealand
RSP	Retail service providers
SFA	Specified Fibre Areas
TAMRP	Tax-adjusted market risk premium
TSLRIC	Total service long-run incremental cost
UCLL	Unbundled copper local loop
UFB	Ultra-fast broadband
UL	Unrecovered Loss
UNI	Universal Network Interface
VCA	Value of commissioned asset
WACC	Weighted average cost of capital

Executive summary

Purpose of this paper

X1 This paper sets out and explains our decisions that establish the value of Chorus Limited's (**Chorus**) transitional initial price-quality regulatory asset base (**transitional initial PQ RAB**). The transitional initial PQ RAB is a key input required to determine the total revenue that Chorus may recover in its first price-quality revenue path (**PQP1**), which commences on 1 January 2022, the implementation date of the new fibre regulatory regime.

X2 We have determined that Chorus' transitional initial PQ RAB value is $5.425 billion.

X3 As we explain later in this paper, we will determine Chorus' final initial PQ RAB value in 2022 once the necessary information to do so becomes available.

What is the initial PQ RAB?

X4 The collection of fibre assets that Chorus employs in the provision of fibre fixed line access services (**FFLAS**) that are subject to PQ regulation is known as its '**PQ RAB**'.[1]

X5 The PQ RAB is made up of two components:

X5.1 **Core fibre assets**: fibre assets that are employed by Chorus in the provision of PQ FFLAS (whether or not the asset is also employed in the provision of other services); and

X5.2 **The financial loss asset** (**FLA**): Chorus is treated as owning a FLA that captures unrecovered returns that have accumulated in relation to the Ultra-fast broadband (UFB) initiative over the financial loss period (the period starting on 1 December 2011 and ending on 31 December 2021).

X6 The initial PQ RAB is the value of the PQ RAB at the commencement of the new fibre regulatory regime on 1 January 2022. This value, once rolled forward for future years, is used as a key input for the second PQ period (**PQP2**) and subsequent regulatory periods. Determining the value of the initial PQ RAB is a critical foundational step for the new regulatory regime, since it underpins the value of Chorus' PQ RAB in subsequent regulatory periods and its value cannot be reconsidered at a later date.

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[1] Clause 2.2.2(1)(b) of the IMs. "PQ FFLAS" is defined as "means, in respect of a regulated provider, all FFLAS provided by that regulated provider that is subject to price-quality regulation in regulations made under s 226 of the Act. *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 1.1.4(2), definition of "PQ FFLAS".

Why have we determined a transitional initial PQ RAB?

X7 We must determine the value of Chorus' initial PQ RAB as an input into PQP1, before PQP1 commences on 1 January 2022. However, some information we require to determine the initial PQ RAB value is unavailable at this stage. As such, we have had to determine a transitional initial PQ RAB value which serves as the input to the total revenue Chorus can earn in PQP1.

X8 The information that will only be available after 1 January 2022 is as follows:

X8.1 Actual values for financial loss years 2021 and 2022: Information for the 2021 and 2022 financial loss years is currently in the form of forecasts. The update for actual values will be done in 2022.

X8.2 Further assurance information to support the application of the central office space allocator type: This assurance information, once supplied, may necessitate changes to some of the values that will be used to determine the final initial PQ RAB.

X9 When this information becomes available, we will proceed to determine Chorus' final initial PQ RAB value. Any difference in the revenue that Chorus would have otherwise been allowed to recover in PQP1 as a result of a change in the value of the initial PQ RAB between transitional and final will be washed up over PQP2. As noted above, it is the final initial PQ RAB value that underpins the value of Chorus' PQ RAB in PQP2 and subsequent regulatory periods – the transitional initial PQ RAB value serves only as an input for PQP1.

Our determination of the value of the transitional initial PQ RAB

X10 We have determined that the value of the transitional initial PQ RAB (including the FLA) is $5.425 billion. This is $82 million less than the $5.507 billion estimate provided by Chorus. The key results of our decisions are set out in Table X1 below.

Table X1 Our determination of the transitional initial PQ RAB values

Value	Unallocated values ($ millions)				Allocated values ($ millions)			
	Final decision	*Draft decision*	*Chorus' estimate*	*Difference (final vs Chorus' estimate)*	*Final decision*	*Draft decision*	*Chorus' estimate*	*Difference (final vs Chorus' estimate)*
Initial PQ RAB (total)	6,526	6,551	6,566	-40	5,425	5,427	5,507	-82
Core Fibre Assets	5,136	5,104	5,104	32[2]	4,034	3,980	4,045	-12
FLA	n/a	n/a	n/a	n/a	1,391	1,446	1,462	-71
Tax losses[3]	n/a	n/a	n/a	n/a	-955	-1,001	-803	-152

X11 Determining the transitional initial PQ RAB value has required us to follow the same steps (as required by the fibre input methodologies (**IM**)) as we would to determine the final initial PQ RAB value.[4] In summary:

X11.1 We determine the initial RAB value of the core fibre assets in the PQ RAB. This requires us to:

X11.1.1 determine the unallocated initial RAB value of the core fibre assets. This is the value before we apply the cost allocation IM and which therefore reflects the total value of assets either wholly or partly employed in the provision of FFLAS; and

[2] As part of integrating Chorus' initial PQ RAB and our own high-level discounted cashflow (DCF) models and quality assurance processes ahead of the final decision, Analysys Mason identified errors in Chorus' initial PQ RAB model. The $32 million increase in the unallocated Core Fibre Asset value between our final decision and Chorus' estimate from March 2021 is due to the error corrections applied by Analysys Mason. See paragraphs 3.26-3.28.

[3] In the draft decision we reported these numbers as the tax effect of losses. In this final decision we have reported these numbers as the "opening tax losses" for disclosure year 2022, which is consistent with clause 2.3.3(3)(a)(i) of the IMs as amended. The tax effect of losses is equal to "opening tax losses" multiplied by the corporate tax rate of 28%.

[4] When citing applicable IMs in this paper, we have referred to the "*Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021". These references capture the original IMs - *Fibre Input Methodologies Determination 2020* [2020] NZCC 21 (13 October 2020) and the subsequent amendments made as part of *Fibre Input Methodologies (initial value of financial loss asset) Amendment Determination 2020* [2020] NZCC 24 (3 November 2020), *Fibre Input Methodologies (base capex and connection capex baseline allowance determination dates) Amendment Determination 2021* [2021] NZCC 17 (29 September 2021), and *Fibre Input Methodologies Amendment Determination (No.2) 2021* [2021] NZCC 25 (29 November 2021).

X11.1.2 apply the cost allocation IM to the unallocated initial RAB value to arrive at the initial RAB value of the core fibre assets.

X11.2 We determine the initial RAB value of the FLA. The FLA is equal to the financial losses accumulated in providing UFB FFLAS in the financial loss period. At a high-level, the financial losses are the sum of the differences between revenue received, and costs incurred, by Chorus for the provision of UFB FFLAS under the UFB initiative each year.[5], [6]

X11.3 The initial PQ RAB value is the sum of the initial RAB values of the core fibre assets and the FLA.

X12 The key difference for the transitional initial PQ RAB, as compared to the final initial PQ RAB, is that the values for the transitional initial PQ RAB and its constituent components described above are as much as we are able to determine prior to finalising the RAB in 2022.

X13 This paper does not detail our calculation of each of the components at paragraphs X11.1 to X11.3 above, but instead focuses on setting out and explaining our decisions on key inputs in the determination of the transitional initial PQ RAB and its component values. Those key inputs are the subject of chapters 4-6 of this paper, and concern:

X13.1 the direct attribution of post-2011 assets (chapter 4);

X13.2 the allocation of shared operating costs and asset values (chapter 5) (our decisions applying the cost allocation IM will also apply to determination of the forecasts of Chorus' operating expenditure (**opex**) and capital expenditure (**capex**) allowances for PQP1. The calculated figures will however be set out in our final decision paper on Chorus' price-quality path (**PQ paper**);[7] and

X13.3 specific inputs used to calculate the FLA and opening tax losses (chapter 6).

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[5] Telecommunications Act 2001, s 177(2)-(3). The calculation of financial losses also includes an adjustment to account for the depreciated value of UFB assets at the implementation date and the benefit of concessionary Crown financing during the financial loss period.

[6] Unless stated otherwise, all references to statutory provisions in this paper are references to the statutory provisions under the Telecommunications Act 2001.

[7] Commerce Commission "Chorus' price-quality path from 1 January 2022 – Final decision – Reasons paper" (16 December 2021).

X14 When we come to determine Chorus' final initial PQ RAB in 2022, there will be only two matters that we will make decisions on that may result in the final initial PQ RAB (and its components) having a different value to the transitional initial PQ RAB (and its components). These two decisions, which relate to the information that will become available only in 2022 as noted in paragraph X8 above, are:

X14.1 replacing the forecast values for financial loss years 2021 and 2022 with actual values; and

X14.2 our decision on the application of the central office space allocator type.

X15 As such, apart from these two decisions, all decisions that we set out in this paper to determine the transitional initial PQ RAB are final decisions. This is consistent with the commitment in our June 2021 process update paper to 'lock in' as much as possible to keep any differences between the transitional and final initial PQ RAB decisions as narrow as possible.

Direct attribution of post-2011 assets

X16 The cost allocation IM first involves assessing whether assets and operating costs are 'directly attributable' to UFB FFLAS/PQ FFLAS.[8] The IMs define 'directly attributable' as being where an asset is wholly and solely employed, or where an operating cost is wholly and solely incurred, in the provision of a particular service. Direct attribution of assets or operating costs therefore means there is never any sharing of these assets or functions.

X17 Chorus proposed that its expenditure on an asset as a result of participating in the UFB initiative should be fully allocated to UFB FFLAS, even if the asset is not 'directly attributable' to UFB FFLAS in accordance with the IM definition.

X18 In coming to our final decision on direct attribution, we remain of the view that direct attribution of an asset or cost does not depend on whether the asset or cost was built or incurred as a direct result of establishing that service. As noted in paragraph X16 above, the IMs contain a definition of "directly attributable", and we have applied that definition in this paper.

[8] The allocation of costs and asset values to UFB FFLAS is required to determine the FLA value.

X19 Taking into account new evidence that Chorus has provided in response to our draft decision on the initial PQ RAB, we are now satisfied that for assets installed by Chorus since 1 December 2011 under the UFB initiative (**post-2011 assets**) that it claimed are directly attributable, the level of sharing of those assets between UFB FFLAS and services that are not UFB FFLAS (in respect of the FLA), and between PQ FFLAS and services that are not regulated FFLAS (in respect of the core fibre assets), is likely to be immaterial as of the implementation date and for the purposes of rolling forward the initial PQ RAB during PQP1. This represents a change from our draft decision in which we proposed to allow for some sharing of post-2011 duct and manhole assets.

X20 Our final decisions are therefore to treat post-2011 UFB assets installed by Chorus in areas where it was contracted to supply UFB FFLAS, and which Chorus claimed as directly attributable:

X20.1 as being directly attributable to UFB FFLAS for the purposes of determining the initial RAB value of the FLA;

X20.2 as being directly attributable to PQ FFLAS for the purposes of determining the initial RAB value of core fibre assets at the implementation date;

X20.3 as being directly attributable to PQ FFLAS for the purposes of rolling forward the initial PQ RAB during PQP1.

Allocation of shared operating costs and asset values

Overview of cost allocation framework

X21 A significant portion of Chorus' assets and operating costs are not 'directly attributable' to UFB FFLAS or PQ FFLAS, but rather, are shared between UFB FFLAS and services that are not UFB FFLAS (or shared between PQ FFLAS and services that are not regulated FFLAS).

X22 The cost allocation IM requires that shared costs must be allocated between those services using the accounting-based allocation approach (**ABAA**). This ensures that only those costs associated with Chorus' provision of UFB FFLAS (or PQ FFLAS) are included in the FLA and revenue path calculations for the purposes of PQ regulation.

X23 Within ABAA, costs and assets must be allocated using an allocator that is based on: [9]

X23.1 a causal relationship: between the asset value and the circumstance where a factor influences the employment of the asset in provision of UFB FFLAS (in the case where an asset value is being allocated); or between the operating cost and the circumstance in which a cost driver leads to an operating cost being incurred (in the case where operating costs are being allocated);[10] or

X23.2 a proxy asset allocator or a proxy cost allocator: where a causal relationship cannot be established.[11]

X24 Within the definitions of "causal relationship", "proxy asset allocator" and "proxy cost allocator" is the requirement that in each case these allocators (ie, ratios):[12]

X24.1 must be consistently applied within a financial loss year, and between financial loss years; and

X24.2 are "objectively justifiable and demonstrably reasonable".

X25 The IMs provide a list of 'default' allocator types that may be used to allocate operating costs and asset values when determining the FLA. Allocator types are the basis on which allocation of an operating cost or asset value to regulated FFLAS or services that are not regulated FFLAS is carried out. Alternative allocator types may be used for determining the FLA, where certain requirements are met.[13]

X26 Once an allocator type has been identified, an "allocator value" must be derived for that allocator type. An allocator value is the value in units for each cost allocator or asset allocator that is used to calculate the ratio of operating costs or asset values to be allocated to FFLAS/services that are not regulated FFLAS.

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[9] Under the IMs, each cost allocator and asset allocator has an "allocator type" and an "allocator value". The allocator type is the "basis for the attribution or allocation of an operating cost or asset value". The allocator value is the value in units for each allocator. See *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, definition of "allocator type" and "allocator value" in clause 1.1.4(2).

[10] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 1.1.4(2) – definition of causal allocator.

[11] Ibid, clause 1.1.4(2) – definition of proxy allocator.

[12] Ibid, clause 1.1.4(2) – definition of proxy allocator and causal allocator.

[13] Ibid, clause B.1.1.6(1)(c)(x).

X27 To illustrate, if the 'allocator type' for central office costs is 'central office space', and 30 square metres of the floor area of a 120 square metre central office is used for regulated FFLAS, the 'allocator value' is 1/4 (30/120).

Our decisions on the application of the cost allocation IM

X28 Our decisions on the application of the cost allocation IM have involved us assessing:

X28.1 how Chorus has implemented its approach to cost allocation via its models;

X28.2 whether to approve Chorus' proposed 'alternative' allocator types not set out under the default list in the cost allocation IM;

X28.3 whether proxy asset and cost allocators used by Chorus are 'objectively justifiable and demonstrably reasonable'; and

X28.4 whether Chorus' allocation of costs meets the shared cost cap requirements.[14]

X29 Chorus proposed a number of alternative allocator types and, for each of those types, allocator values for each year of the financial loss period and as at the implementation date.

X30 We have determined that Chorus' proposed allocator types and values meet the IM requirements, except for the following modifications we have decided to make:

X30.1 **use of future benefits allocator type:** we have determined the allocator values using the present value of relative revenues over a 5-year time horizon rather than Chorus' proposal to use undiscounted revenues over a 12- year horizon. This is a change from our draft decision and reduces the value of the transitional allocated initial PQ RAB relative to Chorus' estimate by $57.0 million.

[14] That is, whether the total asset values or operating costs allocated to UFB FFLAS (and, post-implementation, PQ FFLAS) exceeded the asset values or operating costs that would be incurred if only UFB (or PQ) FFLAS were to be provided.

X30.2 **use of the totex allocator type**: while we have in general approved the use of a totex allocator, we have not approved its use for the entirety of the Chief Technology Office (**CTO**) Common Costs expense category. Instead, we have determined a set of allocator types (see Table 5.1 on page 108 below) with which common expenditure items will be allocated between UFB FFLAS and services that are not UFB FFLAS. This is a change from our draft decision and reduces the value of the transitional allocated initial PQ RAB relative to Chorus' estimate by $60.2 million.

X30.3 **allocation of pre-2011 ducts:** We consider Chorus' proposed allocator type 'Route Length Ratio' for pre-2011 duct values meets the IM requirements. Based on the evidence we have, however, Chorus has not applied an appropriate usability filter to these ducts, meaning its proposed allocation to UFB FFLAS is not demonstrably reasonable over time. For this reason, we have capped the allocation of pre-2011 duct assets at 30% in 2015, rising linearly to a forecast 51.7% at 31 December 2021. This is to reflect the proportion of ducts that have been available to be used for UFB during the pre-implementation period. This decision reduces the value of the transitional allocated initial PQ RAB relative to Chorus' estimate by $19.4 million.

X30.4 **allocation of central office space**: We consider that Chorus has not provided adequate assurance in relation to its model to support the application of the central office floor space allocator type. We have applied a 50% reduction factor to the allocation Chorus has proposed. This is a change from our draft decision (where our acceptance of Chorus' central office floor space allocator was conditional on Chorus providing adequate model assurance) and reduces the value of the transitional allocated initial PQ RAB relative to Chorus' estimate by $66.8 million. However, we will allow for the allocated amounts from Chorus' model to be applied if adequate assurance is provided prior to finalisation of the initial PQ RAB in 2022.

Specific inputs used to calculate the financial loss asset and 'opening tax losses'

X31 We are required to make decisions on specific technical inputs used to calculate the value of the FLA and 'opening tax losses'. These include the treatment of taxation and the weighted average cost of capital (**WACC**) estimates for the financial loss period.

X32 Through the consultation process Chorus had advised it was unable to comply with aspects of the IMs. The 'alternative methodology with equivalent effect or substantively the same effect' provision (**alternative methodologies**), introduced under the November 2021 IM amendments, provides a mechanism to permit departures from the IMs where certain criteria are met.[15] The alternative methodologies provision applies to the following elements of the FLA inputs:

X32.1 capital contributions that are not matched to individual assets;

X32.2 the use of net book value (**NBV**) adjustments;

X32.3 value of a commissioned asset (**VCA**) not recorded as a separate asset; and

X32.4 the calculation of UFB cost allocation adjustment cash flow.

[15] We have published an IM amendment determination and supporting reasons paper that sets out and explains these changes. *Fibre Input Methodologies Determination (No.2) 2021* [2021] NZCC 25, clause B1.1.14 of Schedule B of Attachment B and Commerce Commission "Fibre Input Methodologies main 2021 amendments: Final decisions – Final reasons paper" (29 November 2021), paragraphs 3.59-3.79.

Chapter 1 Introduction

Purpose of this paper

1.1 This paper sets out and explains our decisions that establish the value of Chorus' transitional initial PQ RAB.

1.2 This paper is structured as follows.

1.2.1 Chapter 1 is an introduction to this paper and provides relevant background to our task to determine the transitional initial PQ RAB and our decisions;

1.2.2 Chapter 2 sets out the regulatory framework we have applied in making these decisions (including explaining the task before us, and the legal requirements in the Act and IMs), and key concepts/terminology involved.

1.2.3 Chapter 3 addresses overarching issues that impact the whole of the transitional initial PQ RAB setting process (such as the role of Chorus' estimate of the initial PQ RAB, and the appropriate starting point for our analysis).

1.2.4 Chapter 4 deals with direct attribution of post-2011 assets.

1.2.5 Chapter 5 sets out and explains our decisions on cost and asset allocation (for the UFB assets commissioned and opex incurred during the financial loss period that are used to calculate the FLA and the core fibre assets that will be employed in the provision of PQ FFLAS at the implementation date).

1.2.6 Chapter 6 deals with our decisions on other inputs necessary to calculate the FLA and opening tax losses.

1.3 We have also included two supporting attachments to this paper.

1.3.1 Attachment A provides detail on the debt premium estimates applied in the vanilla WACC.

1.3.2 Attachment B summarises Chorus' initial PQ RAB model.

Summary of decisions for the transitional initial PQ RAB

1.4 In this paper we set out our determination of the transitional initial PQ RAB value, including transitional values for the following components of the transitional initial PQ RAB:

1.4.1 The initial RAB value of Chorus' core fibre assets, which requires us to:

1.4.1.1 determine the unallocated initial RAB value of the core fibre assets; and

1.4.1.2 apply the cost allocation IM to the unallocated initial RAB value to arrive at the initial RAB value of the core fibre assets.

1.4.2 The initial RAB value of Chorus' FLA, which is equal to the financial losses that Chorus incurred from providing UFB FFLAS in the financial loss period.

1.5 We make decisions on key inputs in the determination of the transitional initial PQ RAB value and its component values. These decisions are the subject of chapters 4-6 of this paper, and concern:

1.5.1 the direct attribution of post-2011 assets (chapter 4);

1.5.2 the allocation of shared operating costs and asset values (chapter 5); and

1.5.3 other inputs to the financial loss asset (chapter 6).

1.6 Our decisions on the application of the cost allocation IM also apply to our determination of:

1.6.1 the forecasts of Chorus' operating expenditure (**opex**) and capital expenditure (**capex**) allowances for PQP1; and

1.6.2 the forecast roll-forward of the initial PQ RAB for determining the building blocks revenue for PQP1.

1.7 The values for the above two matters that result from the application of our cost allocation IM decisions are set out in the Chorus' Price-quality path from 1 January 2022 – Final decision – 16 December 2021 (**PQ reasons paper**).

The final initial PQ RAB and our process to determine it

1.8 We are determining a transitional initial PQ RAB because some information we require to determine the initial PQ RAB value will not be available until 2022. We cannot wait until that information becomes available because we must determine an initial PQ RAB value as an input into PQP1 before it commences on 1 January 2022. Accordingly, the initial PQ RAB value that serves as an input into PQP1 is a transitional value.

1.9 We will proceed to determine Chorus' final initial PQ RAB value in 2022 once the necessary information becomes available. This will include our determination of the final values of the components of the initial PQ RAB that are identified in paragraph 1.4 above. Any difference in the revenue that Chorus would have otherwise been allowed to recover in PQP1 as a result of a change in the value of the initial PQ RAB between transitional and final will be washed up over PQP2.

1.10 There will be only two matters that we will make decisions on that may result in the final initial PQ RAB (and its components) having a different value to the transitional initial PQ RAB (and its components). These two decisions, which relate to the information that will become available only in 2022, are:

1.10.1 replacing the forecast values for financial loss years 2021 and 2022 with actual values; and

1.10.2 our decision on the application of the central office space allocator type.

1.11 As such, apart from these two decisions, all decisions that we set out in this paper to determine the transitional initial PQ RAB are final decisions.

1.12 We intend to confirm the process to determine the final initial PQ RAB in 2022, with stakeholder engagement on our approach in early 2022. If necessary, the process will include consultation relating to our final decision on the application of the central office space allocator type and replacing the forecast values for the financial loss years 2021 and 2022 with actual values.

1.13 However, the process will not include consultation on the final decisions that we have set out in this paper. Those final decisions apply also to the determination of the final initial PQ RAB and will not be revisited.

Our process to determine the transitional initial PQ RAB

1.14 On 26 March 2021, Chorus submitted its initial PQ RAB model to the Commission, setting out its $5.5 billion estimate of the total initial PQ RAB value.[16]

1.15 Chorus stated that "[t]his model is compliant with the Commission's Input Methodologies requirements and supports a solid, but conservative, starting RAB of $5.5 billion for Chorus' fixed line fibre access services at 1 January 2022." [17]

1.16 In April 2021 we published a consultation document on Chorus' initial PQ RAB (**April consultation**).[18] Alongside that document, we published a Process Update Paper (**PUP**), in which we provided an update on the process and timing we intended to follow in determining Chorus' initial PQ RAB.[19]

1.17 We then published a further PUP on 29 June 2021. In response to submissions on our consultation on Chorus' estimate of its initial PQ RAB, we made changes to the process set out in the April consultation, and confirmed our intention to:

1.17.1 have regard to stakeholders' views on our August initial PQ RAB draft decision, in setting the transitional initial PQ RAB at the end of 2021; and

1.17.2 narrow, to as great an extent possible, any differences between the transitional initial PQ RAB and the final initial PQ RAB (that we will determine in 2022) that would be subject to the wash-up.[20,21]

1.18 Our initial PQ RAB process and how it fits into the wider PQ process is outlined in Figure 1.1 below.

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[16] As we note later, Chorus uses the term 'Initial Asset Value' (IAV), whereas we use the term 'initial RAB value'.

[17] See Chorus stock exchange announcement (26 March 2021).

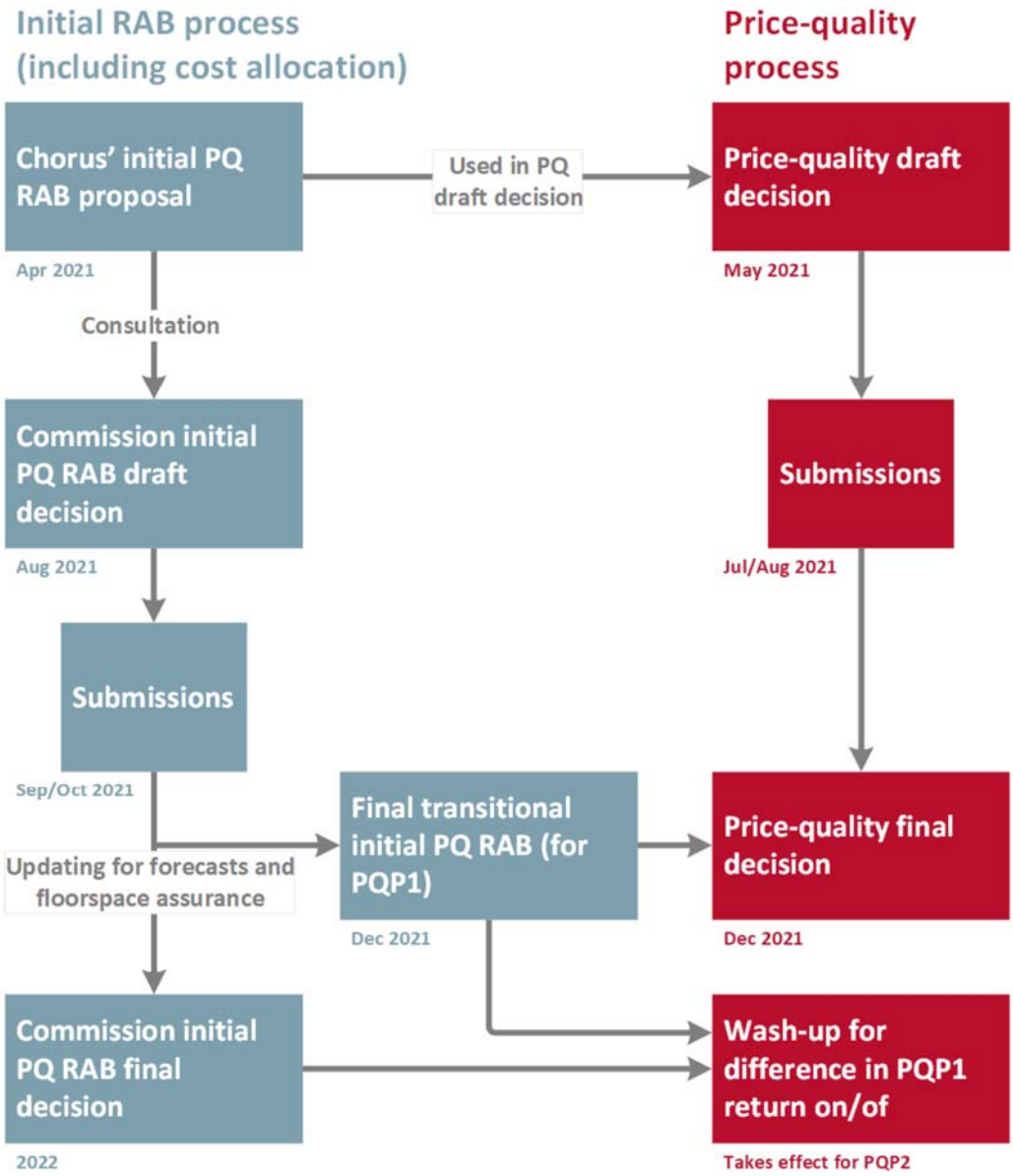
[18] Commerce Commission "Chorus' initial price-quality regulatory asset base as at 1 January 2022 – Consultation on Chorus' initial price quality RAB proposal" (30 April 2021).

[19] Commerce Commission "Determining Chorus' first fibre price-quality path – Process update paper" (30 April 2021).

[20] Commerce Commission "Determining Chorus' first fibre price-quality path – Process update" (29 June 2021).

[21] We have implemented changes to the way the wash-up operates, specifying its scope in the IMs. This includes any differences between the transitional initial PQ RAB and the final initial PQ RAB (for PQP1 only). See Commerce Commission "Fibre Input Methodologies main 2021 amendments: Final decisions – Final reasons paper" (29 November 2021), Chapter 4.

Figure 1.1 Links between the initial PQ RAB and PQ processes



1.19 We have arrived at the decisions set out in this paper after a consultation process that has involved:

1.19.1 publishing a paper setting out our proposed process and approach for the first regulatory period, and considering feedback from stakeholders in response;

1.19.2 carrying out high-level analysis on Chorus' estimate of the total initial PQ RAB value;

1.19.3 publishing a paper for consultation on Chorus' estimate of the total initial PQ RAB value;

1.19.4 reviewing stakeholders' submissions;

1.19.5 issuing s 221 notices to Chorus requiring it to provide information, as well as issuing a number of information requests; and

1.19.6 carrying out further analysis following submissions and analysing further information we requested from Chorus.

1.20 Table 1.1 below shows the key phases and milestones of the PQ and ID projects, including the process to finalise the transitional initial PQ RAB (and the eventual process to fully finalise the initial RABs).

Table 1.1 Key milestones for the PQ and ID projects

Phase	Timing	Scope
Initiation **Complete**	Q4 2020 to Q1 2021	Process and approach paper Consultation on Chorus PQP1 expenditure proposal Stakeholder workshop on quality of service
Process update and initial PQ RAB proposal **Complete**	April 2021	Publication of Chorus' initial PQ RAB proposal
Draft PQ and ID decisions **Complete**	27 May 2021	ID draft decisions PQP1 draft decisions Potential August 2021 and November 2021 IM amendment draft decisions
PQP1 WACC determination **Complete**	1 July 2021	Publication of final PQP1 WACC determination
Draft initial PQ RAB decisions	19 August 2021	Initial PQ RAB draft and related decisions Submissions on draft initial PQ RAB (four weeks, 16 September 2021) Cross-submissions on draft initial PQ RAB (two weeks, 30 September 2021) Notice of intention for potential initial PQ RAB-related IM amendments
Potential initial PQ RAB-related IM amendments draft decision	end August 2021	Initial PQ RAB-related IM amendments draft decision Submissions on draft IM amendments (16 September 2021) Cross-submissions on draft IM amendments (two weeks, 30 September 2021)
Final fast-track IM amendment decisions	September 2021	Final decisions on "fast-track" IM amendments (capex IM timelines)

Phase	Timing	Scope
Final PQ and ID decisions	November and December 2021	Final decisions on potential November 2021 IM amendments Final decisions on Chorus expenditure Final PQP1 decisions (including cost allocation and transitional initial PQ RAB) Final ID decisions
Final Initial RAB decisions	2022	Draft decisions on other local fibre company (LFC) initial ID RABs and the ID RAB and ID-only RAB for Chorus Final decisions on all FLAs and determination of all initial RABs Disclosure on all initial RABs

Materials we have published alongside this paper

1.21 Alongside this paper we have published the following:

1.21.1 public versions of documents provided by Chorus;[22]

1.21.2 a working paper from external experts, Network Strategies, who have provided us advice on aspects of our decisions; and

1.21.3 a version of our FLA discounted cash flow model (updated from the version we published in August 2021, to reflect our decisions, amendments to the IMs and input information provided by Chorus).

IM amendments

1.22 In November 2021, we made several IM amendments that:[23]

1.22.1 implement our proposed approach to determining Chorus' initial PQ RAB;

1.22.2 enhance certainty about the rules, requirements and processes that apply to PQ paths; and

1.22.3 correct technical errors.

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[22] We are publishing three Chorus documents in total. Two of these are documents that Chorus previously claimed were confidential: a claim Chorus has since withdrawn. The third document was only recently received and has not been published before.

[23] *Fibre Input Methodologies Determination (No.2) 2021* [2021] NZCC 25; Commerce Commission "Fibre Input Methodologies main 2021 amendments: Final decisions – Final reasons paper" (29 November 2021).

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1.23 Our initial PQ RAB decisions apply the IMs as amended.

Chapter 2 Regulatory framework

Purpose of this chapter

2.1 This chapter sets out the regulatory framework we have applied in making our decisions on matters relating to Chorus' initial PQ RAB. This chapter sets out:

2.1.1 the task before us, as defined in the Act and the IMs; and

2.1.2 how we have gone about this task, in terms of meeting the requirements in the Act and IMs and (where relevant) the exercise of our judgement in accordance with s 166(2)(b) of the Act.

Structure of this chapter

2.2 The structure of this chapter is as follows:

2.2.1 an overview of our task to decide on Chorus' initial PQ RAB value;

2.2.2 the legal framework, including:

2.2.2.1 mandatory considerations under the Act:

2.2.2.1.1 sections 162 and 166(2);

2.2.2.1.2 section 177: determining the initial value of fibre assets, including the FLA; and

2.2.3 the IMs relevant to these decisions: asset valuation, cost allocation and taxation;

2.2.4 an overview of the key values that are determined as part of the initial PQ RAB decisions; and

2.2.5 the economic framework that helps us reach regulatory decisions that promote the relevant purposes set out in Part 6 of the Act.

The initial PQ RAB

2.3 The Act requires us to establish the first PQ path for Chorus by 1 January 2022 (**implementation date**).

2.4 The collection of fibre assets that Chorus employs in the provision of FFLAS that are subject to PQ regulation is known as its 'PQ RAB'.[24] We must estimate the value of Chorus' fibre assets employed in the provision of PQ FFLAS as at the implementation date (the 'initial PQ RAB'). The initial PQ RAB is the value of the PQ RAB at the commencement of the new fibre regulatory regime on 1 January 2022. This value, once rolled forward for future years, is used as a key input for the second PQ period (**PQP2**) and subsequent regulatory periods. Determining the value of the initial PQ RAB is a critical foundational step for the new regulatory regime, since it underpins the value of Chorus' PQ RAB in subsequent regulatory periods and its value cannot be reconsidered at a later date.[25]

2.5 The disclosure of information about fibre assets in the PQ RAB (which is a subset of the ID RAB) also has significance for the information disclosure (**ID**) aspect of our regulatory regime under Part 6. The value of fibre assets in the PQ RAB has an enduring impact as part of ID as it contributes to ensuring that sufficient information is disclosed under ID to allow interested persons to assess whether the purpose of Part 6 is being met.

2.6 The initial PQ RAB is made up of two components:

2.6.1 **Core fibre assets**: fibre assets that are employed by Chorus in the provision of PQ FFLAS (whether or not the asset is also employed in the provision of other services);[26] and

2.6.2 **The FLA**: Chorus is treated as owning a FLA that captures unrecovered returns that have accumulated in relation to the UFB initiative over the financial loss period (the period starting on 1 December 2011 and ending on 31 December 2021).[27]

2.7 Core fibre assets and the FLA are discussed under the legal framework section at paragraphs 2.41-2.50 below.

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[24] Clause 2.2.2(1)(b) of the IMs. "PQ FFLAS" is defined as "means, in respect of a regulated provider, all FFLAS provided by that regulated provider that is subject to price-quality regulation in regulations made under s 226. *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 1.1.4(2), definition of "PQ FFLAS".

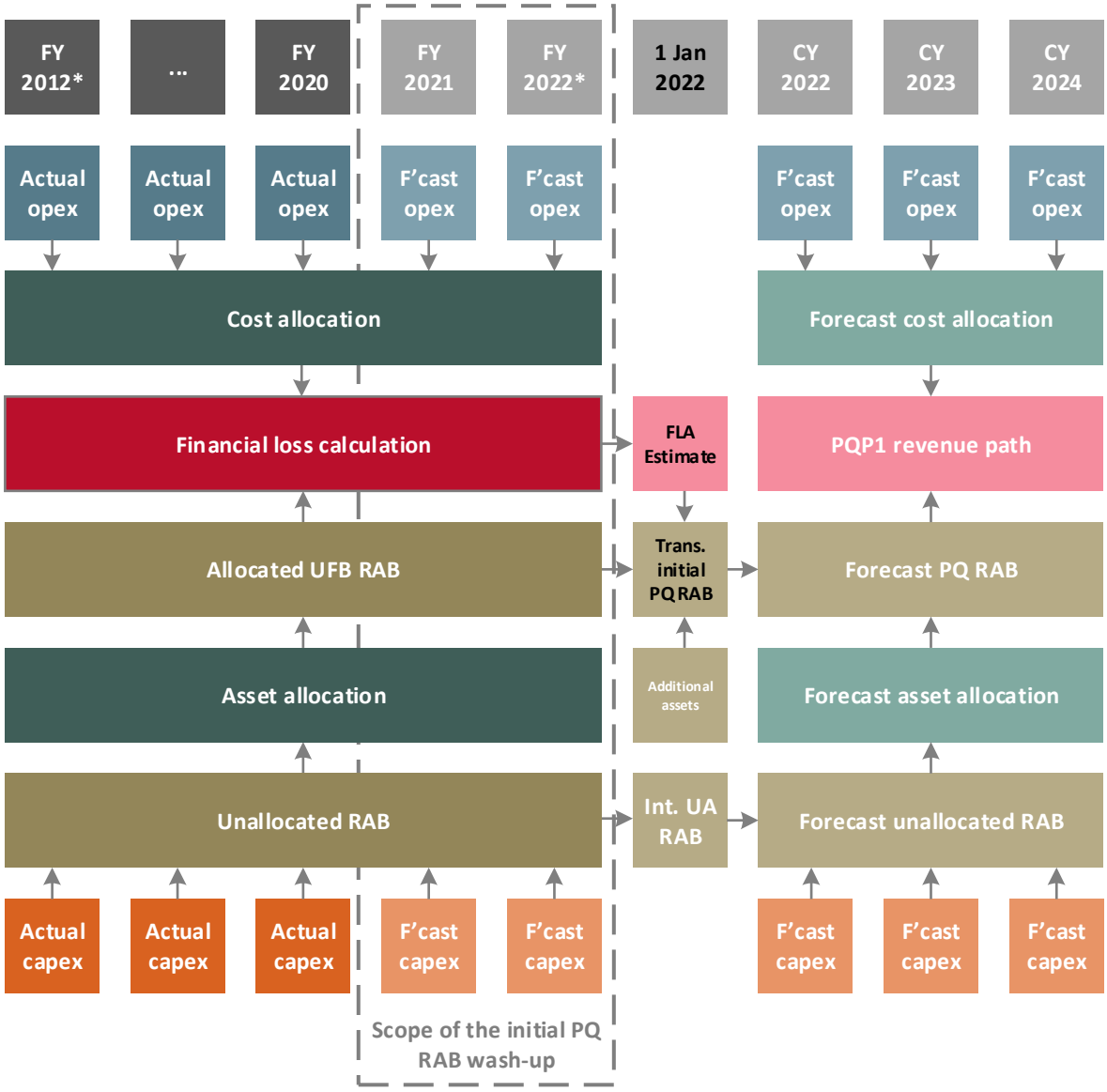
[25] Section 172(1)(a).

[26] Section 177(6); and *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 1.1.4(2). There are some exclusions to the definition of core fibre assets, namely (a) the financial loss asset; (b) intangible assets, unless they are- (i) finance leases; or (ii) identifiable non-monetary assets whose costs do not include (wholly or partly) pass-through costs; and (c) works under construction.

[27] Section 177(2) and (3).

2.8 Figure 2.1 below summarises the components of the initial PQ RAB and how the initial PQ RAB value flows through into the PQP1 revenue path.

Figure 2.1 Initial PQ RAB components and scope



*Financial loss year 2012 is a seven-month period from 1 December 2011, and FY 2022 is a six-month period ending 31 December 2021

Why we have determined a transitional initial PQ RAB

2.9 We must determine the value of Chorus' initial PQ RAB as an input into PQP1, before PQP1 commences on 1 January 2022. However, some information we require to determine the initial PQ RAB value is unavailable at this stage. As such, we have had to determine a transitional initial PQ RAB value which serves as the input to the total revenue Chorus can earn in PQP1.

2.10 The information that will only be available after 1 January 2022 is as follows:

2.10.1 Actual values for financial loss years 2021 and 2022: Information for the 2021 and 2022 financial loss years is currently in the form of forecasts. The update for actual values will be done in 2022.

2.10.2 Further assurance information to support the application of the central office space allocator type: This assurance information, once supplied, may necessitate changes to some of the values that will be used to determine the final initial PQ RAB.

2.11 When this information becomes available, we will proceed to determine Chorus' final initial PQ RAB value. Any difference in the revenue that Chorus would have otherwise been allowed to recover in PQP1 as a result of a change in the value of the initial PQ RAB between transitional and final will be washed up over PQP2. As noted above, it is the final initial PQ RAB value that underpins the value of Chorus' PQ RAB in PQP2 and subsequent regulatory periods – the transitional initial PQ RAB value serves only as an input for PQP1.

2.12 We summarise the values that will be finalised in 2022 in Table 1.1 in Chapter 1.

Key concepts and terminology used in this paper

Terminology

2.13 Where necessary to distinguish between the different definitions of FFLAS to explain our decisions with reference to the relevant time periods, we use the defined terms from the IMs:

2.13.1 'UFB FFLAS' and 'services that are not UFB FFLAS' (when determining the FLA, for the pre-implementation period);

2.13.2 'PQ FFLAS' and 'services that are not regulated FFLAS' (for the post-implementation period).

2.14 However, for ease of reference, we use the terms 'FFLAS' to refer to *both* 'UFB FFLAS' and 'PQ FFLAS'; and 'non-FFLAS' to refer to both 'services that are not UFB FFLAS' and 'services that are not regulated FFLAS'.

Initial RAB (generally)

2.15 We have adopted a building blocks model (**BBM**) approach to developing our IMs relating to FFLAS under Part 6. Under the BBM, we calculate the value of the collection of fibre assets that are employed by a regulated provider in the provision of regulated FFLAS at certain times.

2.16 Under our IM decisions, we adopted the construct of multiple separate regulatory asset bases (**RAB**) in order to implement the Telecommunications (Regulated Fibre Service Providers) Regulations 2019 (**Regulations**). These will apply to Chorus as follows:

2.16.1 The collection of fibre assets that are employed by Chorus in the provision of ID FFLAS as at the implementation date is referred to in this paper as Chorus' initial ID RAB. "ID FFLAS" means, in respect of a regulated provider, all FFLAS provided by that regulated provider that is subject to ID regulation in regulations made under s 226 of the Act.[28]

2.16.2 The collection of fibre assets that are employed by Chorus in the provision of ID-only FFLAS as at the implementation date is referred to in this paper as Chorus' initial ID-only RAB. "ID-only FFLAS" means, in respect of a regulated provider that is subject to PQ regulation in regulations made under s 226 of the Act, all FFLAS provided by that regulated provider that: (a) are subject to ID regulation in regulations made under s 226; and (b) are not subject to PQ regulation in regulations made under s 226.[29]

2.16.3 The collection of fibre assets that are employed by Chorus in the provision of PQ FFLAS as at the implementation date is referred to in this paper as Chorus' initial PQ RAB. "PQ FFLAS" means, in respect of a regulated provider, all FFLAS provided by that regulated provider that is subject to PQ regulation in regulations made under s 226 of the Act.[30]

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[28] Clause 2.2.2(1)(a) of the IMs. "ID FFLAS" is defined as "means, in respect of a regulated provider, all FFLAS provided by that regulated provider that is subject to information disclosure regulation in regulations made under s 226 of the Act. See *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 1.1.4(2), definition of "ID FFLAS".

[29] Clause 2.2.2(1)(c) of the IMs. "ID-only FFLAS" is defined as "means, in respect of a regulated provider, all FFLAS provided by that regulated provider that: (a) is subject to information disclosure regulation in regulations made under s 226 of the Act; and (b) is not subject to price-quality regulation in regulations made under s 226 of the Act;". See *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 1.1.4(2), definition of "ID-only FFLAS".

[30] Clause 2.2.2(1)(b) of the IMs. "PQ FFLAS" is defined as "means, in respect of a regulated provider, all FFLAS provided by that regulated provider that is subject to price-quality regulation in regulations made under s 226 of the Act. See *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 1.1.4(2), definition of "PQ FFLAS".

2.16.4 Any collection of fibre assets that are employed in the provision of a FFLAS class as we may from time to time specify for the purposes of Part 6 at a date specified by us is referred to in this paper as Chorus' initial additional RABs.[31]

2.17 The focus and relevant RAB for the purposes of this paper is Chorus' initial PQ RAB, which we intend to finalise in 2022. This paper provides our decisions on:

2.17.1 The unallocated initial RAB value of each core fibre asset in the initial PQ RAB (the "unallocated" value is the value of the initial RAB prior to the allocation of assets between FFLAS and non-FFLAS under the cost allocation IM);

2.17.2 the allocated initial RAB value of each core fibre asset in the initial PQ RAB (the "allocated" value is the value of the initial RAB after the application of the cost allocation IM); and

2.17.3 the initial RAB value of the FLA in the initial PQ RAB.

2.18 In order to determine certain inputs for Chorus' "forecast building blocks revenue" for each regulatory year of PQP1, the IMs also require us to calculate:

2.18.1 allocated "opening RAB values" of Chorus' fibre assets for the PQ RAB as of the implementation date;[32]

2.18.2 followed by a forecast of those values for each regulatory year of PQP1.[33]

2.19 We use the allocated 'opening RAB values' and the associated forecasts for PQP1, along with Chorus' other costs (such as operating costs: eg, labour expenses, network operating costs, and pass-through costs)—together, the building blocks—as the basis for calculating Chorus' forecast allowable revenue for PQP1. The way these building blocks interact is illustrated in Figure 2.2 below.

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[31] Clause 2.2.2(1)(d) of the IMs. "Additional RAB" is defined as "any collection of fibre assets that are employed in the provision of a FFLAS class as the Commission may from time to time specify for the purposes of Part 6 of the Act, where that collection of fibre assets is a subset of and does not encompass all fibre assets in the (a) ID RAB; (b) PQ RAB; or (c) ID-only RAB.

[32] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 3.3.1(8)-(9).

[33] Ibid, clause 3.3.1(6)-(7).

Key concepts related to the determination of the initial RAB value of the FLA

2.20 The initial RAB value of the FLA as at the implementation date is equal to the accumulated unrecovered returns made by Chorus in providing FFLAS under the UFB initiative during the financial loss period.[34]

2.21 Unrecovered returns are calculated as the present value, as at the implementation date, of the revenue inflows less expenditure outflows occurring during the pre-implementation period adjusted for the depreciated value of UFB assets at implementation date. Expenditure shared between UFB FFLAS and services that are not UFB FFLAS during the pre-implementation period is subject to cost allocation rules.[35]

2.22 The UFB assets used to determine the initial RAB value of the FLA are assets that are:

2.22.1 constructed or acquired by Chorus; and

2.22.2 employed in the provision of UFB FFLAS (whether or not the asset is also employed in the provision of other services).[36]

2.23 The collection of UFB assets that are employed by a Chorus in the provision of UFB FFLAS is referred to as the "UFB asset base".[37]

2.24 "UFB FFLAS" means any FFLAS provided by Chorus under the UFB initiative during the financial loss period.[38]

2.25 In this paper, we use the phrase "initial RAB value of the FLA" to refer to the value of the FLA as at the implementation date, as defined in clause 2.2.4(1) of the IMs. We also use the phrase "initial RAB value of the FLA" when referring to the various unrecovered returns throughout the pre-implementation period that are used to determine the value of the FLA at implementation date under clause 2.2.4(1) of the IMs.

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[34] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 2.2.4(1) and Schedule B.

[35] For a more detailed discussion, see Commerce Commission "Fibre input methodologies – Financial loss asset – reasons paper" (3 November 2020), Chapter 2.

[36] Subject to certain exceptions. See *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, the definition of "UFB asset" in clause B1.1.1(2).

[37] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause B1.1.1(2), the definition of "UFB asset base".

[38] Ibid, clause B1.1.1(2), definition of "UFB FFLAS".

Allocated and unallocated RAB values

2.26 When a core fibre asset is first employed in the provision of regulated FFLAS as at the implementation date, it has an "unallocated initial RAB value" which is its "value of commissioned asset".[39] The sum of all unallocated initial RAB values as at the implementation date is referred to as the total unallocated initial RAB value and reflects the total value of assets that are wholly or partly employed in the provision of regulated FFLAS.

2.27 The cost allocation IM is then applied to each core fibre asset's unallocated initial RAB value to determine an attributable (ie, "allocated") portion of the asset value for regulated FFLAS (for example, to calculate depreciation and revaluations). The allocated portion of a core fibre asset attributable to PQ FFLAS at the implementation date is referred to as its initial PQ RAB value.[40]

2.28 The FLA is treated as being directly attributable to PQ FFLAS and its value in the initial PQ RAB is determined by us in accordance with s 177(2) and clause B1.1.2 of Schedule B of the IMs.[41] We discuss the process for determining the initial value of the FLA at paragraphs 2.89-2.90.

2.29 In this paper, unless specifically stated otherwise, we are referring to the allocated RAB (i.e., in any instance where we are referring to the 'unallocated RAB' we will state this).

RAB roll-forward

2.30 The unallocated initial RAB value of each core fibre asset is "rolled forward" each disclosure year with the unallocated value of a core fibre asset at the end of a disclosure year having an "unallocated closing RAB value".[42]

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[39] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 2.2.3(1).

[40] Ibid, clause 2.2.3(2).

[41] Ibid, clause 2.2.4(1).

[42] Clause 2.2.5(1)-(2) of the IMs. "Disclosure year" in this context means "a 12-month period ending on the date specified in an ID determination" - see *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 1.1.4(2). In this context, the 'disclosure year' has the same meaning as the 'regulatory year'.

2.31 The cost allocation IM is then applied to each core fibre asset's unallocated closing RAB value to determine an attributable (i.e., "allocated") portion of the asset value for regulated FFLAS. The allocated portion of a core fibre asset attributable to PQ FFLAS at the end of a disclosure year is referred to as its closing PQ RAB value.[43] The closing PQ RAB value then becomes the opening PQ RAB value for the following disclosure year.[44]

2.32 The total value of the PQ RAB (including the value of the FLA) will change over time to reflect changes in Chorus' fibre assets over time, including changes in how assets are shared between different services.[45] Examples of changes include the addition of newly commissioned assets; the disposal of assets; revaluation of assets (ie, indexation by the Consumer Price Index (**CPI**)); changes in allocations; and the return of capital via depreciation over time.

Analysys Mason model terminology

2.33 In certain instances, we have adopted the terminology used by Chorus/Analysys Mason in its models and associated documentation (which in some cases departs from the terms we used in our IMs). These are:

2.33.1 'Contracted FFLAS': Analysys Mason define Contracted FFLAS as FFLAS provided under the UFB contract.[46] The relevant term in our IMs is 'UFB FFLAS'.

2.33.2 Initial asset value (**IAV**): Analysys Mason define the IAV as the starting value of the RAB at implementation date.[47] The relevant terms in our IMs are the 'initial RAB value of core fibre assets' and the 'initial RAB value of the FLA'.

2.33.3 'Non-FFLAS': this is a catch-all term used to refer to both "services that are not regulated FFLAS"[48] and "services that are not UFB FFLAS".[49]

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[43] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 2.2.5(4). We note that the IMs refer to this as the "closing RAB value".

[44] Ibid, clause 2.2.5(3)(b). We note that the IMs refer to this as the "opening RAB value".

[45] Ibid, clause 2.2.5-2.2.6.

[46] Analysys Mason report for Chorus "Building Block model IAV model documentation IAV model v314_120c" (24 March 2021), Figure 6.

[47] Ibid.

[48] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 1.1.4(2).

[49] Ibid, clause B1.1.1(2) of Schedule B.

2.33.4 'UFB A-D": Analysys Mason define 'UFB A-D' as those assets that were built and used for Contracted FFLAS (where Chorus won the UFB contract).[50] There is no corresponding term in our IMs. However, these assets are relevant to the determination of the initial RAB value of Chorus' core fibre assets and the FLA.

2.33.5 'UFB E': Analysys Mason define 'UFB E' as the collection of assets that were built and used for Voluntary FFLAS.[51] There is no corresponding term in our IMs. These assets are excluded from the determination of the initial RAB value of Chorus' core fibre assets and the FLA, but will form part of the initial PQ RAB where these assets are employed in the provision of PQ-regulated FFLAS.

2.33.6 Unrecovered Loss (**UL**): Analysys Mason define UL as the sum of the annual shortfall in UFB revenues (relative to that which would have provided capital maintenance for the UFB business) in the pre-implementation period (from 1 December 2011 to 31 December 2021), taking the cost of funding that loss into account.[52] The relevant term in our IMs is "financial loss asset".

2.33.7 'Voluntary FFLAS': Analysys Mason define 'Voluntary FFLAS' as FFLAS not provided under the UFB contract.[53] There is no corresponding term in our IMs. However, from the implementation date, 'Voluntary FFLAS' forms part of PQ FFLAS and ID FFLAS (as defined in the IMs).

2.34 In this paper, our approach is to use the term that best applies in the particular context. For example, when referring to Chorus' models, we use the terms that Analysys Mason or Chorus have used, for ease of navigating their models/explanatory documents. Where relevant, we include references to explain how these terms interact with our IM terminology.

[50] Analysys Mason report for Chorus "Building Block model IAV model documentation IAV model v314_120c" (24 March 2021), Figure 6.

[51] Ibid, Figure 6.

[52] Ibid, Figure 6.

[53] Ibid, Figure 6.

Legal framework

Mandatory considerations that apply for our decisions

Matters to be considered by Commission and Minister: s 166

2.35 When making the decisions described in this paper, we were required to consider certain matters specified in s 166(2) of the Act:[54]

> (2) The Commission or Minister must make the recommendation, determination, or decision that the Commission or Minister considers best gives, or is likely to best give, effect—
>
> (a) to the purpose in section 162; and
>
> (b) to the extent that the Commission or Minister considers it relevant to the promotion of workable competition in telecommunications markets for the long-term benefit of end-users of telecommunications services.

Purpose of Part 6: s 162

2.36 Section 162 sets out the purpose of Part 6 of the Act:[55]

> The purpose of this Part is to promote the long-term benefit of end-users in markets for fibre fixed line access services by promoting outcomes that are consistent with outcomes produced in workably competitive markets so that regulated fibre service providers-
>
> (a) have incentives to innovate and to invest, including in replacement, upgraded, and new assets; and
>
> (b) have incentives to improve efficiency and supply fibre fixed line access services of a quality that reflects end-user demands; and
>
> (c) allow end-users to share the benefits of efficiency gains in the supply of fibre fixed line access services, including through lower prices; and
>
> (d) are limited in their ability to extract excessive profits.

How we apply ss 166 and 162

2.37 We must exercise our judgement on a case-by-case basis and make the following observations about the relationship between the two objectives in s 166(2) of the Act:

2.37.1 Section 166(2)(a) directs us to make decisions that best give effect to the purpose in s 162. This is a mandatory consideration;

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[54] Commerce Commission "Fibre input methodologies: Main final decisions – reasons paper" (13 October 2020), paragraphs 2.206-2.271.

[55] Section 162.

2.37.2 We are also required to make decisions that best give effect to the outcome in s 166(2)(b). This is also a mandatory consideration, but only in cases where we consider that it is 'relevant'. In assessing whether the promotion of workable competition in telecommunications markets for the long-term benefit of end-users of telecommunications services is relevant, we will consider whether a decision has the potential to affect the level of competition in one or more telecommunications markets;

2.37.3 Where we consider that the promotion of workable competition is relevant, we must strive to make the decision that best gives, or is likely to best give effect, to both:

2.37.3.1 the promotion of outcomes consistent with those produced in workably competitive markets for the benefit of end-users of FFLAS (s 166(2)(a)); and

2.37.3.2 the promotion of competition in telecommunications markets for the benefit of end-users in those markets (s 166(2)(b)); and

2.37.4 Where our decisions require us to exercise judgement in accordance with s 166(2), we have explained why those decisions best give, or are likely to best give, effect to the purposes set out in s 166(2).

2.38 As with all decisions under Part 6, all of our decisions relating to the initial PQ RAB must best give, or be likely to best give, effect to the purposes set out in s 166(2).

2.39 However, in many cases, we must make our decisions according to specific legal requirements that constrain the exercise of judgement. This arises in relation to:

2.39.1 the application of IMs (for instance, the estimation of the cost of capital for the financial loss period)[56] where most parameters were determined because they best give, or are likely to best give, effect to the s 166(2) purposes; and

2.39.2 the application of mandatory requirements in the Act (for instance, the meaning of "fibre asset" in s 177(6) of the Act).

2.40 In these cases, we have explained our decisions by referring to our specific obligations under the IMs or the Act.

[56] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, Subpart 5 of Part 3 of Attachment B.

Section 177: Determining the initial value of fibre assets

2.41 Section 177 provides the Commission with specific direction on the calculation of the initial value of fibre assets that enter the PQ RAB on the implementation date.

2.42 The definition of "fibre asset" includes an asset that is constructed or acquired by Chorus and employed in the provision of FFLAS, whether or not it is also employed in the provision of other services: s 177(6).

2.43 Section 177(2) and (3) direct that the Commission is responsible for determining the value of the financial losses. This means it is for the Commission to determine the initial value of fibre assets in Chorus' initial PQ RAB (as well as the initial value of fibre assets in the ID RABs for Chorus and the other LFCs).

Core fibre assets

2.44 Section 177(1) sets the value of assets employed in the provision of FFLAS (core fibre assets). The initial value of a fibre asset is calculated by taking the cost Chorus incurred in constructing or acquiring the asset net of capital contributions, adjusted for depreciation and impairment losses (if any): s 177(1).

2.45 Assets which were owned by Chorus before 1 December 2011 and therefore pre-date the UFB initiative, and which have been employed in the provision of FFLAS, are valued at their cost derived from Chorus' general-purpose financial statements as of 1 December 2011, adjusted for accumulated depreciation and impairment losses (if any). We refer to these assets in this paper as 'pre-2011 assets'.[57]

Financial loss asset

2.46 Financial losses over the pre-implementation period (from 1 December 2011 to 31 December 2021) must be capitalised and treated as an additional asset (referred to as the "financial loss asset") which will be part of Chorus' initial PQ RAB, but separately identified.

2.47 The FLA calculation must take into account the "accumulated unrecovered returns on investments made by [Chorus] under the UFB initiative": s 177(3)(a).

[57] We note that for the purposes of its model, Analysys Mason uses the term 'pre2012 assets' in reference to the same set of assets (refer to Attachment B for the four time periods relating to when assets were employed in the provision of FFLAS).

2.48 The background to the FLA is that it was expected that Chorus and the other LFCs that deployed fibre access networks under the Government's UFB initiative would incur financial losses during their initial period of operation.[58] That is, despite the provision of partial funding via concessionary Crown financing, it was expected that the initial uptake of UFB services would generate insufficient revenue to cover the costs that Chorus and the other LFCs incurred during that period.

2.49 In order to provide an opportunity for each regulated provider to recover these losses within the new regulatory regime, the Act provides for these accumulated financial losses to be capitalised and included as an asset in each LFC's RAB as at the implementation date.

2.50 We discuss this further at paragraphs 2.89 and 2.90 below in the context of the FLA.

IMs relevant to initial PQ RAB decisions

2.51 Section 176 requires the Commission to publish IMs covering (among other matters) the valuation of assets and the allocation of common costs (for example, between activities, businesses, access seekers, regulated services, or geographic areas), and treatment of revaluations.[59]

2.52 In determining the value of fibre assets in the initial PQ RAB, the key IMs are the asset valuation, cost allocation and tax IMs:[60]

2.52.1 the asset valuation IM sets out the rules regarding the determination of the "initial RAB value" of each regulated provider's fibre assets, which includes both the core fibre assets and the FLA;

2.52.2 the cost allocation IM sets the rules for how the values of each regulated provider's shared assets and costs at implementation date are to be allocated to the appropriate FFLAS classes and to services that are not regulated FFLAS; and

2.52.3 the tax IM sets out the rules for determining the value of tax costs.

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[58] Commerce Commission "Fibre input methodologies: Main final decisions – reasons paper" (13 October 2020).

[59] Section 176(1)(a)(ii) and (iii).

[60] Under s 175(b)(ii), we must apply the IMs in determining how regulation should apply to FFLAS and the prices or quality standards applying to FFLAS.

Overview of how the IMs require the initial RAB to be valued

2.53 In this section, we provide a high-level overview of how the IMs require the initial RAB to be valued.

2.54 The value of the initial RAB is the sum of the values of the core fibre assets and the FLA and is determined by applying the asset valuation IM. The asset valuation IM establishes separate rules for determining the value of the core fibre assets and the FLA.

Determining the value of the core fibre assets

2.55 Core fibre assets may be:

2.55.1 UFB assets, that have been employed in the provision of UFB FFLAS; or

2.55.2 Fibre assets employed in the provision of FFLAS (but not UFB assets).

2.56 While the FLA is calculated based on UFB FFLAS supported by UFB assets only, at implementation date, fibre assets employed in the provision of PQ FFLAS are core fibre assets with certain exceptions.[61]

2.57 Determining the value of the core fibre assets at implementation date to determine the initial RAB is a two-step process.[62]

Unallocated initial RAB value

2.58 First, the 'unallocated initial RAB value' of the core fibre assets must be calculated. The unallocated initial RAB value is the value of the core fibre assets before the cost allocation IM has been applied, and therefore reflects the value of assets that are wholly or partly employed in the provision of FFLAS.[63] The unallocated initial RAB value is the total value of the relevant asset determined on a depreciated historic cost basis at implementation date.[64]

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[61] Core fibre assets exclude the FLA, works under construction and intangible assets, unless they are finance leases or identifiable non-monetary assets whose costs do not include (wholly or partly) pass-through costs (see *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 1.1.4).

[62] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 2.2.3.

[63] Ibid, clause 2.2.3(1)

[64] Section 177(1)(a) and (b); *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 2.2.13(1).

(Allocated) initial RAB value

2.59 The initial RAB value at implementation date is then arrived at by applying the cost allocation IM to the unallocated initial RAB value.[65] At a high-level, the cost allocation IM requires that:[66]

2.59.1 Unallocated asset values that are "directly attributable" to the provision of FFLAS are allocated to FFLAS.[67] Conversely, asset values that are directly attributable to the provision of services that are not FFLAS must not be allocated to FFLAS; and

2.59.2 Unallocated asset values that are not directly attributable to either FFLAS or services that are not FFLAS (ie, are shared) must undergo cost allocation. Specifically, shared costs must be allocated between those services using the accounting-based allocation approach (**ABAA**).

2.59.3 Within the ABAA, costs and assets must be allocated using an allocator that is based on:

2.59.3.1 a causal relationship: that is, there is a causal relationship between the asset value and the circumstance where a factor influences the employment of the asset in provision of UFB FFLAS; [68] or

2.59.3.2 a proxy asset allocator: that is, where a causal relationship cannot be established.[69]

[65] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 2.2.3(2).

[66] Ibid, clause 2.1.1.

[67] "Directly attributable" is defined in the IMs as "in relation to operating costs, where a cost is wholly and solely incurred in the provision of a particular service; and (b) in relation to asset values, where an asset is wholly and solely employed by a regulated provider in the provision of a particular service". See *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021.

[68] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 1.1.1(4)(2) – definition of causal allocator.

[69] Ibid, clause 1.1.1(4)(2) – definition of proxy allocator.

2.59.4 Within the definitions of "causal relationship" and "proxy asset allocator" is the requirement that in each case these allocators (ie, ratios):[70]

2.59.4.1 must be consistently applied within a financial loss year, and between financial loss years; and

2.59.4.2 are objectively justifiable and demonstrably reasonable.

2.60 To support our analysis and judgement as to whether the "objectively justifiable and demonstrably reasonable" requirement has been met for a given proposed cost or asset allocator, we have considered factors such as:

2.60.1 whether the proposed allocation promotes the purpose of Part 6 and, where relevant, workable competition in telecommunications markets for the long-term benefit of end-users of telecommunications services;

2.60.2 whether the allocator type meets the definition of a proxy cost allocator or proxy asset allocator;[71]

2.60.3 whether the allocation is being undertaken at a reasonable level of aggregation – whether operating costs or assets that have been grouped together have sufficiently similar characteristics to be treated in common;

2.60.4 the extent to which the underlying data used is robust; and

2.60.5 whether there is a readily available alternative allocator which better meets these criteria above, such that it would be unreasonable to prefer the proposed allocator.

Determining the value of the FLA

2.61 The value of the FLA is equal to the unrecovered returns that have accumulated from providing UFB FFLAS in the financial loss period.[72] Therefore, to determine the value of the FLA, we must determine the value of the financial losses incurred in providing UFB FFLAS.

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[70] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 1.1.1(4)(2) – definition of proxy allocator and causal allocator.

[71] Ibid, clause 1.1.4(2).

[72] Ibid, clause B1.1.2.

2.62 A regulated provider may have provided FFLAS during the financial loss period outside of the UFB initiative (this is referred to as 'Voluntary FFLAS: see paragraph 2.33.7 above). These FFLAS are not included in the calculation of the FLA, as the Act limits losses to those incurred under the UFB initiative for the pre-implementation period.[73]

2.63 The asset valuation IM sets out how to calculate the financial losses. At a high-level, the financial losses are the sum of the differences between revenue received by the regulated provider for the provision of UFB FFLAS under the UFB initiative and the costs incurred in the provision of UFB FFLAS under the UFB initiative each year.[74]

2.64 Because some costs incurred during the financial loss period were shared with services that are not UFB FFLAS (including Voluntary FFLAS), the cost allocation IM must be applied to determine the share of costs attributable to the provision of UFB FFLAS. The rules for allocating these costs are, at a high-level, similar to the rules for allocating asset values for the core fibre assets.[75]

2.65 The calculation of financial losses also includes an adjustment to account for the depreciated value of UFB assets at the implementation date[76] and the benefit of concessionary Crown financing during the financial loss period.[77]

Asset valuation IM

2.66 Under the asset valuation IM, the core fibre assets that are employed by Chorus in the provision of PQ FFLAS at the implementation date are included in the initial PQ RAB.[78] The regulatory values of these core fibre assets are based on the depreciated historic cost of investments and adjustments for impairment losses (if any), as required by s 177(1) of the Act. In addition to the core fibre assets, the PQ RAB includes a FLA. The FLA captures the unrecovered returns on and of the allocated PQ RAB for the UFB assets that have accumulated up to the implementation date (s 177(2) and (3)).

2.67 The asset valuation IM includes the rules relating to the valuation of assets in the initial PQ RAB. These cover the following areas:

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[73] Section 177(2).

[74] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause B1.1.2(3).

[75] Ibid, clause B1.1.6.

[76] A portion of unallocated depreciation costs are allocated to UFB FFLAS over the pre-implementation period.

[77] The treatment of concessionary Crown financing is discussed in detail in "Commerce Commission "Fibre input methodologies – Financial loss asset – reasons paper" (3 November 2020)".

[78] Commerce Commission "Fibre input methodologies: Main final decisions – reasons paper" (13 October 2020), paragraph 3.6.

2.67.1 the scope of the PQ RAB and its valuation;

2.67.2 core valuation rules for initial PQ RAB assets;

2.67.3 limits on allocation of shared assets to regulated FFLAS;

2.67.4 capital contributions; and

2.67.5 the benefits of Crown financing.

Cost allocation IM

2.68 The cost allocation IM includes the rules relating to the attribution and allocation of assets and costs in determining the initial PQ RAB. These cover the following areas:

2.68.1 the methodologies used to determine the (allocated) initial RAB values of core fibre assets at the implementation date;

2.68.2 the methodologies used to determine allocated RAB inputs for PQP1, being based on an allocation to PQ FFLAS of estimates of historic values and forecast values at the implementation date:

2.68.3 the treatment of assets that pre-date the UFB initiative that are employed during the pre-implementation period to provide UFB FFLAS (pre-2011 assets) for purposes of calculating the FLA; and

2.68.4 the treatment of new costs incurred during the pre-implementation period to deliver UFB FFLAS for purposes of calculating the FLA.

2.69 The IM defines "'directly attributable" as being where an operating cost is wholly and solely incurred, or an asset is wholly and solely employed, in the provision of a particular service.[79] The assets that are directly attributable are discussed in Chapter 4.

2.70 Assets and costs that are not 'directly attributable' must undergo cost allocation. We discuss cost allocation methodology in greater detail in Chapter 5.

[79] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 1.1.4(2).

Treatment of taxation

2.71 The tax IM determines the way in which regulated providers disclose information about their tax costs, which in turn affects their disclosed profitability. For regulated providers subject to PQ regulation (i.e., currently, Chorus), the treatment of taxation will affect the size of the regulatory allowance for tax costs included in the PQ path, and thus the overall return and/or timing of the revenues it is likely to realise.

2.72 The tax IM includes rules that cover the following areas:

2.72.1 the determination of the regulatory tax allowance;

2.72.2 the valuation and roll-forward of regulatory tax assets; and

2.72.3 the recognition and roll-forward of tax losses.

Overview of key values determined as part of initial PQ RAB decisions

2.73 We summarise the key values determined as part of the initial PQ RAB decisions in Table 2.1 below.

2.74 We are determining transitional values for values 1-4 below in this paper.

2.75 The cost allocation decisions we have set out in Chapter 5 of this paper, and which we apply in order to determine values (1) and (3) below, also apply to the following inputs to determine building blocks revenue for PQP1:

2.75.1 forecasts of Chorus' opex and capex allowances for PQP1; and

2.75.2 the forecast roll-forward for the transitional initial PQ RAB.

Table 2.1 Key values determined as part of initial PQ RAB decisions

Value	Description
1. Unallocated initial RAB value of core fibre assets	• The total value of assets either wholly, or partly employed in the provision of FFLAS. • This is the value before we apply the cost allocation IM.[80]
2. (Allocated) initial RAB value of core fibre assets	• The value of Chorus' assets employed in the provision of FFLAS (item 1 above) with cost allocation applied.[81]
3. Initial RAB value of the financial loss asset (FLA)	• The financial losses Chorus accumulated in providing UFB FFLAS during the financial loss period.[82]
4. Total initial PQ RAB value	• Sum of all the "initial RAB values" of Chorus' core fibre assets employed in the provision of PQ FFLAS at the implementation date and the "initial RAB value" of the FLA (ie, the sum of items #2 and #3 above).

2.76 We discuss each element in greater detail below at 2.77-2.92.

Key values determined as part of initial PQ RAB decision

2.77 Our decisions regarding the transitional initial PQ RAB provide inputs that are used to determine Chorus' "forecast building blocks revenue" for each regulatory year of PQP1.

Forecast allowable revenue

2.78 Section 195(1)(a) of the Act requires us to specify in the PQ paths for each regulatory period that starts before the reset date the maximum revenues that may be recovered by a regulated provider.[83]

2.79 As set out in clause 3.1.1(1) of the IMs, the maximum revenues that a regulated provider may recover for a regulatory year in a given regulatory period will be specified in a PQ determination as a "revenue cap".[84]

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80 *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 2.2.3(1).

81 Ibid, clause 2.2.3(2).

82 Section 177(2); *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 2.2.4, Schedule B, clause B1.1.2.

83 Section 195(2). 'Reset date' means the date declared in an order made under s 225 to be the reset date. The reset date may only follow a Commission PQ review under s 209 (which must take place at least 3 years after implementation date (1 January 2022). The earliest possible reset date will therefore be during the second regulatory period (from 2025-2028).

84 Fibre Input Methodologies Determination 2020 [2020] NZCC 21, as amended by the Fibre Input Methodologies (initial value of financial loss asset) Amendment Determination 2020 [2020] NZCC 24, consolidated for convenience July 2021 Fibre Input Methodologies Determination 2020.

2.80 Under the revenue cap, the forecast total FFLAS revenue derived by a regulated provider in a given regulatory year must not exceed forecast allowable revenue specified in the PQ determination for that regulatory year.

2.81 Under clause 3.1.1(2) of the IMs "forecast allowable revenue" means the sum of the following for a regulatory year:

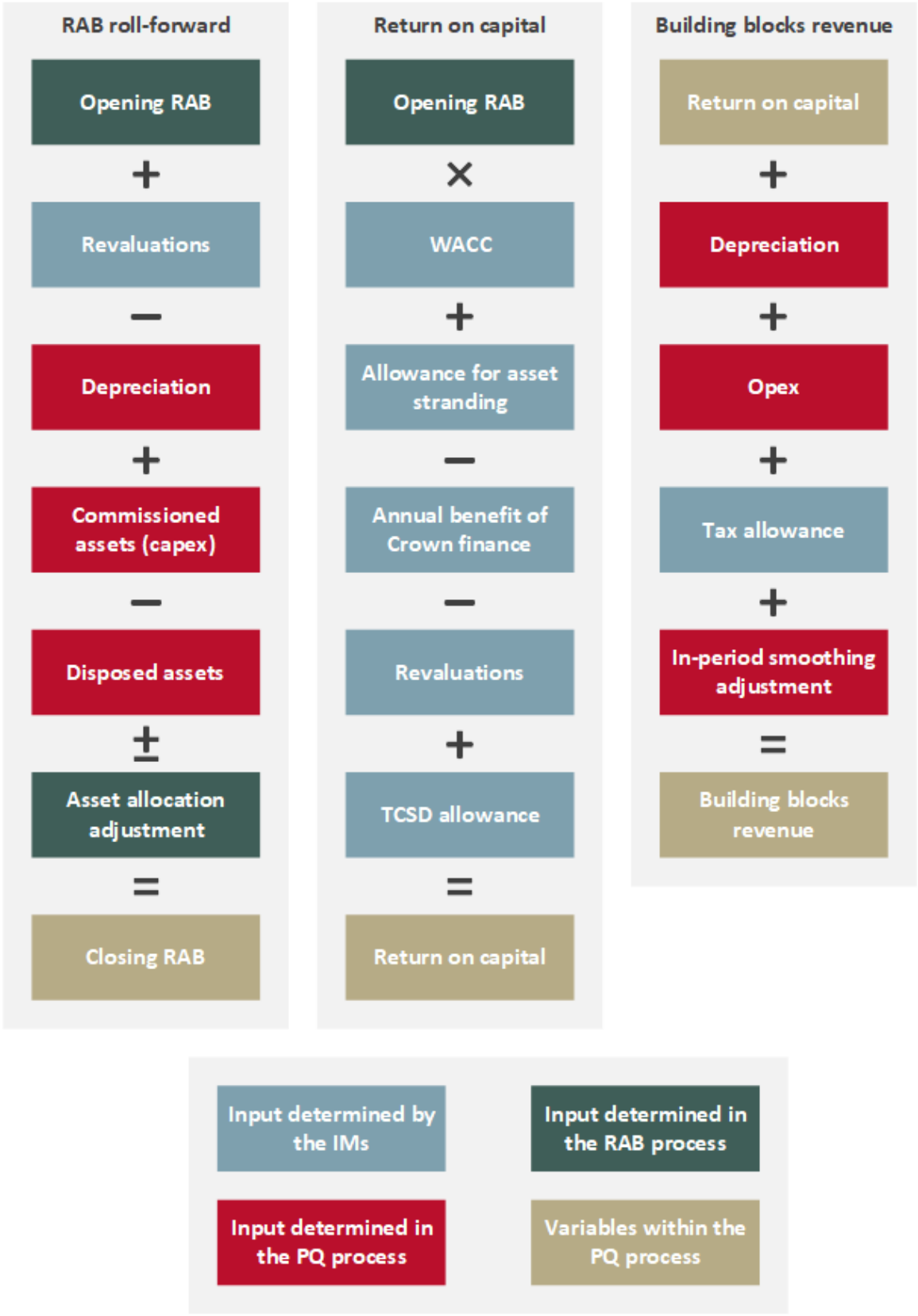
2.81.1 forecast building blocks revenue

2.81.2 forecast pass-through costs

2.81.3 the wash-up amount.

2.82 In our PQP1 decision, we have specified "forecast building blocks revenue" using a model that is based on the illustrative building blocks formula shown in Figure 2.2 below.

Figure 2.2 Illustrative building blocks formula for PQP1[85]



2.83 In our draft PQP1 decisions, we did not provide our view on the inputs needed to determine "forecast building blocks revenue" for regulatory year 2022 as we had not yet made draft decisions on the value of Chorus' initial PQ RAB and cost allocation. Instead, we adopted (by way of illustration only) the outputs of Chorus' BBM IAV model developed by Analysys Mason, as submitted Chorus' initial PQ RAB.

2.84 Clause 3.3.1(6)-(9) of the IMs specifies the methodology for determining the following inputs for PQP1:

2.84.1 an adoption of the "opening RAB value" of Chorus' fibre assets for the PQ RAB as of the implementation date under clause 3.3.1(8) of the IMs, including:

2.84.1.1 an adoption of any relevant estimates of historic values in accordance with clause 3.3.1(8)(a) and (d);

2.84.1.2 where historic values are not available, an application of forecast values in accordance with clause 3.3.1(8)(b); and

2.84.1.3 an allocation under clause 3.2.1 of those estimates of historic values and forecast values to "PQ FFLAS" as of the implementation date in accordance with clause 3.3.1(8)(d)(ii); and

2.84.2 applying forecasts of those allocated values for each regulatory year in PQP1 in accordance with clause 3.3.1(7)(c)(i).

2.85 We refer to the sum of the adopted "opening RAB values" of all fibre assets for the PQ RAB as of the implementation date in this paper as Chorus' 'transitional initial PQ RAB value'.

Chorus' unallocated initial PQ RAB values

2.86 We will determine the final "unallocated initial RAB value" of Chorus' core fibre assets employed in the provision of PQ FFLAS at the implementation date in 2022. This value will be determined following the publication of Chorus' audited accounts for the year ended 30 June 2022. We refer to these values in this paper as Chorus' unallocated initial PQ RAB value. Chorus' unallocated initial PQ RAB values are:

2.86.1 determined under clause 2.2.3(1) of the IMs;

[85] Commerce Commission "Chorus' Price-quality path from 1 January 2022 – Draft decision" (27 May 2021 – Updated 16 May 2021).

2.86.2 "rolled forward" for future disclosure years under clause 2.2.5(1)-(2) of the IMs; and

2.86.3 adopted and applied as forecasts to inform certain inputs used to determine Chorus' "forecast building blocks revenue" for future price-quality paths (beginning with PQP2) under clause 3.3.1(2) of the IMs.

2.87 We will determine Chorus' unallocated initial RAB values by applying clause 2.2.3(1) of the IMs. We do not consider that a separate exercise of judgement in accordance with ss 162 and 166 is required when applying the IMs.

Chorus' (allocated) initial PQ RAB values

2.88 We are required to determine the "initial RAB value" of Chorus' unallocated initial RAB values employed in the provision of regulated FFLAS at the implementation date. We refer to these determinations in this paper as Chorus' initial PQ RAB values. Chorus' initial PQ RAB values are:

2.88.1 determined under clause 2.2.3(2) of the IMs, which includes an application of the cost allocation IM under clause 2.1.1;

2.88.2 "rolled forward" for future disclosure years under clause 2.2.5(3)-(4) of the IMs, which includes (for actual values) an application of the cost allocation IM under clause 2.1.1; and

2.88.3 adopted and applied as forecasts to inform certain inputs used to determine Chorus' "forecast building blocks revenue" for future price-quality paths (starting with PQP2) under clause 3.3.1(2) of the IMs.

Financial loss asset (FLA)

2.89 We are also required to determine the financial losses for Chorus in respect of the financial loss period (the period from 1 December 2011 until 31 December 2021) under s 177(2) and clause B1.1.2(2) of Schedule B of the IMs. The value of Chorus' financial losses is referred to under the IMs as the "initial RAB value" of Chorus' financial loss asset under clause 2.2.4(1).

2.90 In determining the financial losses for Chorus under s 177(2) and clause B1.1.2(2) of Schedule B of the IMs, certain decisions require us to exercise judgement (in accordance with ss 162 and 166). Others involve us making decisions according to specific legal requirements that constrain the exercise of judgement (ie, the application of the IMs, which were determined on the basis that they best give, or are likely to best five effect to the purposes in s 166(2)).

Total initial PQ RAB value

2.91 We are required to determine the sum of the "initial RAB values" of Chorus' fibre assets employed in the provision of PQ FFLAS at the implementation date (to total of the values described under paragraphs 2.88 and 2.89 above). This value is equal to the sum of:

2.91.1 the "initial RAB values" of Chorus' core fibre assets; and

2.91.2 the "initial RAB value" of its FLA at the implementation date.

2.92 The sum of the "initial RAB values" of Chorus' fibre assets employed in the provision of PQ FFLAS at the implementation date is referred to in this paper as Chorus' 'total initial PQ RAB value'.

Summary of nature of our cost allocation decisions

2.93 We have summarised the nature of our cost allocation decisions in Table 2.2 below detailing:

2.93.1 areas where we have exercised judgement in accordance with s 166(2) in reaching our final decisions on cost allocation; and

2.93.2 decisions made according to specific legal requirements that constrain the exercise of judgement (ie, the application of the IMs, which have been determined on the basis that they best give/are likely to best give effect to the purposes set out in s 166(2)).

Table 2.2 Cost allocation decisions

IM requirement	IM clause	Nature of decision
Operating costs incurred during the financial loss period that are directly attributable to the provision of UFB FFLAS and UFB asset values that are directly attributable to the provision of UFB FFLAS must be allocated to UFB FFLAS. **Directly attributable is defined as being where an operating cost is wholly and solely incurred, or asset is wholly and solely employed, in the provision of UFB FFLAS.**	Clause B1.1.6(1)(a) and Clause B1.1.6(2)(b) of Schedule B.	Judgement is involved in determining the extent to which operating costs or UFB assets are 'directly attributable' to UFB FFLAS. This judgement relates to the extent to which an operating cost is wholly and solely incurred, or an asset is wholly and solely employed, in the provision of UFB FFLAS.
For operating costs that are not directly attributable to the provision of UFB FFLAS, ABAA must be applied using cost allocators.	Clause B1.1.6(1)(b) of Schedule B.	Decision made in accordance with IM requirements. ABAA must be used to allocate operating costs that are not directly attributable to UFB FFLAS.

IM requirement	IM clause	Nature of decision
In applying ABAA to allocate operating costs not directly attributable to the provision of UFB FFLAS, allocator types must be used from a default list in the IMs.	Clause B1.1.6(1)(c) of Schedule B.	Judgement is involved in determining which cost allocator to apply.
For asset values that are not directly attributable to the provision of UFB FFLAS, ABAA must be applied using asset allocators.	Clause B1.1.6(2)(c) of Schedule B.	Decision made in accordance with IM requirements. ABAA must be used to allocate asset values that are not directly attributable to UFB FFLAS.
In applying ABAA to allocate asset values not directly attributable to the provision of UFB FFLAS, allocator types must be used from a default list in the IMs.	Clause B1.1.6(2)(d) of Schedule B.	Judgement is involved in determining which asset allocator to apply.
Cost and asset allocators must meet the definitions in the IMs. **In both cases, cost and asset allocators are defined as ratios used to allocate costs or asset values whose quantum is based on a causal relationship or a proxy allocator.**	The definitions are set out in Clause 1.1.4(2).	Judgement is involved in determining whether a causal relationship or a proxy allocator is available.
Causal or proxy cost or asset allocators must be consistent over time and be "objectively justifiable and demonstrably reasonable".	The definitions of causal relationship, proxy asset allocator, and proxy cost allocators are set out in Clause 1.1.4(2) and Clause B1.1.1(2) of Schedule B.	Judgement is involved in determining whether a cost or asset allocator is "objectively justifiable and demonstrably reasonable".
Cost and asset allocator values must be reviewed and updated in respect of each financial loss year	Clause B1.1.6(3) of Schedule B.	Decision made in accordance with IM requirements.
Determination of another allocator type. **The Commission may determine a cost or asset allocator that is not specified in the default list in the IMs.**	Clause B1.1.6(1)(c)(x) and Clause B1.1.6(2)(d)(x) of Schedule B.	Judgement is involved in determining whether an alternative cost or asset allocator is "objectively justifiable and demonstrably reasonable". Chorus has proposed a number of alternative cost allocators (including totex, NBV, future benefits, and recipient business function).

IM requirement	IM clause	Nature of decision
When allocating an asset value or operating cost, the total asset values or operating costs allocated to UFB FFLAS must not exceed the total asset values or total operating costs that the regulated provider could not have avoided if it ceased supplying services that are not UFB FFLAS. This is subject to the condition that allocations would have a material effect on total asset values or operating costs allocated to UFB FFLAS.	Clause B1.1.6(4) and Clause B1.1.6(5) of Schedule B.	The Commission must be satisfied that this is met. Judgement is involved in determining whether the total asset values or total operating costs that would continue to be incurred by a standalone supplier of UFB FFLAS constrain the allocated costs. This cap is likely to apply where costs or asset values that are unrelated to the supply of UFB FFLAS are allocated to UFB FFLAS.

Economic framework

2.94 We have developed an economic framework to help guide the decisions we have been making in developing and implementing the new regulatory regime for Part 6. The framework helps us make individual decisions that are consistent with each other, and with the requirement to best give effect to the purposes specified in s 166(2) of the Act.[86]

2.95 Determining the initial RAB value for core fibre assets and the FLA is an important decision in implementing the new Part 6 regime. This is because it will be one of the main drivers of both the prices faced by end-users of FFLAS and the value of Chorus' regulated fibre business. There may also be wider economic ramifications in terms of signals to investors. This is particularly so in the current context, where the change in regime affects a privately-owned or listed company, and our decisions may affect investor expectations about future regulatory decisions. This matters for future investment.

[86] Commerce Commission "Fibre input methodologies: Main final decisions – reasons paper" (13 October 2020) at 2.272-2.309.

2.96 The approach that legislators (in drafting Part 6 of the Act) and we (in implementing Part 6) have taken reflects the importance of providing certainty to investors about how we approach and make decisions. In this regard, the Act provides specific direction in areas such as how assets should be valued, the recovery of past losses, and the requirement to develop IMs. In implementing the regime, we developed IMs on matters such as asset valuation and cost allocation. We did so in a way that we considered best gave (or likely best gave) effect to the purpose of Part 6 as required by s 166(2)(a), and the promotion of workable competition where relevant, as required by s 166(2)(b). The purpose of the IMs is to promote certainty. One economic principle that underpinned our development of the IMs was that of financial capital maintenance (**FCM**), which we discuss below.

2.97 Our task now is to apply the rules, requirements and processes - the IMs - as required under s 175.

2.98 The economic framework includes three components:

2.98.1 economic principles, including real FCM, allocation of risk, and asymmetric consequences of under/over-investment;

2.98.2 an incentive framework to help us evaluate how the regime may interact with the incentives faced by regulated providers and assist us in identifying risks to end-users; and

2.98.3 competition screening considerations to help us assess whether our decisions might be relevant to competitive outcomes in telecommunications markets.

2.99 At its core, our incentive regulation introduces incentives for regulated providers to behave in ways consistent with the purposes described in s 162 of the Act.

2.100 We have previously set out our views on the application of various components of the economic framework to our decisions relating to the pre-implementation period. The backward-looking and one-off nature of our decisions relating to the initial PQ RAB has implications for the application of parts of our economic framework, in particular in terms of incentivising behaviour. We discuss these further below.

2.101 In our final FLA IMs reasons paper,[87] we noted that FCM is a forward-looking concept in that it provides, at the beginning of each regulatory period, an ex-ante opportunity for efficient regulated providers to earn a normal return on their investments.[88] Allowing a regulated provider the ex-ante opportunity to earn a normal return over the lifetime of an investment is an outcome comparable to investors' expectations in workably competitive markets. The forward-looking application of FCM is thus conducive to promoting investment, consistently with the Part 6 purpose at s 162(a). Likewise, the general concept of FCM is relevant to the pre-implementation period (ie, the period starting on 1 December 2011 and ending the day prior to the implementation date of the regime, 1 January 2022) as the concept goes to what a reasonable investor would expect to recover over the lifetime of investments.

2.102 In practice, however, the application of FCM ex-ante is unlikely to result in a strict NPV=0 outcome and importantly, FCM does not guarantee a normal return ex-post.[89] This applies equally in the context of ID regulation, where ex-post returns are evaluated against the estimated regulatory WACC which is set ex-ante.

2.103 Consequently, we noted that while the FCM principle can assist us in promoting the s 162 purpose and outcomes going forward, there are limitations to its use as a tool for the calculation of the FLA in the pre-implementation period, for the following reasons.

2.103.1 The pre-implementation period is not a regulatory period, and it is unlikely that in 2011 investors' expectations were framed in terms of what a BBM with a 10-year horizon might have delivered. Part 6 regulation did not apply at the time and was not discussed in detail until several years after the commencement of the UFB initiative. Investments were made based on commercial terms achieved through the competitive UFB tendering process.

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87 Commerce Commission "Fibre input methodologies – Financial loss asset – reasons paper" (3 November 2020), from paragraph 2.29.

88 A normal rate of return is the risk-adjusted cost of capital that a typically efficient firm would expect ex ante to earn in a workably competitive market. See Commerce Commission "Fibre input methodologies: Main final decisions – reasons paper" (13 October 2020), paragraph 2.26.

89 Commerce Commission "Fibre input methodologies: Main final decisions – reasons paper" (13 October 2020), paragraphs 2.291-2.294.

2.103.2 We will determine the value of the FLA in accordance with the requirements in s 177 and in a way that we consider best gives effect to the purposes in s 162, including by considering the potential effect of our decisions on incentives of regulated providers to invest going forward. However, a strict application of FCM may not be possible in every FLA IM decision given the statutory requirements, the limited information about investor expectations for the pre-implementation period, and the ex-post nature of the calculation of the FLA.[90] The Act acknowledges at s 177(4) that "It is not the intention […] that regulated fibre service providers should be protected from all risk of not fully recovering those financial losses through prices over time".

2.104 In our main IMs final reasons paper, we also noted that the principle of asymmetric consequences of under- or over-investment is relevant mainly to our final decision on whether an adjustment might be required when calculating the regulatory WACC to protect end-users from the risk of under-investment.[91] We also said that this principle may be relevant to future decisions on the quality standards we set under PQ regulation or the performance measures to be reported under ID.

2.105 In terms of incentives, the backward-looking and one-off nature of the calculation of the initial RAB value of core fibre assets and the FLA indicate that there will be different implications for incentives facing regulated providers from those when we are assessing forward-looking expenditure proposals. For example, we typically want to incentivise regulated providers to minimise costs over time, and to share cost savings with end-users. As we noted in our main IMs reasons paper, the design of the regulatory regime and our periodic resetting of the price paths ensure that regulated providers have incentives to improve efficiency over time and to allow end-users to share in the benefits of any such efficiency gains.[92]

[90] For a discussion of the status of the key economic principles see Commerce Commission "Fibre input methodologies: Main final decisions – reasons paper" (13 October 2020), paragraphs 2.282-2.288.

[91] Commerce Commission "Fibre input methodologies: Main final decisions – reasons paper" (13 October 2020), paragraph 2.309.

[92] Ibid, paragraphs 2.320-2.321.

2.106 However, our decisions on the initial RAB value of core fibre assets and the FLA relate to the historic valuation of assets and losses. The incentives that did operate on regulated providers during the pre-implementation period are more likely to have been influenced by other factors, such as the competitive tendering process of the UFB contracts. As we noted in our final FLA IMs reasons paper, the competitive tendering of the UFB contracts was one of the reasons given by the Ministry for Business, Innovation, and Employment (**MBIE**) for not requiring a backward-looking efficiency test to be applied when determining the initial RAB value.[93]

2.107 This does not mean that the determination of the initial RAB value does not have potential implications for incentives going forward. However, we consider that such risks are mitigated by the IMs, the purpose of which is to promote certainty under s 174. We note that, but for the amendments to the IMs made in November 2021, the IMs were finalised in October 2020 (in the case of the main IMs) and November 2020 (in the case of the FLA), and that we are now implementing the IMs through our fibre PQ, ID, and initial RAB decisions.

2.108 Another difference between our assessment of expenditure proposals and our determination of the initial RAB value as of the implementation date is that the former are periodically repeated, whereas the latter is a one-off exercise. The repeated nature of regulation and the scrutiny of expenditure forecasts allows us to observe expenditure outturns over time, lessening the incentive, and therefore risk, of regulated providers gaming the expenditure forecasts.[94] However, determining the initial RAB value as of the implementation date is a one-off exercise, and so any information asymmetries involved in that determination are likely to have more entrenched effects.

2.109 Finally, in terms of the competition screening considerations, we noted in our final FLA IMs reasons paper that we had not identified any reasons why the promotion of workable competition in telecommunications markets for the long-term benefit of end-users of telecommunications services has implications for our final decisions for the FLA IM that would require us to take a different approach from our chosen decisions which promote s 162(a)-(d).[95]

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93 Commerce Commission "Fibre input methodologies – Financial loss asset – reasons paper" (3 November 2020), paragraph 2.119.

94 Ibid, paragraph 2.332.1.

95 Ibid, paragraph 2.92.

2.110 However, promoting workable competition does have a bearing on cost allocation decisions between regulated and unregulated services, as discussed in this paper (for example at paragraphs 3.44, 4.15, and 4.16).

Chapter 3 Overall approach to the initial PQ RAB and the FLA

Purpose of this chapter

3.1 This chapter summarises our final decisions and addresses overarching issues that impact the whole of the initial PQ RAB setting process.

Structure of this chapter

3.2 The structure of this chapter is as follows:

3.2.1 summary of our final decisions;

3.2.2 Chorus' $5.5 billion estimate of the initial RAB as our starting point;

3.2.3 Chorus' alternative $6 billion estimate of the initial RAB;

3.2.4 mitigating the risk of double-recovery; and

3.2.5 how the Commission has gone about identifying assets employed in the provision of regulated FFLAS.

Summary of final decisions

3.3 As further discussed below, we have used the model Chorus submitted to us on 26 March 2021 that produces an estimate of $5.5 billion as the starting point for our determination of Chorus' initial PQ RAB.

3.4 Subject to the exceptions discussed in Chapter 5, our final decision is to accept the cost and asset allocators Chorus proposed in its model of 26 March 2021.

3.5 We have also considered Chorus' alternative $6 billion estimate of the initial RAB submitted on 28 May 2021. Our final decision is that Chorus' alternative cost allocation approach on which its $6 billion estimate is based does not comply with the IMs or s 177 of the Act, nor does it best give effect to the purpose of Part 6. In addition, the cost allocators that have been proposed by Chorus in its alternative model and which result in an initial RAB value of approximately $6 billion are not objectively justifiable or demonstrably reasonable. This decision is unchanged from our draft decision.

3.6 The combined results of applying these decisions (including the ones discussed in later chapters) are set out in Table 3.1 below, compared with the values from our draft decision and the values proposed by Chorus.

Table 3.1 Our determination of the transitional initial PQ RAB values

Value	Unallocated values ($ millions)				Allocated values ($ millions)			
	Final decision	*Draft decision*	*Chorus' estimate*	*Difference (final vs Chorus' estimate)*	*Final decision*	*Draft decision*	*Chorus' estimate*	*Difference (final vs Chorus' estimate)*
Initial PQ RAB (total)	6,526	6,551	6,566	-40	5,425	5,427	5,507	-82
Core Fibre Assets	5,136	5,104	5,104	32[96]	4,034	3,980	4,045	-12
FLA	n/a	n/a	n/a	n/a	1,391	1,446	1,462	-71
Tax losses[97]	n/a	n/a	n/a	n/a	-955	-1001	-803	-152

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3.7 The cash flows underlying the calculation of the transitional FLA are set out in Table 3.2. The "UFB asset base closing value at implementation date" in the table is the value at the end of the pre-implementation period of the UFB assets. This differs from the value of "Core Fibre Assets" in Table 3.1 as that reflects the addition of FFLAS assets that were not UFB assets.

Table 3.2 Calculation of the transitional FLA ($m)

Cash flow	Value of cash flows												Present value
	Start date 1 Dec 11	*7 months to 30 Jun 12*	*Full year to 30 Jun 13*	*Full year to 30 Jun 14*	*Full year to 30 Jun 15*	*Full year to 30 Jun 16*	*Full year to 30 Jun 17*	*Full year to 30 Jun 18*	*Full year to 30 Jun 19*	*Full year to 30 Jun 20*	*Full year to 30 Jun 21*	*6 months to 31 Dec 21*	
UFB revenues cash flow		16,498	34,411	41,232	66,777	100,607	165,552	238,310	333,432	433,902	527,183	307,048	2,664,883
UFB initial asset value	-31,660												-62,941
UFB value of net commissioned assets cash flow		-139,082	-423,688	-417,826	-467,068	-376,763	-450,908	-523,966	-637,156	-523,419	-593,450	-251,287	-6,540,082
UFB operating expenditure cash flow		-16,922	-37,856	-41,392	-76,123	-100,710	-109,011	-110,565	-131,915	-140,371	-160,565	-87,596	-1,296,273
UFB cost allocation adjustment cash flow		-4,210	-7,004	-14,243	-23,914	-31,452	-39,324	-52,619	-53,823	-46,666	-30,041	0	-396,005
UFB tax costs cash flow		0	0	0	0	0	0	0	0	0	0	0	0
Present value of total net cash flows													-5,630,418
Add UFB asset base closing value at implementation date													3,804,391
Add present value benefit of Crown financing													434,807
Transitional FLA													-1,391,220

[96] As part of integrating Chorus' initial PQ RAB and our own high-level discounted cashflow (DCF) models and quality assurance processes ahead of the final decision, Analysys Mason identified errors in Chorus' initial PQ RAB model. The $32 million increase in the unallocated Core Fibre Asset value between our final decision and Chorus' estimate from March 2021 is due to the error corrections applied by Analysys Mason. See paragraphs 3.26-3.28.

[97] In the draft decision we reported these numbers as the tax effect of losses. In this final decision we have reported these numbers as the "opening tax losses" for disclosure year 2022, which is consistent with clause 2.3.3(3)(a)(i) of the IMs as amended. The tax effect of losses is equal to "opening tax losses" multiplied by the corporate tax rate of 28%.

3.8 We also set out our views on the mitigation of the risk that costs that are shared between FFLAS and other services are over-recovered. We remain of the view that TERA's proposal for mitigating the risk of double recovery is not appropriate for the purposes of determining Chorus' initial PQ RAB value. The revenues that Chorus has earned from services that are not UFB FFLAS were set under the regulatory regime for copper. As such, it is not appropriate to use the cross-check proposal in the context of Part 6.

3.9 In order to guard against double-recovery, and to help ensure an appropriate allocation of shared costs between UFB FFLAS and services that are not UFB FFLAS, we have outlined a number of mitigating steps (discussed below and in more detail throughout this paper). Our final decision is consistent with our decision in the final FLA IMs reasons paper on TERA's proposed cross-check.

Chorus' estimate of the initial PQ RAB

3.10 On 26 March 2021, Chorus submitted its estimate of the initial PQ RAB of $5.5 billion to us, stating that "[t]his model is compliant with the Commission's Input Methodologies requirements...".[98]

3.11 This took the form of two Excel models.

3.11.1 Initial Asset Value model that calculates the initial asset valuation at the implementation date (**BBM IAV model**)[99,100]; and

3.11.2 Opex model that allocates operating costs as described in clause 2.1.1 of the IMs (**Opex model**).[101,102]

3.12 Together, the models undertake the various calculations required to produce Chorus' initial PQ RAB estimate, which is comprised of:

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98 See Chorus stock exchange announcement (26 March 2021).

99 Chorus' BBM IAV model is described in Analysys Mason report for Chorus "Building Block model IAV model documentation IAV model v314_120c" (24 March 2021).

100 Chorus uses the term Initial Asset Value (IAV) in its model and model documentation. This term is defined by Analysys Mason as "[t]he starting value of the RAB at implementation date" (Analysys Mason report for Chorus "Building Block model IAV model documentation IAV model v314_120c" (24 March 2021), page A-12), and is equivalent to the term initial RAB. We use the terms IAV and initial RAB interchangeably in this draft decision and in the IMs. Similarly, we will also use the terms Chorus' initial RAB model and BBM IAV model interchangeably.

101 Chorus' opex model is described in Analysys Mason report for Chorus "Documentation of opex allocation for the BBM Opex workstream (including responses to notice to supply information) – Model version 3.31" (26 March 2021).

102 *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 2.1.1.

3.12.1 Chorus' estimate of the opening initial PQ RAB values of core fibre assets employed in providing PQ FFLAS at 1 January 2022; and

3.12.2 Chorus' estimate of the FLA, reflecting the value of accumulated unrecovered returns in providing UFB FFLAS over the financial loss period (ie, the period from 1 December 2011 to 31 December 2021).[103]

3.13 We have included an overview of Chorus' initial PQ RAB model in Attachment B of this paper.

3.14 We released a public version of Chorus' BBM IAV model, along with its model documentation, at the time of our consultation on Chorus' initial PQ RAB on 30 April 2021. We subsequently engaged further with Chorus over the level of redactions and revised public versions of Chorus' BBM IAV model and model documentation were published with our draft decision on Chorus' initial PQ RAB value on 19 August 2021.[104]

Evaluating Chorus' initial PQ RAB proposal

3.15 As set out in our proposed process and approach paper, our approach has relied on Chorus' modelling complemented by a comprehensive package of assurance.[105] As discussed below, we have also consulted with stakeholders on both Chorus' estimate of its initial PQ RAB, and on our draft decision on Chorus' initial PQ RAB.[106,107]

3.16 We have had regular engagement with Chorus about its estimate of the initial PQ RAB, to understand the process it has undertaken to develop the calculation. This engagement has included workshops with Analysys Mason, the consultancy that assisted Chorus to develop the models that calculate Chorus' estimate of its initial PQ RAB.

3.17 We have gathered further information from Chorus under s 221 notices and through a number of voluntary requests for information (**RFIs**).

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[103] "UFB FFLAS" is defined in the Schedule B of the IMs as "any FFLAS provided by a regulated provider under the UFB initiative during the financial loss period".

[104] See https://comcom.govt.nz/regulated-industries/telecommunications/projects/fibre-price-quality-path-and-information-disclosure

[105] Commerce Commission "Fibre Information disclosure and price-quality regulation – proposed process and approach for the first regulatory period" (15 September 2020), paragraphs 5.135- 5.136.

[106] Commerce Commission "Chorus' initial price-quality regulatory asset base as at 1 January 2022 - Consultation on Chorus' initial price quality RAB proposal" (30 April 2021).

[107] Commerce Commission "Chorus' initial regulatory asset base as at 1 January 2022 – Draft Decisions: Reasons paper" (19 August 2021).

3.18 We have run scenarios through our own high-level discounted cashflow (**DCF**) model and compared our results to those from Chorus, as well as sought further assistance from independent experts.

3.19 We have checked whether Chorus' methodology and estimate of its initial PQ RAB aligns with the requirements set out in the IMs.

3.20 We analysed materiality and sensitivity of the model results to key inputs which allowed us to identify possible risk areas and prioritise our efforts on potential issues with Chorus' estimate of its initial PQ RAB.

3.21 Our 30 April 2021 consultation allowed stakeholders an early view of Chorus' estimate of its initial PQ RAB and the associated model documentation and provided an opportunity for stakeholders to comment on Chorus' estimate. Our high-level analysis informed the focus of this consultation on what we considered likely to be the most material issues for the purposes of determining the initial RAB, being:

3.21.1 Chorus' proposal as to which operating costs/assets would be treated as directly attributable to FFLAS; and

3.21.2 Chorus' proposed cost or asset allocators.

3.22 We received submissions on Chorus' estimate and the issues outlined in our 30 April 2021 consultation on 28 May 2021.

3.23 Our draft decision on Chorus' initial PQ RAB value was published for consultation on 19 August 2021.

3.24 We received submissions on our draft decision on 16 September 2021, and cross-submissions on 30 September 2021. We have taken these submissions and cross-submissions into account in reaching our final decision on Chorus' transitional initial PQ RAB value.

3.25 With the exceptions discussed in Chapter 5, our final decision is to accept the cost and asset allocators Chorus proposed in its model.

Correction of errors in Chorus' initial PQ RAB model

3.26 As part of integrating the initial PQ RAB and DCF models and quality assurance processes ahead of the final decision, errors in Chorus' initial PQ RAB model were identified.

3.27 The overall result of these errors is $68 million or 1.25% of final transitional initial PQ RAB.

3.28 These errors, as documented by Analysys Mason, are set out in Table 3.3 below.

Table 3.3 Error correction in Chorus' initial PQ RAB model

Error	Description
Transfer of opex into IAV and MAR fixed	Opex service category data as an input from the opex model to the IAV and MAR models has been adjusted to avoid colliding with other input data from the opex model. This now means that the "Chargeable damages (fibre)" is now correctly included in the FFLAS allocated opex.
Opex model errors	A series of changes to the opex model to resolve incorrect references in formulae and to address circularities.
Building rates as passthrough	Correction to the allocation of building rates in the opex model to treat them as pass-through categories rather than as opex.
WACC	IAV model now uses WACC inputs provided by the Commission, that are then linked into the MAR model.
VCA	Correction to the treatment of converting capex values to commissioned asset (VCA) values between the regulatory templates and IAV and MAR models.
Tax loss uses alternate calculation	The starting value of the tax effect of tax loss in the MAR uses the Commission alternate method, calculated on a separate sheet in the IAV model, which is based on an implementation of the same calculation that is in the Commission's summary calculation.
CTO common cost alternate	Changes to the opex model to allow for the alternate CTO common cost allocators as proposed by Chorus, and to the IAV and MAR models to receive these new inputs.
RPE calculation errors	Two small errors were corrected in the cost escalation calculation.
WACC calculation error	An error was corrected in the calculation of the WACC.

Chorus' alternative $6 billion RAB

Our final decision

3.29 Our final decision is that Chorus' cost allocation approach on which its alternative $6 billion estimate is based does not comply with the IMs or s 177 of the Act, nor does it best give effect to the purpose of Part 6. In addition, the cost allocators that have been proposed by Chorus in its alternative model and which result in an initial RAB value of approximately $6 billion are not objectively justifiable or demonstrably reasonable.

3.30 We have therefore focussed our scrutiny on Chorus' 26 March 2021 estimate for the initial PQ RAB value of $5.5 billion and the associated cost allocations to determine whether they are compliant with the IMs and best give effect to the purpose of the Act.

Summary of issue

3.31 In addition to its estimated initial PQ RAB value of $5.5 billion, Chorus put forward an alternative estimate of up to $6 billion. The basis on which Chorus has calculated this $6 billion estimate is an alternative cost allocation approach which in our view departs from the requirements of the Act and the IMs.

3.32 Chorus initially argued that where costs are not "directly attributable" to the provision of regulated services in accordance with the IMs, but the costs were incurred as a direct result of Chorus' participation in the UFB initiative, then a causal or proxy allocator should be used that allocates 100% of the costs to regulated FFLAS.[108]

3.33 The specific allocators Chorus proposed to use when allocating certain categories of operating costs under this alternative estimate are:[109]

3.33.1 "Fibre 60 and Totex 40";[110] and

3.33.2 "Fibre".[111]

3.34 This results in allocating a greater proportion of certain operating costs to UFB FFLAS and as such, results in a higher FLA. These allocators are discussed further below.

3.35 In this section, we set out:

3.35.1 the background to the issue;

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[108] Chorus "Submission on Commission's consultation on Chorus' initial PQ RAB" (28 May 2021), page 3.

[109] Chorus also proposed two allocators to apply to "pass-through costs": "Pass-through costs (excluding Rates) Fibre" and "Pass-through costs (excluding Rates) Revenue" allocators. However, as explained below these allocators were actually changed to ensure IM compliance, and not as a result of the alternative RAB proposal.

[110] As discussed below, Chorus' "Fibre 60 and Totex 40" allocator is a weighted average of Fibre (which has a 100% allocation to UFB FFLAS) and Totex (which has an allocation based on total expenditure on UFB FFLAS as a proportion of overall total expenditure). A 60% weight is applied to the Fibre allocator and a 40% weight is applied to the Totex allocator.

[111] Chorus' "Fibre" allocator allocates 100% to UFB FFLAS.

3.35.2 our initial analysis of Chorus' alternative approach that was set out in our draft decision;

3.35.3 summary of stakeholders' views on our draft decision;

3.35.4 our analysis of stakeholders' views on our draft decision; and

3.35.5 our final decision on whether Chorus' alternative cost allocation approach would comply with the IMs and s 177 of the Act and give best effect to the purpose of Part 6.

Background to the issue

3.36 When Chorus first announced it had submitted its BBM IAV model to the Commission on 26 March 2021, it stated that the model was compliant with the IMs and supported an initial RAB of $5.5 billion for Chorus' FFLAS as of 1 January 2022.[112] [113]

3.37 Chorus also noted that it had provided an alternative cost allocation approach that supported potential RAB estimates of up to $6 billion, reflecting the standalone requirements of participating in the UFB initiative.

3.38 As we pointed out in our initial RAB consultation paper in April 2021, Chorus stated that the main point of departure for its alternative cost allocation approach was in the treatment of opex and the consequential impact on the FLA.[114] We noted that during its investor briefing on its IAV model, Chorus acknowledged that this standalone cost approach was technically not compliant with the IMs.[115]

3.39 In its submission on the initial RAB consultation paper, Chorus claimed that its position had been mischaracterised, and that the Commission had "dismissed, without any consideration" Chorus' view that a valuation in the range of $6 billion would better reflect the requirements of s 177 and the unique circumstances in which Chorus was established.[116]

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[112] As we note earlier, Chorus use the term Initial Asset Value (IAV) whereas we use the term initial RAB value.

[113] See Chorus stock exchange announcement (26 March 2021).

[114] Chorus "Submission on Commission's consultation on Chorus' initial PQ RAB" (28 May 2021), paragraphs 3.28-3.29.

[115] See Chorus IAV Model investor presentation - 26 March 2021.

[116] Chorus "Submission on Commission's consultation on Chorus' initial PQ RAB" (28 May 2021), paragraph 2.

Our initial analysis of Chorus' alternative approach in our draft decision

3.40 In our draft decision, we noted that the IMs define costs to be "directly attributable" to the regulated service where they are "wholly and solely" incurred or employed in the provision of that service.[117] We said that where a cost meets that definition, no cost allocation will be required, and it will enter the initial PQ RAB at its full value.[118] Where an operating cost or asset value is not directly attributable to FFLAS, but is incurred or employed in the provision of FFLAS, then the value of that cost or asset to be included in the allocated RAB must be determined by applying cost allocators or asset allocators (as applicable) that meet the requirements of the cost allocation IM.[119]

3.41 We said that cost or asset allocators are applied where the opex is incurred or the asset is employed in the provision of regulated FFLAS as well as services that are not regulated FFLAS (or in the case of the FLA, UFB FFLAS and services that are not UFB FFLAS). We noted that Chorus appeared to be advancing a policy argument that where costs were only incurred due to Chorus' participation in the UFB initiative (ie, Chorus would not have incurred them "but for" its decision to participate in the UFB initiative) then they should be included without deduction in the allocated RAB and recovered through FFLAS prices, regardless of whether those costs also supported the provision of other services.

3.42 We also noted that Chorus appeared to accept that cost allocation rules must be applied to costs that were partly (but not wholly) incurred in the provision of regulated services under the UFB initiative. Its specific argument was that for certain categories of costs, the Commission should adopt a "proxy" cost allocator that allocates 100% of the costs to the regulated service, regardless of whether those costs supported the provision of other services.

3.43 In our chapter on "direct attribution", we explained why we disagreed with Chorus' view that s 177 'requires' the allocation of 100% of shared costs to regulated services. [120] Under the IMs, if the Commission is satisfied that the costs are not directly attributable to regulated services, then the IMs require it to select an appropriate cost allocator, and that exercise is a matter for the Commission's judgement.

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[117] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 1.1.4 - definition of "directly attributable".

[118] Ibid, clause 3.2.1(1). Likewise a cost that is directly attributable to a non-regulated service must be excluded under clause 3.2.1(2).

[119] Ibid, clause 3.2.1(3)-(4).

[120] See paragraph 4.43 and footnote 203 below.

Application of the s 162 purpose of Part 6 of the Act and s 166(2)

3.44 We said that s 162(c) is relevant to the issue of cost allocation. According to s 162(c), one of the outcomes of Part 6 of the Act is that regulated fibre service providers allow end-users to share the benefits of efficiency gains in the supply of FFLAS, including through lower prices. A cost allocator that reflects the sharing of operating costs allows FFLAS end-users to share in the benefits of the efficiency gains in the supply of FFLAS (in the form of economies of scope, where FFLAS is supplied along with other services). Allowing for such sharing therefore promotes s 162(c).

3.45 We noted that Chorus' proposed alternative approach to cost allocators would result in a relatively high allocation of operating expenses to regulated FFLAS. In doing so, Chorus' approach would limit the extent to which FFLAS end-users are able to share in the benefits of efficiency gains where operating expenses were incurred in respect of both regulated FFLAS and services that are not regulated FFLAS.

3.46 We also said that the promotion of workable competition under s 166(2)(b) of the Act is also relevant to the issue of how to allocate operating expenses, including Chorus' proposed alternative approach. If such operating expenses are incurred in respect of both regulated FFLAS and services that are not regulated FFLAS (such as copper-based services), a disproportionate allocation of these expenses to regulated FFLAS may distort competition, including in the supply of other services.

Our analysis of the specific allocators proposed by Chorus under its alternative $6 billion RAB valuation

3.47 When Chorus first submitted its BBM IAV model in March 2021, it put forward its proposed cost allocators to be applied to operating costs. A description of the cost allocators, the rationale for choosing the preferred allocator, and the various alternative allocators that Chorus considered, is provided in the opex model documentation.[121] In each case Chorus considered and rejected various alternative cost allocators, including one referred to as 'Fibre 60 and Totex 40'.

[121] Analysys Mason Documentation of opex allocation for the BBM opex workstream (including responses to notice to supply information) (Model version v3.31) (22 March 2021), Chapter 4.

3.48 In its submission on our initial RAB consultation paper, Chorus provided "a model … that sets out an approach that better reflects the Act, with an indicative value of approximately $6 billion."[122] Chorus claimed that "this valuation better reflects the requirements of s 177 and is consistent with the requirements of the IMs."[123]

3.49 In its alternative $6 billion RAB model, Chorus has applied the 'Fibre 60 and Totex 40' allocator which it previously rejected, to a number of opex categories, without providing any justification for these changed allocators. In our draft decision, we noted that Chorus had not explained why it proposed to use the allocators it had earlier rejected in its $5.5 billion model.

3.50 We also made the following observations on Chorus' proposal to replace the proxy allocators it used in its 26 March 2021 calculation with alternative proxy allocators in its $6 billion estimate.

3.51 Chorus proposed a number of new proxy allocators to replace a number of existing proxy allocators (see paragraph 3.33 above).

3.52 Two of what we considered in our draft decision analysis were new proposed allocators relating to the alternative approach, and which had the same annual allocation factors as the allocators they replace, were as follows:

3.52.1 a "pass through costs (excluding rates) revenue" allocator, which replaces a "revenue" allocator; and

3.52.2 a "pass through costs (excluding rates) fibre" allocator, which replaces a "fibre" allocator.

3.53 Chorus proposed a third allocator, a "fibre" allocator (which was already in use and directly attributes costs to UFB FFLAS) to replace the existing "totex" allocator for some opex categories. This increases the allocation of these costs to UFB FFLAS to 100% across the pre-implementation period, from the totex allocator which grows from approximately 34% to 74% over the pre-implementation period.

[122] Chorus "Submission on Commission's consultation on Chorus' initial PQ RAB" (28 May 2021), page 2.

[123] Ibid.

3.54 The fourth proxy allocator is the new "Fibre 60 and Totex 40" allocator. This calculates the allocation by applying a 60% weight to a UFB FFLAS 100% allocation and a 40% weight to the existing totex (which as noted above grows from approximately 34% to 74% over the pre-implementation period). There are a number of existing allocators that would be replaced by this proxy allocator, as set out in Table 3.4.

Table 3.4 Opex categories where Chorus has proposed alternative Fibre 60 and Totex 40 allocator

Expense category[124]	Original allocator proposed by Chorus (26 March 2021)	Alternative allocator proposed by Chorus (28 May 2021)
CNO – NPC – Network	Service company overhead	Fibre 60 and Totex 40
CNO - NPC - property - accommodation	Accommodation relationship driver	Fibre 60 and Totex 40
CNO - NPC - property - power	Power relationship driver	Fibre 60 and Totex 40
CNO - NPC - property - overhead	Corporate personnel	Fibre 60 and Totex 40
CNO - NPC - billing agency	Other services	Fibre 60 and Totex 40
CNO - NPC - Assure	Maintenance overhead	Fibre 60 and Totex 40
CNO - NPC - copper operations	Copper	Fibre 60 and Totex 40
CNO - NPC - fibre operations	Fibre	Fibre 60 and Totex 40
CNO - NPC - Provisioning	Provisioning overhead	Fibre 60 and Totex 40
CNO - NPC - CC Provisioning	CC Provisioning	Fibre 60 and Totex 40
CNO - NPC - Customer Supply & Billing	Customer Supply & Billing	Fibre 60 and Totex 40
CNO - NPC - overall serco management	Service company overhead	Fibre 60 and Totex 40
CNO - NPC - Operations & Optimisation	Service company overhead	Fibre 60 and Totex 40
CNO - NPC overhead costs	Service company overhead	Fibre 60 and Totex 40
CTO - NPC	CTO Overhead	Fibre 60 and Totex 40
Marketing & Sales - NPC	Future benefits	Fibre 60 and Totex 40

[124] The expense categories relate to Net Personnel Costs (NPC) of Chorus' Customer and Network Operations (CNO) and Chief Technology Office (CTO) functions, and Marketing & Sales NPC.

3.55 Chorus asserted that these new proxy allocators better meet the requirements of the Act.[125] For example, Chorus submitted that there are a number of costs attributable to the UFB initiative for which it had been unable to identify a suitable causal allocator. According to Chorus, "[i]n those cases, in order to best give effect to s 177, the Commission should use a proxy allocator that allocates 100% of those shared costs that were incurred as a direct result of participating in the UFB initiative."[126] Chorus gave examples of certain shared IT assets, and corporate overhead costs.

3.56 In our draft decision, we noted that Chorus had not provided any information or explanation that supports its claim that the new allocators that it proposes (and which are listed at paragraph 3.33 above) meet the test of being "objectively justifiable and demonstrably reasonable".[127] As noted above, as part of its initial RAB model provided in March, Chorus did provide some rationale for its choice of the original cost allocators. Chorus noted that it had considered and rejected a range of allocators at that time, including the 'Fibre 60 and Totex 40' allocator that it has subsequently put forward to support its alternative $6 billion RAB estimate.

3.57 We provided some examples of changes proposed by Chorus to existing allocators that had not, in the Commission's view, been demonstrated to be "objectively justifiable and demonstrably reasonable". These included the proposed substitution of the new proxy 'Fibre 60 and Totex 40' allocator for the following existing proxy allocators:

3.57.1 a copper allocator - directly attributable to non-FFLAS;

3.57.2 a fibre allocator - directly attributable to FFLAS; and

3.57.3 a CTO Overhead allocator, originally justified on the basis that it allocates the cost of CTO staff based on the weighted average of the other CTO allocation drivers, given CTO staff are managing overall CTO spend.

3.58 For example, in its 26 March 2021 initial RAB model, Chorus stated that the opex category 'CNO – NPC – copper operations' should be:[128]

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[125] Chorus "Submission on Commission's consultation on Chorus' initial PQ RAB" (28 May 2021), paragraphs 4, 6 and 28.

[126] Ibid, paragraph 28.

[127] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 1.1.4(2).

[128] Analysys Mason Documentation of opex allocation for the BBM opex workstream (including responses to notice to supply information) (Model version v3.31) (22 March 2021), Chapter 4, page 18.

Directly attributable to non-FFLAS services. Entirely allocated to copper services and not to be included in the fibre BBM calculations.

3.59 Under its alternative model submitted on 28 May 2021, Chorus proposed to allocate a significant share of these costs to UFB FFLAS, using the 'Fibre 60 and Totex 40' allocator.

3.60 Based on our analysis contained in our draft decision, we noted that the change in allocator values proposed by Chorus would have a material value impact, as illustrated in the following figures. In each case, the 20 opex categories for which Chorus had proposed to change the cost allocators (to one of the four allocators listed in paragraph 3.33 above) are shown. Figure 3.1 shows the allocator values for 2012 as proposed by Chorus in its 26 March 2021 initial RAB model, compared to its alternative allocator values in its 28 May 2021 initial RAB model. Figure 3.2 shows the comparison in allocator values for 2022.

Figure 3.1 Comparison of Chorus' original and alternative opex allocator values for 2012

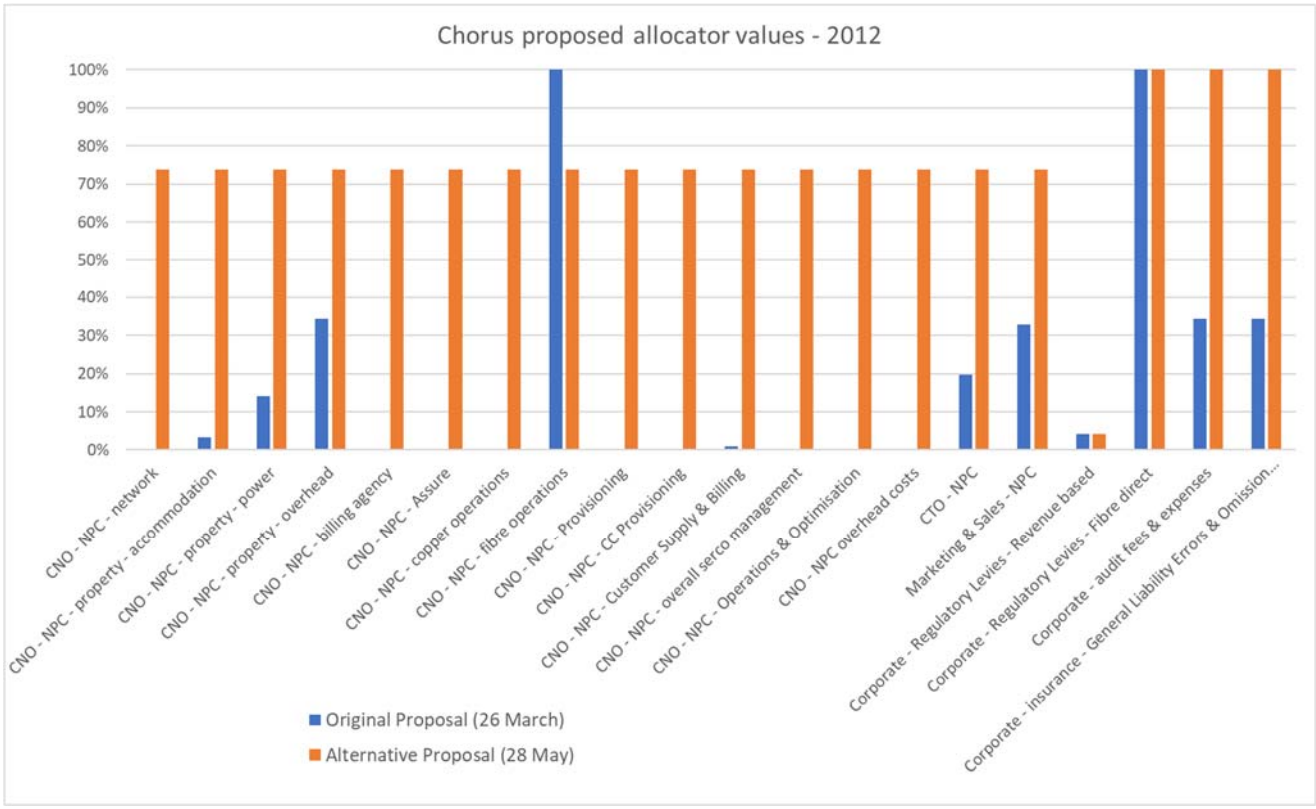
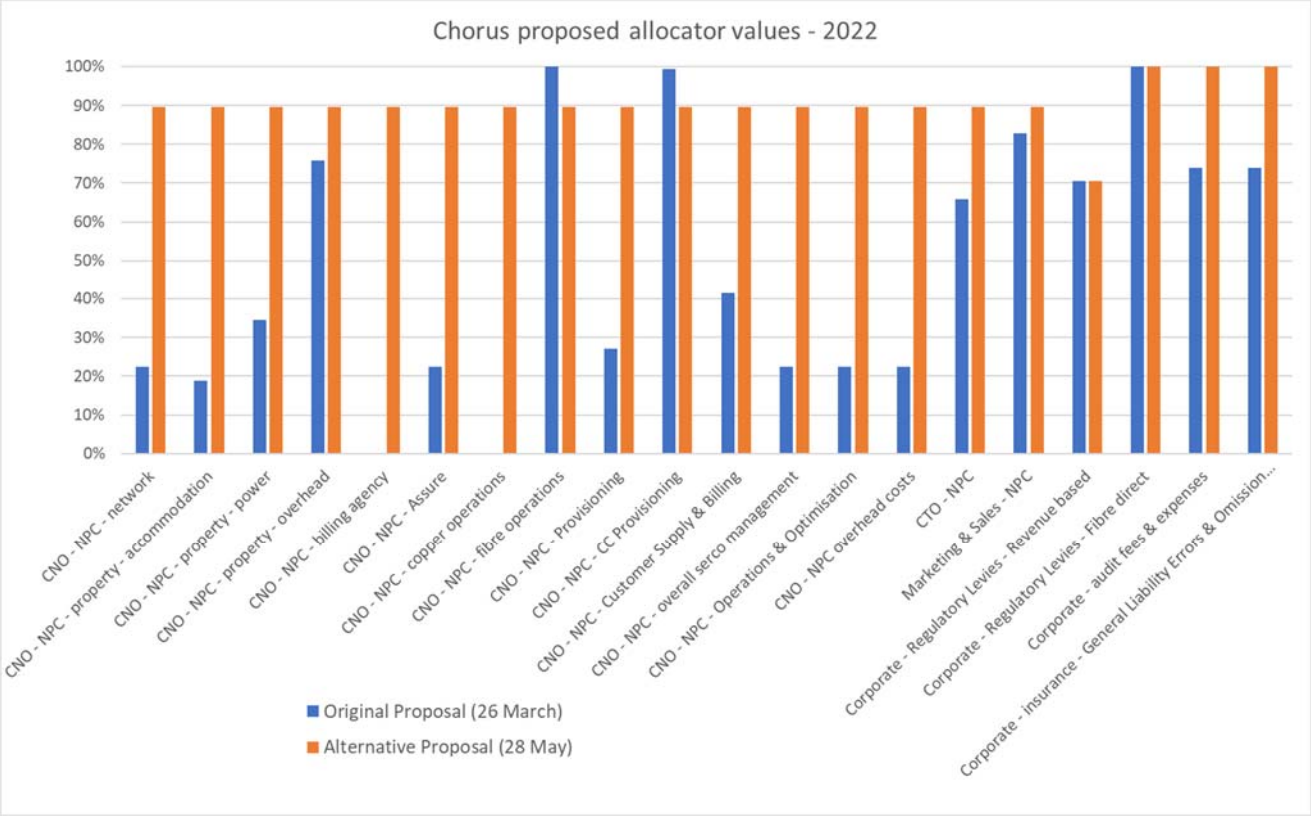


Figure 3.2 Comparison of Chorus' original and alternative opex allocator values for 2022



3.61 As can be seen from the above figures, in the majority of cases where Chorus had proposed a change in opex allocators, the allocations to UFB FFLAS would increase significantly over the pre-implementation period. These increased allocations would lead to a higher FLA, resulting in Chorus' initial RAB estimate increasing from $5.5 billion to approximately $6 billion.

Draft decision

3.62 Our draft decision was that the alternative allocators that have been proposed by Chorus in its alternative model submitted on 28 May 2021 and which result in an initial RAB value of approximately $6 billion had not been demonstrated by Chorus to be objectively justifiable or demonstrably reasonable. For that reason, our draft view was that Chorus' alternative valuation of the initial RAB of approximately $6 billion was not compliant with the IMs. Further, as discussed at paragraphs 3.40 to 3.46 above, we did not consider that these alternative allocators were consistent with s 177 and would not best give effect to s 166(2) since they would effectively allow Chorus to recover costs entirely through FFLAS prices where those costs are also recoverable from unregulated services.

3.63 We therefore proceeded to scrutinise Chorus' 26 March model (which produces the $5.5 billion estimate), and the allocators proposed by Chorus as part of that model.

Summary of stakeholders' views on our draft decision

Submissions

3.64 In its submission on our draft decision, Chorus argued that it had provided a "conservative starting RAB of $5.5b".[129] Chorus submitted that "different IM-compliant choices on technical matters are available and better reflect the outcomes that in our view were expected under the Act. This would increase the range of the initial RAB to up to $6b."[130]

3.65 Chorus submitted "that the IMs and Telecommunications Act could support the $6b valuation, as a standalone cost approach", for the following reasons:[131]

3.65.1 Chorus was established to build and operate a fibre network. As a result, the costs of establishing Chorus are incremental to the UFB initiative.

3.65.2 In a workably competitive market, Chorus' incremental investment in establishing the fibre business would be recovered from consumers of the fibre service and not consumers of copper services.

3.65.3 Fibre was and is expected to replace copper in UFB areas, with the result that Chorus' focus has been on fibre investment and uptake.

3.66 Chorus referred to the alternative allocators that in its view better reflect the cost drivers of the fibre business, including the Fibre allocator (100% to FFLAS) and the Fibre 60 Totex 40 allocator.[132]

3.67 Chorus also submitted that the Commission had misunderstood the reason for Chorus' proposed change in the following cost allocators:[133]

3.67.1 Pass-through costs (excluding rates) revenue; and

3.67.2 Pass-through costs (excluding rates) fibre.

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[129] Chorus "Submission on fibre PQID initial RAB and IM amendments draft decision"" (16 September 2021), paragraph 79.

[130] Ibid.

[131] Ibid, paragraph 81.

[132] Chorus "Submission on fibre PQID initial RAB and IM amendments draft decision"" (16 September 2021),, paragraph 82.

[133] Ibid, paragraph 83.

3.68 Chorus noted that it had previously included pass-through costs in the opex building block, and that the reclassification of these costs was to be consistent with the IM requirements (separating them from other opex and allowing them to be included as pass-through costs in the revenue allowance calculation).[134] We acknowledge that the changes relating to these allocators was for the purposes of IM compliance.

3.69 Vocus agreed with our draft decision that Chorus' alternative RAB model should be disregarded:[135]

> We agree with the Commission, and other stakeholders, that Chorus' "alternative" estimate of the RAB value of $6 billion is not IM compliant and "the alternative allocators that have been proposed by Chorus in its alternative model submitted on 28 May 2021 and which result in an initial RAB value of approximately $6 billion are not objectively justifiable or demonstrably reasonable".

Cross-submissions

3.70 In its cross-submission, Spark supported the Commission's and Vocus' views that Chorus' alternative $6 billion RAB proposal "is not objectively justifiable or demonstrably reasonable and does not comply with the IMs or give best effect to the purpose of Part 6."[136]

3.71 Spark submitted that Chorus had described itself as a multi-service broadband provider operating one network and two technologies (copper and fibre), and that this results in the need to consider the allocation of shared costs as set out in the IMs.[137] Spark noted that the Commission had considered and rejected an incremental cost approach to the FLA, due to concerns that Chorus would not be able to recover its costs across multiple services.[138]

3.72 Spark concluded that Chorus' proposed alternative approach is inconsistent with the IMs.[139]

3.73 A number of cross-submissions from investors supported Chorus' view that further consideration should be given to Chorus' $6 billion RAB estimate:

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[134] Ibid, paragraph 84.

[135] Vocus "Submission on fibre PQID initial RAB draft decision" (16 September 2021), paragraph 26.

[136] Spark NZ – "Submission on Fibre PQ initial RAB cross-subs – 11 October 2021 - Updated" (21 October 2021), paragraph 7.

[137] Ibid, paragraph 8.

[138] Ibid, paragraph 9.

[139] Ibid, paragraph 10.

3.73.1 Investors Mutual said that the Commission should fully consider Chorus' alternative $6 billion RAB estimate, and that "[l]ocking in a RAB that clearly fails to adequately recognise the costs and risks investors took on through the UFB project does not satisfy our expectations of the new framework as defined by section 177".[140]

3.73.2 L1 Capital expressed its view that "Chorus' proposed alternative RAB of $6 billion better reflects the true allocation costs to fibre, given the requirements of the UFB initiative."[141]

Our analysis of stakeholders' views on our draft decision

3.74 As noted above, Chorus submitted that the IMs and the Act could support a standalone cost approach and Chorus' alternative $6 billion RAB valuation. Chorus also claimed to have used alternative allocations to better reflect the cost drivers of the fibre business. Investors Mutual and L1 Capital support Chorus' view.

3.75 In our view, Chorus' proposed standalone cost approach does not comply with the cost allocation rules set out in the IMs. Under a standalone cost approach, any costs that are shared between UFB FFLAS and services that are not UFB FFLAS would be allocated to UFB FFLAS, as if UFB FFLAS were being supplied on a standalone basis in the absence of any other services. Such an approach would not comply with the ABAA methodology that is set out in the IMs.

3.76 Chorus' submission does not engage with the concerns we raised in our draft decision with respect to Chorus' alternative cost allocation approach.[142] For example, as discussed above (see paragraphs 3.56 to 3.61), in our draft decision, we questioned the basis for a number of allocators that Chorus had used in its alternative RAB model, noting that Chorus had earlier considered and rejected those allocators. Chorus' submission on our draft decision provides no explanation of why its alternative RAB model included allocators that it had previously rejected.

[140] Investors Mutual Ltd "Submission on Fibre PQID initial RAB draft decision - 29 September 2021" (4 October 2021), page 2.

[141] L1 Capital Submission on Fibre PQID initial RAB draft decision - 30 September 2021" (4 October 2021), page 5.

[142] As noted above (paragraph 3.68), we have accepted that Chorus' proposed changes relating to pass-through cost allocators was for the purposes of IM compliance.

3.77 We also note that Chorus provides no basis for its claim that in a workably competitive market, any incremental investment in establishing the fibre business would be recovered from consumers of the fibre service and not consumers of copper services. In this regard, during the IMs consultation process, we agreed with the view expressed by Axiom (on behalf of Spark) that "firms in workably competitive markets would expect to recover some portion of their common costs from all services in the long-term."[143] [144] We also noted that a standalone cost approach to regulated FFLAS could distort competition and result in end-users of regulated FFLAS paying higher prices.[145]

3.78 Regarding Chorus' comments around fibre replacing copper services in UFB areas, we note that as this occurs, we would expect cost allocation to dynamically reflect this migration of demand to the extent that this migration has a bearing on shared costs. Chorus acknowledges this in its cross-submission, when it says that it "operates a single network that provides FFLAS and non-FFLAS, with dynamic asset allocation".[146]

3.79 In our view, the migration of demand from copper to fibre services does not justify talking a standalone cost approach as proposed by Chorus.

3.80 We note that Chorus has proposed the following allocators to ensure compliance with the IMs, and we accept these allocators:

3.80.1 pass-through costs (excluding rates) revenue

3.80.2 pass-through costs (excluding rates) fibre.

[143] Commerce Commission "Fibre input methodologies: Main final decisions – reasons paper" (13 October 2020), paragraph 4.78.

[144] This is consistent with the approach that we have taken in other sectors. For example, during our review of input methodologies in 2016, we said that "ABAA would be expected to move the allocation of shared costs closer to those in workably competitive markets than when applying ACAM". Commerce Commission "Input methodologies review decisions Topic paper 3: The future impact of emerging technologies in the energy sector" (20 December 2016), paragraph 113.

[145] Commerce Commission "Fibre input methodologies: Main final decisions – reasons paper" (13 October 2020), paragraph 4.29.

[146] Chorus "Submission on Fibre PQID initial RAB draft decision" (30 September 2021), page 3.

Our final decision on whether Chorus' alternative cost allocation approach would comply with the IMs and s 177 of the Act and give best effect to the purpose of Part 6.

3.81 Having reviewed submissions on our draft decision, our final decision is that Chorus' alternative cost allocation approach does not comply with the IMs or s 177 of the Act, nor does it best give effect to the purpose of Part 6. We consider that under s 177, costs directly related to the UFB initiative but used to support the provision of other services should be subject to the cost allocation rules set out in the IMs.

3.82 Our final decision on Chorus' alternative cost allocation approach is unchanged from our draft decision. In our view, no new information or evidence has been provided in submissions that would support a change from our draft decision. As noted above, a number of other submissions agreed with our draft decision that Chorus' alternative cost allocation approach, and the resulting estimate of the RAB value of approximately $6 billion, does not comply with the IMs or give best effect to the purpose of the Act.

3.83 We have therefore focussed our scrutiny on Chorus' estimate for the initial PQ RAB value of $5.5 billion and the associated cost allocations to determine whether they are compliant with the IMs and best give effect to the purpose of the Act.

Mitigating the risk of double-recovery

3.84 During the IMs consultation process, we noted that double-recovery of shared costs would not best promote the s 162(d) purpose of limiting the ability of regulated providers to extract excess profits.[147] We considered a number of tools to mitigate the risk that costs that are shared between FFLAS and other services are over-recovered.

3.85 One such tool was a proposal by TERA (in a submission on behalf of Spark), which would take into account the revenues earned by Chorus from services that are not FFLAS. In our final IMs reasons paper, we set out our reservations with TERA's proposal, and noted that we had decided to implement a number of other steps to mitigate the risk of double-recovery.[148]

[147] Commerce Commission "Fibre input methodologies – Financial loss asset – reasons paper" (3 November 2020), paragraph 3.369.

[148] Ibid, paragraphs 3.327-3.346.

3.86 We remain of the view that the TERA's proposal for mitigating the risk of double recovery of costs that are shared between UFB FFLAS and services that are not UFB FFLA is not appropriate for the purposes of determining Chorus' initial PQ RAB value. As we discuss below, the revenues that Chorus has earned from services that are not UFB FFLAS were set under the regulatory regime for copper. Copper does not come within regulation under Part 6 of the Act, but rather is regulated under a different regulatory framework. As such, it is not appropriate to use the cross-check proposal in the context of Part 6.

3.87 In order to guard against double-recovery, and to help ensure an appropriate allocation of shared costs between UFB FFLAS and other services that are not UFB FFLAS, we have outlined a number of mitigating steps (discussed in more detail below). The approach that we have taken in this paper is consistent with our final FLA IMs reasons paper.

An overview of TERA's proposed cross-check on double recovery

TERA's proposed cross-check

3.88 During the IMs consultation process, TERA provided a submission (on behalf of Spark) in which it raised a concern about the potential for over-recovery of shared costs between copper and fibre services. In particular, TERA noted that different modelling approaches are used (total service long-run incremental cost (TSLRIC) for copper under the final pricing principle (FPP), and BBM for fibre under Part 6), and characterised the issue as follows:[149,150]

> The coexistence of these two distinct modelling approaches could lead to inconsistencies and double recovery of shared costs used for providing both services based on copper and on fibre.
>
> TSLRIC for copper does not allocate costs that are shared with fibre – because it models one technology only. This is a potential source of over-recovery, as some costs would go 100% to copper under TSLRIC model and then a further share of those same costs would be added to fibre under BBM

[149] TERA for Spark "Fibre Emerging Views cross submission - Study on potential cost over-recovery in the BBM model for fibre services" (31 July 2019), page 12.

[150] Commerce Commission "Final pricing review determination for Chorus' unbundled copper local loop service" (15 December 2015).

3.89 TERA proposed a cross-check that would apply the BBM costing methodology being developed for fibre, to both fibre and copper services (ie, depreciated historic cost of fibre and copper), and then determine the resulting maximum allowable revenue required to cover those costs. This would then be compared with what has been recovered through the regulated tariffs on copper and fibre services over the pre-implementation period.

3.90 According to TERA,[151]

> As a crosscheck to augment the more detailed cost category reporting, the absence or existence of double recovery can also be tested by calculating the total cost recovered from copper and fibre regulated activities. This methodology, which does not depend on the cost category information, will be an important cross-check for the Commission.

What we said during the IMs consultation process

3.91 In our final FLA IMs reasons paper, we considered TERA's proposed cross-check. We outlined a number of concerns that we had with the cross-check.[152]

3.92 First, we said that TERA's proposed cross-check failed to account for important differences between regulated copper services and UFB FFLAS. The regulated price caps set for Chorus' copper services were based on a fundamentally different standard from that to which Chorus' FFLAS will be subject. We noted that Analysys Mason had documented some of the key differences between the TSLRIC and BBM standards, including:

3.92.1 the TSLRIC model in the FPP is based on a hypothetical network (encompassing fibre as well as some wireless) which is national in scope, whereas the UFB deployment is a fibre network to 87% of premises;

3.92.2 the TSLRIC model assumes a greater proportion of aerial deployment than has been used in the UFB deployment; and

3.92.3 the TSLRIC model values modern equivalent assets based on current cost, whereas the BBM approach is based on the depreciated historic cost of actual assets.

3.93 We also noted that TERA's cross-check appeared to have the effect of revisiting the TSLRIC price set in the FPP, by potentially clawing back some of the revenues earned by Chorus from the Unbundled Copper Local Loop (**UCLL**) service.

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[151] TERA for Spark "Fibre Emerging Views cross submission - Study on potential cost over-recovery in the BBM model for fibre services" (31 July 2019), page 27.

[152] Commerce Commission "Fibre input methodologies – Financial loss asset – reasons paper" (3 November 2020), paragraphs 3.366-3.369.

3.94 We agreed with TERA on the principle of no double recovery of shared costs between copper and fibre. However, we continued to have reservations regarding TERA's proposed approach to check for double recovery between copper and fibre services based on a comparison of the revenues earned from the regulated tariffs on copper and fibre with the revenues that would be sufficient to cover the costs under BBM for copper and fibre. The regulated tariffs for copper services (UCLL and Unbundled Bitstream Access (**UBA**)) were not set using a BBM approach, and therefore a comparison of the copper tariffs to costs determined using a BBM approach may give a misleading impression of under- or over-recovery.

Summary of what we said on the TERA cross-check in our draft decision on Chorus' initial PQ RAB

3.95 In our draft decision on Chorus' initial PQ RAB, we reiterated our view not to adopt the TERA cross-check on double recovery. We considered doing so would pose a number of practical difficulties and that the benefits of applying such a cross-check were unlikely to be justified.[153]

Summary of stakeholders' views on our draft decision on Chorus' initial PQ RAB

Spark's views

3.96 In its submission on our draft decision, Spark "recommend[ed] that the Commission consider how it might assure the FLA against material double and over-recovery of costs".[154] Spark said it was unclear what the Commission's underlying concern was with the TERA cross-check. Spark submitted that the concerns highlighted in the draft decision, and the references to the final IM decision paper, related to asset granularity.[155] However, according to Spark:[156]

> …this was but one of a number of TERA recommendations, and we were referring in our submission to the TERA recommended cross check that augmented these recommendations.

3.97 Spark referred to the original submission by TERA as part of the IMs consultation process (see paragraph 3.90 above).[157]

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[153] Commerce Commission ""Chorus' initial price-quality regulatory asset base as at 1 January 2022 – Draft Decisions" (19 August 2021), paragraphs 3.7 and 3.61.

[154] Spark "PQ RAB draft decision and Draft IM amendments" (16 September 2021), paragraph 26.

[155] Ibid, paragraph 27.

[156] Ibid, paragraph 28.

[157] Ibid, paragraph 28, citing TERA for Spark "Fibre Emerging Views cross submission - Study on potential cost over-recovery in the BBM model for fibre services" (31 July 2019).

3.98 Spark noted that during the IMs consultation, the Commission had set out its reservations relating to the TERA cross-check. These included that the TSLRIC methodology (on which the FPP for copper services was based), and BBM methodology are fundamentally different, and that applying the cross-check would appear to have the effect of revisiting the TSLRIC prices set under the FPP for copper services.[158] However, in response to this, Spark submitted that the information required to apply the TERA cross-check is now readily available through Chorus' RAB and expenditure proposals.[159]

3.99 Spark concluded that in the absence of the Commission adopting the TERA cross-check, none of the mitigations in the IMs against double recovery will have been applied. According to Spark, such mitigations included the following:[160]

3.99.1 The use of bottom-up analysis of asset values and operating costs directly attributable to FFLAS and other services. Spark submitted that the draft decision is based on a top-down approach which fully allocates Chorus' actual costs.

3.99.2 Bringing shared assets into the FLA, and post-implementation, into the RAB, only when they are employed in the provision of UFB FFLAS, and the use of filters to identify where assets are shared. Spark submitted that the use of filters has not been applied to exclude assets.

3.99.3 Proportionate cost allocation, for example allowing pre-2011 assets to be shared in a way that reflects the transition of demand from copper service to fibre services. According to Spark, a proportionate allocation of operating costs had not been applied in the draft decision, resulting in a relatively high allocation of operating costs when compared to an allocation based on revenues or connections.

3.99.4 The use of an avoided cost cap to mitigate the risk that excessive costs are transferred into the initial value of the fibre RAB. Spark submitted that the draft decision proposes only to apply this cap in the limited example of exchange space.

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[158] Commerce Commission ""Chorus' initial price-quality regulatory asset base as at 1 January 2022 – Draft Decisions" (19 August 2021), paragraph 30.

[159] Ibid, paragraph 31.

[160] Ibid, paragraph 32.

3.99.5 The use of a limited number of default allocators. Spark noted that Chorus had proposed a number of alternative allocators, which move further away from delivering proportionate cost allocation (such as Chorus' proposed allocation of marketing expenses based on future benefits rather than current demand).

Chorus' views

3.100 In its cross-submission, Chorus disagreed with Spark's views on proportionate cost allocation and the use of the number of connections as an allocator for shared costs:[161]

> We disagree. Connections must only be used for allocation where that is justifiable.
>
> Also, Incenta has demonstrated that using connections as an allocator for shared operating costs and assets could result in an *under-recovery* of costs across copper and fibre services when shared cost or asset values increase due to providing multiple services.

3.101 Chorus said that the number of connections should only be used as an allocator where justified, rather than a starting point for allocation of all shared assets. According to Chorus, Spark has not provided any evidence to justify the use of number of connections as an allocator.[162]

3.102 Chorus also disagreed with Spark's views on the use of the TERA cross-check, referring to its submission from the IMs consultation, in which it had explained its view that the TERA cross-check proposal is misconceived. Chorus also noted that "while a combined BBM was considered during the legislative review, it is not relevant to this process given Part 6 regulation applies only to FFLAS."[163]

Our analysis of stakeholders' views on our draft decision

3.103 As Chorus noted in its cross-submission, Spark raised TERA's cross-check proposal, and we considered it during the IMs consultation process. While we did refer to concerns around asset granularity in our final FLA IMs reasons paper, we also said that it would be impractical to fully ensure "no double or under-recovery between the UFB past losses and copper services, due to the different methodologies that apply for the FPP (TSLRIC) and for Part 6 (actual costs)."[164]

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[161] Chorus "Submission on Fibre PQID initial RAB draft decision" (30 September 2021), page 8.

[162] Ibid, page 8.

[163] Chorus "Submission on Fibre PQID initial RAB draft decision" (30 September 2021), page 10.

[164] Commerce Commission "Fibre input methodologies – Financial loss asset – reasons paper" (3 November 2020), paragraph 3.381.

3.104 In this regard, we note Chorus' observation that while a BBM approach for Chorus as a whole was considered during the legislative review, the regulatory regime ultimately set out in Part 6 of the Act applies only to FFLAS.

3.105 We disagree with Spark's submission that none of the mitigations in the IMs against double recovery have been applied under our decision. In our view, these mitigations remain appropriate as they relate directly to the treatment of costs that are shared between UFB FFLAS and services that are not UFB FFLAS. As discussed below and later in this paper, we have applied these mitigations when determining the treatment of shared costs.

3.106 For example, on the question of direct attribution of asset values and operating costs to UFB FFLAS, our approach considers whether assets are "wholly and solely employed", and whether operating costs are "wholly and solely incurred", in the provision of a particular service, as required by the IMs.[165] For costs that are not directly attributable to a particular service, we have applied the ABAA methodology as set out in the IMs, which allocates shared costs between UFB FFLAS and services that are not UFB FFLAS.[166]

3.107 On the treatment of pre-2011 assets, these assets are brought into the FLA as they are employed in the provision of UFB FFLAS. For example, in the case of pre-2011 ducts, the allocation of these assets to UFB FFLAS reflects the end-user uptake of UFB FFLAS. We have also applied a ceiling on the allocation of pre-2011 ducts to reflect actual levels of re-use of these assets.

3.108 In terms of proportionate allocation of operating costs and the use of connections as an allocator, we agree with Chorus that the allocator type to be used needs to be justified against the criteria in the IMs. The use of revenues or connections as an allocator type will only be appropriate where they meet the criteria in the IMs. As discussed at paragraphs 5.41 to 5.44 in Chapter 5, the use of asset allocators or cost allocators must be based on:

3.108.1 a causal relationship (as defined in the IMs), or a proxy allocator

3.108.2 consistently applied within and between years

3.108.3 must be objectively justifiable and demonstrably reasonable.

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[165] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 1.1.4(2).

[166] A consequence of our approach is that we have rejected Chorus' claim that asset values and operating costs incurred as a direct result of the UFB should be fully allocated to UFB FFLAS, even where these asset value or operating costs are not directly attributable to UFB FFLAS.

3.109 As Spark has noted, the IMs contain a list of default allocators that can be used for the purposes of determining the value of the FLA. However, the Commission may consider alternative allocators.[167] As discussed later, we have decided to use a number of alternative allocator types proposed by Chorus, including the use of a future benefit allocator type to allocate joint marketing expenses (although using a shorter timeframe to determine the value of this allocator), and the use of totex to allocate a proportion of CTO common costs. In each case, we set out the reasons for using these allocator types later in this paper.

3.110 In light of the above, we remain of the view that the TERA cross-check proposal is not appropriate for the purposes of determining the initial PQ RAB value. The revenues that Chorus has earned from services that are not UFB FFLAS were set under a different regulatory framework. We consider that the steps that we have outlined above and discussed in more detail later in this paper will help ensure an appropriate allocation of shared costs between UFB FFLAS and services that are not UFB FFLAS.

[167] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause B1.1.6(1)(c) for the allocation of operating costs, and clause B1.1.6(2)(d) for the allocation of asset values.

Chapter 4 Direct attribution of post-2011 assets

Purpose of this chapter

4.1 This chapter sets out our final decisions on the direct attribution of post-2011 assets for determining:

4.1.1 the initial RAB value of the FLA;

4.1.2 the initial RAB value of core fibre assets as at the implementation date;

4.1.3 forecasts of Chorus' capex allowance for PQP1; and

4.1.4 the forecast roll-forward of the transitional initial PQ RAB (which is the sum of the initial RAB value of the FLA and the initial RAB value of core fibre assets as at the implementation date) for determining the building blocks revenue for PQP1.

Our final decisions

4.2 Our final decisions set out below are:

4.2.1 for the purposes of determining the initial RAB value of the FLA, Chorus' assets installed under the UFB initiative (in UFB A-D areas, as defined in Chapter 2) are directly attributable to UFB FFLAS; [168]

4.2.2 for the purposes of determining the initial RAB value of core fibre assets at the implementation date, Chorus' assets installed to supply PQ FFLAS (UFB A-D and UFB E areas, as defined in Chapter 2) are directly attributable to PQ FFLAS; [169]

4.2.3 for the purposes of determining Chorus' capex allowance for PQP1, Chorus' capex on assets installed to supply PQ FFLAS is directly attributable to PQ FFLAS;

4.2.4 for the purposes of the forecast roll-forward of the transitional initial PQ RAB for determining the building blocks revenue for PQP1, Chorus' assets installed to supply PQ FFLAS are directly attributable to PQ FFLAS; and

4.2.5 for the purposes of rolling forward the PQ RAB beyond PQP1, the allocation of core fibre assets should reflect any sharing of these assets between PQ FFLAS and services that are not PQ FFLAS.

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[168] See paragraph 2.33.4 above.

[169] See paragraphs 2.33.4 and 2.33.5 above.

4.3 As discussed in Chapter 1, we are setting a 'transitional initial PQ RAB' for PQP1 in December 2021 and will be determining the final initial PQ RAB value in 2022. Our decisions on the direct attribution of UFB assets and capex set out in paragraphs 4.2.1 to 4.2.4 above relate to both the transitional initial PQ RAB value and the final initial PQ RAB value.

4.4 We have reached these decisions because we are now satisfied that the level of sharing of these assets between UFB FFLAS and services that are not UFB FFLAS in the case of the FLA; and between PQ FFLAS and services that are not PQ FFLAS in the case of the initial PQ RAB, is likely to be immaterial as of the implementation date and during PQP1.

4.5 This decision is a change from the position set out in our draft decision in August. There, we proposed to limit the direct attribution of post-2011 UFB ducts and manholes constructed as part of the UFB initiative to 95%. This was on the basis that at that point, Chorus had not supplied any empirical evidence for its view that post-2011 UFB A-D duct and manhole assets should be directly attributable to UFB FFLAS. This was despite the Commission having made a number of requests that Chorus supply evidence to support its argument.[170]

4.6 Ultimately, in its submission on our draft decision, Chorus supplied evidence regarding the use of micro ducts in its UFB deployment (discussed further at paragraphs 4.49 to 4.50 and 4.59 to 4.64 below). Chorus has also supplied information regarding the extent to which these ducts can be used to support services that are not UFB FFLAS.[171]

4.7 Having reviewed Chorus' evidence and other submissions on our draft decision, we are now satisfied that:

4.7.1 post-2011 UFB A-D assets —including duct and manhole assets— are directly attributable to UFB FFLAS for the purposes of the FLA; and

4.7.2 post-2011 UFB A-D and UFB E assets —including duct and manhole assets— are directly attributable to PQ FFLAS for the purposes of the determining the initial PQ RAB value as of the implementation date and for the purposes of rolling forward the initial PQ RAB during PQP1.

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[170] Later in this chapter, we refer to the s 221 notices that we issued to Chorus on 26 February 2021 and 28 May 2021.

[171] Chorus "Submission on fibre PQID initial RAB and IM amendments draft decision" (16 September 2021), paragraphs 39-52.

4.8 However, for the purposes of rolling forward the PQ RAB beyond PQP1, the allocation of core fibre assets should reflect the proportion of any sharing of these assets between PQ FFLAS and services that are not PQ FFLAS.

Legal framework for our decisions

Relevance and application of s 166(2) to our decisions

4.9 This section sets out how our final decisions best give effect to the purpose in s 162 and, where relevant, s 166(2)(b) (ie, give effect to the promotion of workable competition in telecommunications markets for the long-term benefit of end-users of telecommunications services).

The promotion of the Part 6 purpose: s 162

4.10 Part 6 of the Act provides that one of the key outcomes to be promoted is that regulated fibre service providers allow end-users to share the benefits of efficiency gains in the supply of FFLAS, including through lower prices: s 162(c). This outcome is relevant to the issue of direct attribution and cost allocation.

4.11 An asset allocator that reflects the shared usage of an asset allows FFLAS end-users to share in the benefits of the efficiency gains in the supply of FFLAS (in the form of economies of scope, where FFLAS is supplied along with other services). Allowing for such sharing therefore promotes s 162(c). As we said in our main IMs final reasons paper:[172]

> The cost allocation IM helps ensure that the efficiencies realised by regulated providers through common costs are appropriately shared with end-users of regulated FFLAS. For example, in the absence of such rules, a regulated provider may allocate a high proportion of shared costs to regulated FFLAS, with the result that end-users of regulated FFLAS are excluded from the benefits of economies of scope. In this way, the cost allocation IM promotes s 162(c) of the Act.

[172] Commerce Commission "Fibre input methodologies: Main final decisions – reasons paper" (13 October 2020), paragraph 4.12.

4.12 Chorus initially proposed to directly attribute all post-2011 UFB expenditure to UFB FFLAS on the basis that the expenditure was incurred as a direct result of its participation in the UFB initiative.[173] As we will discuss further below, Chorus' initial approach was not in line with the IM definition of "directly attributable", which is where an operating cost is wholly and solely incurred, or an asset is wholly and solely employed, in the provision of a particular service. Chorus' initial approach - which would allocate assets based on what motivated the installation of the assets, and without regard to whether those assets are actually shared between services - would deny FFLAS end-users the ability to share in the benefits of efficiency gains where UFB assets are used to supply both UFB FFLAS and services that are not UFB FFLAS.

4.13 In addition, we consider that Chorus' initial approach would raise a risk that Chorus would over-recover the costs of UFB assets where those assets are used to supply both UFB FFLAS and services that are not UFB FFLAS. Such an outcome would not promote, and would be counter to, the s 162(d) outcome of limiting the ability of regulated fibre service providers to extract excessive profits.

4.14 That is to say, an assessment of whether assets deployed as part of the UFB initiative are in fact shared with non-FFLAS is required. The cost of those assets will only be "directly attributable" to FFLAS where they are not shared with non-FFLAS to any material extent.

The promotion of workable competition in telecommunications markets: s 166(2)(b)

4.15 The promotion of workable competition under s 166(2)(b) of the Act is also relevant to the issue of direct attribution. If UFB assets are employed in the provision of both UFB FFLAS and services that are not UFB FFLAS (such as copper-based services), the allocation of the full cost of these assets to UFB FFLAS may distort competition. For example, as we noted in our main IMs final reasons paper:[174]

> If Chorus is able to allocate the majority of the costs shared between regulated FFLAS and its copper network to regulated FFLAS this could have an impact on the prices they could charge for copper services in the future.

[173] Chorus "Submission on Commission's consultation on Chorus' initial PQ RAB" (28 May 2021), paragraph 23.

[174] Commerce Commission "Fibre input methodologies: Main final decisions – reasons paper" (13 October 2020), paragraph 2.387.2.1.

4.16 By fully allocating any shared costs to UFB FFLAS, Chorus may be able to lower prices for copper services towards incremental cost. In our main IMs final reasons paper, we noted the potential implications of this for competition when discussing the relevance of s 166(2)(b) for cost allocation:[175]

> The way in which shared costs are allocated between regulated FFLAS and other services can affect the ability of regulated providers to compete. For example, if a regulated provider's total economic common costs were all to be allocated to regulated FFLAS:
>
> other services supplied using the common assets would only need to recover their incremental cost. This would allow the regulated provider to set prices for those other services at a level that could frustrate competition in the long run.

Determining the initial value of fibre assets: s 177

4.17 Section 177 provides specific direction to the Commission regarding the calculation of the initial value of fibre assets that enter the PQ RAB on the implementation date.[176]

4.18 The definition of "fibre asset" includes an asset that is constructed or acquired by Chorus and employed in the provision of FFLAS, whether or not it is also employed in the provision of other services: s 177(6). We discuss the application of s 177 in more detail in the regulatory framework chapter.

Input methodologies

4.19 The relevant IMs are the asset valuation and cost allocation IMs. We discuss the asset valuation and cost allocation IMs and their application in our determination of asset values and opex contributing to Chorus' total initial PQ RAB value from paragraph 2.66 of the regulatory framework chapter. In particular, we note that the IM defines "directly attributable" as follows:[177]

> directly attributable means-
>
> > in relation to **operating costs**, where a cost is wholly and solely incurred in the provision of a particular service; and
> >
> > in relation to **asset values**, where an asset is wholly and solely **employed** by a **regulated provider** in the provision of a particular service.

[175] Commerce Commission "Fibre input methodologies: Main final decisions – reasons paper" (13 October 2020), paragraph 4.29.

[176] Section 177 is included in full in Chapter 2, from paragraph 2.41.

[177] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 1.1.4(2).

Chorus' initial proposal for direct attribution of UFB assets to UFB FFLAS[178]

4.20 In this section, we summarise Chorus' initial approach regarding direct attribution, and specifically Chorus' view that all UFB assets should be fully allocated to UFB FFLAS as part of our determination of the "initial RAB value" of the core fibre assets and the FLA. We summarise:

4.20.1 Chorus' view that its expenditure on an asset as a result of participating in the UFB initiative should be fully allocated to UFB FFLAS, even if the asset is not "directly attributable" to UFB FFLAS in accordance with the IM definition; and

4.20.2 Chorus' argument that "a proper application of s 177 requires [this approach]".[179]

Overview of Chorus' initial approach to UFB investments

4.21 On 26 February 2021, we issued Chorus with a s 221 notice in which we requested information from Chorus in relation to the initial PQ RAB, including Chorus' BBM IAV model and model documentation, and how the BBM IAV model complies with the IMs.[180]

4.22 Chorus provided documentation regarding the BBM IAV model in response to this notice. In this documentation, Analysys Mason describes how assets that were built for and used by UFB FFLAS (which Analysys Mason refers to as "Contracted FFLAS") are included in its model as "directly attributable" to UFB FFLAS:[181]

> Assets that are analysed in the FAR processing to be dedicated to UFB are recorded as being either "UFB A-D" (which means they were built for and used by Contracted FFLAS) or "UFB E" which means they are used only by voluntary FFLAS. As a result, "UFB E" dedicated assets are out of scope pre-implementation. "UFB A-D" assets are included as directly attributable to UFB FFLAS.

[178] We published a consultation paper on Chorus' initial PQ RAB model on 30 April 2021. Our draft decision on the initial PQ RAB summarised and took into account submissions received in response to the 30 April 2021 consultation.

[179] Chorus "Submission on Commission's consultation on Chorus' initial PQ RAB" (28 May 2021), paragraph 2

[180] Commerce Commission "Notice to supply information to the Commerce Commission under section 221 of the Telecommunications Act 2001 - Requirements for initial PQ regulatory asset base (initial PQ RAB) (core fibre assets and financial loss asset)" (26 February 2021).

[181] Analysys Mason report for Chorus "Building Block model IAV model documentation IAV model v314_120c" (24 March 2021), section 3.6.8. We note that Analysys Mason uses the term "Contracted FFLAS" to refer to FFLAS provided under the UFB initiative; and "Voluntary FFLAS to refer to FFLAS provided outside of the UFB initiative.

4.23 In Chorus' BBM IAV model, an allocation factor of 100% is applied to UFB assets in those areas where Chorus was awarded the UFB contracts (referred to by Chorus as "UFB A-D" areas). Chorus applies the 100% allocation factor in each financial loss year of the pre-implementation period to calculate the FLA (referred to as 'Unrecovered Losses' in Chorus' BBM IAV model), and in 2022, for the calculation of the allocated core fibre asset base. The asset classes include layer 1 assets (such as ducts, manholes, fibre cables, fibre service lead-ins, cabinets, and splitters) as well as layer 2 equipment.[182]

Chorus' argument that s 177 requires inclusion of all upfront costs incurred as a direct result of carrying out the UFB initiative

4.24 Chorus submitted that FFLAS prices must allow for the recovery of all pre-implementation investments and operating costs undertaken to deliver the UFB initiative. Chorus submitted that "…a proper application of s 177 requires that certain upfront costs as a direct result of the UFB initiative are included in the RAB and recovered through FFLAS prices…".[183]

4.25 Chorus' argument was that the definition of "fibre assets", and its express reference to investments made under the UFB initiative, indicate that Parliament's expectation was that investments that related to the UFB initiative would be recovered through FFLAS prices:[184]

> An approach that excludes a material proportion of UFB-related costs from the initial RAB implicitly allocates those costs to consumers of non-FFLAS services, which would be inconsistent with the statutory intent.
>
> By expressly acknowledging Chorus' unrecovered returns, Parliament also recognised the fact that the UFB arrangement stipulated areas of priority build and communal infrastructure was rolled out well ahead of demand.

4.26 Chorus made the argument that even where assets do not meet the IM definition of "directly attributable", s 177 requires that they should nevertheless be fully allocated to FFLAS:[185]

> The Commission's task is therefore to apply the IMs in a manner that gives effect to the words of s 177. Any divergence from s 177 in the decision-making process would be inconsistent with Parliament's intent and the ability for Chorus to earn a normal return.

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[182] Analysys Mason report for Chorus "Building Block model IAV model documentation IAV model v314_120c", Figure 13 on page A-36

[183] Chorus "Submission on Commission's consultation on Chorus' initial PQ RAB" (28 May 2021), paragraph 2

[184] Ibid, paragraphs 12-13.

[185] Ibid, paragraph 14.

4.27 According to Chorus:[186]

> Where those investments or costs do not meet the Commission's application of "directly attributable", but where those costs were nonetheless incurred as a direct result of our participation in the UFB initiative, we believe a proxy allocator should be applied that allocates 100% of those costs to FFLAS. This approach is required to deliver the Commission's obligations in respect of s 177 and is permitted within the existing IMs framework.
>
> If this approach is not adopted, then this risks a perverse outcome in which Chorus is not permitted to recover through FFLAS prices the investments required to implement the UFB initiative. Not only does this conflict with Parliament's intent as demonstrated in the legislative background and set out in s 177, but it would result in non-fibre consumers implicitly bearing the costs of the fibre network.

Further information supplied by Chorus under s 221 notice

4.28 We issued Chorus with a further s 221 notice in May 2021, seeking detail regarding why Chorus had identified UFB assets as "directly attributable" to UFB FFLAS in its BBM IAV model. In particular, we required Chorus to:[187]

> Provide a detailed explanation of how Chorus has ensured that the UFB assets it has identified as directly attributable to the provision of UFB FFLAS, for example building leases, cabinets, manholes, fibre cable, and ducts have not been shared at all with services that are not UFB FFLAS.

4.29 On 30 June 2021, Chorus provided some further explanation. In particular, Chorus made the following points.

4.29.1 During the pre-implementation period, the "directly attributable" UFB assets are those identified as UFB A-D in the UFB Won area.[188]

4.29.2 Where an asset class (such as splitters) is used to provide both UFB FFLAS and services that are not UFB FFLAS, these assets are shared and therefore *not* treated as "directly attributable" to UFB FFLAS.

4.29.3 Many assets are fibre-specific and optimised by vendors, and copper cables could not be used in these ducts. Chorus provided a number of examples:

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[186] Chorus "Submission on Commission's consultation on Chorus' initial PQ RAB" (28 May 2021), paragraphs 23, 24.

[187] Notice to supply information to the Commerce Commission under section 221 of the Telecommunications Act 2001 - Requirements for initial PQ regulatory asset base (initial PQ RAB), 28 May 2021, submitted to Chorus. Refer to clause A12. Chorus "Submission on Commission's consultation on Chorus' initial PQ RAB" (28 May 2021).

[188] See Chapter 2, paragraph 2.69 for a further description of this term.

4.29.3.1 fibre assets such as micronet and ribbonet are not designed for copper use or hybrid use;

4.29.3.2 UFB assets such as manholes, pits and handholes will provide access to only micronet/ribbonet tubes/ducts and so only provide UFB FFLAS; and

4.29.3.3 the "building leases" which are treated as "directly attributable" to UFB FFLAS are new railway crossing leases where Chorus has installed UFB assets that cross the railway corridor or for lead-ins to buildings on railways land.

4.29.4 On potential sharing with services that are not UFB FFLAS (including copper-based services) there is no need to augment or expand capacity for those services that are not UFB FFLAS, given that such services have been in significant decline in UFB areas.

4.29.5 Chorus is not actively promoting existing copper services in its UFB areas, and rules are in place that prevent the provisioning of new copper services in UFB areas.

4.30 Aside from the qualitative statements above, Chorus did not provide any empirical evidence in support of these claims.

Summary of views in submissions on our initial PQ RAB consultation paper

What we said in our initial PQ RAB consultation paper

4.31 In our initial PQ RAB consultation paper, we noted that a significant proportion of Chorus' valuation of the initial PQ RAB relates to assets that Chorus considers are "directly attributable" to UFB FFLAS.[189] These are assets that Chorus says were either constructed or acquired for the UFB initiative, or constructed or acquired to provide UFB FFLAS, and have not been shared to support services that are not UFB FFLAS.

4.32 We noted that the IMs define "directly attributable" as being where an operating cost is wholly and solely incurred, or where an asset is wholly and solely employed, in the provision of a particular service. Direct attribution of assets or operating costs therefore means there is never any sharing of these assets or functions.

[189] Commerce Commission "Chorus' initial price-quality regulatory asset base as at 1 January 2022 – Consultation on Chorus' initial price quality RAB proposal" (30 April 2021).

4.33 We invited views on the extent of Chorus' direct attribution of costs in its initial RAB model, setting out a list of specific consultation questions for stakeholders. We noted that where Chorus had treated assets as "directly attributable" to UFB FFLAS, those assets were fully allocated to UFB FFLAS, and remained so over time. We said we were considering whether this was reasonable, given that Chorus had previously stated that it has "a single network providing both regulated and unregulated services with dynamic asset utilisation."[190]

Submissions on our initial PQ RAB consultation paper

4.34 In its submission, Chorus did not respond directly to the specific consultation questions relating to direct attribution, other than referring to its earlier response to the s 221 notice. Chorus also provided some information on the allocation of power assets and network electronics which it stated had to be installed ahead of demand.[191]

4.35 However, Chorus did make a number of comments on the recovery of pre-implementation investments and operating costs earlier in its submission. For example, Chorus submitted that:[192]

> … the Commission must ensure FFLAS prices allow the recovery of all pre-implementation investment and operating costs undertaken to deliver the UFB initiative. Where those investments or costs do not meet the Commission's application of "directly attributable", but where those costs were nonetheless incurred as a direct result of our participation in the UFB initiative, we believe a proxy allocator should be applied that allocates 100% of those costs to FFLAS. This approach is required to deliver the Commission's obligations in respect of s 177 and is permitted within the existing IMs framework.
>
> If this approach is not adopted, then this risks a perverse outcome in which Chorus is not permitted to recover through FFLAS prices the investments required to implement the UFB initiative. Not only does this conflict with Parliament's intent as demonstrated in the legislative background and set out in s 177, but it would result in non-fibre consumers implicitly bearing the costs of the fibre network.

[190] Chorus "Submission on Fibre input methodologies – Draft decision" (30 January 2020) and Commerce Commission "[Draft] Fibre input methodologies determination 2020" (11 December 2019), paragraph 60.1.

[191] Chorus "Submission on Commission's consultation on Chorus' initial PQ RAB" (28 May 2021), pages 19-20.

[192] Ibid, paragraphs 23-24.

4.36 Chorus provided a number of examples of assets in respect of which it was unable to identify a suitable allocator based on a causal relationship with which to allocate costs. These included shared IT assets, the costs of which were incurred as a result of participating in the UFB initiative, and certain corporate overhead costs that arose from establishing Chorus as a standalone company. Chorus made the argument that these costs should be allocated 100% to UFB FFLAS 'in order to best give effect to s 177 of the Act'.[193]

> This recognises that the driver of the investment was the need to implement the UFB initiative and therefore achieve Parliament's intent of ensuring UFB investment are recovered through FFLAS prices. This approach is permitted by the IMs requirements regarding proxy allocators.

4.37 Spark noted that an operating cost or an asset is "directly attributable" to a particular service where it is wholly and solely incurred or employed in the provision of that service.[194] Spark said the IMs process recognised that in the case of a multi-product firm, there is likely to be a material proportion of costs shared between regulated and non-regulated services, and that the allocation of such costs would change over time as the use of an asset by services changes.[195]

4.38 Spark submitted that Chorus' proposal to directly attribute a significant portion of RAB assets to UFB FFLAS - which would indicate that there is no sharing of such assets or functions with other services - is implausible for a multi-service firm. Spark noted that Chorus operates in a number of markets and provides multiple services that are expected to draw on fibre and power infrastructure. Spark submitted that it is unlikely that over the ten-year period there has been no growth in other services.[196]

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[193] Chorus "Submission on Commission's consultation on Chorus' initial PQ RAB" (28 May 2021), page 3. We note that s 177 must be simply *applied* rather than, "best give[n] effect to". This is in contrast with the language of s 166(2)(a), which requires the Commission to make decisions that the Commission considers best give effect to, or are likely to best give effect to the purpose in s 162.

[194] Spark NZ "Chorus' initial price-quality regulatory asset base" (28 May 2021), paragraph 65.

[195] Ibid, paragraph 66.

[196] Ibid, paragraph 68.

4.39 Spark submitted that Chorus' proposal appears to be inconsistent with, and potentially undermines, key elements of the Commission's IMs framework. For example, Spark noted the Commission's view expressed in the FLA reasons paper, that all services should make a contribution to costs and that as a result, an incremental cost approach to valuing the FLA was not appropriate. According to Spark, Chorus' proposal applies an incremental approach to fibre in some circumstances and an allocated approach in other circumstances in order to maximise FFLAS costs.[197] Spark suggested that if Chorus' proposed approach were to be applied to new investment in shared assets, it should also be applied to the use of existing assets.[198]

4.40 Spark also argued that a consistent approach should be applied to both existing and new investment, and that for the purposes of setting the actual RAB, the Commission should "apply the IMs and reasons paper expectation that there be a proportionate allocation of investment in shared platforms prior to implementation between copper and fibre services."[199] Spark also noted that a proportionate allocation of platform costs was a key mitigation in the IMs to the risk of double recovery during the transition to fibre.[200]

4.41 Vodafone submitted that there is no reason to directly attribute shared assets and recommended that the ABAA approach set out in the IMs be applied.[201]

4.42 Similarly, 2degrees expressed concerns over Chorus' proposal to fully allocate shared costs to FFLAS, rather than using ABAA.[202] 2degrees submitted that this is one of a number of examples of how Chorus appears to have inflated its RAB estimate.

Our draft decision on the direct attribution of UFB assets

4.43 In our draft decision, we disagreed with Chorus' view that s 177 "requires all upfront costs incurred as a direct result of the UFB initiative to be included in the determination of the initial RAB value of Chorus' core fibre assets and the FLA".[203]

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[197] Spark NZ "Chorus' initial price-quality regulatory asset base" (28 May 2021), paragraph 72.

[198] Ibid, paragraph 73.

[199] Ibid, paragraph 74.

[200] Ibid, paragraph 72.

[201] Vodafone "Vodafone Aotearoa: Submission on Chorus' initial price-quality regulatory asset base proposal" (28 May 2021), page 7.

[202] 2Degrees "Commerce Commission Fibre Price-Quality Regulation, Consultation on Chorus' initial price quality RAB proposal" (28 May 2021), page 10.

[203] Commerce Commission "Chorus' initial price-quality regulatory asset base as at 1 January 2022 – Draft Decisions" (19 August 2021), paragraphs 4.37-4.44.

4.44 We also noted that Chorus had not provided compelling evidence for its view that post-2011 UFB assets are "directly attributable" to UFB FFLAS.[204] We further considered Chorus' proposed treatment of post-2011 UFB assets to be inconsistent both with its approach to pre-2011 assets (where such assets were to be shared with UFB FFLAS),[205] and with its views on the application of the cost cap.[206] We noted that we had previously included an explicit recognition of infrastructure sharing.[207]

4.45 Our draft decision was that there was likely to be some sharing of certain classes of UFB assets between UFB FFLAS and services that are not UFB FFLAS, and that it would be appropriate to allow for such sharing when determining the initial RAB value of the core fibre assets and the initial RAB value of the FLA. We proposed to recognise some sharing of certain UFB asset classes (specifically, a subset of ducts and manholes installed as part of the UFB initiative), by applying a revenue-based allocator. We proposed to directly attribute 95% of post-2011 UFB A-D duct and manhole assets to UFB FFLAS, and that the remaining 5% were likely to be shared and subject to cost allocation. The 5% proportion was based on independent advice received from Network Strategies on the level of sharing that could be expected.

4.46 We also noted that Chorus had undertaken some analysis of the extent to which UFB gigabit passive optical network (**GPON**) services have utilised pre-demerger fibre cables.[208] Chorus had used the results of this analysis (which indicated that 11.65% of pre-demerger fibre cables have been used for GPON services) to determine the allocation factor for pre-2011 fibre cable assets (ie, the extent to which a share of those assets is brought into the initial RAB value of the core fibre assets and the initial RAB value of the FLA). This indicated that it may be feasible for Chorus to undertake similar analysis of the extent to which assets installed after 1 December 2011 to provide UFB FFLAS (including communal ducts) have been used by services that are not UFB FFLAS.

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[204] Commerce Commission "Chorus' initial price-quality regulatory asset base as at 1 January 2022 – Draft Decisions" (19 August 2021), paragraphs 4.45-4.54.

[205] Ibid, paragraphs 4.55-4.59.

[206] Ibid, paragraphs 4.60-4.65.

[207] Ibid, paragraphs 4.66-4.69.

[208] Analysys Mason report for Chorus "Building Block model IAV model documentation IAV model v314_120c" (24 March 2021), Figure 15.

4.47 As noted above, we issued Chorus with a number of s 221 notices requiring it to provide such information. Chorus did not provide sufficiently detailed information in response. In the absence of such information, we considered our draft decision outlined at paragraph 4.45 above was reasonable.

Summary of submissions and cross-submissions on our draft decision

Submissions

4.48 Chorus disagreed with the draft decision to limit the direct attribution of ducts constructed as part of the UFB initiative to 95%. Chorus submitted that if pre-2011 assets are to be allocated to FFLAS based on their use, the same should apply to assets installed under the UFB initiative.[209] Chorus agreed that assets installed under the UFB initiative may be shared with other services over time but argued that this does not mean any such sharing is occurring by the implementation date. According to Chorus:[210]

> The attribution of assets can and will change over time, which will be captured as part of periodic updates to allocations required by the IMs. If there is no sharing with non-FFLAS (or for the pre-implementation period, services that are not UFB FFLAS), then these assets should be allocated 100% to FFLAS (or for pre-implementation, UFB FFLAS).

4.49 In its submission, Chorus provided further details on the deployment of specific types of ducts for UFB. Chorus submitted that the UFB network design was based on the deployment of two types of micro ducts (i.e. air blown fibre systems):

4.49.1 ribbonet ducts, which are installed between the end user and fibre flexibility point, and which cannot be shared with non-FFLAS; and

4.49.2 micronet ducts, which are deployed along some routes where there is insufficient capacity in existing Ribbonet ducts.

4.50 Chorus provided additional information in its submission on the extent to which UFB ducts can be used to support non-FFLAS transport services. This evidence is based on data extracted from Chorus' network records for fibre routes that provide core, mesh and regional connectivity, which indicates that less than 1% of Chorus' total post-2011 ducts in Chorus' UFB areas will be available for non-FFLAS use. Chorus noted that this "is considerably less than the immediate 5% assumed in the Commission's draft decision."[211]

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[209] Chorus "Submission on fibre PQID initial RAB and IM amendments draft decision" (16 September 2021), paragraph 39.

[210] Ibid, paragraph 41.

[211] Ibid, paragraph 49.

4.51 Chorus also submitted that the evidence relied upon by Network Strategies and the draft decision "appear[s] to rely on the efficiencies that would apply to a hypothetical efficient operator. However, applying optimisation assumptions is not appropriate in a DCF calculation under a BBM regime and the legislation does not provide for such optimisation in valuing the initial RAB."[212] Chorus argued that any sharing of UFB ducts that does occur is only likely to build up over a period of time, rather than occurring immediately, and that accordingly:[213]

> the Commission's proposed allocator for post-2012 UFB A-D duct and manhole assets should be modified such that it does not jump to 5% sharing on day one but only slowly grows to the target level of sharing over an extended period (e.g. 20 years).

4.52 In its submission, Vocus commented on Chorus' approach to "directly attributable" costs and pointed to the logical inconsistency it highlighted with Chorus' approach to pre-2011 assets. According to Vocus:[214]

> The Commission is correct that "If Chorus' proposed approach to post-2011 UFB assets (to fully allocate the assets to the services that motivated their investment) were to be applied consistently to pre-2011 assets, this would suggest that those pre-2011 assets should be fully allocated to the non-FFLAS (eg copper) services that those assets were originally installed to supply".

4.53 Vocus argued that Chorus' approach would result in the exclusion of all pre-2011 assets and costs from the initial PQ RAB (including the determination of the FLA), as none of the pre-2011 assets were a direct result of carrying out the UFB initiative. Rather, pre-2011 assets are a direct result of other business activities such as Chorus' copper network business operation. Vocus said that it was "not aware of Chorus making any suggestion that pre-existing assets that have been repurposed for use in providing FFLAS be excluded from the RAB and FLA, but that is the clear and logical consequence of their *"direct result"* position."[215]

4.54 Vocus expressed a concern that the Commission had only partly remedied this in the draft decision, which proposed to lower Chorus' 100% allocation of UFB ducts by 5%. Vocus referred to the advice from Network Strategies, which indicated that up to 10% of UFB ducts could be shared with other services.[216]

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[212] Chorus "Submission on fibre PQID initial RAB and IM amendments draft decision" (16 September 2021), paragraph 51.

[213] Ibid, paragraph 52.

[214] Vocus "Submission on fibre PQID initial RAB draft decision" (16 September 2021), paragraph 42.

[215] Ibid, paragraph 43.

[216] Ibid, paragraph 44.

Cross-submissions

4.55 In commenting on Vocus' submission that more than 5% of UFB ducts could be subject to cost allocation, Chorus stated that it disagrees with the draft decision, and that the optimisation approach that Network Strategies appeared to apply was inappropriate. Chorus referred to the evidence provided in its submission which showed that "5% sharing immediately after ducts are employed is too high. Our network design rules suggest that this would be less than 1%" and this this would only be reached over a considerable period of time.[217]

4.56 In its cross-submission, Spark said that there was nothing in Chorus' submission to suggest that the Commission should change its approach to cost allocation of UFB assets from the draft decision. Spark submitted that any approach should be applied consistently to existing and new assets. In this regard, Spark claimed that information from Chorus' submission indicated that the allocation of existing (pre-2011) ducts should be no higher than 17%. We discuss this at paragraphs 5.347 and 5.352 to 5.353 below.

Our analysis of submissions and cross-submissions

4.57 On the question of direct attribution, we agree with Vocus that the question of whether an asset or cost is "directly attributable" to a given service does not depend on whether the asset or cost was built or incurred as a direct result of establishing that service. As we noted in our draft decision, the IMs define the term "directly attributable" as being where an operating cost is wholly and solely incurred, or an asset is wholly and solely employed, in the provision of a particular service. If, for example, a new asset was installed as a direct result of the UFB initiative, but is subsequently used to provide other services, the cost allocation rules set out in the IM should be applied to that asset.

4.58 Chorus appears to now accept this, with the focus of its submission being on the level of sharing actually achieved. As noted above (see paragraph 4.48), Chorus agrees that a consistent approach should be taken when allocating pre-2011 assets and assets constructed as part of the UFB initiative.

4.59 Chorus' submission provides new information on the actual degree to which UFB ducts are shared with services that are not UFB FFLAS. This indicates that the level of sharing during the pre-implementation period and at the implementation date is likely to be lower than what we had needed to assume in making our draft decision in the absence of this detailed information.

[217] Chorus "Submission on Fibre PQID initial RAB draft decision" (30 September 2021), page 6.

4.60 We note that prior to its most recent submissions, Chorus had not provided any empirical evidence to support its view that UFB A-D ducts and manholes should be 100% allocated to UFB FFLAS. In the absence of such evidence on the level of sharing, we had assumed a level of sharing of these assets that we considered was reasonable, which was informed by advice from Network Strategies. In this regard, we disagree with Chorus' claim that we were proposing to apply optimisation in our draft decision. We applied an assumed level of sharing of UFB A-D ducts and manholes on the basis of the best information available to us. Chorus had at that stage failed to justify its proposed 100% allocation to UFB FFLAS.

4.61 In reviewing the new information contained in Chorus' submission on our draft decision, Network Strategies has advised us that the level of sharing of Chorus' UFB A-D ducts is likely to be lower than the level we had used in our draft decision.[218] Specifically, the extent to which Chorus' UFB Micronet duct (which is capable of being shared) overlaps its interexchange network represents 3.7% of Chorus' UFB A-D duct constructed under the UFB initiative. When combined with the 20% of Micronet duct capacity available for non-FFLAS use, Network Strategies notes that up to 0.74% of the UFB ducts could be used by other services.[219]

4.62 Network Strategies also notes the following practical difficulties highlighted by Chorus in using UFB ducts to expand or restore inter-exchange capacity, which indicate that current levels of sharing "are likely to be low to negligible":[220]

4.62.1 the use of UFB A-D duct sections for fault repair is typically infeasible because the duct sections are not normally aligned with the inter-exchange duct capacity;

4.62.2 Chorus endeavours to separate cables used for interchange services from those used for distribution for reasons of operational reliability, precluding use of fibres in a UFB A-D sheath from use for interexchange traffic; and

4.62.3 non-FFLAS fibre services pre-date the UFB A-D assets and have been established on independent infrastructure.

[218] Network Strategies "Direct cost attribution in the RAB model: Final report for the Commerce Commission" (4 November 2021).

[219] Ibid, page 3.

[220] Ibid, page 3.

4.63 Network Strategies concludes "that the degree of sharing that may exist at present is considerably less that the upper bound of 0.74% and should be considered immaterial."[221]

4.64 Given the information provided in Chorus' submission, we now accept that the level of sharing of UFB A-D ducts and manholes between UFB FFLAS and other services has been immaterial during the pre-implementation period. For the same reasons, we also accept that the level of sharing of UFB A-D and UFB E ducts and manholes between PQ FFLAS and other services will be immaterial as of the implementation date and during PQP1. As we note at paragraph 4.67 below, this may be subject to change over time, if the proportion of sharing between PQ FFLAS and other services changes.

Summary of our final decision on UFB ducts and manholes

4.65 Our final decision is to treat post-2011 UFB A-D assets, including ducts and manholes, as being directly attributable to UFB FFLAS for the purposes of determining the initial RAB value of the FLA.

4.66 We have also treated post-2011 UFB A-D and UFB E assets, including ducts and manholes, as being directly attributable to PQ FFLAS for the purposes of determining the initial RAB value of core fibre assets at the implementation date, and for the purposes of rolling forward the initial PQ RAB during PQP1.

4.67 To the extent that services that are not PQ FFLAS make use of these assets beyond PQP1, we intend to reflect the proportion of this sharing in cost allocation as the PQ RAB is rolled forward.

[221] Network Strategies "Direct cost attribution in the RAB model: Final report for the Commerce Commission" (4 November 2021), page 4.

Chapter 5 Allocating shared operating costs and asset values

Purpose of this chapter

5.1 This chapter sets out and explains our decisions on how shared operating costs and asset values are allocated between FFLAS and non-FFLAS, and also between different classes of FFLAS: PQ FFLAS and ID-only FFLAS.[222]

5.2 Our decisions in this chapter apply to the calculation of the following:

5.2.1 the initial RAB value of the FLA; and

5.2.2 the initial RAB value of the core fibre assets.

5.3 Our decisions on the application of the cost allocation IM also apply to our determination of the following values (the calculated figures for which are set out in the PQ paper published alongside this paper):[223]

5.3.1 the forecasts of Chorus' operating expenditure (**opex**) and capital expenditure (**capex**) allowances for PQP1; and

5.3.2 the forecast roll-forward of the initial PQ RAB for determining the building blocks revenue for PQP1.

5.4 Table 5.1 below sets out how our individual cost allocation decisions impact on the values outlined at paragraphs 5.2-5.3 above.

'Transitional initial PQ RAB' & 'final initial PQ RAB'

5.5 As discussed at paragraphs X7-X9 and 1.8-1.13 above, we are setting a 'transitional initial PQ RAB' as an input into PQP1, before PQP1 commences on 1 January 2022.[224] This value will provide estimates of initial PQ RAB asset values for PQP1 to take effect from 1 January 2022.

[223] Commerce Commission, "Chorus' price-quality path from 1 January 2022 – Final decision – Reasons paper" (16 December 2021).

[224] The "transitional initial PQ RAB" is the sum of the adopted "opening RAB values" of all fibre assets for the PQ RAB as of the implementation date, as determined under clauses 3.3.1(8)-(9) of Attachment B of the fibre IM amendment determination. *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021), clauses 3.3.1(8)-(9) of Attachment B.

5.6 The terms ‘transitional initial PQ RAB’ and ‘final initial PQ RAB’ are used in order to differentiate between the:

5.6.1 values that will be used for PQP1, being the "transitional initial PQ RAB” values; and

5.6.2 values that will be disclosed under ID, washed-up against the transitional initial PQ RAB values for the second PQ path, and, once rolled forward for future years, used as a key input for PQP2 onwards, being the "final initial PQ RAB” values.

Decisions and timeframes

5.7 In December 2021, we are determining the following cost allocation decision:

5.7.1 The transitional initial PQ RAB values required for PQP1[225] (where our decision on the central office space allocator is an “estimate”).

5.7.2 For the purposes of the final initial PQ RAB decisions for the FLA:[226]

5.7.2.1 all decisions for financial loss years 2012-2020, except the allocator values used for central office space; and

5.7.2.2 all allocator types used for opex/asset values for financial loss years 2021-2022, and all allocator values except the allocator values used for central office space.[227]

5.7.3 For the purposes of the final initial PQ RAB decisions for core fibre assets in the initial PQ RAB,[228] all allocator types used for core fibre assets forecast to be commissioned at implementation date, except the allocators for any assets used for central office space.

5.7.4 The treatment of specific inputs used to calculate the FLA and ‘opening tax losses’ (detailed in Chapter 6). This includes discussion of the application of the ‘alternative methodology with equivalent effect or substantially the same effect’ provision’ (a mechanism to permit departures from the IMs in particular instances where Chorus has advised it is not possible for it to apply the IMs).

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[225] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 3.3.1(6)-(9).

[226] Ibid, clause 2.2.4(1).

[227] Through this paper, the term ‘opex’ is used interchangeably with ‘operating costs’ as defined in *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021.

[228] Ibid, clause 2.2.3(2).

5.8 In 2022, we are determining:

5.8.1 For the purposes of the final initial PQ RAB decisions for the FLA:[229]

5.8.1.1 the allocator values and allocations for central office space for financial loss years 2012-2022;

5.8.1.2 all decisions for financial loss years 2021-2022, applying the allocator types decided under 5.7.2.2 above while changing from forecast to actual values; and

5.8.1.3 the "initial RAB value" of the FLA in accordance with s 177(2), which represents a complete calculation of the matters decided in paragraphs 5.7.2, 5.8.1.1, and 5.8.1.2 above.

5.8.2 For the purposes of the final initial PQ RAB decisions for core fibre assets in the initial PQ RAB:[230]

5.8.2.1 the "unallocated initial RAB value" of all core fibre assets at implementation date;[231]

5.8.2.2 the "initial RAB value" of all core fibre assets at implementation date,[232] having applied the allocators decided under 5.7.3 above.

5.8.2.3 the "initial RAB value" of all core fibre assets used for central office space at implementation date.[233]

Terminology

5.9 As noted in Chapter 2, where necessary to distinguish between the different definitions of FFLAS to explain our decisions with reference to the relevant time periods, we use the defined terms from the IMs:

5.9.1 'UFB FFLAS' and 'services that are not UFB FFLAS' (when determining the FLA, for the pre-implementation period)

[229] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 2.2.4(1).

[230] Ibid, clause 2.2.3.

[231] Ibid, clause 2.2.3(1).

[232] Ibid, clause 2.2.3(2).

[233] Ibid, clause 2.2.3(2).

5.9.2 'PQ FFLAS' and 'services that are not regulated FFLAS' (for the post-implementation period).

5.10 However, for ease of reference, we use the term 'FFLAS' to refer to *both* UFB FFLAS and PQ FFLAS, and 'non-FFLAS' to refer to both 'services that are not UFB FFLAS' and 'services that are not regulated FFLAS'.

Summary of decisions on the allocation of shared operating costs and assets

5.11 Table 5.1 below sets out a summary of the decisions on the allocation of shared operating costs and assets. For each of these decisions, we have accepted Chorus' proposed allocator type. However, in a number of cases, we have made changes to the calculation of the associated allocator values.

Table 5.1 Decisions on the allocation of shared operating costs and assets and impacts on the initial PQ RAB, forecast expenditure and roll-forward PQP1

Issue	Decision	1. Initial RAB value of the FLA	2. Initial RAB value of the core fibre assets	Forecasts of opex/capex and forecast roll-forward for PQP1
Allocation of shared operating costs and shared assets	We agree, in principle, with Chorus' overall two-step approach to the allocation of aggregated costs between PQ FFLAS and ID-only FFLAS. We accept Chorus' allocations of aggregated costs after taking into account corrections for calculation or assignment errors.	N/A	N/A	N/A
Chorus' proposed allocator types and associated allocator values for the cost/asset allocators	**Future benefit** Approve the use of the future benefits allocator type to allocate joint marketing expenses. Calculate the future benefits cost allocator using present value of forward-looking revenues over a five-year timeframe.	✔	N/A	✔
	Net book value (NBV) Approve the use of the NBV allocator type to allocate property damage costs and business interruption insurance costs.	✔	N/A	✔
	Recipient business function Approve the use of the recipient business function allocator type for allocating to business units the operating costs associated with certain overhead functions/activities that support those units.	✔	N/A	✔
	Total Expenditure (Totex) Approve the use of the totex allocator type to allocate specified overhead expenses where totex meets the IM requirements.	✔	N/A	✔
	Allocation of CTO Common Costs The "CTO Common Cost" expenditure items listed in Table 5.9 below will be allocated between FFLAS and non-FFLAS using the allocators set out in that table. All other "CTO Common Cost" expenditure items will be allocated between FFLAS and non-FFLAS using the totex allocator.	✔	N/A	✔

Issue	Decision	1. Initial RAB value of the FLA	2. Initial RAB value of the core fibre assets	Forecasts of opex/capex and forecast roll-forward for PQP1
	Use of 'shared ISAM' as an allocator type Approve the use of 'shared ISAM' as an allocator type to allocate the value of Chorus' ISAM equipment employed in the provision of both FFLAS and non-FFLAS.	✔	✔	✔
	Use of 'shared with copper, fibre cable' as an allocator type Approve the use of the allocator type 'shared with copper, fibre cable' to allocate the value of pre-2012 assets L1 fibre cable and associated L1 OFDF.	✔	✔	✔
	Additional alternative allocator types Approve Chorus' proposed use of a number of additional alternative proxy allocators.	✔	N/A	✔
	Pre-2011 ducts Approve the use of Chorus' allocator with the addition of a cap to limit the allocation to ducts available	✔	✔	✔
	Cap on cost allocation regarding central office space Approve Chorus' proposed allocator	N/A	N/A	N/A
	Central office space allocator value Approve the use of 50% of the central office space allocator value proposed by Chorus until appropriate assurance is provided	✔	✔	✔

Structure of this chapter

5.12 The first section discusses the legal framework and relevant considerations that have informed our cost and asset allocation decisions.

5.13 The second section discusses Chorus' two-step approach to implementing cost allocation via its BBM IAV model, and how this approach relates to subsequent decisions on individual allocator types.

5.14 The third section then discuss individual cost and asset allocator types, and whether we consider they meet the requirements in the IMs. The allocator types and associated allocator values we discuss in detail are:

5.14.1 alternative allocator types that Chorus has proposed for the allocation of certain operating costs and asset values[234] (by 'alternative' we are referring to those allocator types which are not on the default list in the IMs):

5.14.1.1 future benefits;

5.14.1.2 net book value (**NBV**);

5.14.1.3 recipient business function;

5.14.1.4 total expenditure (**totex**);

5.14.1.5 Shared Intelligent Service Access Manager (**ISAM**);[235]

5.14.1.6 proxy "shared with copper, fibre cable";[236] and

5.14.1.7 a number of additional alternative allocator types.

[234] For example, operating costs to be allocated include insurance, joint marketing expenses, various business unit overhead expenses, while assets values are ISAM equipment and shared fibre cables

[235] Analysys Mason report for Chorus "BBM IAV model responses to s 221 notice questions" (26 March 2021), Figure 5.3, page 56. Analysys Mason notes that separate approval is being sought for the ISAM allocator type.

[236] Ibid, Figure 5.3, page 56. Analysys Mason notes that separate approval is being sought for the "Shared with copper, fibre cable" allocator type.

5.14.2 allocator types that Chorus has proposed for the allocation of the following pre-2011 assets:

5.14.2.1 ducts; and

5.14.2.2 central office space.

5.15 The fourth and final section deals with the application of the shared cost cap on cost allocation.

Section One: Legal framework for our decisions

Relevance and application of s 166(2) to our decisions

5.16 Section 166(2) provides:

> (2) The Commission or Minister must make the recommendation, determination, or decision that the Commission or Minister considers best gives, or is likely to best give, effect—
>
> (a) to the purpose in section 162; and
>
> (b) to the extent that the Commission or Minister considers it relevant to the promotion of workable competition in telecommunications markets for the long-term benefit of end-users of telecommunications services.

5.17 In this section of the paper, we set out how our decisions on allocator types and the associated allocator values for the cost or asset allocators promote:

5.17.1 the outcomes of s 162; and

5.17.2 where relevant, workable competition in telecommunications markets for the long-term benefit of end-users of telecommunications services.

The promotion of the Part 6 purpose: s 162

5.18 Part 6 of the Act provides that one of the key outcomes to be promoted is that regulated fibre service providers allow end-users to share the benefits of efficiency gains in the supply of FFLAS, including through lower prices: s 162(c). This outcome is relevant to cost allocation.[237]

5.19 A cost allocator that reflects the sharing of costs incurred in supplying multiple services, or an asset allocator that reflects the shared usage of an asset, allows FFLAS end-users to share in the benefits of the efficiency gains in the supply of FFLAS (in the form of economies of scope, where FFLAS is supplied along with other services). Allowing for such sharing therefore promotes s 162(c).

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[237] Commerce Commission "Fibre input methodologies: Main final decisions – reasons paper" (13 October 2020), paragraph 4.27.1.

5.20 If Chorus' proposed approach to allocation results in a disproportionate allocation of costs to FFLAS, then this approach would limit the extent to which FFLAS end-users are able to share in the benefits of efficiency gains, where shared costs are incurred in respect of both regulated FFLAS and services that are not regulated FFLAS.

5.21 Section 162(d) is also relevant to the issue of cost allocation.[238] According to s 162(d), regulated service providers are limited in their ability to extract excessive profits. Allocating shared costs between regulated FFLAS and services that are not regulated FFLAS in a consistent way for the initial unallocated RAB, as well as for forecast expenses under PQ regulation, will minimise the risk that regulated providers could over-recover shared costs. This approach limits the ability of regulated providers to extract excessive profits in accordance with s 162(d).

The promotion of workable competition in telecommunications markets: s 166(2)(b)

5.22 The promotion of workable competition under s 166(2)(b) of the Act is also relevant to the issue of how to allocate shared costs. For example, in our main IMs final reasons paper, we noted the potential implications of this for competition when discussing the relevance of s 166(2)(b) for cost allocation:[239]

> The way in which shared costs are allocated between regulated FFLAS and other services can affect the ability of regulated providers to compete. For example, if a regulated provider's total economic common costs were all to be allocated to regulated FFLAS:
>
> > other services supplied using the common assets would only need to recover their incremental cost. This would allow the regulated provider to set prices for those other services at a level that could frustrate competition in the long run.

5.23 If such costs are incurred in respect of both regulated FFLAS and services that are not regulated FFLAS (such as copper-based services), a disproportionate allocation of these expenses to regulated FFLAS may distort competition, including in the supply of services that are not regulated FFLAS.

Cost Allocation IM

5.24 Regulated providers have operating costs and asset values that are shared between regulated FFLAS and services that are not regulated FFLAS.

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[238] Commerce Commission "Fibre input methodologies: Main final decisions – reasons paper" (13 October 2020), paragraph 4.27.2.

[239] Ibid, paragraph 4.29.

5.25 The main function of the cost allocation IM is to set out the rules and methodologies that regulated providers must apply in order to identify the portion of operating costs and asset values that are associated with regulated FFLAS.

5.26 Cost allocation ensures that only those costs associated with the provision of regulated FFLAS are included in the BBM calculations for the purposes of PQ and ID regulation. The cost allocation IM includes the rules relating to the attribution and allocation of operating costs and assets necessary for determining the initial PQ RAB.[240]

Cost allocation methodology for determining the value of core fibre assets

5.27 In determining the initial value of core fibre assets under s 177 of the Act, the cost allocation IM requires that only the value of those assets that are employed in the provision of regulated FFLAS is included.[241] This includes:

5.27.1 assets that are 'directly attributable' to the provision of regulated FFLAS

5.27.2 an allocation (ie, proportion) of the value of any assets that are shared between regulated FFLAS and other services.

5.28 The IM defines "directly attributable" as follows:[242]

> directly attributable for assets means-
>
> (a) In relation to **asset values**, where an asset is wholly and solely **employed** by a **regulated provider** in the provision of a particular service.

5.29 For asset values that are *not* directly attributable to regulated FFLAS, the ABAA must be used to allocate asset values, using asset allocators. Under ABAA, each service would bear the directly attributable cost of supplying that service, plus a contribution to the costs of the shared asset or activity. The contribution would be based on identifiable causal-based allocators or proxy allocators (where causal allocators are not available).[243]

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[240] We discuss the cost allocation IM further from paragraph 2.68 of the regulatory framework chapter.

[241] See *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021. The cost allocation IM rules relating to the determination of the initial RAB value of core fibre assets are set out in clause 2.1.1 and clause 2.1.2. The initial RAB values of core fibre assets as at the implementation date must be determined as per clause 2.2.3(2), as a result of applying clause 2.1.1 (in respect of regulated fibre service providers subject to both ID and PQ regulation) or clause 2.1.2 (in respect of regulated fibre service providers subject to ID regulation only) to the unallocated initial RAB value of the core fibre assets.

[242] Ibid, clause 1.1.4(2).

[243] Commerce Commission "Fibre input methodologies: Main final decisions – reasons paper" (13 October 2020), paragraph 4.42.1.

5.30 An asset allocator is defined as "a ratio used to allocate asset values whose quantum is (a) based on a causal relationship; or (b) equal to a proxy asset allocator."[244]

5.31 Asset allocators must have, in the first instance, a causal relationship with the asset value. The definition of "causal relationship" requires that the circumstance in which a factor influences the employment of the asset is "objectively justifiable and demonstrably reasonable".[245]

5.32 Asset allocators must also be applied consistently within and between disclosure years.

5.33 Where a causal allocator is not available, a proxy allocator may be used. Similar to the definition of a "causal relationship", the definition of "proxy asset allocator" requires that the ratios are "objectively justifiable and demonstrably reasonable".[246]

5.34 To support our analysis of whether the "objectively justifiable and demonstrably reasonable" requirement has been met for a given proposed cost or asset allocator[247], we have considered factors such as:

5.34.1 whether the proposed allocation promotes the purpose of Part 6 and, where relevant, workable competition in telecommunications markets for the long-term benefit of end-users of telecommunications services;

5.34.2 whether the allocator type meets the definition of a proxy cost allocator or proxy asset allocator;[248]

5.34.3 whether the allocation is being undertaken at a reasonable level of aggregation – whether operating costs or assets that have been grouped together have sufficiently similar characteristics to be treated in common;

5.34.4 the extent to which the underlying data used is robust; and

5.34.5 whether there is a readily available alternative allocator which better meets these criteria above, such that it would be unreasonable to prefer the proposed allocator.

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[244] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 1.1.4(2).

[245] Ibid.

[246] Ibid.

[247] While this section deals with core fibre assets, this is our approach covering both cost and asset allocators.

[248] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 1.1.4(2).

Application of the cost allocation methodology to FFLAS classes

5.35 With regards to specific classes of FFLAS, the cost allocation IM requires that,[249] for the purposes of ID and PQ regulation, operating costs and asset values (both actual and forecast): [250]

5.35.1 must be allocated to PQ FFLAS or to ID-only FFLAS respectively where they are directly attributable to the provision of PQ FFLAS or ID-only FFLAS;

5.35.2 must not be allocated to PQ FFLAS or ID-only FFLAS where they are directly attributable to the provision of services that are not regulated FFLAS; and

5.35.3 must be allocated using the ABAA where they are not directly attributable to the provision of PQ FFLAS, ID-only FFLAS, or services that are not regulated FFLAS (ie, shared costs).

Cost allocation methodology for determining financial losses

5.36 The methodology for determining the FLA involves a similar approach to that outlined above for determining the initial RAB value of the core fibre assets.

5.37 In determining the value of any financial losses under s 177(2) of the Act, the cost allocation IM requires that only those costs associated with the provision of UFB FFLAS are included in the determination.[251] This includes:

5.37.1 costs that are directly attributable to the provision of UFB FFLAS; and

5.37.2 an allocation of any costs that are shared between UFB FFLAS and other services (ie, those costs that are *not* directly attributable to UFB FFLAS).

5.38 The cost allocation IM rules are applied to UFB assets and to opex associated with UFB assets, when determining the initial RAB value of the FLA.[252]

5.39 The cost allocation IM requires that any operating costs or asset values that are directly attributable to the provision of UFB FFLAS must be allocated to UFB FFLAS.[253]

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[249] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clauses 2.1.1(2)(a).

[250] Ibid, clauses 2.1.1 and 3.2.1.

[251] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021.

[252] Ibid, the cost allocation IM relating to the determination of the initial RAB value of the FLA is set out in Section 3 of Schedule B.

[253] Ibid, clause B1.1.6(1)(a) and clause B1.1.6(2)(b) of Schedule B.

5.40 For operating costs or asset values that are *not* directly attributable to the provision of UFB FFLAS, the cost allocation IM requires these to be allocated to UFB FFLAS by applying ABAA.[254]

5.41 A "cost allocator" is a ratio used to allocate operating costs whose quantum is "(a) based on a causal relationship; or (b) equal to a proxy cost allocator". An "asset allocator" is a ratio used to allocate asset values whose quantum is "(a) based on a causal relationship; or (b) equal to a proxy asset allocator."[255]

5.42 Asset allocators must have in the first instance a causal relationship with the asset value, or where a causal allocator is not available a proxy allocator may be used. The definition of "causal relationship" requires that the circumstance in which the cost driver leads to the operating cost being incurred (or the factor influencing employment of the asset) is "objectively justifiable and demonstrably reasonable". Similarly, the definitions of "proxy asset allocator" and "proxy cost allocator" require that the ratios are "objectively justifiable and demonstrably reasonable".[256]

5.43 They also must be applied consistently both within and between financial loss years.

5.44 In making this assessment of whether the ratios are "objectively justifiable and demonstrably reasonable", we have applied the same assessment factors set out in paragraph 5.34 above.

Default allocator types

5.45 When determining the value of the FLA, the IMs define the "default" allocator types that can be used for the allocation of asset values/operating costs that are not directly attributable to UFB FFLAS. [257]

5.46 The list of default allocator types includes those that reflect demand drivers (such as end-users, traffic, and revenues); asset size (such as the number of ports, central office space, and used length of linear assets); and other drivers related to operating expenses (such as power usage and number of events). The full list is as follows:

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[254] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause B1.1.6(1)(b) and clause B1.1.6(2)(c) of Schedule B.

[255] Ibid, clause 1.1.4(2).

[256] Ibid, clause B1.1.1(2) of Schedule B.

[257] Ibid, the list of default allocator types is set out in clauses B1.1.6(1)(c)(i)-(ix) (in respect of the allocation of operating costs) and B1.1.6(2)(d)(i)-(ix) (in respect of the allocation of asset values) of Schedule B.

5.46.1 number of customers, end-users, or premises (intact, connected or passed);

5.46.2 number of ports;

5.46.3 revenue;

5.46.4 central office space;

5.46.5 peak traffic;

5.46.6 average traffic;

5.46.7 used length of linear assets;

5.46.8 power usage;

5.46.9 number of events; and

5.46.10 any other allocator type as determined by the Commission.

5.47 The allocator values must be reviewed and updated for each financial loss year of the financial loss period.[258] In addition, the total asset values or operating costs allocated to UFB FFLAS must not exceed the asset values or operating costs that would continue to be incurred if only UFB FFLAS were to be provided.[259]

5.48 The IMs also require that, for the purposes of establishing an initial RAB, a regulated provider must apply the same allocator types as those used to determine the financial losses in accordance with Schedule B. [260]

Commission may determine alternative allocator types

5.49 The IMs provide that any other allocator type (ie, other than the list of default allocator types in paragraph 5.46 above) can be used, as determined by the Commission (see paragraph 5.46.10 above).[261]

[258] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause B1.1.6(3) of Schedule B.

[259] Ibid, clause B1.1.6(4) of Schedule B.

[260] Ibid, clause 2.1.3(3).

[261] Ibid, clause B1.1.6(1)(c)(x) and clause B1.1.6(2)(d)(x) of Schedule B.

5.50 Chorus may propose an alternative allocator type (as it has done in its estimate of the initial PQ RAB). Equally, the Commission can substitute an alternative allocator type of its own where it considers it appropriate to do so.[262] The provisos that apply are that:

5.50.1 for an operating cost:

5.50.1.1 where the quantum of the applicable cost allocator is:

5.50.1.1.1 based on a circumstance, that circumstance has a causal relationship which leads to an operating cost being incurred; or

5.50.1.1.2 equal to a ratio, that ratio is equal to a proxy cost allocator; and

5.50.1.2 the decision is consistent with s 166(2) of the Act; and

5.50.2 for an asset:

5.50.2.1 where the quantum of the applicable asset allocator is:

5.50.2.1.1 based on a circumstance, that circumstance has a causal relationship which influences the employment of an asset; or

5.50.2.1.2 equal to a ratio, that ratio is equal to a proxy asset allocator; and

5.50.2.2 the decision is consistent with s 166(2) of the Act.

Two-step cost allocation process

5.51 While the discussion of cost allocation that follows relates to the determination of the initial RAB, it is also relevant to cost allocation that is applied post-implementation to determine the PQP1 price path.

[262] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clauses B1.1.6(1)(c)(x)(A)-(B) of Schedule B in respect of opex and B1.1.6(2)(d)(x)(A)-(B) of Schedule B in respect of assets.

5.52 In our IM reasons paper, we noted the introduction of reg 6 and the exemption of certain of Chorus' FFLAS from PQ regulation required us to consider the relationship between the different steps of cost allocation, that is, the interaction between: [263] [264]

5.52.1 Step 1: the allocation of Chorus' asset values and operating costs between regulated FFLAS and services that are not regulated FFLAS (eg, copper); and

5.52.2 Step 2: how Chorus allocates these costs between different FFLAS classes (ie, PQ FFLAS, ID-only FFLAS and any additional FFLAS class (see paragraph 5.35 above)).

5.53 Our IM reasons paper outlined and discussed the following two-step allocation process:

5.53.1 Step 1: Regulated providers allocate costs between regulated FFLAS and services that are not regulated FFLAS (eg, copper); and

5.53.2 Step 2: Regulated providers allocate costs between different classes of regulated FFLAS (eg, PQ FFLAS and ID-only FFLAS).

5.54 We decided not to prescribe either a single step, or two step cost allocation process in the IM. Rather, the IM is sufficiently flexible to allow the regulated provider (currently, Chorus, as the only regulated provider subject to both ID and PQ regulation) to choose the process that suits its financial reporting systems.[265]

5.55 However, to mitigate the risk of excessive profits (or windfall gains) when determining the value of the FLA, the IM requires:

5.55.1 assets only come into the FLA —and post-implementation, into the RAB— when they are employed in the provision of FFLAS;

5.55.2 proportionate cost allocation using ABAA;

5.55.3 cost allocation data to be updated annually;

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[263] The Telecommunications (Regulated Fibre Service Providers) Regulations 2019 specify the providers subject to ID regulation and PQ regulation. Regulation 6 (reg 6) provides that Chorus is subject to PQ regulation in respect of the following services: "All FFLAS, except to the extent that a service is provided in a geographical area where a regulated provider (other than Chorus) has installed a fibre network as part of the UFB initiative."

[264] Commerce Commission "Fibre input methodologies: Main final decisions – reasons paper" (13 October 2020), paragraphs 4.173.

[265] Ibid, paragraphs 4.253-4.255.

5.55.4 the inclusion of a shared cost cap to limit the total costs associated with repurposed assets to those which cannot be avoided in providing UFB FFLAS;

5.55.5 the use of a list of default allocator types; and

5.55.6 that cost allocators are applied consistently across like costs both within and between years.

5.56 The IM also allows the Commission to retain the final decision in determining the value of the FLA and the cost allocation decisions behind it.[266]

Other relevant considerations when assessing alternative allocator types

5.57 When calculating the initial RAB value of the core fibre assets, Chorus must apply the same allocator types as those that are used to determine the FLA (as outlined at paragraph 5.48 above).

5.58 However, where Chorus has proposed alternative allocator types, we may assess their use in the context of the initial PQ RAB and expenditure allowance proposals. This is to determine whether its proposed alternative allocators comply with the IM requirements and best promote the purposes of Part 6 of the Act.

5.59 The cost allocation IM requires, in respect of decisions relating to the use of alternative allocator types for the initial PQ RAB and expenditure allowance decisions, that resulting forecasts are based on relevant and demonstrably reasonable assumptions, data, methods and judgements.[267]

5.60 We invited views from stakeholders on Chorus' proposed alternative allocator types (set out in Table 5.1 above) in our April consultation on Chorus' initial PQ RAB proposal and draft decision.[268] We identified the assessment of Chorus' alternative allocator types as a priority area for our analysis and decisions on the initial PQ RAB.[269] Where relevant, we refer to stakeholders' submissions and how we have considered these in our analysis.

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[266] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 2.2.4.

[267] Ibid, clause 3.2.1 (5)(a) subpart 3.

[268] Commerce Commission "Consultation on Chorus' initial price quality RAB proposal" (30 April 2021), paragraph 4.50; Commerce Commission "Chorus' initial price-quality regulatory asset base as at 1 January 2022 – Draft Decisions" (19 August 2021), paragraph 5.44.

[269] Commerce Commission "Consultation on Chorus' initial price quality RAB proposal" (30 April 2021), paragraph 4.3.5.

Section Two: Chorus' two-step approach to cost allocation

Summary of our view on Chorus' approach

5.61 We agree with Chorus' overall approach to the allocation of aggregated costs between FFLAS and non-FFLAS and using a two-step cost allocation approach.[270]

5.62 We accept Chorus' broad approach to cost allocation, taking into account corrections for a calculation or assignment error we have identified. The error is that expenses associated with recovering chargeable copper damages have been charged to PQ FFLAS as a component of total 'Billable and Core fibre service' instead of to copper (non-FFLAS) services.

5.63 In later sections within this chapter, we examine in more detail some of the asset and cost allocators (both the allocator type and the calculation of the allocator value) used within the broad approach.

Summary of Chorus' two-step approach to cost allocation

5.64 Chorus implemented a two-step allocation approach. The approach is consistent between its expenditure proposal for PQP1 and modelling the initial value of the RAB.[271,272] It is summarised as follows:

Step 1

5.65 Chorus groups costs (operating costs and asset values) into expense categories and asset classes. The costs are then apportioned as follows:[273]

5.65.1 For opex, allocation drivers allocate costs across five variables (as listed below). [274] For example, operating costs allocated by the maintenance overhead allocator type are allocated as follows for 2022:

5.65.1.1 Billables and core fibre service – weighting 0.23%;

5.65.1.2 NBV – weighting 0%;

5.65.1.3 Totex – weighting 0%;

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[270] As described by Chorus in its initial RAB and PQP1 expenditure proposals.

[271] Chorus: "A3 Short form responses: Short form responses to the Information Request from the Commission dated 18 November 2020", 10 February 2021, page 28.

[272] Chorus: "Our Fibre Plans", 12 February 2021, page 107.

[273] Chorus, Regulatory Template 3 - cost allocation regulatory template - April 2021 (27 May 2021).

[274] The term "allocation drivers" is used by Chorus in a way that is comparable to cost allocator under the IMs. Allocation drivers include drivers that allocate certain costs directly (ie, 100%) to either FFLAS or non-FFLAS and as well as costs that are proportionally shared.

5.65.1.4 Fibre access service – weighting 23.64%; and

5.65.1.5 Copper access service – weighting 76.13%.[275]

5.65.2 For capex, asset classes are allocated according to the following categories:[276]

5.65.2.1 directly attributable to FFLAS;

5.65.2.2 shared between FFLAS and non-FFLAS; or

5.65.2.3 directly attributable to non-FFLAS.

Step 2

5.66 The FFLAS costs (that is, the total costs that are directly attributable to FFLAS, and those that are shared between FFLAS and non-FFLAS) are allocated between the different classes of FFLAS (PQ FFLAS and ID-only FFLAS) using cost allocators and asset allocators.

5.67 For example, operating expenses apportioned by the maintenance overhead cost allocator for financial loss year 2022 are allocated to UFB FFLAS via the following weighting:

5.67.1 D1, Billables and core fibre service – weighting 70.6%;

5.67.2 D2, NBV – weighting 78.0%;

5.67.3 D3, Totex – weighting 76.0%;

5.67.4 D4, Fibre access service – weighting 99.4%; and

5.67.5 D5, Copper access service – weighting 0%.[277]

[275] Chorus, Regulatory Template 3 - cost allocation regulatory template - April 2021 (27 May 2021).

[276] We note that the term 'FFLAS' here refers to both UFB FFLAS and PQ FFLAS, and 'non-FFLAS' refers to both 'services that are not UFB FFLAS' and 'services that are not regulated FFLAS'.

[277] Chorus, Regulatory Template 3 - cost allocation regulatory template - April 2021 (27 May 2021).

Our analysis of Chorus' two-step approach

5.68 In our draft decision, we set out our view that, in principle, we agreed with Chorus' approach to allocating aggregated costs between PQ FFLAS and ID-only FFLAS and using a two-step allocation approach.[278,279]

Identified error in Chorus' method

5.69 We did, however, identify an error in Chorus' allocation of chargeable copper damages as presented in Chorus' expenditure proposal.[280] The error is that expenses associated with recovering chargeable copper damages have been incorrectly allocated to PQ FFLAS as a component of total 'Billable and Core fibre service' instead of to copper (non-FFLAS) services.

5.70 We estimate that correcting this error reduces 'Billable and Core fibre service' expenses allocated to PQ FFLAS by the amounts shown in the table below.

Table 5.2 CNO – Chargeable damages – copper expenses charged to PQ FFLAS in error[281]

	2022	2023	2024
Allocated expenditure	$ 2,901	$ 2,705	$ 2,369
PQ FFLAS allocation	70.6%	74.4%	77.1%
Amount allocated to PQ FFLAS in error	$ 2,048	$ 2,013	$ 1,826

5.71 We received no submissions on the error we identified in Chorus' allocation of chargeable copper damages as discussed above and in our draft decisions reasons paper.

[278] Analysys Mason: "Report for Chorus Documentation of opex allocation for the BBM opex workstream (including responses to notice to supply information), Model version V3.31" (26 March 2021), page 10.

[279] As described by Chorus in supporting initial RAB and PQP1 expenditure proposal documentation: Analysys Mason: "Report for Chorus Building Block model IAV model documentation: IAV model v314_120c" (24 March 2021), page A.31.

[280] Chorus, Regulatory Template 3 - cost allocation regulatory template - April 2021 (27 May 2021).

[281] Ibid.

5.72 While we accept Chorus' overall approach to cost allocation —subject to the correction of the error above— we have made changes to the application of the allocator types or associated allocator values in some cases to ensure that Chorus' proposed proxy allocators meet the "objectively justifiable and demonstrably reasonable" requirement in the IMs.[282] These changes are discussed in greater detail under their respective headings in the remainder of this chapter.

Section Three: Our decisions on Chorus' proposed alternative allocator types

5.73 In this section, we set out a summary of our decisions on Chorus' proposed alternative allocator types and associated allocator values.

5.74 In the section that follows, we provide a summary of each of Chorus' proposed alternative allocator types, and then consider each in turn.

Summary of Chorus' proposed alternative allocator types

5.75 Chorus has proposed six alternative allocator types: four for the purpose of allocating operating costs, and two for the purpose of allocating asset values.

5.76 The proposed allocator types do not form part of the list of default allocator types in the IMs.[283,284] As outlined at paragraph 5.50 above, the Commission has the discretion to determine any other cost allocator type, provided that:[285]

5.76.1 for an operating cost:

5.76.1.1 where the quantum of the applicable cost allocator is:

5.76.1.1.1 based on a circumstance, that circumstance has a causal relationship which leads to an operating cost being incurred; or

5.76.1.1.2 equal to a ratio, that ratio is equal to a proxy cost allocator; and

5.76.1.2 the decision is consistent with s 166(2) of the Act; or

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[282] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause B1.1.1(2) contains the definition of "proxy allocator".

[283] Incenta "Certain cost allocation issues relevant to the IAV" (published 30 April 2021), pages 12-13.

[284] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause B1.1.6(1)(c)(i)-(ix) of Schedule B. The default allocator types in the IMs are available to be applied to allocate opex that is not directly attributable to the provision of UBF FFLAS, as used for the initial RAB value of the FLA.

[285] Ibid, clauses B1.1.6(1)(c)(x)(A)-(B) of Schedule B in respect of opex and B1.1.6(2)(d)(x)(A)-(B) of Schedule B in respect of assets.

5.76.2 for an asset:

5.76.2.1 where the quantum of the applicable asset allocator is:

5.76.2.1.1 based on a circumstance, that circumstance has a causal relationship which influences the employment of an asset; or

5.76.2.1.2 equal to a ratio, that ratio is equal to a proxy asset allocator; and

5.76.2.2 the decision is consistent with s 166(2) of the Act.

5.77 Chorus' proposed alternative allocator types for the allocation of operating costs are as follows:

5.77.1 Future benefits: this allocator type uses forecast revenues to allocate joint marketing expenses.

5.77.2 Net book value (**NBV**): this allocator type uses the NBV of assets to allocate the costs of insurance.

5.77.3 Recipient business function: this set of allocator types is proposed to allocate the overheads of certain activities provided by service companies as well as the services of certain overhead functions. Examples of overhead activities include Chorus' Customer and Network Operations (**CNO**) personnel costs associated with:

5.77.3.1 the management of service assurance (ie CNO - NPC – Assure). These costs are allocated using the maintenance overhead allocator based on opex payments to the service companies for reactive and proactive maintenance activities; and

5.77.3.2 the management of Chorus' relationship with service companies (ie, CNO – NPC – overall serco management). These costs are allocated using the service company overhead allocator based on opex payments to the service companies.

5.77.4 Total expenditure (ie, capex and opex) (**totex**): This allocator type uses relative totex to allocate certain corporate expenses (such as personnel costs and audit fees and expenses).[286]

5.77.5 CTO common costs: some CTO common cost expenditure items, as listed in Table 5.9 below, will be allocated between FFLAS and non-FFLAS using the allocators set out in that table. All other "CTO Common Cost" expenditure items will be allocated between FFLAS and non-FFLAS using the totex allocator.

Chorus' proposed alternative allocator types for allocation of assets

5.78 Chorus has proposed the following alternative allocator types for the allocation of assets:[287]

5.78.1 shared ISAM; and

5.78.2 proxy "shared with copper, fibre cable".

5.79 We now address each of Chorus' six proposed alternative allocator types.

Use of future benefit as an allocator type to allocate joint marketing expenses

Our final decision

5.80 Our final decision is to approve Chorus' proposed future benefit allocator type to allocate joint marketing expenses. We consider it meets the requirements set out above (see paragraphs 5.41 to 5.44). In particular:

5.80.1 it is a proxy cost allocator, used to allocate joint marketing expenses in a way that reflects the expected benefits from undertaking those marketing activities;[288]

[286] It should be noted that the allocator type is the sum of capital and operating expenditure, that is total expenditure or "totex". The allocator value is the ratio of the capital and operating expenditure deemed to be on FFLAS to the total capital and operating expenditure on all services (it is the relative amount of totex expended on FFLAS compared to total totex).

[287] Analysys Mason report for Chorus "Building Block model IAV model documentation IAV model v314_120c" (24 March 2021), page 142.

[288] In line with the requirement in *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clauses 1.1.4(2) and 3.2.1, and clause B1.1.1(2) of Schedule B.

5.80.2 it is applied consistently, within a financial loss year and from one financial loss year to another when determining the value of the FLA, and within a disclosure year and from year to year when determining expenditure allowances for PQP1; and[289,290]

5.80.3 it is objectively justifiable and demonstrably reasonable (subject to the way in which the allocator values are calculated, which is discussed below).[291]

5.81 However, in light of submissions on our draft decision, we have decided to calculate the value of the future benefit allocator type using forward-looking revenues over a five-year timeframe rather than Chorus' proposed 12 years. We have also calculated the value of the future benefit allocator each year, based on discounted revenue streams.

5.82 Our final decision applies to how joint marketing expenses are allocated in the determination of the following:[292]

5.82.1 the value of the transitional initial PQ RAB;

5.82.2 the forecast expenditure allowances in PQP1; and

5.82.3 the forecast roll-forward of the transitional initial PQ RAB for determining the building blocks revenue for PQP1.

Overview of Chorus' proposed use of a "future benefit" allocator type to allocate joint marketing expenses

5.83 Chorus proposes to use a "future benefit" allocator type to allocate the following joint marketing expense categories between UFB FFLAS and services that are not UFB FFLAS:[293]

5.83.1 Marketing & Sales – Net Personnel Costs (**NPC**);

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[289] In line with the requirement in *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause B1.1.1(2) of Schedule B.

[290] In line with the requirement in *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 1.1.4(2).

[291] Ibid.

[292] We determine the allocator values used for the transitional initial PQ RAB below. The allocator values used for the PQP1 expenditire allowances are determined in our final PQ decision.

[293] Analysys Mason "Documentation of opex allocation for the BBM opex workstream (including responses to notice to supply information)",(23 March 2021), Figure 4.14. These three expense categories are listed in Chorus' BBM opex model with 'Future benefits' as the allocation driver. See 'List' and 'Opex allocation' sheets.

5.83.2 Marketing & Sales – Market Research; and

5.83.3 Marketing & Sales – Marketing and Communications.

5.84 [redacted]

5.85 Chorus has also used the future benefit allocator to allocate marketing expenditure in its expenditure allowance proposal for PQP1.

5.86 Under our February s 221 notice, Chorus was required to provide information on the rationale for its choice of allocator types, as well as evidence that the allocator type meets the IM requirement of being "objectively justifiable and demonstrably reasonable".[294]

5.87 In its response to our s 221 notice, Chorus referred to the model documentation supporting its BBM opex model.[295] In that model documentation, Analysys Mason noted that the "future benefit" allocator type was not on the default list of allocator types set out in the IMs,[296] and therefore requires Commission approval.[297] Analysys Mason explains that expenses in each of the three marketing categories referred to at paragraphs 5.83.1-5.83.3 above "are allocated based on future benefit which is calculated based on total revenues Chorus earned over 12 years (ie, distribution in 2012 will be based on revenues from 2012 to 2023). This captures the nature of marketing, which is oriented towards future revenue."[298]

5.88 Analysys Mason also claims that "the allocator is based ultimately on data on Chorus' revenue so is justifiable and reasonable."[299]

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[294] Commerce Commission "Notice to supply information under s221 of the Telecommunications Act 2001" (26 February 2021) , Attachment B, B22.6.

[295] Chorus "Appendix B. Summary Description in response to B4.1 and B4.2 of Commission notice" (26 March 2021) , page 16 (response to Notice req. B22.6).

[296] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause B1.1.6(1)(c) of Schedule B.

[297] Ibid, clause B1.1.6(1)(c)(x) of Schedule B. Analysys Mason "Documentation of opex allocation for the BBM opex workstream (including responses to notice to supply information)", (23 March 2021), Figure 4.14 (column headed "Allocator type under B.1.16 (sic) of the IM".

[298] Ibid, Figure 4.14.

[299] Ibid, Figure 4.14.

5.89 In its opex model documentation, Analysys Mason indicates that it considered a number of alternative allocator types for allocating marketing and sales expenses, including 'Fibre 60 and Totex 40'; marketing personnel; subscribers; 'Market research Subscribers'; and campaigns.[300] However, the opex model documentation does not include any discussion of the advantages and disadvantages of these potential allocator types.

Chorus' rationale for its proposed future benefit allocator type

5.90 In a report prepared for Chorus, Incenta reviews the economic rationale for the additional alternative allocator types Chorus proposed, including the "future benefit" allocator type applied to certain marketing initiatives.[301,302]

5.91 Incenta notes that "[d]uring the pre-implementation period, Chorus undertook substantial marketing initiatives to promote the use of better broadband services, which were agnostic to the technology employed."[303] According to Incenta, the benefits of such marketing initiatives – in the form of encouraging customers to connect to Chorus' broadband services, either by upgrading to a better quality copper services or by migrating to fibre – are likely to continue over an extended horizon.[304]

5.92 Incenta notes that Chorus has proposed to use relative revenue forecasts over a 12-year period, "which reflects three cycles of an average customer life of four years, which is consistent with how Chorus considers that customers react to marketing initiatives and hence has factored into its decisions on marketing initiatives."[305]

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[300] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause B1.1.6(1)(c)(x) of Schedule B. Analysys Mason "Documentation of opex allocation for the BBM opex workstream (including responses to notice to supply information)", (23 March 2021), Figure 4.14.

[301] Incenta "Certain cost allocation issues relevant to the IAV" (March 2021).

[302] As noted above, the expense categories which Chorus proposes to allocate on the basis of future revenues [redacted]

[303] Incenta "Certain cost allocation issues relevant to the IAV" (March 2021), page 15.

[304] Ibid, page 15.

[305] Ibid, page 16.

5.93 Incenta considers that Chorus' future benefits allocator type provides a good proxy for the benefits that might be expected from the marketing initiatives, as such initiatives are expected to influence customer decisions and result in increased customer numbers or revenues. Incenta notes that although the list of default allocator types in the IMs includes revenues, this might be interpreted as being contemporary revenues rather than forward-looking revenues. In Incenta's view, contemporary revenues would not be a reasonable proxy to apply to marketing activities designed to promote uptake of higher quality fibre services going forward.[306]

5.94 Incenta briefly queries whether Chorus' proposed future benefit allocator type is sufficiently robust to be used for cost allocation purposes, given that it is based on forecasts. Incenta understands that Chorus' future benefits allocator type is based on "corporate plan forecasts which existed over the period and were updated frequently, and so this allocator would reflect observable information from the period in question."[307]

Chorus' proposed calculation of the future benefit allocator values

5.95 Having proposed a future benefit allocator type based on forecast revenues, Chorus derives allocator values for each financial loss year of the pre-implementation period. This is calculated each year by estimating the ratio of FFLAS revenues to total revenues Chorus earned over the subsequent 12-year period. For example, the allocator value for 2012 is calculated as 'forecast' FFLAS revenues over the 12-year period from 2012 to 2023, divided by 'forecast' total revenues over 2012 to 2023. Allocator values for each of the subsequent financial loss years in the pre-implementation period are similarly calculated using a 12-year rolling average.[308,309]

[306] Incenta "Certain cost allocation issues relevant to the IAV" (March 2021), page 16.

[307] Ibid, page 16.

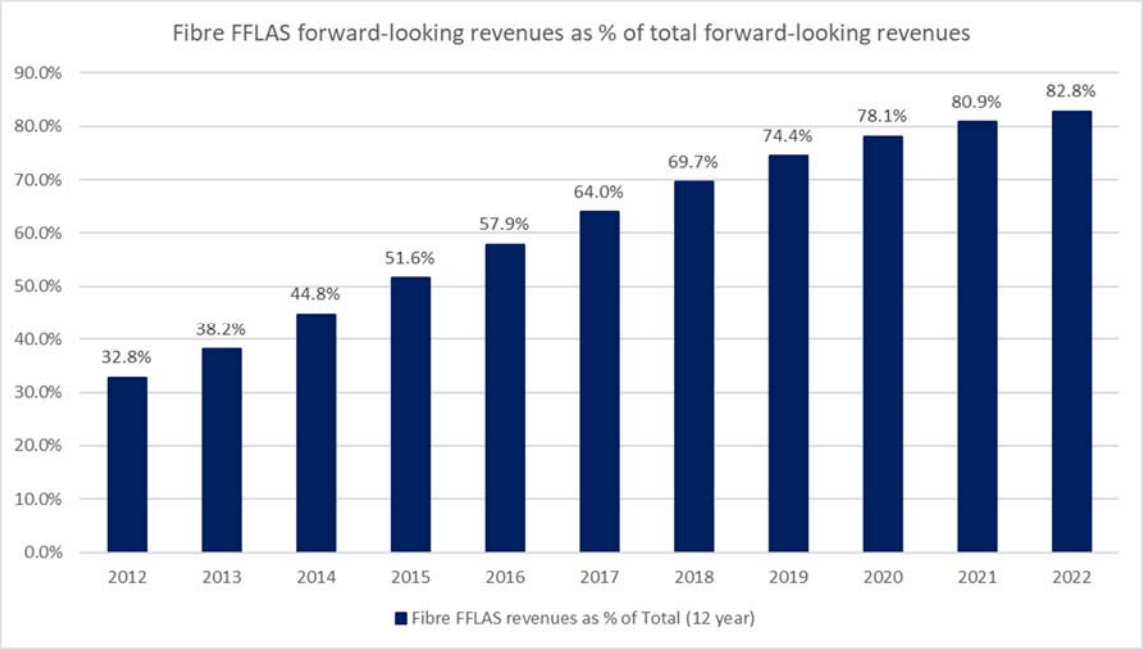
[308] For example, for 2013, the allocator value is calculated on the basis of forecast revenues over the 12-year period from 2013 to 2024, and so on.

[309] Analysys Mason report for Chorus "Documentation of opex allocation for the BBM Opex workstream (including responses to notice to supply information) – Model version 3.31" (26 March 2021), Section A.4.2 on page A-91

5.96 The revenues are extracted from Chorus' demand and revenue model.[310] Chorus' demand and revenue model combines actual revenues for 2012-2020 and forecast revenues from Chorus' five-year plan for the period from 2021-2025. For the period beyond 2025, growth is assumed to continue based on an extrapolation of the trend over 2023-2025.[311]

5.97 The resulting allocator values for each financial loss year of the pre-implementation period are shown in Figure 5.1 below.

Figure 5.1 Chorus' proposed future benefit allocator values



Source: Chorus BBM Opex Allocation v3.31 for Commission

5.98 The allocator values shown in Figure 5.1 are then applied to the three expense categories referred to at paragraphs 5.83.1-5.83.3 above. The unallocated total value of these three expense categories is $[redacted] million over the period from 2012-2022.[312] Applying the allocator values in Figure 5.1 results in a total of $[redacted] million being allocated to FFLAS over the period.

5.99 The allocated totals of the three marketing expense categories flow through into the calculation of the initial RAB value of the FLA, which forms part of the total initial PQ RAB value.

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[310] Chorus 'A11.3 CONFIDENTIAL Chorus Integrated Demand Revenue Model_v4.3ad2 CC for Commission.xls'.

[311] Analysys Mason "Documentation of demand and revenue model for the Chorus BBM IAV model", 8 June 2021, pages 10-11.

[312] These sums are extracted from Chorus 'BBM Opex Allocation v3.31 for Commission.xls' ('Opex allocation' worksheet).

Summary of our draft decision on Chorus' proposed future benefit allocator

5.100 Our draft decision was that, in principle, Chorus' proposal to allocate joint marketing expenses using an allocator type that reflects expected revenues is reasonable. We considered that marketing initiatives are likely to be motivated by the potential to capture future revenues.[313, 314]

5.101 The use of an allocator type that is based on forward-looking revenues, rather than contemporary revenues, appears to be reasonable in the context of growing demand for UFB FFLAS. We noted that if demand for UFB FFLAS was stable, the marketing effort may more likely be focussed on retaining existing customers, in which case an allocation based on existing contemporary demand (rather than forecast demand) might be more appropriate.

5.102 However, we expressed a concern with Chorus' proposed "future benefit" allocator values in terms of the timeframe over which revenues are forecast. This concern is set out below.

The period over which future revenues are forecast

5.103 Chorus' proposed future benefit allocator is calculated on a forward-looking basis, using relative revenues forecast over a 12-year period. Chorus did not explain why it used a period of 12 years, other than to note that the use of forecast revenues captures the nature of marketing, which is oriented towards future revenue.[315] Incenta observed that a 12-year horizon reflects three cycles of an average customer life of four years, although provided no rationale as to why one cycle is four years, or why three cycles might be appropriate.[316]

[313] Strictly speaking, marketing activity is likely to be driven by a motivation to increase future profits rather than revenues.

[314] We noted that the expense categories that Chorus propose to allocate using its 'future benefits' allocator include marketing and communications costs incurred by Chorus' corporate cost centre. It is not clear what these costs consist of, but they may include for example general corporate communications such as the production of annual and half-year reports. The link between such costs and future revenue generation is likely to be quite tenuous. However, the amount of corporate marketing and communications expenses is relatively small, for example representing $[redacted] million out of a total of $[redacted] million in 2020.

[315] Analysys Mason Documentation of opex allocation for the BBM opex workstream (including responses to notice to supply information) (Model version v3.31) (22 March 2021), Figure 4.14.

[316] Incenta "Certain cost allocation issues relevant to the IAV" (March 2021), page 16.

5.104 We noted that any attempt to forecast revenues over a 12-year period was likely to be subject to considerable uncertainty. In this regard, we noted that Chorus' corporate planning appears to be based on a five-year planning horizon, which is updated annually.[317] This suggested that a period shorter than 12 years is likely to be appropriate when determining the value of a cost allocator.

5.105 Although Incenta discussed the use of a 12-year forecasting period, it appears this is based on the understanding that this is consistent with Chorus' corporate plan forecasts and that these are updated frequently.[318] As noted in the preceding paragraph, Chorus' primary corporate planning document is its five-year plan, which is updated on an annual basis.

5.106 We also noted that Chorus' treatment of customer retention costs in its audited annual financial accounts supported the use of a shorter timeframe over which to consider the benefits of marketing activities to attract and retain customers. For example, in its annual report for 2020, Chorus refers to customer retention costs as the "incremental costs incurred in acquiring new contracts with new and existing customers … Customer retention assets have a finite life and are amortised from the month that costs are capitalised on a straight-line basis over the average connection life." Chorus reports the average connection life as up to four years for new connections and migrations.[319]

5.107 Chorus' financial statements do not detail how customer retention costs are allocated between different services. However, the split between fibre and copper shows a lower proportion of costs allocated to fibre services than the "future benefit" approach proposed by Chorus for the purposes of determining the initial PQ RAB. Examples are detailed below.[320]

5.107.1 For 2019, Chorus reported fibre customer retention capex of $29 million and copper customer retention capex of $22 million. This indicates that fibre customer retention capex was 57% of total customer retention capex in 2019 (compared to Chorus' proposed 74% allocation to FFLAS in 2019).

[317] For example, in submitting its expenditure proposal, Chorus refers to its annual 5-year business planning round. See Chorus "Modelling and cost allocation report" (16 December 2020), page 2.

[318] Incenta "Certain cost allocation issues relevant to the IAV" (March 2021), page 16.

[319] Chorus "Annual report 2020", page 45.

[320] Ibid, page 28.

5.107.2 For 2020, Chorus reported fibre customer retention capex of $20 million and copper customer retention capex of $16 million. This indicates that fibre customer retention capex was 56% of total customer retention capex in 2020 (compared to Chorus' proposed 78% allocation to FFLAS in 2020).

5.108 These figures indicate that the approach actually used to allocating customer retention costs in Chorus' financial statements results in a much lower allocation of costs to fibre than Chorus' proposed future benefits approach for the valuation of the initial PQ RAB.

5.109 We also observed that, in the context of its claims around confidentiality, Chorus itself had expressed some concerns over the reliability of allocator values that are based on long-range forecasts. Chorus had initially claimed that allocator values were commercially sensitive and should therefore be redacted. Chorus subsequently withdrew its claim of confidentiality over allocator values for the pre-implementation period and for the PQP1 period but maintained its claim of confidentiality over allocator values beyond PQP1, on the basis that these values are extrapolated and are very long-dated forecasts.

5.110 We concluded that the issues identified above indicate that a shorter timeframe should be used in order to generate a "future benefit" allocator value. This will produce an allocator value that can be relied upon, and which still reflects the forward-looking focus of the marketing expenditure each year throughout the pre-implementation period.

5.111 Our draft decision was that a timeframe of eight years is reasonable, taking into account that FFLAS was a new service being offered throughout the pre-implementation period, meaning marketing activity is likely to have focussed on driving new uptake of the service.

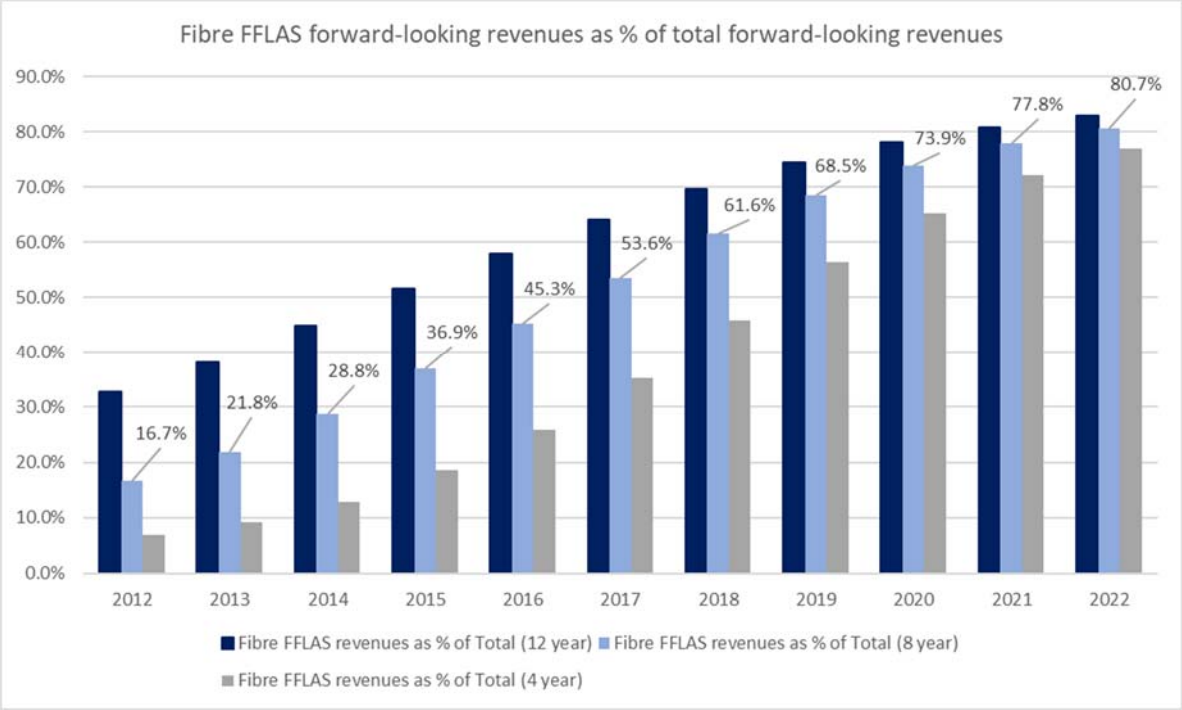
5.112 We said that an eight-year timeframe would also recognise that once an end-user moves on to a new FFLAS-based retail service, they may be more inclined to remain on that service (or to move to a higher-value FFLAS-based service) for a longer period of time, given the higher capability and quality of fibre compared to Chorus' legacy services. This would support a timeframe that is somewhat longer than Chorus' reported view on average customer lifetimes.[321]

[321] Using an 8-year timeframe, the future benefit allocator for 2012 is based on the expected revenues earned over 2012-2019; for 2013, the allocator is based on expected revenues earned over 2013-2020; and so on.

5.113 We also noted that a timeframe of eight years broadly aligns with the term of the original UFB contracts, which covered the period from 2011 to 2019. Our draft view was that it would be reasonable to have regard to forecasts made as part of planning for this period.

5.114 Figure 5.2 below summarises the future benefit allocator values for each year of the pre-implementation period, were revenue forecasts over an eight-year period to be used.[322] The allocator value would increase over the period, from just under 17% in 2012 to just over 80% by 2022. For comparison, the values proposed by Chorus (using a 12-year period) are also shown, along with the values where revenues are forecast over a four-year period.

Figure 5.2 Future benefit allocator values



Source: Chorus BBM Opex Allocation v3.31 for Commission

5.115 The resulting allocator values that we used for our draft decision on the initial PQ RAB are summarised in Table 5.3. For each year, these values are calculated using Chorus' UFB FFLAS revenues as a proportion of total revenues over an eight-year period. For comparison, Table 5.3 also includes the values proposed by Chorus.

[322] These allocator values are calculated in the Chorus BBM opex model by changing the period over which revenues are aggregated.

Table 5.3 Future benefit allocator values for draft decision

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Draft decision	16.7%	21.8%	28.8%	36.9%	45.3%	53.6%	61.6%	68.5%	73.9%	77.8%	80.7%
Chorus proposal	32.8%	38.2%	44.8%	51.6%	57.9%	64.0%	69.7%	74.4%	78.1%	80.9%	82.8

5.116 In our draft decision, we set out the impact on the value of the FLA specifically and on the initial PQ RAB value overall of using a future benefit allocator calculated using future relative revenues over an eight-year period, rather than Chorus' proposed twelve-year period. The impact was to lower the allocator value (as shown in Figure 5.3), which would result in a reduction in the marketing expenses that are allocated to FFLAS over the pre-implementation period.

Summary of stakeholders' views on our draft decision

Submissions

5.117 Chorus noted the Commission's draft decision to approve the use of the future benefit allocator type. However, Chorus submitted that the draft decision to reduce the time horizon from 12 years to 8 years is not justified. Chorus claimed that a longer period is appropriate to reflect the longer-term impact of marketing expenditure.[323]

5.118 Chorus argued that the four-year connection life reported in Chorus' financial accounts for customer retention costs is not relevant to the treatment of marketing expenses.[324] Customer retention costs relate to the average connection life, rather than the average customer life (which will include for example where a customer disconnects and then reconnects when moving houses).[325] Chorus estimates a churn rate across all "next-generation access" (**NGA**) products of [redacted]% to [redacted]%, which supports an average customer lifetime of between [redacted] and [redacted] years.[326] Chorus also submitted that the four-year connection life is possibly underestimated, as the underlying data has only been collected in Chorus' current data systems since 2015 (as a result, connection lives are capped at six years).[327]

[323] Chorus "Submission on fibre PQID initial RAB and IM amendments draft decision" (16 September 2021), page 6.

[324] Ibid, paragraphs 64, 65.

[325] Ibid, paragraph 64.

[326] Ibid, paragraph 66.

[327] Ibid, paragraph 67.

5.119 Chorus noted that its confidentiality claims in respect of forecasts were based around market disclosure obligations, and that extrapolated forecasts could provide the market with confidential information not previously disclosed.[328]

5.120 Chorus also commented on the issue of uncertainty of forecasts. Chorus said that while there is risk and uncertainty in revenue forecasts, this is not an important factor for the future benefit allocator. Chorus submitted that uncertainty around the relative shares of FFLAS and non-FFLAS revenues will be limited by the regulated copper withdrawal, as this will ensure that the FFLAS share of revenues will not fall below current levels.[329]

5.121 Chorus noted that its FFLAS share of its total revenue increased significantly faster during the early period of the UFB deployment (from [redacted]% in 2012 to [redacted]% in 2017), than is expected in the forecast period beyond its 5-year plan (from [redacted]% in 2026 to [redacted]% in 2031). According to Chorus, for the long-term forecasts to be materially incorrect, the proportion of copper revenues would have to be stable or increasing, which is not a reasonable assumption.[330]

5.122 Chorus also submitted that customer retention costs do not reflect the intended long-term benefit of marketing expenditure. Chorus referred to Incenta's observation on this:[331]

> Chorus undertook substantial marketing initiatives to promote the use of better broadband services, which were agnostic to the technology employed … customers may be encouraged to adopt a better quality of copper broadband service, but these customers would then be more likely to upgrade to a fibre service once the fibre services were available.

5.123 Vocus questioned the use of the future benefits allocator to allocate joint marketing expenses and did not support any allocator that needs to be treated as confidential.[332] Vocus submitted that consideration should be given to lagged actual revenues to reflect the more immediate impact of joint marketing activities.[333]

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[328] Chorus "Submission on fibre PQID initial RAB and IM amendments draft decision" (16 September 2021), paragraph 68.

[329] Ibid, paragraph 69.

[330] Ibid, paragraph 70.

[331] Ibid, paragraph 71.

[332] Vocus "Submission on fibre PQID initial RAB draft decision" (16 September 2021), paragraph 46.

[333] Ibid, paragraph 48.

5.124 Vocus submitted that the use of an eight-year timeframe to calculate the future benefit allocator value is not well-founded. It submitted that the Commission had not provided any rationale for a timeframe of eight years (or two customer life cycles).[334] According to Vocus, the Commission's reasons contained in the draft decision support a timeframe of between three and five years.[335] Vocus submitted that "the time horizon should not extend to any period where Chorus has 'concerns over the reliability of allocator values'. It should be axiomatic that if there are 'concerns over the reliability of allocator values', they should not be used."[336]

5.125 Vocus submitted that the Commission's observations on Chorus' accounting treatment of retention costs support a four-year period. It considered Chorus had adopted an inconsistent position in proposing a 12-year timeframe for the future benefits allocator while not having confidence in expenditure and demand forecasts beyond the end of PQP1.[337]

5.126 Vocus disagreed with the Commission's view that the term of the original UFB contracts is relevant when considering the timeframe used to set the future benefit allocator value, submitting "the time provided for the UFB roll-out has nothing to do with customer life-cycles. There would be a stronger justification in use of the 3-year regulatory period."[338]

Cross-submissions

5.127 Chorus disagreed with Vocus' submission on the timeframe to be used for the future benefit allocator. Chorus referred to its submission on the draft decision.[339]

5.128 In its cross-submission, Spark agreed with the Commission that marketing support to promote brand recognition has long-term benefits but submitted that Chorus had not demonstrated a clear link between past marketing activity and future benefits.[340]

5.129 According to Spark:[341]

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[334] Vocus "Submission on fibre PQID initial RAB draft decision" (16 September 2021), paragraph 51.

[335] Ibid, paragraph 6.

[336] Ibid.

[337] Ibid, paragraphs 54, 55.

[338] Ibid, paragraph 56.2.

[339] Chorus "Submission on Fibre PQID initial RAB draft decision" (30 September 2021), page 5.

[340] Spark "Submission on Fibre PQ Initial RAB cross-subs" (11 October 2021), paragraphs 14 and 15.

[341] Ibid, paragraph 15.

5.129.1 marketing cost categories appear to relate to activities with short, medium, and longer-term future benefits;

5.129.2 maintaining brand recognition over time will require ongoing spend, which indicates that Chorus' fibre network will have benefited from prior investment made by Telecom to promote broadband services, and future services will benefit from investments made today; and

5.129.3 investments in brands are likely to have a greater impact in current promotions (and diminishing over time) and are likely to provide fewer benefits for monopoly fibre services than for copper-based broadband services which face competition from other networks.

5.130 Spark argued that if a future benefit allocator is to be applied to marketing spend, consideration should be given to placing greater weight on benefits in the near-term (or applying the future benefits allocator to a subset of market expenditure relating to brand-building). Spark also submitted that brand marketing benefits decay over time, and that this should be considered.[342]

Our analysis of stakeholders' views on our draft decision

5.131 Chorus has provided some estimates of churn rates across NGA products, which it submits are consistent with a time period of three customer connection lives (or 12 years). However, in our view, the churn rates provided by Chorus are unlikely to provide a complete picture of the impact of Chorus' marketing efforts to attract new customers onto its fibre network.

5.132 For example, it is likely that Chorus' NGA customer base consists of a mix of customers with varying propensities or abilities to change technologies. Chorus itself commented that churn rates in its UFB areas would likely increase the estimated lifetime of customers on its network, although it provides no evidence of this in its submission. The likely heterogeneity of customers and customer circumstances indicates that the aggregate gross churn rates estimated by Chorus in its submission are of limited value when considering the impact of Chorus' marketing initiatives on UFB uptake.

[342] Spark "Submission on Fibre PQ Initial RAB cross-subs" (11 October 2021), paragraph 17.

5.133 Chorus has previously noted that UFB demand "is strongly affected by when and where we're deploying fibre, the timing and nature of local marketing activity and consenting challenges. Demand will change as the market evolves through, for example, adoption of online TV."[343] The reference to the timing of local market activity is consistent with the views expressed by a number of RSPs, that marketing activity will have a more immediate impact on demand and uptake, which is likely to dissipate over time. In our view, this supports shortening the timeframe proposed by Chorus for determining the value of the future benefit allocator.

5.134 It is also relevant that uptake of a new service such as fibre is likely to go through different phases. Characteristics of early adopters of fibre services — including their sensitivity to prices and responsiveness to marketing initiatives— are likely to differ from those of later adopters. For example, Chorus has described the following phases of the customer adoption lifecycle.[344]

5.134.1 Early adopters: technology enthusiasts who want to try the new technology as soon as it becomes available.

5.134.2 Pragmatists: customers who are undecided on the new technology, and who rely on word-of-mouth and marketing before adopting.

5.134.3 Laggards: late adopters who are likely to be more price-sensitive and require justification of the move to the new technology.

5.135 As noted by Chorus, the late adopters of new fibre-based services are likely to be more price sensitive, and potentially more open to switching away from fibre if offered a more compelling alternative. To the extent that these customers are under-represented in Chorus' estimated churn rates, their inclusion over time may have the effect of increasing the churn rate and lowering the average customer life. For example, the increasing availability of 5G fixed-wireless services may increase customer churn and reduce the average customer life.

5.136 It is also not clear what proportion of customers underpinning Chorus' churn rates responded to Chorus marketing campaigns or would have moved in any case.

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[343] Chorus Coverage Maps (November 2016), at https://sp.chorus.co.nz/system/files/resources_files/Coverage%20Maps%20UFB%20Early%20Adopters.pdf

[344] Chorus 'Customer adoption lifecycle' (23 October 2019), at https://sp.chorus.co.nz/system/files/resources_files/Hyperfibre%20Customer%20Adoption%20Lifecycle.pdf

5.137 On the question of whether forecasts over longer timeframes are subject to greater uncertainty, Chorus does not consider this to be an important factor when considering the timeframe over which the future benefits allocator should be measured. As noted above, Chorus submitted that uncertainty relating to long-range forecasts of future revenues will be mitigated as the growth of FFLAS revenues slows and the mix of revenues stabilises.

5.138 Chorus' claim appears to be that forecasting demand is more uncertain during periods when demand is changing relatively quickly. However, in our view this does not mitigate concerns over the reliability of forecasts over a long period of time.

5.139 In this regard, as we noted in our draft decision, Chorus' consultant (Incenta) had commented on whether Chorus' proposed future benefits allocator type would be sufficiently robust to be used for cost allocation purposes, given that it is based on forecasts. Incenta said that it understood that Chorus' future benefits allocator type is based on "corporate plan forecasts which existed over the period and were updated frequently, and so this allocator would reflect observable information from the period in question."[345]

5.140 Chorus' corporate planning is based on a five-year planning horizon, which is updated annually. In its expenditure proposal, Chorus noted that "the underlying business forecast cost models are the ones that are used for the annual 5-year business planning round (5YP),"[346] and that its "current business planning process only takes our detailed planning to 30 June 2025."[347]

5.141 Chorus' reasoning would also indicate that there should be no concerns about disclosing future benefit allocator values beyond PQP1, as beyond PQP1, the growth in FFLAS is expected to be relatively modest. Despite this, Chorus has claimed confidentiality over forecasts that extend beyond the end of PQP1.

[345] Incenta "Certain cost allocation issues relevant to the IAV" (March 2021), page 16.

[346] Chorus "Modelling and cost allocation report" (16 December 2020), page 2.

[347] Chorus "Our Fibre Assets" (10 February 2021), page 12.

5.142 We note Chorus' view that its confidentiality claims in respect of forecasts were based around market disclosure obligations, and that extrapolated forecasts could give the market confidential information not previously disclosed. However, as we said in our draft decision,[348] Chorus was prepared to disclose forecast allocator values (which had not been previously disclosed) out to the end of PQP1 but not beyond, on the basis that these are extrapolated and are very long-dated forecasts. A number of RSPs have also highlighted a number of times the apparent incongruity in Chorus' position of not having confidence in forecasts beyond the end of PQP1 (less than 4 years into the future) and yet proposing to use long-dated 12-year forecasts to determine the value of the future benefit allocator.[349]

5.143 Recent events relating to COVID-19 have also highlighted the difficulties of forecasting how demand may change in the future. Even in the early years of the pre-implementation period, forecast levels of UFB uptake have been significantly at odds with actual levels of uptake. This supports our view that a shorter period should be used, and that revenue streams used in the determination of a future benefit allocator value should consider discounting, which we further discuss below.

5.144 We note Vocus' submission that an allocator based on lagged actual revenues might be more appropriate to reflect the more immediate impact of any joint marketing activities. As we noted in our draft decision, we did consider the use of contemporary revenues to allocate marketing expenses.[350] However, we considered that the use of forward-looking revenues would be more appropriate in the context of growing demand for UFB FFLAS. We said that if demand for UFB FFLAS was stable, the marketing effort may more likely be focussed on retaining existing customers, in which case an allocation based on existing contemporary demand might be preferable.[351]

5.145 We remain of the view that the future benefit allocator type is appropriate for the allocation of joint marketing expenses during the pre-implementation period and for PQP1.

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[348] Commerce Commission "Chorus' initial price-quality regulatory asset base as at 1 January 2022 – Draft Decisions" (19 August 2021), paragraph 5.88.

[349] See for example, 2Degrees "Commerce Commission Fibre Price-Quality Regulation, Consultation on Chorus' initial price quality RAB proposal" (28 May 2021), page 9; and Vocus "Submission on fibre PQID initial RAB draft decision" (16 September 2021), paragraphs 48,54, and 55.

[350] Commerce Commission "Chorus' initial price-quality regulatory asset base as at 1 January 2022 – Draft Decisions", paragraph 5.101.1.

[351] Ibid, paragraph 5.80.

5.146 However, we agree with submissions from Vocus and Spark that the impact of marketing activity is likely to be focused over a shorter period than the eight year we proposed in our draft decision, and that the robustness of revenue forecasts further into the future is likely to undermine their suitability for the purposes of determining allocator values. While determining the precise period over which forward-looking revenues should be forecast is a matter of judgement, our final decision on this has been informed by submissions on the impact of marketing activity, as well as the corporate planning cycle of Chorus. As we noted in our draft decision, a relatively short period also broadly aligns with the position that Chorus has taken with respect to the disclosure of future allocator values.

5.147 On balance and having reviewed submissions and cross-submissions on our draft decision, we have decided to shorten the timeframe over which the value of this allocator is determined using forward-looking forecast revenues from the eight years in our draft decision, to five years.

5.148 We note Vocus' argument that any stream of future revenues should be discounted to reflect the time value of money. We also note that none of the cross-submissions disagreed with Vocus' proposal to discount the revenue streams.

5.149 As we noted in our draft decision, marketing activity in a given year is likely to be motivated by the prospect of earning additional revenues in future years. Using the present value of future revenue streams takes into account the time value of money. In our view, this represents a better measure of the future benefits of marketing initiatives undertaken each year.

5.150 We therefore agree with Vocus that it is appropriate to determine the future benefit allocator value by using a discounted approach of future revenue streams and have implemented this for each year by using the present value of the 5-year forward revenues. The discount rate that we have used is the vanilla WACC for each year of the pre-implementation period.

5.151 Examples are detailed below.

5.151.1 For 2012, we have calculated the future benefit allocator value as the ratio of the present value in 2012 of FFLAS revenues over 2012-2016 to the present value in 2012 of Chorus total revenues over 2012-2016. The discount rate used is our vanilla WACC estimate for 2012 (7.18%).

5.151.2 For each subsequent year, the same calculation is performed, using the ratio of 5-year revenues, in each year discounted using the corresponding vanilla WACC estimate.

5.152 The impact of our final decision on the initial RAB value of the FLA specifically, and on the transitional initial PQ RAB value overall, is shown in Table 5.4 below. Table 5.4 also shows the impact of our draft decision. The use of a 5-year period over which to determine the future benefit allocator values using discounted revenue streams reduces the FLA value by $57.0 million (compared to Chorus' estimate).

Table 5.4 Impact of our final decision on the future benefit allocator ($M)

	Draft Decision *(change from Chorus proposal)*	Final Decision *(change from Draft Decision)*	Final Decision *(total change from Chorus proposal)*
Core fibre assets	0.0	0.0	0.0
FLA	-27.0	-30.0	-57.0
Total value of Initial PQ RAB	-27.0	-30.0	-57.0

Source: Analysys Mason

Summary of our final decision on the use of Chorus' future benefit allocator type

5.153 Our final decision is to approve Chorus' proposed future benefit allocator type to allocate joint marketing expenses.[352] We consider it meets the requirements of the IMs, in particular:

5.153.1 it is a proxy cost allocator, used to allocate joint marketing expenses in a way that reflects the expected benefits from undertaking those marketing activities;[353]

5.153.2 it is applied consistently, within a financial loss year and from one financial loss year to another when determining the value of the FLA,[354] and within a disclosure year and from year to year when determining expenditure allowances for PQP1; and[355]

5.153.3 it is objectively justifiable and demonstrably reasonable (subject to the way in which the allocator values are calculated).[356]

[352] Our final decision to approve the future benefit allocator type is unchanged from our draft decision.

[353] In line with the requirement in *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clauses 1.1.4(2) and 3.2.1, and clause B1.1.1(2) of Schedule B.

[354] Ibid, clause B1.1.1(2) of Schedule B.

[355] Ibid, clause 1.1.4(2).

[356] Ibid, clause 1.1.4(2).

5.154 Our final decision is that the allocator values should be determined using a forward-looking period of five years (rather than the 12-year period proposed by Chorus) and using discounted revenue streams. The use of a five-year timeframe and discounted revenue streams represent changes from our draft decision in light of submissions on our draft.

5.155 The resulting allocator values that we have used in our final decision on the transitional initial PQ RAB are summarised in Table 5.5. For each year, these values are calculated using Chorus' UFB FFLAS revenues as a proportion of total revenues over a 5-year period, with the revenue streams discounted using our vanilla WACC estimates. For comparison, Table 5.5 also includes the values proposed by Chorus, and the values we proposed in our draft decision.

Table 5.5 Future benefit allocator values for final decision

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Final decision	8.1%	10.9%	15.3%	21.7%	29.8%	39.2%	49.6%	59.3%	67.5%	73.6%	77.9%
Draft decision	16.7%	21.8%	28.8%	36.9%	45.3%	53.6%	61.6%	68.5%	73.9%	77.8%	80.7%
Chorus proposal	32.8%	38.2%	44.8%	51.6%	57.9%	64.0%	69.7%	74.4%	78.1%	80.9%	82.8%

5.156 Our final decision applies to the application of the future benefit allocator type to expenditure in both the transitional initial PQ RAB and PQP1 expenditure allowances, and the forecast roll-forward of the transitional initial PQ RAB for determining the building blocks revenue for PQP1. We calculate the future benefit allocator values used for PQP1 in our final PQ decision.

Use of net book value (NBV) as an allocator type to allocate certain property damage and insurance costs

Our final decision

5.157 Our final decision is to approve the use of the proxy allocator NBV to allocate certain property damage costs and business interruption insurance costs. Costs are allocated based on the relative NBV of UFB assets during the pre-implementation period, and fibre assets post-implementation, to the total NBV of all assets.[357] We consider it meets the IM requirements set out above (see paragraphs 5.41 to 5.44). In particular:

5.157.1 it is a proxy cost allocator, used to allocate certain property damage costs and business interruption insurance costs in a way that reflects the expected benefits of the insurances;[358]

5.157.2 it is applied consistently, both within a financial loss year and from one financial loss year to another;[359] and

5.157.3 it is objectively justifiable and demonstrably reasonable.[360]

5.158 Our final decision applies to how certain property damage costs and business interruption insurance costs are allocated to:

5.158.1 the transitional initial PQ RAB;

5.158.2 forecast expenditure allowances in PQP1; and

5.158.3 the forecast roll-forward of the transitional initial PQ RAB for determining the building blocks revenue for PQP1.

[357] Relative NBV means: the NBV of the UFB assets in the pre-implementaiton period or core fibre assets post-implementation divided by the total NBV of all assets.

[358] In line with the requirement in *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause B1.1.1(2) of Schedule B.

[359] Ibid.

[360] Ibid.

Chorus' proposal to use of NBV as an allocator type

Overview of what Chorus has proposed

5.159 Chorus has proposed using NBV as an allocator type to allocate certain property damage costs and business interruption insurance costs.[361] This approach identifies the NBV of the relevant fibre and copper assets and applies the ratio to the relevant operating costs.

5.160 The NBV allocator would apply to relevant operating costs in both Chorus' initial PQ RAB and expenditure allowance proposals. Under Chorus' expenditure proposal, over the period 2012 to 2020, these costs had an average value of $2.0m per annum, or 0.6% of total opex. During PQP1, these costs are $2.5 - $2.6m per annum.[362]

The rationale for Chorus' proposal

5.161 Chorus' view is that that none of the default allocator types set out in the IMs would be adequate to allocate the costs of certain property damage and business interruption insurance costs between fibre and copper assets. [363,364]

5.162 In its report on "Certain cost allocation issues relevant to the IAV", Incenta submits that:[365]

> The rationale for applying "net book value" to allocate these insurance costs is that the net book value of each of the networks has a close relationship to the premium that is chargeable. Thus, net book value could be interpreted either as a causal allocator, or as a proxy allocator that provides a very close proxy for the true causal allocator.

5.163 Incenta's report also notes that while an allocator type based on revenue could reflect the relative size of the copper and fibre businesses, it would be a poor allocator type for insurance costs during the pre-implementation period. [366] This is because during this period, the network was being constructed, and so there will have been a delay between the assets being installed (at which time insurance was obtained and associated costs incurred) and then subsequently being employed in the provision of FFLAS (at which time revenue is generated).

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[361] Net book value of an asset should reflect the current accounting value of the asset in the PQ RAB ie, the historical value of an asset, taking into account depreciation and other treatments such as revaluations.

[362] Chorus, Regulatory Template 3 - cost allocation regulatory template - April 2021 (27 May 2021).

[363] Incenta "Certain cost allocation issues relevant to the IAV" (published 30 April 2021), page 13.

[364] The default cost allocator types for the allocation of operating costs are set out in clause B1.1.6 (1)(c)(i)-(ix) in Schedule B of *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021.

[365] Incenta "Certain cost allocation issues relevant to the IAV" (published 30 April 2021), page 13.

[366] Ibid, page 13.

Summary of our draft decision on Chorus' proposal to use the NBV allocator type

5.164 Our draft decision was to approve the use the NBV allocator type to allocate certain property damage costs and business interruption insurance costs for determining the transitional initial PQ RAB and expenditure allowances for PQP1.

5.165 In principle, we considered that allocating these insurance costs between FFLAS and non-FFLAS should reflect, where possible, the causal drivers of insurance premiums.

5.166 While the use of historic cost as an allocator type is relatively easy to implement for both copper and fibre assets and may reflect drivers of expenditure if the insurance in question is based on replacement cost, it also suffers from limitations. For example, in relation to accurately reflecting replacement costs (where those are relevant), it is clear that replacement costs do not all follow the same price trends (eg some assets may be relatively cheaper to replace today). We accept NBV meets the IM requirement and we do not consider we need to consider historic cost further.

5.167 We also note that the total cost of Chorus' property damage and business interruption insurance is approximately $5m per annum. Any change in the allocation of these costs by the application of a different allocator will not materially alter the value of the transitional initial PQ RAB.

5.168 We are satisfied that Chorus' proposed use of the NBV allocator type to allocate certain property damage and business interruption insurance costs meets the IM definition of a proxy cost allocator. In particular:

5.168.1 it provides a ratio to allocate an operational cost where a causal relationship could not be readily established;

5.168.2 the quantum is based on factors in existence during the 12-month period terminating on the last day of the most recent disclosure year; and

5.168.3 in the circumstances it is objectively justifiable and demonstrably reasonable.[367]

[367] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, definition of "proxy cost allocator".

Other alternatives that we considered

5.169 In assessing Chorus' proposal, we considered other possible causal drivers of these costs and the way in which the value of an asset insured may influence insurance premiums.

5.170 For example, a replacement cost valuation will reflect the impact of inflation. Copper assets are older than fibre assets and will have a lower NBV on average. Therefore, if insured values were based on current replacement value (rather than depreciated historic cost), an allocation based on replacement costs would likely allocate a higher proportion of costs to copper than an NBV approach.

5.171 However, we note that replacement cost is a calculated value which may not be readily available. In our view, requiring Chorus to maintain replacement costs to allocate a relatively small amount of expenditure would not be proportionate.

5.172 We also note that business interruption insurance may be based on the expected level of profitability of the business, rather than asset values. It is likely that copper assets contributed more to Chorus' profitability during the pre-implementation period given that the migration of customers from copper to fibre was still in its early stages. However, the expected level of profitability is less objective than asset values as it requires forecasting rather than reporting on actual values.

Summary of stakeholders' views on our draft decision

5.173 We received submissions on our draft decision from Chorus and Vocus.

5.174 Chorus in its submission noted its support for our draft decision that approved use of allocators of the NBV type.[368]

5.175 By contrast, in its submission, Vocus stated:[369]

> Vocus doesn't support the use of NBV as an allocator, as it biases the allocation towards newer assets because of inflation and depreciation, i.e. fibre, even though the expenditure items are not inversely related to age. If NBV is used it should be non-depreciated Book Value (still biased in favour of new assets due to inflation, but less so) outcomes or Replacement Cost.

[368] Chorus "Submission on Commission's consultation on Chorus' initial PQ RAB" (28 May 2021), Appendix B11, page 48

[369] Vocus' "Submission on fibre PQID initial RAB draft decision" (16 September 2021), paragraph 58.1.

Our analysis of stakeholders' views on our draft decision

5.176 As noted above, we considered the use of historic cost (ie non-depreciated Book Value) as an allocator type that would be relatively easy to implement for both copper and fibre assets and may reflect drivers of expenditure if the insurance in question is based on replacement cost. We do not accept the need to change to that method of allocation as we consider NBV meets the IM and there is no evidence that a change to a historic cost allocator type will produce a materially better allocation result.

5.177 We consider the NBV allocator type meets the IM requirements set out above (see paragraphs 5.41 to 5.44). We disagree however with Vocus' view above, and prefer the approach that Chorus has proposed as it recognises that newer items tend to have higher values for insurance purposes and would receive a higher benefit in the event of an insurance pay-out, and they are therefore deemed to drive a higher proportion of the insurance cost.[370]

Summary of our final decision on Chorus' proposal to use proxy allocators of the NBV allocator type

5.178 Our final decision, taking account of submissions received on our draft decision, is to approve the use of the proxy allocator NBV to allocate certain property damage costs and business interruption insurance costs for determining the value of the transitional initial PQ RAB, the PQP1 expenditure allowance, and the forecast roll-forward of the transitional initial PQ RAB for determining the building blocks revenue for PQP1.

Use of recipient business function as an allocator type

Our final decision

5.179 Our final decision is to approve Chorus' proposed recipient business function allocator type for the purpose of determining:

5.179.1 the value of the transitional initial PQ RAB;

5.179.2 the PQP1 expenditure allowance; and

5.179.3 the forecast roll-forward of the transitional initial PQ RAB for determining the building blocks revenue for PQP1.

[370] In line with the requirement in *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause B1.1.1(2) of Schedule B.

5.180 We consider it meets the requirements of the IMs. In particular, it is a proxy cost allocator, the ratio used to allocate the operating costs is "objectively justifiable and demonstrably reasonable", and the decision is consistent with s 166(2) of the Act.

5.181 Proxy cost allocators of the recipient business function type are set out as follows:

5.181.1 Accommodation relationship driver;

5.181.2 Service company overhead;

5.181.3 Chorus - all NPC costs;

5.181.4 Chorus proactive maintenance overhead;

5.181.5 Chorus reactive maintenance overhead;

5.181.6 Corporate - all insurance costs;

5.181.7 Corporate personnel;

5.181.8 Maintenance overhead;

5.181.9 Provisioning;

5.181.10 Power relationship driver; and

5.181.11 CTO overhead allocator.

Chorus' proposed use of proxy allocators of the recipient business function type

5.182 This allocator assigns overhead costs of the business to various business units in the same ratio as the ratio of direct costs of that business unit are split between FFLAS and non-FFLAS. Chorus has proposed using proxy allocators of the recipient business function type (listed above in 5.181) to various internal business unit overhead costs. These are the CNO and CTO overhead categories. This occurs in step 1 of Chorus' allocation process, as shown in Table 5.6 below.

5.183 A proxy cost allocator is the ratio used to allocate operating costs for which a causal relationship cannot be established. An allocator of the recipient business function type is based on how other operational costs of the associated business unit are allocated.

5.184 Examples of how Chorus has applied allocators using the recipient business function allocator type include:

5.184.1 The overhead costs of supervising the work of service companies are allocated in the same proportion as the direct payments that are made to service companies. That is, the direct payments for the work undertaken by the service companies have been allocated to FFLAS using causal or proxy allocators, and the overhead costs of this work are allocated in the same ratio as the direct costs, using this proxy.

5.184.2 Maintenance in relation to power and property assets is allocated using the same allocation ratio as that used to allocate payments for property-related power and accommodation operating expenditures, respectively. The split of the maintenance costs relating to power and property is therefore assumed to follow the same ratio as the split of property-related power and accommodation costs.

Table 5.6 Operating cost categories allocated using a recipient business type allocator[371]

Expense category	Proxy allocator
CNO – NPC – Network	Service company overhead
CNO - NPC - overall Serco management	Service company overhead
CNO - NPC - Operations & Optimisation	Service company overhead
CNO - NPC overhead costs	Service company overhead
CTO - Common - Schedules	Service company overhead
CNO - NPC - property - overhead	Corporate personnel
CNO - NPC - Assure	Maintenance overhead
CNO - payment to service companies - maintenance	Maintenance overhead
CNO - Network integrity - non-chargeable	Maintenance overhead
CNO - payment to service companies - provisioning	Provisioning
CNO - Chorus network proactive maintenance (power)	Power relationship driver
CNO - Chorus network reactive maintenance (power)	Power relationship driver
CNO - NPC - property - power	Power relationship driver
CNO - Chorus proactive maintenance overhead	Chorus proactive maintenance overhead
CNO - Chorus network proactive maintenance (accommodation)	Accommodation relationship driver
CNO - NPC - property - accommodation	Accommodation relationship driver
CNO - Chorus network reactive maintenance (accommodation)	Accommodation relationship driver

[371] Analysys Mason report for Chorus "Documentation of opex allocation for the BBM Opex workstream (including responses to notice to supply information) – Model version 3.31" (26 March 2021).

CNO - property - accommodation	Accommodation relationship driver
CNO - property - Rates - Buildings	Accommodation relationship driver
CNO - project opex - shared	Accommodation relationship driver
CNO - Chorus reactive maintenance overhead	Chorus reactive maintenance overhead
CNO - property - corporate	Corporate personnel
CTO - NPC	CTO Overhead
CTO - Common - Faults/Tickets	Chorus reactive maintenance overhead
CTO - Common - S/O Volumes	Provisioning overhead
Corporate - Insurance - Chorus benefit of the insurance of staff	Chorus - all NPC costs
Corporate Insurance	Corporate - all insurance costs

Rationale for Chorus' proposal

5.185 In its report for Chorus, Incenta states that:[372]

> There are a range of overhead functions that perform services for other functions within Chorus, and Chorus proposes to extend the allocation that is applied to the lower level (service recipient) function to the higher level (service provider) function.
>
> …
>
> The implicit assumption behind this proxy allocator is that the effort that is undertaken in the relevant overhead function between the different services is related to the relative size of expenditures of the business function that is receiving the overhead service.

Chorus' proposed calculation of the proxy overhead cost allocators of the recipient business allocator type

5.186 On the allocation of operating costs, Chorus outlines that:[373]

> Allocation drivers range from simple ones (e.g. 100% allocated to copper) to more complex data-driven allocation, changing from year to year. Some allocation drivers are calculated as the weighted average of other allocation drivers.

[372] Incenta "Certain cost allocation issues relevant to the IAV" (published 30 April 2021), page 17.

[373] Analysys Mason "Report for Chorus: Documentation of opex allocation for the BBM Opex workstream (including responses to notice to supply information) – Model version 3.31" (26 March 2021), page 10.

5.187 The proposed proxy cost allocators that are a recipient business function allocator type are calculated as the weighted average of the allocation drivers that have been used to allocate other expenditure in the business unit. The recipient business function allocator is applied to allocate overhead of the business unit in question. For example, Chorus explains the application and calculation of the recipient business allocator 'Chorus proactive maintenance overhead' as follows:[374]

> Allocates proactive maintenance overhead based on weighted average of the other proactive maintenance allocation drivers which makes sense as proactive maintenance overhead can be assumed to be in line with other proactive maintenance spend.

5.188 This proxy cost allocator therefore allocates overhead costs in the same ratio as the non-overhead costs of the business unit have been allocated on the basis that overhead costs will follow a similar split to the non-overhead costs of the function.

Summary of our draft decision on Chorus' proposed use of allocators of the recipient business function type

5.189 Our draft decision was that, in principle, Chorus' proposal to allocate certain overhead costs using proxy allocators based on the allocation of other operating costs within the recipient business function was reasonable.

5.190 The proxy allocator type is that of recipient business unit. This allocator type allocates a business unit's overhead costs via a proxy allocator because a cost allocator based on a causal relationship is not available.

5.191 The IM requires that any proxy cost allocator used is "objectively justifiable and demonstrably reasonable".[375] We consider determining the recipient business unit allocator value as a proportion (ie, weighted average) of the business unit's other operating cost allocation drivers is an acceptable approach. This is on the basis that the underlying cost allocators on which the overhead proxy cost allocator is calculated are themselves objectively justifiable and demonstrably reasonable.

Summary of stakeholders' views on our draft decision

5.192 We received a single submission on our draft decision from Chorus that supported our draft decision. No cross-submissions were received.[376]

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[374] Analysys Mason "Report for Chorus: Documentation of opex allocation for the BBM Opex workstream (including responses to notice to supply information) – Model version 3.31" (26 March 2021), page 31.

[375] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause B1.1.1(2) of Schedule B - definition of "proxy cost allocator".

[376] Chorus "Submission on Commission's consultation on Chorus' initial PQ RAB" (28 May 2021), Appendix B12, page 49

CTO overhead allocator

5.193 In our draft decision, we raised concerns with the calculation of the CTO overhead allocator, a recipient business function allocator type.[377] Our concerns related to the underlying calculation of this particular allocator. Its calculation relied on the allocation of CTO common costs, which in turn were allocated via totex.

5.194 In the draft decision, we raised concerns regarding the totex allocator and the resulting impact on the allocation of CTO common costs[378], which in turn impacted the calculation of the CTO overhead allocator. These concerns have now been addressed, and we accept the revised calculation of the CTO overhead allocator. See the section below on the allocation of CTO common costs, beginning at paragraph 5.235.

Summary of our final decision on the use of proxy allocators of the recipient business function type

5.195 Our final decision is to approve the use of proxy allocators of the recipient business function type for determining the value of the transitional initial PQ RAB and the PQP1 expenditure allowance, and the forecast roll-forward of the transitional initial PQ RAB for determining the building blocks revenue for PQP1.[379]

5.196 The allocation ratio of a recipient business function allocator is the product of its component allocators. Because of this dependency on other allocators, the value of the recipient business allocator must be recalculated if any of its component allocators or values change.

Use of total expenditure (totex) as an allocator type

Our final decision

5.197 Our final decisions are to:

5.197.1 Approve the use of total expenditure (totex) as an allocator type and "prorated totex" as an allocator value for determining:

5.197.1.1 the value of the transitional initial PQ RAB;

5.197.1.2 the forecast expenditure allowance in PQP1; and

[377] Commerce Commission "Chorus' initial price-quality regulatory asset base as at 1 January 2022 – Draft Decisions" (19 August 2021), paragraphs 5.134 to 5.140.

[378] Ibid paragraphs 5.178 to 5.198.

[379] Our final decision to approve the recipient business function allocator type is unchanged from our draft decision.

5.197.1.3 the forecast roll-forward of the transitional initial PQ RAB for determining the building blocks revenue for PQP1.

5.197.2 Approve the inclusion of pass-through costs, inclusive of infrastructure rates, in the calculation of the totex proxy costs allocator pre and post implementation date.

Chorus' proposal to use "prorated totex" as a proxy cost allocator

5.198 In step 1 of Chorus' cost allocation process, certain operating costs are allocated in full or part to "costs to be allocated using totex".

5.199 The operating cost categories that are fully (100%) allocated to 'costs to be allocated using totex' are:

5.199.1 CTO – common costs;

5.199.2 Corporate – audit fees & expenses; and

5.199.3 Corporate – insurance – general liability errors & omission Directors & Officers Statutory.

5.200 However, only a portion of other operating costs are to be allocated to 'costs to be allocated using totex.' The degree to which these operational costs are allocated to 'cost to be allocated by totex' varies between cost categories and from one financial loss year to another.

5.201 In step 2 of Chorus' cost allocation process, the overall costs associated with FFLAS need to be allocated between in scope FFLAS and other FFLAS. To do this the value of "costs to be allocated by totex" are assigned between in-scope FFLAS (ie, UFB or PQ FFLAS) and other FFLAS ('voluntary FFLAS' or ID-only FFLAS), using the proxy cost allocator "prorated totex".[380] See Table 5.7 below for the annual "prorated totex" allocations between FFLAS and non-FFLAS for the PQP1 expenditure allowance.[381]

[380] Analysys Mason report for Chorus "Documentation of opex allocation for the BBM Opex workstream (including responses to notice to supply information) – Model version 3.31" (26 March 2021), Figure A.104, page A-96. Refer to paragraph 2.33.7 above regarding use of terminology.

[381] Analysys Mason report for Chorus "Building Block model IAV model documentation IAV model v314_120c" (24 March 2021), Figure 18, page A-42.

Table 5.7 Prorated totex allocations by year

Prorated Totex	FFLAS	Non-FFLAS
2022	76.0%	24.0%
2023	74.0%	26.0%
2024	74.2%	25.8%

Source: Chorus - RT03 Cost allocation, 10 February 2021. [382]

Calculation of prorated totex cost allocator formula

5.202 The "prorated totex" cost allocator is used in step 2 of Chorus' cost allocation process, to allocate certain operating costs to UFB FFLAS and PQ FFLAS.[383] It is determined by the following formula:

Figure 5.3 Calculation of totex cost allocator

$$\frac{\text{Total Capex Allocated to FFLAS} + \text{Total Opex Allocated to FFLAS (Excluding Costs Allocated by Totex)}}{\text{Total Capex} + \text{Total Opex (Excluding Costs Allocated by Totex)}}$$

5.203 The value of costs to be allocated using the totex cost allocator is determined in step 1 of Chorus' allocation process. The value of expenses to be allocated by the "prorated totex" allocator is referred to in Chorus' model documentation as "costs to be allocated by totex".

5.204 The operating costs that Chorus proposes to allocate using the "prorated totex" allocator are associated with its Corporate, CTO and CNO functions. Table ([5.8]) below lists the Chorus expenditures to be allocated in full or part using the "prorated totex" allocator.

Table 5.8 Operating costs to be allocated using totex (PQ RAB only)

[382] Chorus Regulatory Template 3 - cost allocation regulatory template - April 2021 (27 May 2021).

[383] This allocation takes place in step 2 of Chorus' cost allocation process described at paragraphs 5.66 – 5.67 above.

[redacted]

5.205 As shown in Table 5.8, between 2012 to 2020, operating costs totalling on average $94.3m per annum, representing 27.8% of Chorus' total operating costs, are to be allocated by the "prorated totex" allocator. This is the largest allocation of Chorus' operating costs to FFLAS and non-FFLAS after direct (100%) attributions.

5.206 Two expense categories, "CTO Common Costs" ($33.7m), and Corporate NPC costs ($28.3m), account for approximately two thirds ($62m) of the average total annual expenditure to be allocated by totex ($94.3m).

5.207 Our analysis considered the use of the totex allocator type in determining the value of the transitional initial PQ RAB, the PQP1 expenditure allowance and the forecast roll-forward of the transitional initial PQ RAB for determining the building blocks revenue for PQP1.

Rationale for Chorus' proposal to allocate costs using a proxy allocator based on totex

5.208 In a report for Chorus, Incenta explains the rationale for using total expenditure (totex) as the basis for allocating operating overhead costs. Incenta submits that:[384]

[redacted]

[384] Incenta "Certain cost allocation issues relevant to the IAV" (published 30 April 2021), page 15.

> It is not uncommon for aspects of corporate overhead to be allocated between activities on the basis of expenditure, as this reflects the reasonable assumption that the degree of effort required in corporate support roles are related to the magnitude of the expenditure. For example, the potential for and complexity of legal advice that may be sought in relation to contracts with external service providers would be expected to have a strong relationship to the cost to Chorus of the services provided. The one additional extension to this common allocator for corporate services is the observation that effort that is provided by corporate is reasonably indifferent as to whether the activity would be classified as an operating expense or as a capital cost. Indeed, given the UFB rollout comprised a very large undertaking using a new technology, it should be expected that a substantial part of the effort of corporate was directed to decisions and management in relation to this capital project.

5.209 Further, Incenta submits that the default allocator types listed in the IMs[385] are unlikely to provide a reasonable proxy where a new network is being built, as approved allocator types such as customer connections lag behind the timing of certain expenditures. Incenta states:

> In terms of the list of default allocators, none of the allocators would be expected to provide a reasonable proxy for the effort that corporate service functions exercise in relation to expenditures between the copper and fibre services that reflect the current context, namely where one of the networks is being constructed. Where there were two networks in operation (i.e., already constructed), then relative customer connections may be a reasonable proxy for relative corporate effort. However, as customer connections will lag expenditures by some period where a network is being constructed, this allocator is not appropriate in the context of fibre services. Moreover, the context whereby relative customers are not related to relative expenditure (or assets) is also not something that likely arose in the context of the Commission's FPP modelling.

Summary of our draft decision on Chorus' proposal to use a proxy cost allocator based on totex

5.210 Our draft decision was to approve the use of totex as an allocator type for determining the transitional initial PQ RAB and PQP1 expenditure allowance. However, our draft decision excluded rates from the opex element of the totex allocator for the purposes of calculating the initial RAB value of the FLA.

5.211 The rationale for this was that, similar to other pass-through costs, rates should be excluded from the opex element of the totex allocator for the purpose of cost allocation in the PQP1 period (ie, the PQP1 expenditure proposal). We said that pass-through costs are not related to an activity performed by Chorus' overhead functions. They therefore do not represent activities that support either copper or FFLAS.

[385] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause B1.1.6(1)(c) of Schedule B.

Our analysis of Chorus' proposal

5.212 In determining whether totex is an appropriate alternative allocator type, we need to ensure it meets the requirements of the IMs. In particular:

5.212.1 any proxy cost allocator must meet the IM requirement that the ratio used to allocate operating costs is "objectively justifiable and demonstrably reasonable";[386]

5.212.2 any proxy asset or cost allocators used to determine the FLA, must also be "consistent with similar measures, both within a financial loss year and from financial loss year to financial loss year."[387]

5.212.3 the quantum of the applicable cost allocator must be:[388]

5.212.3.1 based on a circumstance, that circumstance has a causal relationship which leads to an operating cost being incurred; or

5.212.3.2 equal to a ratio, that ratio is equal to a proxy cost allocator; and

5.212.3.3 the decision is consistent with s 166(2) of the Act.

5.213 Allocations made using the totex allocator type are material to the calculations of Chorus' FLA and expenditure allowance for PQP1. The allocations of operating costs in the early years of the pre-implementation period impact significantly on the calculated value of the FLA in the initial RAB.

5.214 In the early stages of the pre-implementation period, Chorus invested heavily in UFB deployment (particularly in communal assets), while initial uptake of UFB FFLAS was low. Incenta submitted on Chorus' behalf: [389]

> Chorus has applied Totex as an allocator because it better reflects the actual effort that drove costs across our entire business and the timing of when those costs were incurred. The default allocators do not provide a demonstrably reasonable proxy whereas Totex does.

5.215 We have looked at the relative difference in the timing of an expense allocated using the proposed prorated totex allocator type, compared to using the 'number of customers' default allocator type= in the IM.

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[386] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause B1.1.1(2) of Schedule B - definitions of "proxy asset allocator" & "proxy cost allocator".

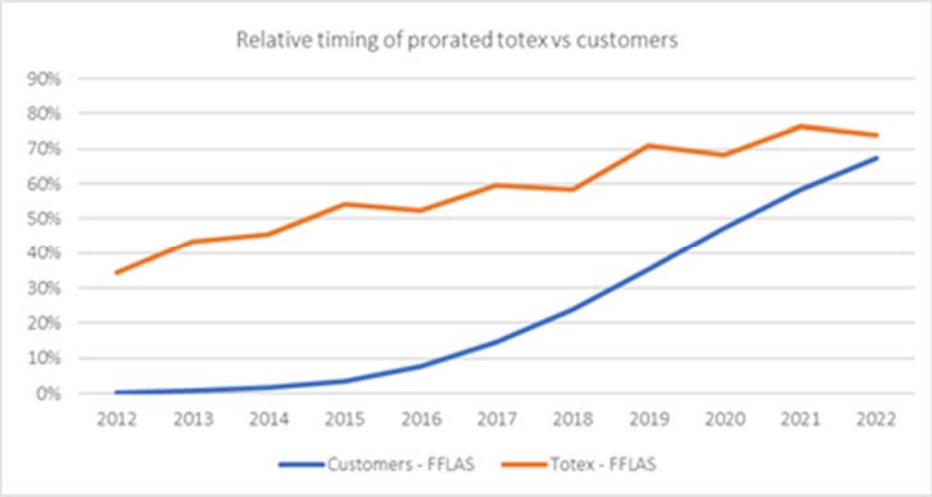
[387] Ibid.

[388] Ibid, clause B1.1.6(1)(c)(x)(A)-(B) of Schedule B.

[389] Chorus "Submission on Commission's consultation on Chorus' initial PQ RAB" (28 May 2021), paragraph 40.

5.216 We found, as Incenta submitted, an allocation of expenses based on the "prorated totex" allocator type would allocate a higher proportion of costs to UFB FFLAS in the early years of the UFB rollout programme than a demand-based allocation (ie, number of customer connections). Not until after 2016 would a demand-based allocation (based on customers) allocate more than ~ 10% of costs to in-scope FFLAS, as shown in Figure 5.4.

Figure 5.4 Relative difference in timing of an allocation based on Totex vs number of customers[390]



5.217 Certain overheads Chorus incurred under its corporate function should be recognised at the time they were incurred, even if the corresponding connections did not arise until sometime later. These include non-capitalised, operational expenses Chorus incurred in directing initial decisions and future investment in its participation in the UFB initiative. Chorus' incentive to invest and innovate would otherwise be diluted, contrary to s 162(a) of the Act.

5.218 However, the risk with such an approach is that certain costs that are not related to the UFB initiative deployment could be allocated to UFB FFLAS at rates greater than they should otherwise be allocated. An inappropriate allocation of costs using "prorated totex" would inflate the value of Chorus' FLA to the long-term detriment of end-users, contrary to s 162(c) and (d) of the Act.

[390] Note: While the IMs refer to number of customers as an available allocator type, Chorus' model documentation appears to use the terms subscribers, consumers and end-users interchangeably. We understand these terms to refer to customers as Incenta has used that term in its report for Chorus (ie, customer connections).

Inclusion of pass-through costs in the calculation of the totex allocator

5.219 As part of our draft decision we considered the issue of the calculation of the totex allocator and whether pass-through costs should be included. That is, should pass-through costs be included as part of the "opex" that is used in the calculation of the ratio.

5.220 When reaching our draft decision, we noted that some pass-through costs, specifically infrastructure rates, have been included in the calculation of the opex component of the totex allocator.[391] We said that Chorus' rationale for the totex allocator is that it meets the definition of a "proxy cost allocator". Totex provides a proxy for overhead functions that support FFLAS and copper services.

5.221 Our draft decision view was that pass-through costs are not related to an activity performed by Chorus' overhead functions. They therefore do not represent activities that support either copper or FFLAS. The existence of the pass-through cost does not in itself impact the costs incurred by Chorus' overhead functions. Accordingly, we considered the inclusion of these costs in the opex component of totex is likely to distort the cost allocator.

5.222 Our draft decision was to exclude infrastructure rate costs from the calculation of the opex component of the "prorated totex" allocator. The effects of that decision are:

5.222.1 Infrastructure rates have been excluded from the opex element of the totex allocator for the purpose of calculating the FLA in the pre-implementation period.

5.222.2 Like other pass-through costs, infrastructure rates will be excluded from the opex element of the totex allocator for the purpose of cost allocation in PQP1.

Summary of stakeholders' views on our draft decision

5.223 We received submissions from Chorus and Vocus on our draft decision on the use of totex.

[391] Pass-through cost is defined in *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 3.1.2(1). For present purposes, the relevant definition is 'a cost payable by a regulated provider on or after the implementation date, being (c) includes rates on fibre assets paid or payable by a regulated provider to a local authority under the Local Government (Rating) Act 2002.

5.224 In its submission, Chorus agreed with our draft decision to approve the allocation of costs using a proxy allocator based on totex but disagreed with our draft decision to exclude infrastructure rates from the calculation pre-implementation and pass-through costs post-implementation.[392]

5.225 Chorus contends that it is necessary to include infrastructure rates in the totex allocator value pre-implementation and all pass-through costs post-implementation:[393]

> The Commission's rationale is that pass-through costs do not support FFLAS or non-FFLAS services and therefore do not drive costs. However, pass-through costs, including infrastructure rates, should be included in the totex allocator calculation as they drive business activity (for example administration) and therefore drive cost.
>
> Infrastructure rates are drivers of effort in the business – they relate to costs paid to use land for network assets (e.g. ducts) and are equivalent to paying rent for land use. As a counterfactual, if we were not paying these costs as infrastructure rates, we would be incurring the costs directly.

5.226 In its submission Vocus disagreed with our draft decision noting:[394]

> Vocus does not support use of Net Book Value (NBV) or TOTEX as they bias the allocation to the fibre business. The Commission should consider whether options such as total opex or service company overhead would be a better and more reasonable allocators.

5.227 We received a single cross-submission from Chorus in which it noted that Vocus' submission had failed to recognise that:[395]

> Totex is a demonstrably reasonable driver of costs. No alternative evidence has been provided to address the evidence we and the Commission have used.
>
> Further, the aim of the cost allocation exercise is to identify causal and proxy allocators that meet the standard of being "objectively justifiable and demonstrably reasonable", not to seek allocators just to lower the allocation to fibre, which appears to be Vocus' intention,

Our analysis of stakeholders' views on our draft decision

5.228 We have considered Chorus' submission disagreeing with our draft decision to exclude infrastructure rates from the calculation pre-implementation and pass-through costs post-implementation considering the requirements of the IMs.

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[392] Chorus "Submission on fibre PQID initial RAB and IM amendments draft decision" (16 September 2021) Appendix B13, page 49.

[393] Chorus "Submission on fibre PQID initial RAB and IM amendments draft decision" (16 September 2021) Appendix B18, page 50.

[394] Vocus "Submission on fibre PQID initial RAB draft decision" (16 September 2021), paragraph 58.1.

[395] Chorus "Submission on Fibre PQID initial RAB draft decision" (30 September 2021), page 7.

5.229 We consider Chorus' point that the totex allocator does need to reflect the relative levels of business activity (FFLAS vs non-FFLAS) as a whole is correct, as rates and pass-through costs do drive business activity and therefore cost. Treating rates in the same manner as other property costs or levies, in that they are necessary administrative costs, is reasonable.[396] We note that the regulatory treatment allows for the recovery of pass-through costs through allowable revenues. The key difference with other costs is that the actual value of pass-through costs is recovered: it is not a forecast value.

5.230 We have concluded that pass-through costs, inclusive of costs for infrastructure rates[397], should be included in the calculation of the totex allocator pre and post the implementation date and not excluded as proposed in the draft decision. This is because, while the regulatory treatment for recovery of pass-through costs (eg, infrastructure rates and levies) changes post the implementation date under the IMs, this should be of no consequence from the point of view of allocating costs.

5.231 We consider it is objectively justifiable and demonstrably reasonable that Chorus should treat infrastructure rate and pass-through costs in the same manner as other administrative costs when allocating costs to FFLAS. The totex allocator should be calculated pre the implementation date based on capex + opex (which is inclusive of rates costs) and post-implementation date based on capex + opex + pass-through costs.

5.232 We have also considered Vocus' submission that an allocation based on totex would bias the allocation toward Chorus' fibre business and an alternative allocation based on total opex or service company overhead would be objectively justifiable or demonstrably reasonable.

5.233 We disagree, given the nature of the costs to be allocated (see table 5.8 above). This is because an allocation of these costs using either total opex or service company overhead would not recognise the timing of Chorus expenditure (effort) constructing a fibre network while managing its copper network, as noted in Incenta's report for Chorus:[398]

[396] We note that pass-through costs only exist post-implementation.

[397] That is rates on fibre assets payable by a regulated provider to a local authority.

[398] Incenta "Certain cost allocation issues relevant to the IAV" (published 30 April 2021), page 15.

In terms of the list of default allocators, none of the allocators would be expected to provide a reasonable proxy for the effort that corporate service functions exercise in relation to expenditures between the copper and fibre services that reflect the current context, namely where one of the networks is being constructed. Where there were two networks in operation (i.e., already constructed), then relative customer connections may be a reasonable proxy for relative corporate effort. However, as customer connections will lag expenditures by some period where a network is being constructed, this allocator is not appropriate in the context of fibre services. Moreover, the context whereby relative customers are not related to relative expenditure (or assets) is also not something that likely arose in the context of the Commission's FPP modelling.

Summary of our final decision on Chorus' proposal to allocate costs using a proxy allocator based on totex

5.234 Our final decisions taking account of submissions and cross-submissions received on our draft decision are to:

5.234.1 Approve the use of total expenditure (totex) as an allocator type and "prorated totex" as an allocator value for determining:

5.234.1.1 the value of the transitional initial PQ RAB;

5.234.1.2 the PQP1 expenditure allowance; and

5.234.1.3 the forecast roll-forward of the transitional initial PQ RAB for determining the building blocks revenue for PQP1.

5.234.2 Approve the inclusion of pass-through costs, inclusive of infrastructure costs, in the calculation of the totex proxy cost allocator pre and post the implementation date.

The allocation of "CTO Common Costs"

5.235 This section sets out our final decision on the allocation of "CTO Common Costs", a specific category of opex to be allocated for Chorus' transitional initial PQ RAB.

5.236 CTO (Chief Technology Office) Common Costs are opex. The decisions regarding allocation of these costs impact on:

5.236.1 the value of the transitional initial PQ RAB;

5.236.2 the forecast opex allowance during PQP1; and

5.236.3 the forecast roll-forward of the transitional initial PQ RAB for determining the building blocks revenue for PQP1.

5.237 Our final decision is that:

5.237.1 the "CTO Common Cost" expenditure items listed in Table 5.9 below will be allocated between FFLAS and non-FFLAS using the allocators Chorus proposed in its submission as set out in Table 5.9;[399] and

5.237.2 all other "CTO Common Cost" expenditure items will be allocated between FFLAS and non-FFLAS using the totex allocator.

5.238 This decision means that the dependent recipient business function allocator used to allocate CTO overhead must be calculated considering our "CTO Common Cost" decision. The calculation of the directly allocated costs will change as the portion of costs allocated via totex is reduced.[400]

What we said in the draft decision

5.239 In our draft decision, we considered Chorus' approach to the allocation of "CTO Common Costs". Chorus had proposed to allocate 100% of "CTO Common Costs" to UFB FFLAS (for the initial RAB value of the FLA) and to PQ FFLAS (for the forecast opex allowance during PQP1) using totex as a proxy cost allocator.

5.240 As we have discussed above, totex does not form part of the list of default allocator types in the IMs that are available to be applied to allocate opex that is not directly attributable to the provision of UFB FFLAS, as used for the initial RAB value of the FLA.[401] The totex allocator is calculated as the combination of opex and capex that has been allocated to FFLAS and non-FFLAS.[402]Capex represents spending to procure or construct assets which will support the delivery of FFLAS and non-FFLAS over many years, not only the year in which the capex is incurred. Opex represents spending to operate and maintain the assets in each year of their useful life.

5.241 Chorus submitted this allocation approach was reasonable on the basis that the CTO function supports the entire organisation.[403]

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[399] We use the term 'FFLAS' here to refer to both UFB FFLAS and PQ FFLAS, and 'non-FFLAS' to refer to both 'services that are not UFB FFLAS' and 'services that are not regulated FFLAS'.

[400] It should also be noted that any costs allocated via totex are excluded from contributing to the calculation of the allocator. Due to the change in the total amount of opex cost allocated via totex, the calculation of the overall totex allocator will change, impacting any totex related allocations.

[401] *Fibre Input Methodologies (initial value of financial loss asset) Amendment Determination 2020* [2020] NZCC 24 , clause B1.1.6(1)(c)(i)-(x) of Schedule B.

[402] Avoid circular references, opex and capex that are allocated between FFLAS and non-FFLAS using the totex allocator are not included in the calculation of the allocator itself.

[403] Analysys Mason report for Chorus "Documentation of opex allocation for the BBM Opex workstream (including responses to notice to supply information) – Model version 3.31" (26 March 2021), page 47.

5.242 As we noted in our draft decision, our review of the information Chorus provided found that the "CTO Common Costs" category contained 274 individual expenses, 53 of which are forecast to be $100,000 or greater for the financial loss year 2022.

5.243 To assess whether Chorus' use of the totex allocator was compliant with the IM requirements, we reviewed whether for these 53 expense categories Chorus had provided evidence that the totex allocator meets the definition of a "proxy cost allocator". We assessed whether the totex allocator is a ratio:

5.243.1 used to allocate costs for which a causal relationship cannot be established;[404] and

5.243.2 whose quantum is based on factors in existence during the 12-month period terminating on the last day of the most recent financial loss year in respect of which the cost allocation is carried out,

which in each case:

5.243.3 is consistent with similar measures, both within a financial loss year and between financial loss years; and

5.243.4 is objectively justifiable and demonstrably reasonable.

5.244 In our review of the "CTO Common Costs" expenditure category undertaken as part of reaching our draft decision, based on our analysis of the information we had at that time, we found that the use of totex as a proxy cost allocator for expenditure that accounted for 39% of this category was not compliant with the IM requirements, for the following reasons:

5.244.1 Chorus had not adequately explained why a causal relationship could not be established, when it appeared that this might be possible for at least some individual expenses within the "CTO Common Costs" expenditure category.

[404] Causal relationship means in relation to operating costs, a circumstance in which a cost driver led to an operating cost being incurred during the 12-month period terminating on the last day of the disclosure year in respect of which the cost allocation is carried out.

5.244.2 Even if no causal relationship could be established, applying the totex allocator as a proxy cost allocator for all individual expenses within the "CTO Common Costs" category was not objectively justifiable and demonstrably reasonable.[405] This was because the evidence provided by Chorus did not demonstrate that the activities supported by "CTO Common Costs" are undertaken in proportion to totex incurred in each year.

5.245 Our draft decision was therefore to:

5.245.1 limit the use of the totex allocator as a proxy cost allocator to allocate 61% of "CTO Common Costs"; and

5.245.2 allocate the remaining 39% of "CTO Common Costs" using the CTO Overhead allocator.

5.246 The CTO Overhead allocator is a recipient business unit allocator. It is calculated as the weighted average of all other CTO opex that has been allocated to FFLAS and non-FFLAS.[406] It is not based on a causal relationship: it is a proxy cost allocator.

5.247 While we considered that causal relationships could potentially be established for some individual expenses within the "CTO Common Costs" category, we did not have enough information to identify such causal relationships.

5.248 In the absence of information to support a direct attribution of costs or a causal allocation, we considered that CTO Overhead was a reasonable proxy cost allocator. This is because it results in the "CTO Common Costs" to which it is applied being allocated broadly consistently with the attribution of other CTO costs.

5.249 The impact of our draft decision was to reallocate a portion of "CTO Common Costs" from FFLAS to non-FFLAS. This reduced the value of the transitional initial RAB value of the FLA by $51.8 million and reduced the opex allowance for PQP1 by $38.6 million, compared to Chorus' proposal.

Our analysis of Chorus' submission

5.250 We have reviewed the additional information provided by Chorus in its submission in relation to "CTO Common Costs".

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[405] Commerce Commission "Chorus' initial price-quality regulatory asset base as at 1 January 2022 – Draft Decisions" (19 August 2021), paragraph 5.190.

[406] To avoid circulatory references, opex that is allocated between FFLAS and non-FFLAS using the CTO Overhead allocator is not included in the calculation of the allocator itself.

5.251 We remain of the view that the use of the totex allocator as a proxy cost allocator for 100% of "CTO Common Costs" does not meet the requirements of the IMs. In particular, it is not an objectively justifiable and demonstrably reasonable allocator for all "CTO Common Costs". This is for the reasons stated in our draft decision, as summarised in paragraphs 5.252 to 5.256 below.

5.252 As noted in paragraph 5.240 above, the totex allocator is calculated as the combination of opex and capex that has been allocated to FFLAS and non-FFLAS.[407] Capex represents spending to procure or construct assets which will support the delivery of FFLAS and non-FFLAS over many years, not only the year in which the capex is incurred. Opex represents spending to operate and maintain the assets in each year of their useful life.

5.253 In determining whether the supporting CTO functions that are part of CTO Common Costs should be allocated by totex, we have considered whether the function is focussed on the rollout of the UFB network to provide services in future or if it is supporting the provision of contemporary services. Because totex is calculated as the sum of capex and opex, the question of whether the totex allocator meets the definition of a "proxy cost allocator" suitable for allocating CTO Common Costs depends on how intensively the supporting CTO function activity that produces the cost is used:

5.253.1 in the period in which an asset or capability to provide FFLAS and non-FFLAS is acquired, developed, or is intended to be commissioned (i.e., associated with the period when capex is being incurred); and/or

5.253.2 in the period in which FFLAS and non-FFLAS are being provided (i.e., associated with the period when opex is being incurred).

5.254 As set out in the draft decision, our review of the "CTO Common Cost" expenditure category found that the underlying CTO functions may support activities that occur in both periods. While such activities are, to some extent, *related* to both capex and opex, this does not necessarily mean that use of the CTO functions which support these activities is proportionate to the level of capex and opex (i.e., totex) incurred.

[407] To avoid circulatory references, opex and capex that is allocated between FFLAS and non-FFLAS using the totex allocator is not included in the calculation of the allocator itself.

5.255 To illustrate this point, our analysis for the draft decision identified several expenses within the "CTO Common Costs" category where the use of the underlying function is *not* proportionate to the sum of capex and opex associated with FFLAS and non-FFLAS. That is, such CTO functions appear to primarily support operational activities related to the provision of services, rather than the acquisition, development or commissioning of assets or service capabilities. In such cases, the totex allocator does not meet the IM definition of a proxy cost allocator, as it is not a ratio that is objectively justifiable or demonstrably reasonable. Applying the totex allocator in these cases would tend to inflate the value of Chorus' FLA for the transitional initial PQ RAB. This would be to the detriment of end-users, contrary to s 162(c) and (d) of the Act.

5.256 Further, the additional information Chorus has supplied in its submission has not led us to change our draft decision that the totex allocator is not an objectively justifiable and demonstrably reasonable allocator for all expenditure categories within "CTO Common Costs". In particular:

5.256.1 We acknowledge that Chorus has provided a more granular description of the functions within "CTO Common Costs" and, in some cases, has demonstrated that these functions support activities related to the acquisition, development and commissioning of assets and service capabilities, in addition to the provision of services.

5.256.2 However, Chorus has not presented evidence to substantiate that the use of these CTO functions is proportionate to capex and opex (ie, totex). In paragraphs 5.257 to 5.2675.266 we provide three examples to illustrate this point.

5.256.3 The examples explain that, although, for the allocation of certain CTO common costs, the totex allocator proposed by Chorus is not compliant with the IM in relation to those costs, the alternative proxy cost allocators proposed by Chorus do satisfy the IM requirements. Our final decision on all the alternative proxy cost allocators proposed by Chorus is discussed in paragraphs 5.257 to 5.281 below.

5.257 The first example relates to a group of shared system costs that include telecommunication systems and site access systems.[408]

[408] More specifically, this cost category includes the following items: Spark Line Rental, Activity, 0800 & Other; Telecommunications Landline costs; Telecommunications WAN services costs; VDI rental costs; Vodafone Fixed and Mobile Costs; Cardax; CCL WAN & Inter Data Centre Connectivity; and SAP People Management.

5.258 In relation to these shared system costs, Chorus states that:

> The degree of effort required for the other shared systems / costs also relates to the magnitude of the expenditure they support – both capex and opex. For instance, Cardax is driven by site access to both build (capex) and operate (opex) the network. Site access to exchanges and offices is driven by capex as projects require personnel to complete them. Site access is also driven by BAU work which is reflected in the opex component of totex. Both classes of expenditure are important in this case, especially given the transition from UFB build to operate.[409]

5.259 The evidence provided by Chorus in paragraph 5.258 above indicates that the use of these shared systems (such as those used for managing site access) will be driven by both the acquisition and development of new assets and the operation and maintenance of existing assets to provide services.

5.260 However, Chorus has not provided evidence to demonstrate that the relative magnitude of totex allocated to FFLAS and non-FFLAS accurately reflects the use of these shared systems. For example, in relation to Cardax, the information provided does not show that the number of personnel accessing sites (a direct measure of the usage of site access systems) is proportionate to totex.

5.261 In contrast, we consider that the alternative proxy cost allocator that Chorus has proposed (using staff costs as the basis for allocation) does meet the IM requirements, and in particular is objectively justifiable and demonstrably reasonable, because it is more clearly related to usage of shared systems. This is because the staff cost allocator is a reasonable proxy for staff numbers.[410] The number of staff associated with the provision of FFLAS and non-FFLAS is in turn a reasonable proxy for the relative use of telecommunications, access management and other shared systems in the context of providing these services.

5.262 The second example relates to Netcracker costs. Netcracker is a workforce management solution used by Chorus for both the delivery of new installations, and the rectification of faults on existing networks.

5.263 In relation to Netcracker costs, Chorus states that:[411]

> Netcracker is used not only for new installations but also to synchronise Assure schedules for customer faults. […] Orders will understate the role of assure for Netcracker utilisation. […] When compared to the order and CTO overhead allocator types, totex better reflects the likelihood that customer interactions are UFB related.

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[409] Chorus "Submission on fibre PQID initial RAB and IM amendments draft decision" (16 September 2021), page 39.

[410] See Table 5.14 below, which sets out the alternative allocators Chorus has proposed. This allocator is referred is referred to as "Chorus – all Net Personnel Costs (NPC) allocator" in that table.

[411] Chorus "Submission on fibre PQID initial RAB and IM amendments draft decision" (16 September 2021), pages 41-42.

> Totex is also a reasonable proxy for the overall effort required to roll out the UFB network as it reflects our move from build to operate, resulting in FFLAS capex reducing while opex is increasing, which suggests totex is a better reflection of the mix of costs required.

5.264 However, Chorus has not provided evidence that the delivery of new installations and rectification of faults on existing network assets are more likely to be UFB related, particularly during the pre-implementation period. Chorus has also not provided evidence to demonstrate that the use of Netcracker to support the provision of FFLAS and non-FFLAS is proportionate to the level of totex associated with each group of services.

5.265 In contrast, we consider that the alternative proxy cost allocator that Chorus has proposed (service company overhead)[412] is objectively justifiable and demonstrably reasonable. The service company overhead allocator attributes cost in proportion to the payments made by Chorus to service companies. This reflects the level of effort of those service companies in installing and maintaining the assets used to provide FFLAS and non-FFLAS. Because Netcracker supports this activity, it is reasonable that Netcracker opex is allocated in line with the level of effort incurred by service companies who are undertaking the work.

5.266 The third example relates to Spark Non-Portfolio Charges. Chorus states that under the Spark Non-Portfolio Charges expense category: "Spark look after our hosted or shared IT while we establish replacement capability of our own over time."[413]

5.267 In relation to the allocation of these costs, Chorus considers that:[414]

> As these costs relate to the whole of Chorus it is reasonable for the allocator to reflect the magnitude of overall expenditure, not just a subset. Totex more directly reflects the underlying effort and timing of costs incurred for the fibre network. These costs are used to support the delivery of expenditure, in the same sense that other overheads do which we note also use totex as an allocator."[415]

5.268 The evidence provided by Chorus indicates that this expenditure item relates to outsourced IT services that assist the CTO function in supporting the whole of Chorus' business.

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[412] See Table 5.14 below, which sets out the alternative allocators Chorus has proposed.

[413] Chorus "Submission on fibre PQID initial RAB and IM amendments draft decision" (16 September 2021), pages 41-42.

[414] We note that here Chorus is referring to a range of different "CTO Common Costs", including but not limited to Spark Non-Portfolio Charges.

[415] Chorus "Submission on fibre PQID initial RAB and IM amendments draft decision" (16 September 2021), pages 44-45.

5.269 However, Chorus has not provided evidence that these outsourced services are used in proportion to the level of totex associated with FFLAS and non-FFLAS.

5.270 In contrast, we consider that the alternative proxy cost allocator that Chorus has proposed (CTO Overhead) is objectively justifiable and demonstrably reasonable. Applying the CTO Overhead proxy cost allocator results in Spark Non-Portfolio Charges being allocated to FFLAS and non-FFLAS in line with the allocation of other opex incurred by the CTO business function. This is reasonable because, based on our understanding of the evidence provided by Chorus, these outsourced services support the services delivered by the CTO team to the rest of the business. Therefore, it is reasonable to expect that utilisation of the services outsourced to Spark reflects the overall utilisation of the internal CTO function.

Submissions on the draft decision

5.271 Chorus submitted that it disagreed with our draft decision to limit the use of the totex allocator to 61% of "CTO Common Costs" and to allocate the remaining 39% of "CTO Common Costs" using the CTO Overhead allocator.

5.272 Chorus expressed the view that: "Totex is the most demonstrably reasonable allocator for these costs – it reflects the magnitude and timing of the effort that drives the costs".[416]

5.273 In contrast, Chorus considered that the alternative CTO Overhead allocator applied by the Commission was not an appropriate driver for these costs.[417]

5.274 Chorus further considered that the Commission's draft decision to change the allocator for "CTO Common Costs" "severely cuts the opex allowance for shared systems expenditure with a material consequential impact on our ability to deliver services to end users".[418]

5.275 Chorus' submission set out a more detailed description of the individual expense categories within "CTO Common Costs". While Chorus maintains that the totex allocator is the most suitable allocator for these costs, Chorus also states that:[419]

> … we have now reviewed each cost item and canvassed alternative allocators that would be in line with the methodology applied in the draft decision. If the Commission continues to disagree with our proposal to use totex, then these alternatives would improve on the Commission's revised allocators.

[416] Chorus "Submission on fibre PQID initial RAB and IM amendments draft decision" (16 September 2021), page 5.

[417] Ibid.

[418] Ibid., page 4.

[419] Ibid, paragraph 38.

5.276 The alternative allocators provided by Chorus, that it proposes be applied if the Commission continues to reject totex for particular elements of CTO Common Costs, are listed in Table 5.9 below.

5.277 We received no other submissions or cross-submissions on the allocation of "CTO Common Costs".

How should "CTO Common Costs" be allocated?

5.278 In the draft decision, we rejected the use of totex as a proxy cost allocator for all (100%) of "CTO Common Costs". We proposed to instead apply the CTO Overhead allocator to attribute 39% of "CTO Common Costs" between FFLAS and non-FFLAS, while leaving the remaining 61% allocated via totex.

5.279 We expected that Chorus would provide further information on the appropriate allocation of "CTO Common Costs" in its response to the draft decision. As outlined above, Chorus continues to consider that the totex allocator should be used to allocate all "CTO Common Costs".

5.280 However, after reviewing the additional information provided by Chorus, we still consider that the totex allocator is not an appropriate proxy cost allocator for several expenses within this category.

5.281 Further, the additional information provided by Chorus demonstrates that the CTO Overhead proxy cost allocator also fails to meet the IM requirements for some of the expenditure categories to which we applied it in the draft decision. We have therefore reviewed the alternative proxy costs allocators proposed by Chorus for those expenditure categories.

Chorus' proposed alternative proxy cost allocators

5.282 In its submission in response to the draft decision, Chorus has suggested several alternative proxy cost allocators for those expenses within the "CTO Common Costs" category to which the CTO Overhead allocator was applied in the draft decision. While Chorus considers that the totex allocator is the most appropriate proxy cost allocator, it also considers that its proposed alternative proxy cost allocators represent an improvement on the CTO Overhead allocator applied by the Commission in our draft decision.[420] The alternative allocators Chorus has proposed are listed in Table 5.9 below.

[420] Chorus "Submission on fibre PQID initial RAB and IM amendments draft decision" (16 September 2021), page 13.

5.283 We have reviewed each of the alternative allocators that Chorus has proposed in its submission on the draft decision.[421] Following this review, we are satisfied that the alternative allocators Chorus has proposed meet the IM requirements set out at paragraph 5.243 above. We consider that the proposed alternative allocators are objectively justifiable and demonstrably reasonable because, based on our understanding of each expense item, there is a clear link between the use of the underlying services and the proposed alternative allocators. We are satisfied that each of Chorus' proposed alternative allocators meets the IM requirements. Our reasoning is summarised in Table 5.9 below.

Table 5.9 Chorus' proposed alternatives to the CTO Overhead proxy cost allocator

Expense item	Chorus' proposed alternative allocator	Why is the allocator objectively justifiable and demonstrably reasonable?
NetMap	Net Book Value (NBV) of Layer 1 assets	The NetMap system contains network records. Due to the size of Chorus' Layer 1 network, these records largely relate to network assets outside of exchanges. We consider that NBV is an objectively justifiable and demonstrably reasonable allocator because it reflects the relative size of the Layer 1 assets – used to provide both FFLAS and non-FFLAS – that are recorded and managed by NetMap.
Address Location Management (ALM)	Orders	The ALM system contains all locations and addresses in New Zealand. It is used to validate addresses for all orders and for modelling new property development builds. Chorus consider that the latter activity is primarily related to UFB. However, Chorus have not provided information to demonstrate how use of the ALM system is split between this activity and orders. We consider that orders are an objectively justifiable and demonstrably reasonable allocator because they reflect how the information contained in the ALM system is used to support the provision of both FFLAS and non-FFLAS.
• **BI Feeds** • **Chorus Data Warehouse** • **Infosphere** • **Sharepoint Documents online** • **SAP ERP**	Totex	These systems are used across Chorus' business, supporting network performance, commercial performance, financial management and planning, reporting to internal and external stakeholders, and general analysis. We consider that totex is an objectively justifiable and demonstrably reasonable allocator for these costs because they support executive level reporting and document management. The use of the totex allocator to allocate these costs between FFLAS and non-FFLAS is consistent with the allocation for other executive level costs (e.g. Corporate Insurance).

[421] Chorus "Submission on fibre PQID initial RAB and IM amendments draft decision" (16 September 2021), Appendix A.

Expense item	Chorus' proposed alternative allocator	Why is the allocator objectively justifiable and demonstrably reasonable?
• **Business Continuity – DR inititative** • **Chorus Appln Maintenance** • **Oracle Licence** • **SSA Incentive Payments** • **Server-Desktop SW Licence Agreements**	CTO Overhead (consistent with draft decision)	We understand that the systems included in this category generally support the activities of the CTO team (i.e., business continuity, software licensing). We consider that the CTO Overhead allocator is an objectively justifiable and demonstrably reasonable allocator because it results in these expenses being allocated to FFLAS and non-FFLAS in line with the allocation of other opex incurred by the CTO business function. It is reasonable to expect that utilisation of these systems is consistent with the overall utilisation of the internal CTO function.
• **Spark Line Rental, Activity, 0800 & Other** • **Telecommunications Landline costs** • **Telecommunications WAN services costs** • **VDI rental costs** • **Vodafone Fixed and Mobile Costs** • **Cardax** • **CCL WAN & Inter Data Centre Connectivity** • **SAP People Management**	Chorus – all Net Personnel Costs (NPC) allocator	As discussed in paragraph 5.261 above, we consider that the staff costs allocator is objectively justifiable and demonstrably reasonable. This is because it is related to usage of these shared systems that support the activities of Chorus' staff.
Programme Management	CTO Overhead (consistent with the draft decision)	We understand that this expense reflects external costs associated with IT programme management. It is appropriate for programme management costs to be allocated using a proxy overhead allocator, consistent with the treatment of other internal and contracted CTO management costs of a general nature. We consider that the CTO Overhead allocator is an objectively justifiable and demonstrably reasonable allocator because it results in these expenses being allocated to FFLAS and non-FFLAS in line with the allocation of other opex incurred by the CTO business function.

Expense item	Chorus' proposed alternative allocator	Why is the allocator objectively justifiable and demonstrably reasonable?
• **5530 Network Analyser (Fibre and Copper)** • **Netcracker**	Service company overhead	These systems support the installation and maintenance of copper and fibre services. As discussed in paragraph 5.265 above, we consider that the service company overhead allocator is an objectively justifiable and demonstrably reasonable allocator for Netcracker costs, because it reflects the level of effort incurred by service companies who are undertaking the installation and maintenance work that this system supports. We understand that '5530 Network Analyser' costs are driven by the activities of technicians (installation and monitoring) and RSPs (monitoring). Consistent with the treatment of Netcracker costs, we consider that service company overhead is an objectively justifiable and demonstrably reasonable allocator because it allocates costs in proportion to the effort levels of service companies who undertake the work supported by this system.
Genesys and Call Centre Infrastructure	Customer and Network Operations (CNO) NPC Overhead	These systems support public queries about UFB and fault reporting, in addition to facilitating the enquiries of RSPs and service company technicians in relation to orders, faults and UFB build. We consider that an allocation based on CNO NPC Overhead is objectively justifiable and demonstrably reasonable, because it reflects the activities of the CNO team in responding to these enquiries. We also considered whether Service Company Overhead would better meet the requirements of the IMs in this context. However, the scope of services supported by this infrastructure extends beyond service company transactions to encompass general public enquiries. Therefore, we consider use of this system is more closely linked to the activities of Chorus' CNO team.
• **Sales Management**	Totex	Based on the information provided by Chorus, we understand that sales management systems include software licenses and related expenses that are used for executive level reporting and management of Chorus' sales channels and sales function. We also understand that expenditure on these systems occurs in advance of revenues or customer connections. We consider that totex is an objectively justifiable and demonstrably reasonable allocator for these costs because they support executive level reporting and document management. The use of the totex allocator to allocate these costs between FFLAS and non-FFLAS is consistent with the treatment of other costs that support similar activities.

Expense item	Chorus' proposed alternative allocator	Why is the allocator objectively justifiable and demonstrably reasonable?
• **Centrally managed channels costs**	Service company overhead	These systems support interactions between customers (end-users and RSPs) and service company technicians. Consistent with the approach to Netcracker costs (see above), the service company overhead allocator is objectively justifiable and demonstrably reasonable because it reflects the level of activity undertaken by service companies, which these systems facilitate.
• **Singl.eView**	Revenue	These costs are associated with Chorus' billing system. As usage of the billing system is linked to revenues received from FFLAS and non-FFLAS, we consider that revenue is an objectively justifiable and demonstrably reasonable allocator for this expense.
• **Spark Non-Portfolio Charges** • **Datacom IT Services Management**	CTO Overhead (consistent with draft decision)	As described in paragraph 5.270 above, we consider that the CTO Overhead allocator is objectively justifiable and demonstrably reasonable for Spark Non-Portfolio Charges because it results in these expenses being allocated to FFLAS and non-FFLAs in line with the allocation of other opex incurred by the CTO business function. This is because it is reasonable to expect that utilisation of the services outsourced to Spark reflects the overall utilisation of the internal CTO function. Datacom IT Services Management expenses also relate to the outsourcing of some processes for managing the health of Chorus' IT systems. Following the rationale applied to Spark Non-Portfolio Charges, we consider that CTO Overhead is also an objectively justifiable and demonstrably reasonable allocator for these costs.
• **ALU Configuration Service Fee** • **ALU Network Operations Service Fee** • **TMS Network management system** • **Internal Data Network Management System**	Traffic	These systems manage Chorus' internal and external networks. For example, we understand that ALU related costs are linked to the network operations centre, providing information on how Chorus' core REN and FAN networks are performing and alarm monitoring. The TMS and Internal Data Network costs relate to systems for activating services electronically, in addition to assure and change services. Chorus has proposed that these costs could be allocated on the basis of a traffic ratio. We consider that this alternative allocator is objectively justifiable and demonstrably reasonable, because it is proportionate to the usage of the networks managed by these systems.

Calculation of the CTO Overhead allocator

5.284 The CTO Overhead allocator is calculated as the weighted average of all other CTO costs that have been allocated to FFLAS and non-FFLAS.[422] Accordingly, our final decision on the allocation of "CTO Common Costs" changes the value of the CTO Overhead allocator.

Our final decision on the allocation of "CTO Common Costs"

5.285 Our final decision regarding the allocation of CTO common costs applies to:

5.285.1 the transitional initial PQ RAB valuation;

5.285.2 forecast expenditure allowances in PQP1; and

5.285.3 the forecast roll-forward of the transitional initial PQ RAB for determining the building blocks revenue for PQP1.

5.286 For the purpose of the transitional initial PQ RAB, our final decision is that:

5.286.1 The "CTO Common Cost" expenditure items listed in Table 5.9 above will be allocated between FFLAS and non-FFLAS using the allocators set out in that table.

5.286.2 All other "CTO Common Cost" expenditure items will be allocated between FFLAS and non-FFLAS using the totex allocator.

5.287 The impact of our final decision is shown in Table 5.10 below. These figures are derived from modelling undertaken by Analysys Mason to implement the final decisions described in paragraph 5.285.

5.288 Relative to our draft decision, our final decision results in a reduction in the transitional initial PQ RAB value (specifically, the initial RAB value of the FLA) of $8.4 million.

[422] To avoid circulatory references, opex that is allocated between FFLAS and non-FFLAS using the Opex Overhead allocator is not included in the calculation of the allocator itself.

Table 5.10 Impact of our final decision on CTO common costs

	Draft Decision ($M) (change from Chorus proposal)	Final Decision ($M) (change from Draft Decision)	Final Decision ($M) (change from Chorus proposal)
Core fibre assets	0.0	34.3	34.3
FLA	-51.8	-42.8	-94.5
Total value of Initial PQ RAB	-51.8	-8.4	-60.2

Source: Analysys Mason

Use of the proxy asset allocator type "shared ISAM" as an allocator type

Our final decision

5.289 Our final decision is to approve the use of the proxy asset allocator "shared ISAM" as an allocator type.

5.290 The proxy asset allocator "shared ISAM" will be used to allocate the value of Chorus' layer 2 (**L2**) ISAM equipment assets between FFLAS and non-FFLAS services.

5.291 ISAM equipment refers to 'Shared Intelligent Service Access Manager'. These are line cards that specifically support FFLAS services and allow them to utilise the Intelligent Services Access Manager, along with non-FFLAS services.

5.292 Our decision applies to how the value of Chorus layer 2 (**L2**) ISAM equipment assets is allocated to the initial RAB valuation. This allocator will be used to determine:

5.292.1 the transitional initial PQ RAB (ie, both the initial RAB value of the FLA and the initial RAB value of core fibre assets as at implementation date),

5.292.2 forecasts of Chorus' expenditure allowances for PQP1; and

5.292.3 the forecast roll-forward of the transitional initial PQ RAB for determining the building blocks revenue for PQP1.

Chorus' proposal to use the proxy asset allocator "shared ISAM" as an allocator type

5.293 Chorus has proposed a new proxy asset allocator type "shared ISAM" for allocating the value of its ISAM equipment used in the provision of FFLAS and non-FFLAS services.[423]

[423] ISAM stands for Intelligent services access manager. These are line cards that support FFLAS services.

5.294 The rationale for Chorus' proposal is that this allocator type is closely related to the "number of ports", which is an approved default asset allocator type under the IMs.[424]

Calculation of the "shared ISAM" as an allocator

5.295 The proposed proxy asset allocator "shared ISAM" allocates the cost of ISAM layer 2 equipment based on the ratio of national ISAM cards used to support FFLAS relative to the total number of cards nationally (ie, FFLAS card/all cards).

5.296 The values of the proxy asset allocator "shared ISAM" (ie, the ratio) used in calculating the initial PQ RAB, the MAR (PQ FFLAS) and ID-only FFLAS are given in Figure 5.5 below.

Figure 5.5 Shared ISAM allocation ratios

Shared ISAM allocation ratios	Financial year												
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Intial RAB (FLA)-National	0.0046	0.0066	0.0076	0.0087	0.0084	0.0082	0.0080	0.0085	0.0089	0.0094	0.0099	-	-
Intial RAB (FLA)-Won	0.0046	0.0066	0.0076	0.0087	0.0084	0.0082	0.0080	0.0085	0.0089	0.0094	0.0099	-	-
Intial RAB (FLA)-Lost	-	-	-	-	-	-	-	-	-	-	-	-	-
Intial RAB (FLA)-Non	-	-	-	-	-	-	-	-	-	-	-	-	-
PQ FFLAS (MAR) -National	-	-	-	-	-	-	-	-	-	-	0.0098	0.0098	0.0098
PQ FFLAS (MAR) -Won	-	-	-	-	-	-	-	-	-	-	0.0099	0.0099	0.0099
PQ FFLAS (MAR) -Lost	-	-	-	-	-	-	-	-	-	-	0.0043	0.0043	0.0044
PQ FFLAS (MAR) -Non	-	-	-	-	-	-	-	-	-	-	0.0099	0.0099	0.0099
ID-Only FFLAS-National	-	-	-	-	-	-	-	-	-	-	0.0001	0.0001	0.0001
ID-Only FFLAS-Won	-	-	-	-	-	-	-	-	-	-	-	-	-
ID-Only FFLAS-Lost	-	-	-	-	-	-	-	-	-	-	0.0056	0.0056	0.0055
ID-Only FFLAS-Non	-	-	-	-	-	-	-	-	-	-	-	-	-

Materiality of "shared ISAM" as an allocator

5.297 Chorus' allocation of L2 ISAM assets using the proposed "shared ISAM" allocator results in the allocations set out in Table 5.11 below.

Table 5.11 Shared ISAM unallocated values

Shared ISAM	Post2012Actual (FY12-FY20)	Post2012Forecast (FY21-22)	PostRAB (FY22-30)
Average unallocated capex per year	$6,111,259	$23,423	$23,985
Total for period	$55,001,334	$46,847	$215,862

[424] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause B1.1.6(2)(d).

Summary of our draft decision on Chorus' proposal use the proxy asset allocator "shared ISAM" as an allocator type

5.298 Our draft decision was to approve Chorus' use of the proxy asset allocator "shared ISAM" as an allocator type to allocate the value of shared pre-2011 assets[425] used to provide FFLAS and non-FFLAS.

5.299 We considered Chorus' approach to the allocation of shared L2 ISAM equipment costs based on a share of ISAM line cards used to support FFLAS to be functionally equivalent to an allocation based on "number of ports", one of the default asset allocator types in the IMs. This is because the number of ports is a function of the number of line cards installed in equipment nationally. An ISAM chassis has a fixed number of card slots into which an ISAM line card can be installed, and each ISAM line card has as fixed number of ports. As a result, we consider an allocation based on the number of ISAM line cards to be functionally equivalent to an allocation based on number of ports.

5.300 We considered, in the context of allocating the value of Chorus' shared L2 ISAM assets that Chorus' proposed proxy asset allocator "shared ISAM" is "objectively justifiable and demonstrably reasonable", as required by the IMs.

Summary of stakeholders' views on our draft decision

5.301 A single submission was received from Chorus supporting our decision to approve use of the proxy asset allocator "shared ISAM" as an allocator type.[426]

5.302 No cross-submissions were received on this matter.

Summary of our final decision on Chorus' proposal to use the proxy asset allocator "shared ISAM" as an allocator type

5.303 Our final decision is to approve the use of the proxy asset allocator "shared ISAM" as an allocator type for determining the value of the transitional initial PQ RAB, forecasts of Chorus' expenditure allowances for PQP1, and the forecast roll-forward of the transitional initial PQ RAB for determining the building blocks revenue for PQP1.

[425] Chorus models reference four distinct time periods: Pre-2012; Post2012Actuals (up to EOP FY20); Post2012Forecasts (from SOP FY21 to the implementation date) and PostRAB (from implementation date).Where Pre-2012 means up to the end of financial year (FY) 2011.

[426] Chorus "Submission on fibre PQID initial RAB and IM amendments draft decision" (16 September 2021), Appendix B15, page 49.

Use of proxy asset allocator type "shared with copper, fibre cable" as an allocator type

Our final decision

5.304 Our final decision is to approve the use of the proxy asset allocator "shared with copper, fibre cable" as an allocator type. The proxy asset allocator "shared with copper, fibre cable" is used to allocate the value of shared pre-2011 assets[427] used to provide FFLAS and non-FFLAS.[428]

5.305 Our decision applies to how certain pre-2011 assets are shared and allocated for the transitional initial PQ RAB valuation. This allocator will be used to determine:

5.305.1 the value of the transitional initial PQ RAB (both the initial RAB value of the FLA, and the initial RAB value of core fibre assets as at the implementation date);

5.305.2 forecasts of Chorus' expenditure allowances for PQP1; and

5.305.3 the forecast roll-forward of the transitional initial PQ RAB for determining the building blocks revenue for PQP1.

5.306 We note, in reference back to the summary of terminology in Chapter 2, that Analysys Mason's model uses the term 'pre-2012' assets (whereas our IMs reasons paper used the term 'pre-2011 assets'). Where relevant in the sections that follow, we use Analysys Mason's terminology.

5.307 In a later section of this chapter, 'Approach to the allocation of pre-2011 duct assets' (set out in paragraphs 5.335-5.357 below), we discuss the allocation of pre-2011 ducts in greater detail, noting that the pre-2011 duct allocator is used as part of the determination of the 'shared with copper, fibre cable' allocator type.

Chorus' proposal to use the proxy asset allocator "shared with copper, fibre cable" as an allocator type

5.308 Chorus proposed the use the proxy asset allocator "shared with copper, fibre cable" as an allocator type to allocate the values of its shared pre-2012 layer 1 (**L1**) assets used to provide FFLAS and non-FFLAS:

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[427] Chorus models reference four distinct time periods: Pre-2012; Post2012Actuals (up to EOP FY20); Post2012Forecasts (from SOP FY21 to the implementation date) and PostRAB (from implementation date).Where Pre-2012 means up to the end of financial year (FY) 2011.

[428] Analysys Mason report for Chorus "BBM IAV model responses to s221 notice questions" (26 March 2021) page 56, Figure 5.3.

5.308.1 L1 Fibre; and

5.308.2 L1 optical fibre distribution frame (**OFDF**).

The rationale for Chorus' proposed use of "shared with copper, fibre cable" as an allocator type

5.309 Chorus' proposed the use of this proxy asset allocator to allocate the value of shared L1 fibre cable and L1 OFDF assets used to provide FFLAS and non-FFLAS during the pre-implementation period. The proposed allocation is based on a point-in-time estimate (survey) of the level of shared assets between FFLAS and non-FFLAS adjusted in line with changes in UFB duct overlap during the pre-implementation period. We understand this approach was taken because of an absence of data on the actual use of pre-2012 L1 fibre cables and L1 OFDF assets during the pre-implementation period. Given these L1 assets have been shared with FFLAS, the use of the survey data extrapolated over time is considered to provide a reasonable proxy for the level of sharing of these assets with FFLAS.

Calculation of the "shared with copper, fibre cable" as an allocator

5.310 The "shared with copper, fibre cable" allocator is the product of the fibre allocation factor multiplied by the duct length ratio where:[429]

5.310.1 The fibre allocation factor is 11.65%, in all geographical areas. The fibre allocation factor is Chorus' estimate of the percentage of its national fibres used to provide GPON services (UFB FFLAS) in pre-demerger (pre-1 December 2011) fibre cables.

5.310.2 Duct length ratio is a proxy for the extent of UFB network deployment over time. It is calculated as the national duct length used in the provision of UFB in any financial loss year to the national duct length used for UFB in 2023.

5.311 The values of the "shared with copper, fibre cable" allocator values used in calculating the initial RAB, the MAR (PQ FFLAS) and ID-Only FFLAS are given in Table 5.12 below.

[429] Analysys Mason report for Chorus "Building Block model IAV model documentation IAV model v314_120c" (24 March 2021), Figure 15, page A38.

Table 5.12 "Shared with copper, fibre cable" allocation ratios[430]

Shared copper, fibre cable	Financial year												
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Intial RAB (FLA)-National	0.0117	0.0255	0.0383	0.0511	0.0614	0.0721	0.0812	0.0930	0.1026	0.1096	0.1139	-	-
Intial RAB (FLA)-Won	0.0117	0.0255	0.0383	0.0511	0.0614	0.0721	0.0812	0.0930	0.1026	0.1096	0.1139	-	-
Intial RAB (FLA)-Lost	0.0117	0.0255	0.0383	0.0511	0.0614	0.0721	0.0812	0.0930	0.1026	0.1096	0.1139	-	-
Intial RAB (FLA)-Non	0.0117	0.0255	0.0383	0.0511	0.0614	0.0721	0.0812	0.0930	0.1026	0.1096	0.1139	-	-
PQ FFLAS (MAR) -National	-	-	-	-	-	-	-	-	-	-	0.1132	0.1158	0.1158
PQ FFLAS (MAR) -Won	-	-	-	-	-	-	-	-	-	-	0.1139	0.1165	0.1165
PQ FFLAS (MAR) -Lost	-	-	-	-	-	-	-	-	-	-	0.0492	0.0510	0.0516
PQ FFLAS (MAR) -Non	-	-	-	-	-	-	-	-	-	-	0.1139	0.1165	0.1165
ID-Only FFLAS-National	-	-	-	-	-	-	-	-	-	-	0.0007	0.0007	0.0007
ID-Only FFLAS-Won	-	-	-	-	-	-	-	-	-	-	-	-	-
ID-Only FFLAS-Lost	-	-	-	-	-	-	-	-	-	-	0.0647	0.0655	0.0649
ID-Only FFLAS-Non	-	-	-	-	-	-	-	-	-	-	-	-	-

Materiality of "shared with copper, fibre cable" as an allocator type

5.312 Chorus' allocation of pre-2012 L1 fibre cables and L1 OFDF assets using the proposed "shared with copper, fibre cable" results in the allocations set out in Table 5.13 below.

Table 5.13 Shared copper, fibre cable unallocated values

Shared with copper, fibre cable	Post2012Actual (FY12-FY20)	Post2012Forecast (FY21-FY22)	Post RAB (FY23-FY230)
L1 Fibre cable			
Average unallocated capex per year	$7,728,993	$2,181,226	$2,181,032
Total for period	$69,560,938	$4,362,452	$19,629,284
L1 OFDF			
Average unallocated capex per year	$56,987	$17,972	$20,690
Total for period	$512,880	$35,944	$186,206

Our draft decision on use of "shared with copper, fibre cable" as an allocator type

Our draft decision was to approve the use of the proxy asset allocator "shared with copper, fibre cable" as an allocator type to allocate the value of certain shared pre-2012 assets (ie, fibre cable and OFDF) employed in the provision of FFLAS and non-FFLAS.[431]

[430] Analysys Mason report for Chorus "BBM IAV model responses to s221 notice questions", 26 March 2021, Figures 7.33, 7.34 and 7.35

[431] Analysys Mason report for Chorus "BBM IAV model responses to s221 notice questions" (26 March 2021). Figure 5.3, page 56

5.313 We considered Chorus' approach to the allocation of pre-2012 L1 fibre cable and L1 OFDF assets employed in the provision of FFLAS is "objectively justifiable and demonstrably reasonable" in the circumstances. Chorus' approach is based on a point-in-time estimate (survey) of the level of shared assets between FFLAS and non-FFLAS adjusted in line with changes in UFB duct overlap during the pre-implementation period. We consider this approach is reasonable in the absence of data on the actual use of pre-2012 L1 fibre cables and L1 OFDF assets over the pre-implementation period.

Summary of stakeholders' views on our draft decision

5.314 A single submission was received from Chorus supporting our decision to approve use of the proxy asset allocator "shared with copper, fibre cable" as an allocator type. [432]

5.315 No cross-submissions were received on this matter.

Summary of our final decision on Chorus' proposal to use the proxy asset allocator "shared with copper, fibre cable" as an allocator type

5.316 Our final decision is to approve the use of the proxy asset allocator "shared with copper, fibre cable" as an allocator type for determining the value of the transitional initial PQ RAB, forecasts of Chorus' expenditure allowances for PQP1; and the forecast roll-forward of the transitional initial PQ RAB for determining the building blocks revenue for PQP1. We consider the allocator type meets the IM requirements, for the reasons set out at 5.313 above.

Additional alternative allocator types proposed under Chorus' BBM IAV model

5.317 In addition to the alternative allocator types discussed in detail above, Chorus' BBM IAV model also makes use of a number of other alternative allocator types (detailed below in Table 5.15).[433] Like the allocator types set out in the foregoing sections, these allocator types do not form part of the default list in the IMs and require the Commission's approval.[434]

5.318 In our draft decision we considered that these allocators closely resemble causal allocators. Our draft decision was to approve these alternative allocators.

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[432] Chorus "Submission on fibre PQID initial RAB and IM amendments draft decision" (16 September 2021), Appendix B16, page 49.

[433] Analysys Mason report for Chorus "Documentation of opex allocation for the BBM Opex workstream (including responses to notice to supply information) – Model version 3.31" (26 March 2021).

[434] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause B1.1.6(1)(c)(x) and clause B1.1.6(2)(d)(x) of Schedule B.

5.319 We did not receive any submissions on these alternative allocators.

Summary of our final decision on additional alternative allocator types

5.320 Our final decision is to approve the additional allocator types, as set out in Table 5.14 below. We consider these proxy allocators closely resemble a causal relationship and that they are objectively justifiable and demonstrably reasonable. We consider that they promote the purpose of Part 6, the allocation is being undertaken at a reasonable level of aggregation, the underlying data is robust and there is not a readily available alternative.

Table 5.14 Additional alternative allocator types

Allocator type	Example expense category[435]	Chorus' explanation
Billable to third party	CNO - Network integrity - chargeable	Entirely allocated to billable to third party and partially included in the fibre BBM calculations. These are allocated to services and areas using connections in the IAV model. The allocator is based on identifying costs billable to third party so is justifiable and reasonable.
Cancellations	CNO - Cancellations	Cancellations costs are shared between copper services (not to be included in the fibre BBM calculations) and fibre services (to be included in the fibre BBM calculations) based on the analysis of cost centres.
CC Provisioning	CNO - NPC - CC Provisioning	Allocates costs based on an analysis of full time equivalent (FTE) job description.
CNO - chargeable damages - Copper	CNO - chargeable damages - Copper	Shared between billable to third party (partially included in the fibre BBM calculations in the IAV model) and copper services (not to be included in the fibre BBM calculations).
CNO - chargeable damages - Fibre	CNO - chargeable damages - Fibre	Shared between billable to third party (partially included in the fibre BBM calculations in the IAV model) and fibre

[435] We provide an example expense category as each allocator type in the first column may be applied across multiple expense categories.

Allocator type	Example expense category[435]	Chorus' explanation
		services (to be included in the fibre BBM calculations). Treatment of chargeable damages is consistent across the two opex categories "CNO - Chargeable damages – Fibre" and "CNO - Chargeable damages - Copper"
CNO - Fibre Route Survey	CNO - Fibre Route Survey	Fibre route survey costs are shared between other services (not to be included in the fibre BBM calculations) and fibre services (to be included in the fibre BBM calculations) based on the analysis of cost centres.
Core fibre	CNO - Chorus network proactive maintenance (core fibre)	Entirely allocated to core fibre services billable to third party and partially included in the fibre BBM calculations in the IAV model.
Corporate consultants	Corporate - consultants' costs	Corporate consultants' costs are shared based on an analysis of consultants spend
Corporate legal	Corporate - legal costs	Corporate legal costs are shared based on an analysis of the legal department spend.
Corporate other	Corporate - other costs	Corporate other costs are shared based on an analysis of other costs spend.
Customer Supply & Billing	CNO - NPC - Customer Supply & Billing	Allocates costs based on an analysis of FTE job description.
Infrastructure rates driver	CNO - property - rates - infrastructure	Allocates rates in infrastructure between the four areas (Won, Lost, Non and National) with the final allocation to services done in the IAV model.
Project opex	CNO - Project opex	project opex costs are shared between services based on the analysis of cost centres. CTO - project opex costs are shared based on specific allocation data provided by Chorus subject matter experts

Allocator type	Example expense category[435]	Chorus' explanation
Provisioning post-2017	CNO Provisioning (from July 2017)	Provisioning costs are shared based on an analysis of cost centre costs (for non-fibre part).
Provisioning pre-2017	CNO Provisioning (before July 2017)	Provisioning costs are shared based on an analysis of cost centre costs.

Asset allocators for pre-2011 assets

Purpose of this section

5.321 In this section, we set out our decisions on asset allocators that Chorus has proposed for allocating the costs of pre-2011 ducts and central office space for determining:

5.321.1 the value of the transitional initial PQ RAB (both the initial RAB value of the FLA, and the initial RAB value of core fibre assets as at the implementation date),

5.321.2 the forecast expenditure allowances in PQP1, and

5.321.3 the forecast roll-forward of the transitional initial PQ RAB for determining the building blocks revenue for PQP1.

Explanation of relevant terms and concepts

5.322 The calculation of the initial RAB value of the FLA is based on UFB assets that have been employed in the provision of UFB FFLAS.[436] Therefore, the pre-2011 assets and central office space that are considered during the pre-implementation period are only those that were employed in the provision of UFB FFLAS.

[436] "UFB asset" is defined in *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause B1.1.2 of Schedule B.

5.323 At the implementation date, any core fibre asset that is employed in the provision of PQ FFLAS will enter the PQ RAB.[437] Therefore at implementation date, any pre-2011 core fibre asset (whether or not it was previously a 'UFB asset') that is employed in the provision of PQ FFLAS will enter the PQ RAB. The pre-2011 assets within the initial PQ RAB at implementation date will be a combination of assets that:

5.323.1 were previously employed in the provision of UFB FFLAS; and

5.323.2 are employed in the provision of PQ FFLAS but were *not* previously employed in the provision of UFB FFLAS.

5.324 From implementation date, these two categories of assets will collectively be "core fibre assets".

5.325 Further, the allocation of pre-2011 core fibre assets at implementation date may be determined by changing the allocation of the "UFB unallocated closing asset value" from a value that, on 31 December 2021, allocated a portion of that asset to UFB FFLAS, to a value that as of implementation date will include all PQ FFLAS that the asset is employed to provide.

5.326 Alternatively, a pre-2011 core fibre asset at implementation date may have a portion of its value attributable to PQ FFLAS when it was not employed at all in the provision of UFB FFLAS during the financial loss period as part of the calculation of the initial RAB of the FLA.

Cost allocation of shared assets

5.327 Assets that are shared, and therefore have values that are not directly attributable to the provision of UFB FFLAS (in the pre-implementation period) or PQ FFLAS (from implementation date onwards), must be allocated by applying ABAA. This involves using asset allocators to allocate asset values.[438] Asset allocators are ratios used to allocate asset values whose quantum is:

[437] For the purposes of ID, this is specified in *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 2.2.2(1)(b) and for the purposes of the determination on the transitional PQ RAB as used for PQP1, this is specified in clause 3.3.1(8)).

[438] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause B1.1.6(2)(c) of Schedule B.

5.327.1 based on a causal relationship: that is, there is a causal relationship between the asset value and the circumstance in which a factor influences the employment of the asset during the financial loss year in respect of which the asset allocation is carried out;[439] or

5.327.2 is equal to a proxy asset allocator: that is, where a causal relationship cannot be established.[440]

5.328 Within the definitions of "causal relationship" and "proxy asset allocator" is the requirement that in each case the allocator (or ratio) is:[441]

5.328.1 consistent with similar circumstances both within a financial loss year, and between financial loss years; and

5.328.2 objectively justifiable and demonstrably reasonable.

5.329 The IM limits the shared costs allocated to UFB FFLAS to the costs that a regulated provider could not have avoided incurring if it ceased supplying services that are not UFB FFLAS.[442]

The single network nature of Chorus' network

5.330 Chorus has deployed its FFLAS network by taking advantage of existing assets such as central offices and ducts. In information we obtained for our s 9A fibre study, and in its submission on our proposed approach to the new regulatory framework for fibre, Chorus noted that it operates one network involving two technologies, copper and fibre, resulting in a significant sharing of network as well as non-network assets.[443]

5.331 This limitation is a factor in our consideration of both the duct and central office space allocators. We discuss this in greater detail below.

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[439] The definition of "causal relationship" for the purpose of determining the financial losses is defined in Commerce Commission *Fibre Input Methodologies (initial value of financial loss asset) Amendment Determination 2020* [2020] NZCC 24, clause B1.1.1(2) of Schedule B. The corresponding definition of "causal relationship" in all other instances is in clause 1.1.4(2).

[440] Ibid para 1.1.4(2).

[441] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause B1.1.1(2) of Schedule B.

[442] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause B1.1.6(4) of Schedule B. The corresponding requirement as it relates to PQ FFLAS is set out in clause 2.1.3: Allocation requirements for ABAA.

[443] Chorus, "Submission on new regulatory framework for fibre" (21 December 2018), paragraph 187.1, page 41.

Approach to the allocation of pre-2011 duct assets

5.332 In this section, we set out our final decisions regarding the allocation of pre-2011 ducts between FFLAS and non-FFLAS for the purposes of determining:

5.332.1 the value of the transitional initial PQ RAB (both the initial RAB value of the FLA, and the initial RAB value of the core fibre assets at implementation date);

5.332.2 the forecast expenditure allowances in PQP1; and

5.332.3 the forecast roll-forward of the transitional initial PQ RAB for determining the building blocks revenue for PQP1.

5.333 For clarity, in this context, 'ducts' refers to duct lines and includes pits.

5.334 The approach set out below is used as part of determining the 'shared with copper, fibre cable' allocator type we discussed at paragraphs 5.304-5.316 above.

Final decision on the allocation of pre-2011 ducts

5.335 Our final decision is that Chorus' proposed allocator type for pre-2011 duct values, the 'Route Length Ratio' as described in para 5.339-5.3415.340 below, meets the IM requirements set out at paragraphs 5.327-5.329 above. In particular:

5.335.1 it is based on a causal relationship. This is because it only includes the value of ducts where both UFB FFLAS and services that are not UFB FFLAS (copper services) are deployed, and it allocates those costs on the basis of the duct route length and the number of copper and fibre connections. We expect the number of connections will drive the usage of duct space and therefore the share of costs to be allocated to them;

5.335.2 it is consistent with similar measures, both within a financial loss year, and between financial loss years;

5.335.3 it is "objectively justifiable" since it limits allocation to costs of ducts which are in the 'overlap' area where they can be used for networks for either UFB FFLAS and services that are not UFB FFLAS and allocates these ducts on the basis of the relative number of connections.

5.336 However, in our view, the allocation to UFB FFLAS is not demonstrably reasonable over time, and should be capped at 30% in 2015, rising linearly to a forecast cap of 51.7% at 31 December 2021. This is to reflect the proportion of ducts that have been available to be used for UFB during the pre-implementation period. The forecast figure is subject to confirmation by Chorus of the actual usage at 31 December 2021.

Chorus' proposed allocation of pre-2011 duct assets

5.337 The value of pre-2011 duct assets that is to be included in the transitional initial PQ RAB (ie, both the initial RAB value of the FLA, and the initial RAB value of core fibre assets as at implementation date) is calculated using an asset allocator. The Route Length Ratio that Chorus has proposed, when used in conjunction with connections as it is here, is based on a causal relationship, since it takes the length of pre-2011 duct route available to be shared and shares it according to the number of copper and fibre connections.

5.338 Over the period that the UFB network was constructed, its coverage - and therefore the extent to which it made use of the existing duct network - was extended.

Chorus' proposed allocator type: Route Length Ratio

5.339 Chorus' proposed asset allocator used the total route length of ducts and the respective number of connections for copper and UFB networks in order to allocate the costs of pre-2011 ducts to FFLAS and copper.[444]

5.340 This allocator type is based on the proportion of Chorus' pre-2011 ducts that are located within its UFB contract areas, multiplied by the proportion of the total fixed lines connections taken up by UFB in each financial loss year. This reflects the availability of pre-2011 ducts to be used in Chorus' UFB deployment, as well as the timing of the usage of the ducts over the 10-year pre-implementation period to supply UFB FFLAS.

5.341 Chorus has supplied a detailed description of how this asset allocator has been calculated.[445] The key points from Chorus' information are as follows.

5.341.1 Chorus considered a range of allocator types before selecting this one.

[444] Chorus "RFI 113 – Pre-2011 Ducts" (24 August 2021).

[445] Chorus, "A13 - Chorus' input data collection for pre-1 December 2011 duct allocator values" (30 June 2021).

5.341.2 Chorus' network system records duct routes, and its precise UFB footprint is recorded in Chorus' systems, meaning the allocator type is based on factual inputs.

5.341.3 The copper connections used (the denominator) include connections that are outside the area where the copper network and the UFB network overlap. This is because the ducts inside the overlap area likely support both fibre and copper infrastructure.

5.341.4 Chorus has applied different approaches pre- and post-implementation in order to take into account the increase in the coverage of FFLAS that will occur post-implementation.

5.341.5 Chorus has measured its pre-2011 ducts in 'route metres', rather than 'duct metres'. On this basis, a 100 metre long 2-way duct line is recorded as 100 metres, and not 200 metres.

5.341.6 At the point in time when there is no more copper in a particular area, the proposed allocator type 'Route Length Ratio' will dedicate the entirety of the pre-2011 duct cost in that area to FFLAS. This approach is consistent with the IM requirement that there is a cap on shared costs, (ie, that the shared costs allocated to PQ should be no higher than the unavoidable costs in a scenario where the services that are not regulated FFLAS are not provided).[446]

Chorus' rationale for its proposed allocator type

5.342 Chorus says that it selected the 'Route Length Ratio' because it was based on a causal relationship. Chorus noted that in selecting Route Length Ratio, it had also considered three alternative approaches:[447]

5.342.1 connections ratio: Chorus rejected this approach on the basis that it was a proxy asset allocator, and an asset allocator based on a causal relationship was available;

5.342.2 route length overlap: Chorus rejected this approach because it does not consider the extent of sharing between FFLAS and non-FFLAS; and

[446] Commerce Commission, "Fibre input methodologies: Main final decisions – reasons paper" (13 October 2020) paragraph 3.148; and 4.72-4.76.

[447] Chorus, "A13 - Chorus' input data collection for pre-1 December 2011 duct allocator values" (30 June 2021).

5.342.3 route length overlap multiplied by 50%: Chorus rejected this approach because it does not scale up with the increasing use of fibre over time.

Draft decision on the allocation of pre-2011 ducts

5.343 Our draft decision was that, in principle, Chorus' proposed allocator type 'Route Length Ratio' for pre-2011 duct values met the IM requirements, including that it was "objectively justifiable and demonstrably reasonable". However, our caveat to this was that the allocation to UFB FFLAS should be capped at 30% to reflect the proportion of ducts that were available to be used for UFB FFLAS.[448]

Summary of views in submissions on our initial PQ RAB reasons paper

5.344 We received submissions from Chorus and Vocus, and a cross-submission from Spark.

5.345 Chorus disagreed with our 30% limit on allocation, submitting that:

5.345.1 as at 30 June 2021, of the 14,229 km of pre-2012 duct route available, a total of 7,043 km (nearly 50%) had been re-purposed for UFB FFLAS.[449]

5.345.2 the Commission "could not ignore the legal requirement that Chorus must have the opportunity to achieve real FCM."

5.345.3 that the Commission risks misusing data that was collected six years ago for a different purpose,[450] because the data was supplied in 2015 for the purpose of setting copper prices.[451]

5.345.4 the 30% limit on allocation was too low, because Chorus can remove copper cables and create more space in ducts and can also use partially filled ducts for FFLAS.

5.346 Vocus agreed with our draft decision not to allow costs associated with unavailable ducts to be allocated to the initial RAB.[452]

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[448] Commerce Commission "Chorus' initial price-quality regulatory asset base as at 1 January 2022 – Draft Decisions" (19 August 2021), paragraphs 5.260 – 5.266.

[449] Chorus, "Submission on fibre PQID initial RAB and IM amendments draft decision" (16 September 2021), paragraphs 53-59.

[450] Commerce Commission "Chorus' initial price-quality regulatory asset base as at 1 January 2022 – Draft Decisions" (19 August 2021), paragraphs 5.260.

[451] Chorus, "Submission on fibre PQID initial RAB and IM amendments draft decision" (16 September 2021), paragraph 53b.

[452] Vocus "Submission on fibre PQID initial RAB draft decision" (16 September 2021), paragraph 58.2.

5.347 Spark cross-submitted that the 30% limit on allocation is too high, and that, by its calculations, 17% would be a more suitable ceiling for allocation.

Our analysis of submissions

5.348 In our view, Chorus' calculation for allocating pre-2011 duct costs based on duct Route Length Ratio and the proportion of connections needs to be modified in order to meet the requirement of being "demonstrably reasonable" by limiting the amount that is allocated so that it cannot exceed the proportion of ducts available for reuse.

5.349 We note that no submitters suggested that limiting the allocation of pre-2011 ducts was inappropriate or incorrect. Chorus has submitted there is 'a legal requirement for it to have the opportunity to achieve FCM'.[453] Given that the copper assets in question are considered not reusable, (i.e. they are copper assets which could not be repurposed for FFLAS) we do not agree with Chorus' argument. Copper is not a regulated service. Regulation under Part 6 applies only to FFLAS.

5.350 We accept Chorus' submission that, by 30 June 2021, 50% of pre-2011 ducts that had previously been used for copper were being re-purposed for FFLAS. This is consistent with our view that "over time, it is likely that some copper cables have been removed from ducts, increasing the proportion available for UFB".[454] In our view, applying a sharing factor that is based on the actual level of pre-2011 ducts that were repurposed over time (which is what the 50% as of 30 June 2021 represents) is likely to appropriately reflect the use of those ducts and allow for the recovery of the costs of those assets from both UFB FFLAS and services that are not UFB FFLAS.

5.351 We remain of the view that a 30% ceiling on allocation is appropriate in 2015. It is near the top of the range of re-usable ducts by exchange service area (**ESA**) as provided by Chorus in its 2015 data, allowing for possible use of partially vacant ducts and for ducts to be freed up by removal of copper cables. Chorus has cited these as reasons for 30% being too low, but it is our view that 30% takes these factors into account. We also note that Chorus warned that the 2015 results may overstate the availability of capacity due to some ducts not being suitable for reuse for various reasons including their positioning (eg, in the middle of a large group making access difficult) and some ducts are asbestos which are hazardous to access, and so on.

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[453] Chorus, "Submission on fibre PQID initial RAB and IM amendments draft decision" (16 September 2021), paragraph 53(b).

[454] Commerce Commission "Chorus' initial price-quality regulatory asset base as at 1 January 2022 – Draft Decisions" (19 August 2021), paragraph 5.258.

5.352 In our view, Spark's analysis is incomplete, in that the analysis, and Spark's conclusion that a 17% ceiling would be more appropriate, does not distinguish between duct length and duct route length.

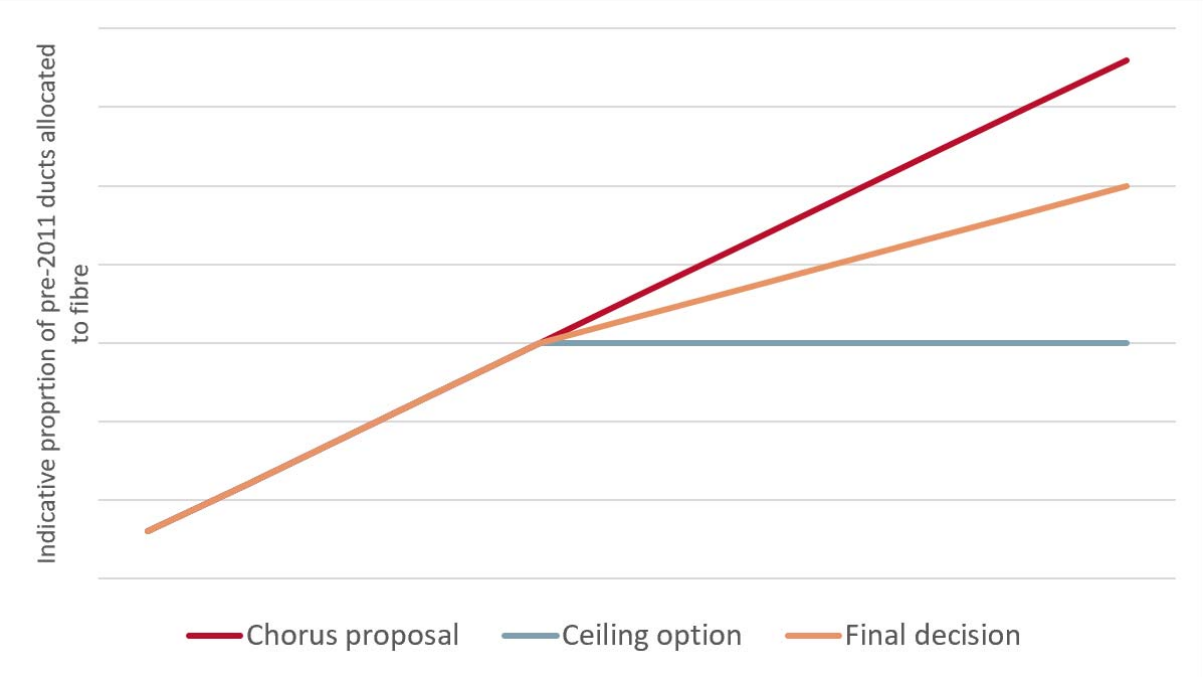
5.353 We sought Network Strategies' (**NS**) advice on Spark's submission that our 2015 ceiling of 30% was too high. NS reports that Spark has used a total duct length of 65,000 km based on a diagram from Chorus' 2021 annual report but notes that the 2020 annual report gave a figure of 40,000 km and that growth of 25,000 km is unlikely, so it is unclear to what the 65,000 km refers. NS also comments on the uncertainty as to whether the 65,000 km refers to duct route km or to duct km. Overall, NS is also of the view that the assumptions in Spark's analysis make its conclusion unreliable. NS also concluded that our 30% cap remains reasonable.

5.354 Chorus' submission provides a second data point for 2021. As expected, the FFLAS network has developed and Chorus has removed redundant copper cables from some ducts, making them available to be used for FFLAS.

5.355 We therefore accept both the 30% ceiling for 2015, and the 50% ceiling for 30 June 2021 (as submitted by Chorus) and assume a linear transition from copper to FFLAS. This produces a growth in the percentage of ducts available to be re-purposed for FFLAS of 3.3% per annum over the six-year period. At that same rate, we forecast an additional 1.7% growth from 30 June 2021 to 31 December 2021.

5.356 Figure 5.6 below illustrates the impact of our draft decision of a 30% ceiling and our revised 50% ceiling as at 30 June 2021, growing linearly to 51.7% as at 31/12/2021 compared to Chorus' proposed allocation.

Figure 5.6 Illustrated effects of allocation ceiling options compared to Chorus' proposal for allocation of pre-2011 duct costs



5.357 The resulting impact on the value of core fibre assets and the FLA (and the resulting total initial PQ RAB value) is shown in Table 5.15 below.

Table 5.15 Impact of our final decision on the pre-2011 ducts allocator ($M)

	Draft Decision *(change from Chorus proposal)*	Final Decision *(change from Draft Decision)*	Final Decision *(total change from Chorus proposal)*
Core fibre assets	-61.7	42.2	-19.5
FLA	-7.3	7.3	0.0
Total value of Initial PQ RAB	-68.9	49.5	-19.4

Source: Analysys Mason

Pre-2011 central office space allocator

5.358 In this section, we set out the following:

5.358.1 our final decision on the allocation of pre-2011 central office building costs;

5.358.2 Chorus' proposed allocation of pre-2011 central office building costs;

5.358.3 a summary of submissions received on our draft decision on this issue; and

5.358.4 our analysis of Chorus' proposed approach to the allocation of pre-2011 central office building costs.

Final decision on the allocation of pre-2011 central office building costs

5.359 Our final decision is:

5.359.1 to not accept Chorus' central office space allocation for calculating the pre-2011 central office building costs to be allocated to the initial RAB value and the initial RAB value of core fibre assets as at the implementation date,[455] based on a lack of suitable evidence that Chorus' model and associated data have been assured and certified according to Chorus' assurance framework;[456] and

5.359.2 to allow an allocation equal to 50% of Chorus' proposal to be included in the transitional initial PQ RAB, which reflects the uncertainty around the appropriate allocation given the inadequate assurance and is a conservative estimate of the appropriate allocation (ie, is unlikely to be more than what is in fact attributable to UFB FFLAS). The allocation for the first regulatory period has also been reduced to 50% of that proposed.

5.360 Chorus will have the opportunity to provide adequate assurance when we decide on the value of the final initial PQ RAB in 2022, which may lead to a change in the amount allocated. If Chorus does not provide adequate assurance, it is likely that the allocation we have allowed for in the transitional initial PQ RAB will remain.

What Chorus proposed

5.361 Chorus has used space in existing exchanges (which have been used mainly in relation to copper services) for the provision of FFLAS terminations and equipment. This makes sense, because these existing sites are centrally located and are already equipped with the infrastructure required by FFLAS such as power supplies, cooling, and security systems. This means that some of the costs of these exchanges should be allocated to the initial PQ RAB. Chorus has calculated this allocation by using the "central office space" allocator, which is a default allocator as set out in B1.1.6 of the IMs.

[455] For clarity, no decision is required with respect to the central office space allocator, which is a default allocator as set out in B1.1.6 of the IMs, but we are declining to accept the allocator values and the resulting allocation.

[456] Chorus, "B11 IM Determination Compliance Information" (24 August 2021), slide 4.

5.362 In addition, Chorus considers that the allocation of vacant central office space is consistent with the IM allowing unavoidable costs to be included in the initial PQ RAB.

5.363 Chorus' central office space allocation is based on the calculated space used for providing FFLAS and for copper services.[457] This is calculated by starting with the number of fibre and copper connections respectively and calculating the equipment required (termination space and related equipment) to provide service for that number of connections. The costs associated with the site are then allocated according to the ratio of space used by FFLAS. The available space (and associated costs) used in this calculation excludes space taken up by Spark exchange equipment. However, it does include the costs of other vacant space, resulting in costs associated with vacant space being apportioned across services that are delivered from the site (including FFLAS).

5.364 Chorus calculates this proportion based on the number of lines of UFB, and a standard allowance per line for equipment installed at each site.

5.365 Chorus supplied the model it has used to calculate the allocator values for the central office space allocation. The model has minimal supporting documentation, which has made our review difficult, and what documentation exists provides an insufficient level of detail of the approach that the model uses to determine the allocation of pre-2011 central office building costs. The model also appears to have been certified on the basis of a discussion between the certifiers and the technical lead who produced the model. This is unsatisfactory because it is not able to be verified and the model itself is not sufficiently documented to allow for an adequate level of verification by the Commission.

5.366 Chorus' model does not include an explicit calculation for vacant space, simply apportioning the total cost of the building between UFB and non-UFB. This means that we have been unable to adequately scrutinise the allocation of vacant space.

[457] Commerce Commission, "Chorus' initial price-quality RAB proposal - Chorus' initial price-quality regulatory asset base as at 1 January 2022" (30 April 2021), paragraph 4.20.

The rationale for Chorus' proposed central office space allocator

5.367 Chorus proposes the central office space allocator as a causal allocator of pre-2011 central office building costs. We note that "central office space" is a default allocator type available in the IMs to allocate operating costs and asset values that are not directly attributable to the provision of UFB FFLAS.[458] Chorus did not indicate whether other allocators on the list of default allocators were also considered.

5.368 Chorus considers that the allocation of vacant central office space is consistent with the IM allowing unavoidable costs to be included in the initial PQ RAB.

Summary of views in submissions on our initial RAB draft decisions

What we said in our initial RAB draft decisions paper

5.369 In our draft decision we accepted Chorus' central office space allocation on the condition that that the model was certified as correct, and in the expectation that appropriate changes would be made to ensure that newly vacant space at Chorus central business district (CBD) sites remains outside the allocation pool. Prior to our draft decision, Chorus had not provided acceptable evidence that the model was correct or had been assured in accordance with its assurance framework. [459]

Submissions on Chorus' central office space allocator

5.370 We received submissions from Chorus and Vocus on our draft decision relating to Chorus' central office space allocator. Chorus supported our decision to accept the central office space allocator. It stated that the associated model "was subject to a robust internal assurance and certification process that related to IM compliance and accuracy of representation of Chorus' operations".[460]

5.371 Vocus submitted that newly vacant space should remain outside the allocation pool and was also of the view that no vacant space should be allocated. Vocus was also concerned regarding the documentation of Chorus' model.[461]

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[458] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause B1.1.6(1)(iv) and B1.1.6(2)(iv) of Schedule B.

[459] Chorus "B11 IM Determination Compliance Information" (24 August 2021), slide 4.

[460] Chorus "Submission on fibre PQID initial RAB and IM amendments draft decision" (16 September 2021), paragraph 76.

[461] Vocus "Submission on fibre PQID initial RAB draft decision" (16 September 2021), paragraph 58.3.

Our analysis of Chorus' proposed central office space allocator

5.372 Our final decision is:

5.372.1 to not accept Chorus' central office space allocation for calculating the pre-2011 central office building costs to be allocated to the initial RAB value and the initial PQ RAB value of core fibre assets as at the implementation date, based on a lack of suitable evidence that Chorus' model and associated data have been assured and certified according to Chorus' assurance framework;[462] and

5.372.2 to allow an allocation equal to 50% of Chorus' proposal to be included in the transitional initial PQ RAB, which reflects the uncertainty around the appropriate allocation given the inadequate assurance and is a conservative estimate of the appropriate allocation (ie, is unlikely to be more than what is in fact attributable to UFB FFLAS).

5.373 We remain concerned with the assurance of the model Chorus has used to calculate the proportion of pre-2011 central office building costs allocated to UFB FFLAS, and therefore with the value of the allocator which the model calculates. Chorus provided us with a description of its assurance framework, the process by which Chorus internally certified the data inputs it provided to both their IAV and Opex models.[463] When we received Chorus' property allocation model it was too poorly documented to allow adequate verification by us, and no information was provided regarding assurance.

5.374 On 25 June 2021 (prior to publication of the draft decision) we issued a notice under s 221 of the Act to Chorus to supply related documentation and information, including explanations of the underlying assumptions used in the property model and any risks and limitations considered in relation to the model. These are documents that should typically be prepared in the course of internal certification, as described by Chorus.

5.375 Chorus' response to this s 221 notice was a brief and high-level description of the underlying assumptions in the property model and a briefer statement about internal certification, saying that certification of the property model was on the basis of a "reasonable enquiry" standard, which involved a discussion between the quality assurance reviewer and the technical lead. [464] [465]

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[462] Chorus "B11 IM Determination Compliance Information" (24 August 2021), slide 4.

[463] Chorus "B11 IM Determination Compliance Information" (24 August 2021), mainly slide 4.

[464] Chorus "A14 – Property Documentation"

[465] Chorus "A15 – Internal Certification"

5.376 Our draft decision offered Chorus another opportunity to demonstrate internal certification of their property model. Chorus' submission in response claims that the model "was subject to a robust internal assurance and certification process that related to IM compliance and accuracy of representation of Chorus' operations".[466]

5.377 Following Chorus' submission, we contacted Chorus and subsequently met with it to discuss our concerns regarding the assurance of the model, and to indicate that we were considering excluding the allocation of pre-2011 central office costs given the absence of adequate assurance.[467] Chorus responded by providing an additional but, in our view, inadequate explanation of the model.[468]

5.378 Despite the additional opportunities we have afforded for Chorus to provide adequate assurance, Chorus has not supplied satisfactory evidence of the property model being subject to an internal assurance and certification process. Without acceptable assurance, we cannot form the view that the central office space allocator proposed by Chorus is objectively justifiable and demonstrably reasonable, and we are therefore unable to allocate pre-2011 central office costs to UFB FFLAS as proposed by Chorus.

5.379 We have therefore made the decision to allow an allocation of 50% of Chorus' proposed amount in the transitional initial PQ RAB. This change will also reduce the expenditure allowance in PQP1, where that allowance is related to the central office space model.

5.380 In making this downwards adjustment we note that the following factors influenced our decision:

5.380.1 The adjustment results in a conservative estimate of the allocation of central office space to UFB FFLAS (ie, is unlikely to be more than what is in fact attributable to UFB FFLAS).

5.380.2 The size of the downwards adjustment was a matter of judgement and is necessarily an imprecise estimate.

5.381 We considered excluding any allocation of pre-2011 central office costs to UFB FFLAS. However, we decided that, since at least some of those costs would in fact be attributable to UFB FFLAS, excluding any allocation would unlikely be objectively justifiable and reasonably demonstrable.

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[466] Chorus "Submission on fibre PQID initial RAB and IM amendments draft decision" (16 September 2021), paragraph 76.

[467] Email to Chorus, "Initial PQ RAB pre-2011 central office building costs", 26 October 2021.

[468] Chorus, "Property model overview", 5 November 2021.

5.382 Our IM amendments decisions mean that the transitional initial PQ RAB may be determined, in part, on estimates rather than actual values.[469] Given the inadequate assurance of the model supporting the allocation of pre-2011 central office space costs, and the necessarily imprecise downwards adjustment to the amount that Chorus proposed be allocated, the allocation of pre-2011 central office space costs is an estimate. Chorus will have the opportunity to provide adequate assurance when we decide on the final initial PQ RAB in 2022. If Chorus does not provide adequate assurance, it is likely that the allocation we have allowed for in the transitional initial PQ RAB will remain.

5.383 Our ability to revisit the allocation of pre-2011 central office costs when we decide on the final initial PQ RAB, potentially on the basis of adequate assurance provided by Chorus, is a key factor in our decision to allow an allocation of 50% of Chorus' proposed amount in the transitional initial PQ RAB. If the allocated amount changes in the final initial PQ RAB on the basis of a properly assured model, that change in the amount will be washed up in PQP2.

5.384 In relation to central office vacant space, our view is that, at large sites, vacant space is likely to be an avoidable cost, and the cost cap on cost allocation may be relevant (see following section). However, at smaller sites, it is unlikely that Chorus will be able to repurpose space. We note that Chorus is already offering a data centre-type product at some large sites, which combines central office space with the no-break power and cooling capacity left by the removal of Spark's NEAX exchange equipment.

5.385 The impact of vacant space at large central offices is reduced by the fact that some of these larger exchanges are Spark-owned sites, so the allocator for Chorus' central office space will not apply.

5.386 Going forward, as Spark vacates more space with the ongoing removal of its NEAX exchanges, and as Chorus withdraws its own copper equipment from its central offices, it is our view that this newly vacated space should not then be shared between FFLAS and non-FFLAS at larger CBD Chorus sites, but should remain outside the RAB. This may require an update to the existing mechanism to permit the space vacated by Spark to remain outside the allocation pool.

5.387 The resulting impact on the value of space and on the FLA (and the resulting total initial PQ RAB value) is shown in Table 5.15 below.

[469] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 3.20

Table 5.16 Impact of our final decision on the central office space allocator ($m)

	Draft Decision *(change from Chorus proposal)*	Final Decision *(change from Draft Decision)*	Final Decision *(total change from Chorus proposal)*
Core fibre assets	n/a	-31.2	-31.2
FLA	n/a	-35.6	-35.6
Total value of Initial PQ RAB	n/a	-66.8	-66.8

Source: Analysys Mason

Cap on cost allocation

5.388 The IMs introduced a cap on the allocation of shared costs to limit the total costs for repurposed assets to those which cannot be avoided in providing UFB FFLAS.

Our final decision on the application of the cost cap to central office space

5.389 Our decision on the cost cap applies to determination of:

5.389.1 the initial RAB value of the FLA;

5.389.2 the initial RAB value of core fibre assets as at the implementation date; and

5.389.3 the expenditure allowances for PQP1.

5.390 Our final decision is that Chorus' proposed asset allocation method for central office space is reasonable for smaller sites where any vacant space is less likely to be avoidable. For larger sites, we consider that vacant space will be an avoidable cost, although this is not likely to have been material to date. In our view, the cost cap is likely to apply for these larger sites.

Legal framework for the cost cap

5.391 The IMs introduced a cap on the allocation of shared costs to limit the total costs for repurposed assets to those which cannot be avoided in providing UFB FFLAS. In particular, the IMs require that the total asset values or operating costs allocated to UFB FFLAS should not exceed the asset values or operating costs that Chorus would continue to incur if it were providing UFB FFLAS alone (and no other services).[470] This requirement applies to allocations that would have a material effect on the total asset values or operating costs allocated to UFB FFLAS.[471]

Before the draft decision

5.392 In information provided in response to the Commission's s 221 notice, Chorus had claimed that the shared cost cap was unlikely to bind for any cost or asset categories, for the following reasons: [472]

5.392.1 Chorus has applied the ABAA methodology for opex and assets, with causal and proxy allocators used to distribute shared costs across multiple services. Due to economies of scope, the shared costs allocated to FFLAS are no more than costs of a standalone FFLAS provider.

5.392.2 Applying a materiality threshold implies that the cap should only be considered for a small number of costs.

5.392.3 Most assets are economically sunk in that they cannot practically be used for anything else or, where they can, the costs of repurposing them exceeds the benefit.

5.393 Incenta, on behalf of Chorus, submitted a report regarding testing for compliance with the shared cost cap.[473] According to Incenta, the requirement to apply allocators based on causal relationships where possible has the effect of sharing economies of scope from joint provision of fibre and copper services. This implies that the allocated cost of providing fibre services will be below the standalone cost of providing fibre. In the case of assets, an additional consideration is the extent to which the asset is sunk. For an asset that is economically sunk —in that the asset cannot be used for an alternative purpose— the avoided costs of ceasing to supply a service will be negligible, as the Commission noted in the case of ducts.

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[470] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause B1.1.6(4) of Schedule B.

[471] Ibid, clause B1.1.6(5) of Schedule B.

[472] Chorus "Response to Attachment B of the Commerce Commission's 26 February 2021 section 221 notice" (26 March 2021), Appendix A, paragraph 9..

[473] Incenta "Certain cost allocation issues relevant to the IAV" (published 30 April 2021), page 6.

5.394 Incenta noted that there are some areas where it may be feasible to sell off or lease assets if copper services were no longer provided, with the most obvious examples being exchange-based assets that would no longer be required (such as power, air conditioning, building and land assets). In these cases, any costs of removing copper equipment and making the exchange space ready for alternative uses would have to be considered.[474]

5.395 Incenta concluded that it is unlikely that the avoided cost cap would 'bind', and less likely again in a material way.[475]

Our draft decision

5.396 Our draft decision was that Chorus' proposed allocation method for central office space was reasonable for smaller sites where any vacant space is less likely to be avoidable. For larger sites, we considered that vacant space would be an avoidable cost, although this is not likely to have been material to date.

5.397 We agreed in principle with Incenta's characterisation of the cost cap. In our view, however, Incenta had downplayed the potential for space to be vacated as a result of the shift in demand from copper-based services to FFLAS. In our view, such migration is likely to free up space in exchanges as Chorus retires legacy equipment located in its exchanges, as well as where Spark decommissions its public switched telephone network (PSTN) switches and associated equipment in Chorus exchanges. Such space is likely to have alternative uses, particularly in larger exchange sites.

5.398 The inclusion of the cap on allocated costs was to limit the amount of allocated costs of reused assets to those which cannot be avoided in providing the UFB services. Using an example from our IMs reasons paper, as copper-based equipment is retired over time, this will free up space in the central office building. In this scenario, where the vacant space in the central office could be put to alternative uses, the costs avoided when copper services are discontinued are likely to be material. Rather than allocating the entire cost of the central office building to regulated FFLAS, it may be appropriate to cap the cost at the level that is unavoidable as demand is shifted away from copper-based services. In this case, the costs that would be assigned to regulated FFLAS would only relate to the space in the central office occupied by equipment used to supply regulated FFLAS.

[474] Incenta "Certain cost allocation issues relevant to the IAV" (published 30 April 2021), pages 5-6.

[475] Ibid, page 6.

Summary of submissions

Chorus submissions

5.399 Chorus submitted that our concerns regarding over-allocation of spare exchange space to FFLAS were unwarranted, and that we cannot simply assume that spare exchange space is unavoidable, but rather, need to consider whether real-world alternatives exist. Chorus said that it is incentivised to earn unregulated revenues, and this provides an incentive for it to find alternative uses for assets. [476]

5.400 Chorus also disagreed with our view that, going forward, space made available by the removal of copper equipment at large sites should not be allocated to FFLAS. It submitted that the counterfactual would be purpose-built new buildings optimised for size, which would cost more and not be as heavily depreciated.

Spark submission

5.401 Spark submitted that an avoided cost cap would mitigate the risk that excessive costs are transferred to the initial value of the RAB, but that the Commission only intends to apply the cap to the exchange space situation.[477] Spark considered that the cap, if applied, would limit the allocations of other costs to FFLAS.

Vocus submissions

5.402 Vocus commented that the shared cost cap should not be relied upon to limit the allocation of costs to the initial RAB, and that such limits should be inherent in the allocators. [478]

Our analysis

5.403 We are aware that there will be substantial removal of copper services from Chorus' central office sites in the next few years. In addition to space directly freed up by the removal of copper services (main distribution frame (MDF) space, space occupied by copper-specific broadband equipment such as DSLAMs and copper co-location space), Spark is also in the process of withdrawing its aging NEAX exchange equipment, vacating more space.

5.404 We are also aware that many of Chorus' larger installations are in Spark-owned buildings, but that there are also large installations that are not in Spark-owned buildings, including in both Auckland and Wellington CBDs.

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[476] Chorus "Submission on fibre PQID initial RAB and IM amendments draft decision" (16 September 2021), paragraphs 72-74.

[477] Spark "Submission on fibre PQID initial RAB draft decision" (16 September 2021), paragraph 32(d).

[478] Vocus "Submission on fibre PQID initial RAB draft decision" (16 September 2021), paragraph 58.3.

5.405 Chorus already offers services that provide data centre-type facilities that combine the high-capacity connectivity with other facilities like no-break power and air-conditioning, that utilise available space in central offices.

5.406 We therefore disagree with Chorus that the cap is unlikely to bind for property allocation. In our view, the costs of vacant space at larger sites are avoidable and are likely to be material. However, we agree that, at smaller sites, such costs are likely to be unavoidable.

5.407 The IMs require that the shared cost cap is always applied when a regulated provider is allocating an asset value or operating cost that is not directly attributable to UFB FFLAS.[479] We therefore disagree with Spark that we are only applying the cost cap to central office space. Central office space is one of the few cost areas that could be avoidable, and therefore where the shared costs cap comes into play. Expenditure on ducts, for example, is unavoidable in its entirety and therefore the shared cost cap does not apply.

5.408 We disagree with Vocus that the shared cost cap should not be relied upon. The shared costs cap is a requirement of the IMs, so its application is always required where allocations of asset values or operating costs are being performed. It is often not possible to make such limitations inherent in allocators, and in these circumstances, the shared cost cap must be relied upon to limit the allocation of shared costs.

[479] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause B1.1.6(4).

Chapter 6 Specific technical inputs used to calculate the financial loss asset and 'opening tax losses'

Purpose of this chapter

6.1 Chapters 4 and 5 explained our decisions on costs and cost allocation that are a key input used to calculate the value of the FLA.[480]

6.2 This chapter sets out and explains our decisions on specific technical inputs that are used to calculate the value of the FLA and "opening tax losses". This chapter does not cover the determination of all cash flows required in determining the transitional FLA (those cash flows are provided in summary form in Table 3.2).

Structure of this chapter

6.3 The first section of this chapter addresses the following specific issues:

6.3.1 the calculation of the "opening tax losses" for disclosure year 2022; and

6.3.2 cost of capital estimates.

6.4 The second section provides the inputs proposed by Chorus that we have accepted on the grounds that it has used a method with substantially the same effect in the determination of the FLA. We have changed the IMs to provide for this situation.[481]

Opening tax losses for disclosure year 2022

Final decision

6.5 In our FLA IMs final reasons paper, we decided to use a post-tax WACC to discount pre-implementation cash flows. [482] In that decision, we recognised that in the event of substantial tax losses, a correction would be required to account for the difference in the time value of money.[483] We indicated that where substantial tax losses occur, "we would consider implementing an adjustment to true up the final amounts, for example through an IM amendment".[484]

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[480] By "value of the FLA", we mean both (1) the "initial RAB value" of the FLA under clause 2.2.4(1) and (2) the "opening RAB value" of the FLA for PQ regulation under clause 3.3.1(9).

[481] We have added *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause B1.1.14.

[482] Commerce Commission "Fibre input methodologies – Financial loss asset – reasons paper" (3 November 2020).

[483] Commerce Commission "Chorus' initial price-quality regulatory asset base as at 1 January 2022 – Draft Decisions" (19 August 2021), paragraph 6.24.

[484] Commerce Commission "Fibre input methodologies – Financial loss asset – reasons paper" (3 November 2020), paragraph 3.402.

6.6 We have amended the IMs to use a vanilla WACC rather than a post-tax WACC in the calculation of the FLA and to allow us to determine the value of the "opening tax losses" for disclosure year 2022 under clause 2.3.3(3)(a) of the IMs.[485] We have provided our reasons for these IM amendments in the IM amendments reasons paper.[486]

6.7 The purpose of this section is to provide the value of the transitional calculation of the "opening tax losses" for disclosure year 2022 for Chorus.[487] This value has been used for the purpose of determining the regulatory tax allowance for each regulatory year of PQP1 under clause 3.4.1 of the IMs.

6.8 The value of the transitional value of the "opening tax losses" is $955,244 million. This calculation has involved judgements about the method we should use, which is explained below.

6.9 A final determination of the "opening tax losses" for disclosure year 2022 for Chorus, in accordance with clause 2.3.3(3)(a)(i) of the IMs, will be made at the same time as our final decisions on matters relating to Chorus' final initial PQ RAB, which is expected in 2022.

Relevant considerations

Provisions in the Act

6.10 By calculating the appropriate value of the "opening tax losses" for disclosure year 2022, we are applying the IMs as amended.

Clauses of the IMs

6.11 Clause 2.3.3(3)(a) of the IMs as amended specifies that, for disclosure year 2022, 'opening tax losses' is a value as determined by the Commission.

[485] The vanilla WACC and post-tax WACC differ in the treatment of notional deductible interest for tax purposes. When a post-tax WACC is used, the notional deductible interest is accounted for in a reduced value of the WACC. When a vanilla WACC is used, the notional deductible interest is accounted for explicitly in the cash-flow calculation of tax.

[486] Commerce Commission "Fibre Input Methodologies – Main 2021 amendments – Final decisions – Final reasons paper" (29 November 2021), paragraphs 3.80 to 3.108.

[487] This is a transitional calculation because a value of "opening tax losses" is needed for the PQP1 determination, which has been made concurrently with this paper, and the final value of "opening tax losses" relies on the "UFB closing tax losses" for financial loss year 2022, which will not be known until after 31 December 2021.

Calculating the tax effect of losses

6.12 Calculating the 'opening tax losses' involves judgement, which we must exercise according to s 166(2) of the Act. The calculation involves the use of many of the values determined from applying the IMs, including "value of commissioned asset", "depreciation", "cost of debt", "leverage" and "net drawdown" of senior and subordinated Crown debt.

6.13 One of the inputs that we have used in the calculation of "opening tax losses" is notional deductible interest.[488] There are two parts to the calculation of notional deductible interest:

6.13.1 First, the calculation of gross notional deductible interest needs to account for tranches of debt being financed at varying interest rates that are consistent with the benchmark cost of debt in the WACC.

6.13.2 The second part is that gross notional deductible interest needs to be reduced by the avoided cost of financing the Crown debt drawdown. This calculation of net notional deductible interest needs to account for tranches of Crown debt being financed at varying interest rates that are consistent with the financing arrangement between Chorus and the Crown.

6.14 The method we will use to calculate the value of "opening tax losses" for disclosure year 2022 applies these two parts by separating the financing of capital expenditure from the financing of the annual losses. This method creates a series of building block calculations of the financing associated with each tranche of capital expenditure and the avoided costs associated with Crown debt financing. It then adds to this the costs of financing annual losses.

Overview of Chorus' proposed approach to calculating the value of opening tax losses

6.15 In its submission on our consultation on Chorus' initial PQ RAB, Chorus proposed a method to correct for the underestimate of the FLA due to the use of a post-tax WACC.[489]

[488] The calculation of notional deductible interest for the pre-implementation period is more complicated than the method specified in clause 2.3.1(7)-(9) of the IMs to calculate notional deductible interest for the post-implementation period.

[489] Chorus "Submission on Commission's consultation on Chorus' initial PQ RAB" (28 May 2021), paragraph 22.

6.16 Chorus subsequently proposed a method that involved calculating the present value of notional deductible interest and then using the tax effect of this value to adjust the FLA. The notional deductible interest calculations for each financial loss year are also used in the calculation of the 'opening tax losses' for disclosure year 2022.

Summary of our draft decision

6.17 In our draft decision we compared Chorus' proposed calculation of net notional deductible interest to the method we had developed that separates the financing of capital expenditure from the financing of the annual losses.[490]

6.18 We decided to use our method because it is more accurate than the method developed by Chorus and its consultant. We have tested for accuracy by checking whether the value of the FLA calculated using a post-tax WACC, when adjusted for the annual tax losses, results in the value of the FLA calculated using a vanilla WACC.[491] The reason we considered our method to be more accurate is that it results in a value of the FLA that is closer to the value that is calculated from using a vanilla WACC than Chorus' method.

Summary of submissions and cross-submissions on the draft decision

6.19 In its submission on the draft decision, Chorus considered it is preferable, for workability, that the value of "opening tax losses" for disclosure year 2022 is calculated using its method.[492] In its proposed drafting change, Chorus summarised its calculation of notional deductible interest for each financial loss year as the difference between:[493]

> the notional interest that is consistent with the sum of the value of the core fibre asset and financial loss asset for the financial loss year in question, multiplied by the level of gearing and the debt interest rate that are as consistent as practicable with the rates applied when calculating the financial loss asset; and
>
> the interest on the debt component of the Crown financing that is attributable to the financial loss year in question including, for the avoidance of doubt, interest associated with drawdowns of Crown financing that took place in years period to the year in question.

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[490] Commerce Commission "Chorus' initial price-quality regulatory asset base as at 1 January 2022 – Draft Decisions" (19 August 2021), paragraph 6.39.

[491] In theory where tax is zero in each financial loss year, and all other inputs are the same, the value of the FLA calculated using a vanilla WACC will be the same as the value of the FLA calculated using a post-tax WACC plus an adjustment for the present value of notional deductible interest.

[492] Chorus "Submission on fibre PQID initial RAB and IM amendments draft decision" (16 September 2021), paragraph 85.

[493] Ibid, paragraph 100(b).

6.20 Enable and Tuatahi First Fibre sought a concise description of the method used to calculate the value of the "opening tax losses" for disclosure year 2022.[494]

6.21 Spark submitted that we should account for Chorus' group tax position by assuming tax losses are used when incurred rather than carried forward.[495] Spark also submitted that the method used in the draft decision introduces uncertainty and requires complex and arbitrary methodological choices.

Our analysis of submissions and cross submissions

6.22 As Spark's submission largely concerns the proposed amendment, we have considered it as part of our decision to amend the IMs. We do not consider it further in this paper, other than to address the matter of complexity.

6.23 We have also considered Chorus' proposal to use its method as part of our decision to amend the IMs as Chorus proposed specific wording changes to the IMs to reflect its method.[496] We decided not to make those changes to the IMs and instead decided to amend the IMs to provide for us to determine the value of "opening tax losses" for disclosure year 2022, rather than the method that is used to calculate the value. We acknowledge that the calculation of the "opening tax losses" for disclosure year 2022 is complex (as Spark has submitted).

6.24 The calculation is complicated for three main reasons that all relate to matters of financial modelling:

6.24.1 The first is that the debt financing cost changes each financial loss year; it would be simpler if debt financing costs were constant throughout the pre-implementation period.

6.24.2 The second is that the avoided cost of debt associated with Crown financing is different to the debt financing costs of commissioned UFB assets; it would be simpler if the debt financing costs were the same for Crown financed assets and other commissioned UFB assets. This is a result of following the IM, as set in 2020.[497]

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[494] Enable and Tuatahi (formerly Ultrafast) "Submission on draft decision for fibre input methodology amendments" (16 September 2021), paragraph 4.3.

[495] Spark "Submission on fibre PQID initial RAB draft decision" (16 September 2021), page 13.

[496] Commerce Commission "Fibre Input Methodologies - Main 2021 amendments - Final decisions – Final reasons paper" (29 November 2021), paragraphs 3.101 to 3.102.

[497] Commerce Commission "Fibre input methodologies – Financial loss asset – reasons paper" (3 November 2020), paragraph 3.5.

6.24.3 The third is that the financing costs need to account for part-years as well as full-years. This is a result of the financial loss years not aligning with standard financial years during the pre-implementation period.

6.25 Given the complexity, we have held discussions with Chorus' consultants, and these discussions have led to refinements in both Chorus' method and our method. However, even with these refinements, the difference in the value of the opening value of tax losses between Chorus' method and our method is approximately $9 million, which is similar to what it was in the draft decision.

6.26 We do not agree with Chorus that its consultant's method is more workable than ours. Both methods are complex, and both have been included in the financial model developed by Analysys Mason.

6.27 We prefer our method because it is more accurate. The reason we consider our method to be more accurate is that it results in a value of the FLA that is closer to the value that is calculated from using a vanilla WACC than Chorus' method. However, the difference in accuracy is not large, with our method producing an estimate of the FLA that is $2 million closer to the actual value of the FLA than Chorus' method.

6.28 Even if we considered Chorus' method to be more workable or less complex, which we do not, we consider there is unlikely to be a net benefit to users from using Chorus' method because it is less accurate than our method. We also recognise the one-off nature of the decision to set the "opening value of tax losses" and that the method used in this decision does not have ongoing applicability to PQ regulation.

6.29 We have taken into account submissions from interested parties and have sought to make the calculation as transparent as possible. We have published the calculation in the model that accompanies this paper.

6.30 A summary of the method we have used to calculate the value of the "opening tax losses" for disclosure year 2022, which is the same method we used in the draft decision, is as follows:[498]

6.30.1 Step 1. Calculate the debt financing costs of commissioned assets.

[498] In terms of the two-part method indicated in paragraph 6.17, steps 1 and 3 in this paragraph relate to the financing of debt whereas step 2 relates to the avoided cost of financing the Crown debt drawdown.

6.30.1.1 This involves calculating, for each annual amount of commissioned UFB assets, the depreciated value of the commissioned UFB assets for each of the remaining financial loss years until implementation.

6.30.1.2 The interest rate applicable to the year in which the UFB assets are commissioned is used to calculate the gross cost of debt financing for each financial loss year of the remaining term. The calculation accounts for leverage.

6.30.2 Step 2. Calculate the avoided costs of debt financing for Crown funded assets

6.30.2.1 This is like the previous step except the Crown funded assets are not depreciated.[499]

6.30.2.2 The Crown debt financing rate for the financial loss year in which the assets are commissioned is used to calculate the avoided interest on Crown funded assets.

6.30.3 Step 3. Calculate the debt financing costs of annual losses.

6.30.3.1 This step first involves calculating the UFB closing asset value including an adjustment for losses for each financial loss year of the pre-implementation period. The UFB closing asset value for a financial loss year including an adjustment for losses is the UFB closing asset value that is rolled-forward each year inclusive of losses.[500]

6.30.3.2 The UFB closing asset value for a financial loss year adjusted for losses is calculated as the difference between the UFB revenues cash flow and UFB costs cash flow that includes the cumulative financing costs of losses for a given financial loss year.

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[499] Assets funded by the Crown are assumed to not depreciate over the pre-implementation period because in general Crown funding was not repaid over the pre-implementation period.

[500] This differs from the general calculation of the roll-forward of the allocated UFB fibre assets, which does not include the losses accumulated over time. Note that our method works by deconstructing the FLA into its constituent parts on an annual basis for the purpose of calculating the annual financing costs. The FLA is calculated as the "present value of total net cash flows" plus the "UFB asset base closing asset value at implementation date" plus the "present value benefit of Crown financing".

6.30.3.3 The UFB closing asset value including an adjustment for losses for each financial loss year is then used to calculate the annual loss that is needed to reconcile the UFB closing asset value exclusive of losses with the UFB closing asset value inclusive of losses for that financial loss year.

6.30.3.4 Each annual loss is then used to calculate the debt financing costs associated with that loss for the remainder of the pre-implementation period. The calculation accounts for leverage.

6.30.3.5 The debt financing costs associated with losses for each year are then summed to obtain the total annual cost of debt financing losses.

6.30.4 Step 4. Calculate the annual values of notional deductible interest by summing the debt financing costs of commissioned assets, the (negative) avoided costs of debt financing Crown funded assets and the debt financing costs associated with losses.

6.30.5 Step 5. These annual values of notional deductible interest are then used in the tax accounts to calculate the value of the ”opening tax losses” for disclosure year 2022.

6.31 These steps are implemented in the FLA demonstration model which accompanies this paper.

6.32 The value of the “opening tax losses” for disclosure year 2022 that is consistent with the cash flows in this final transitional initial PQ RAB decision is $955,244 million.

6.33 This financial model will be used for the final determination of the “opening tax losses” for disclosure year 2022 for Chorus when we make our final decisions on matters relating to Chorus’ final initial PQ RAB, which is expected in 2022.

Cost of capital estimates applying for the FLA

Our WACC estimates for the FLA

6.34 We use the WACC estimates that apply for each financial loss year (or part year) as the relevant rate to compound cash flows to the implementation date.[501] As part of the FLA IMs process, we outlined our reasons for the WACC parameters that are provided as fixed values in the IMs as well as the methodology for estimating the remainder of the WACC parameters.[502]

6.35 These WACC estimates have been applied to calculate both the transitional initial PQ RAB and will be applied to calculate the final initial PQ RAB when that decision is made in 2022.

6.36 This final decision is based on the amendment to the IM to use a vanilla WACC, rather than a post-tax WACC.

6.37 The vanilla WACC that is applied to compound cash flows in the year in which the loss applies will be specified to match a mid-year timing assumption. A separate vanilla WACC for the start date compounding factor of 1 December 2011 is applied for any pre-2011 UFB assets, in accordance with clause B1.1.2(2)(b) of the IMs.

6.38 For the parameters used to calculate the WACC for each financial loss year in the pre-implementation period, we decided in the IMs process to:[503]

6.38.1 apply a risk-free rate based on the 5-year rate at the middle of each financial loss year of the pre-implementation period (or middle of each part year for 2012 and 2021);

6.38.2 apply an asset beta, leverage and credit rating for the pre-implementation period at the same values as for the post-implementation period (0.50, 29% and BBB, respectively);

6.38.3 apply a tax-adjusted market risk premium (TAMRP) that is 7.0% for the period until the commencement date of the IMs in October 2020 and 7.5% for the remainder of the pre-implementation period;

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[501] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause B1.1.2(2).

[502] Commerce Commission "Fibre input methodologies – Financial loss asset – reasons paper" (3 November 2020), pages 59–92.

[503] Ibid, pages 59–92.

6.38.4 use a prevailing debt risk premium with the term equal to 7 years (with associated debt issuance and associated costs to represent a 7-year term fixed in the IMs at 14 bps (0.14%));

6.38.5 not include a term credit spread differential (TCSD);

6.38.6 not provide a WACC uplift; and

6.38.7 apply the WACC parameters consistently between regulated providers subject to PQ (ie, currently, Chorus), and regulated providers subject to ID regulation only.

6.39 For this decision, we have estimated the five-year risk-free rate at the middle of each financial loss year of the pre-implementation period (or middle of each part year for 2012 and 2021) using a prevailing rate approach (based on data from the month preceding the middle of each year or part year).

6.40 We have estimated the seven-year debt premium at the middle of each year of the pre-implementation period (or middle of each part year for 2012 and 2021) using a prevailing rate approach (based on data from the month preceding the middle of each year or part year). The bonds used in the debt premium estimations and how we have applied our judgement in determining the debt premium estimates are outlined in Attachment A.

6.41 For our TAMRP value, we use a 7.0% estimate for the period until the commencement date when the main IMs were determined in October 2020 and a 7.5% TAMRP for the remainder of the pre-implementation period.[504]

6.42 Table 6.1 below outlines the parameters that are not fixed in the IMs and the corresponding vanilla and post-tax WACC estimates. In our draft decision we used Chorus' forecast WACC values for the six-month period to 1 January, which has now been updated for our final determination.

6.43 Figure 6.1 below displays the changes in the five-year risk-free rate, seven-year debt premium and vanilla WACC over the pre-implementation period. The main driver behind the reducing vanilla WACC is the risk-free rate, as most other WACC parameters remain relatively constant (or have been fixed in the IMs) over the period.

[504] For the financial loss year in which the TAMRP changes from 7.0% to 7.5% (loss year from 1 July 2020 to 30 June 2021) the TAMRP will be a weighted average between 7.0% and 7.5% from when the main IMs are determined, that is, the commencement date. This gives a weighted average of 7.36% for the financial loss year.

Figure 6.1 WACC variables over the pre-implementation period

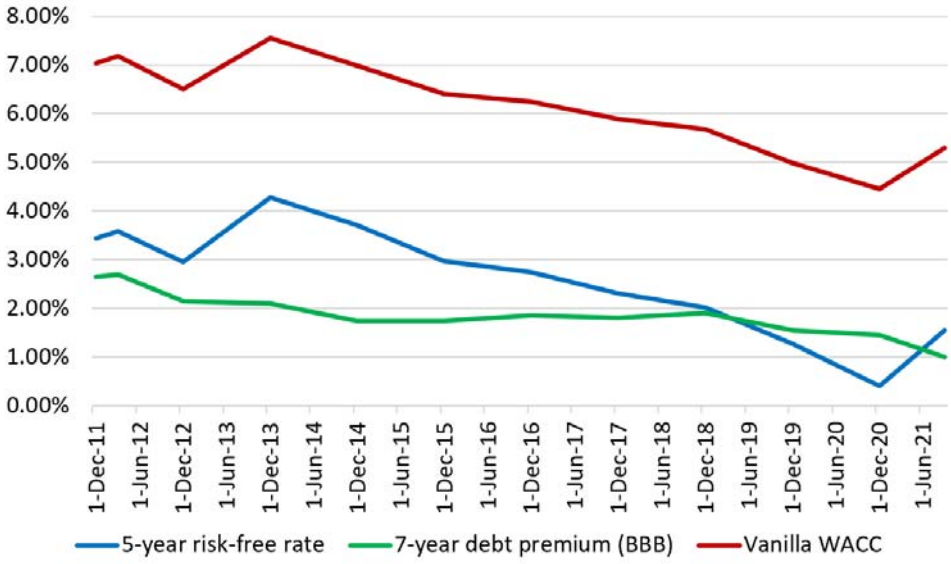

Table 6.1 Overview of WACC parameters[505, 506]

Financial loss year	5-year risk-free rate	7-year debt premium (BBB)	TAMRP	Vanilla WACC	Post-tax WACC
Prior to 1 Dec 2011	3.44%	2.65%	7.0%	7.05%	6.54%
7 months to 30 Jun 2012	3.59%	2.70%	7.0%	7.18%	6.66%
Full year to 30 Jun 2013	2.95%	2.15%	7.0%	6.51%	6.08%
Full year to 30 Jun 2014	4.28%	2.10%	7.0%	7.56%	7.03%
Full year to 30 Jun 2015	3.71%	1.75%	7.0%	7.00%	6.55%
Full year to 30 Jun 2016	2.97%	1.75%	7.0%	6.40%	6.01%
Full year to30 Jun 2017	2.75%	1.85%	7.0%	6.26%	5.87%
Full year to30 Jun 2018	2.31%	1.80%	7.0%	5.89%	5.55%
Full year to 30 Jun 2019	2.02%	1.90%	7.0%	5.69%	5.36%
Full year to 30 Jun 2020	1.27%	1.55%	7.0%	4.99%	4.75%
Full year to 30 Jun 2021	0.41%	1.45%	7.4%	4.45%	4.29%
6 months to 1 Jan 2022	1.55%	1.00%	7.5%	5.30%	5.08%

Comparisons with Chorus' estimates

6.44 Chorus has also undertaken calculations of the WACC applying for the valuing the FLA. Table 6.2 below outlines our vanilla WACC estimates alongside Chorus' vanilla WACC estimates.[507]

[505] Note that the risk-free rates (and TAMRP for the full year to 30 June 2021) displayed in this table are shown to two decimal places, but the unrounded values are used in the determination of the vanilla and post-tax WACC estimates.

[506] Note that we have updated the WACC estimate for the financial loss year applying prior to 1 Dec 2011 from our draft decision for a minor timing error.

[507] Note that Chorus' WACC estimations and forecasts were received in May 2021. Therefore, Chorus' WACC estimate for the 6 months to 1 Jan 2022 were made in advance of the data becoming available.

Table 6.2 Vanilla WACC comparisons

Loss year	Commission estimates	Chorus estimates
Prior to 1 Dec 2011	7.05%	7.00%
7 months to 30 Jun 2012	7.18%	7.19%
Full year to 30 Jun 2013	6.51%	6.53%
Full year to 30 Jun 2014	7.56%	7.59%
Full year to 30 Jun 2015	7.00%	7.01%
Full year to 30 Jun 2016	6.40%	6.41%
Full year to 30 Jun 2017	6.26%	6.24%
Full year to 30 Jun 2018	5.89%	5.88%
Full year to 30 Jun 2019	5.69%	5.68%
Full year to 30 Jun 2020	4.99%	4.97%
Full year to 30 Jun 2021	4.45%	4.46%
6 months to 1 Jan 2022	5.30%	4.81%

Our final decision is to apply our vanilla WACC estimates

6.45 We have applied the above Commission vanilla WACC estimates as the relevant DCF compounding rates for the calculation of the FLA for the transitional initial PQ RAB. The same WACC estimates will be applied to the calculation of the FLA for the final initial PQ RAB when we make that decision in 2022.

6.46 We have decided to use our WACC estimates rather than Chorus' because it is our standard practice to use our calculations of the WACC in our regulatory decisions rather than the regulated service provider's because we can verify the calculations.

Inability to comply with specific requirements of the asset valuation IM

High-level approach

6.47 Chorus advised in its submissions and in response to s 221 notices that, in several instances, it is unable to comply with the asset valuation IM as drafted. This is due to limitations in its information, the way in which it has recorded information in its accounting systems and the design of its IAV model.

6.48 As a general solution to these issues, we have added clause B1.1.14 to the IMs to introduce an "alternative methodologies for determining financial losses" provision. Under clause B1.1.14(3) the Commission may adopt or approve the use of an alternative methodology it if is satisfied that it results in substantially the same effect and does not detract from promoting the purpose of Part 6 and, where relevant, the promotion of workable competition in telecommunications markets for the long-term benefit of end-users of telecommunication services.

6.49 The approach is modelled on similar provisions in the Part 4 IMs for customised price-quality paths.[508]

6.50 The remainder of this section deals with the substantive issues of non-compliance with the IMs, and why we consider it appropriate to approve them under the "alternative methodologies for determining financial losses" provision. In doing this, we have considered:

6.50.1 whether it is possible for Chorus to apply the IMs as written, given information limitations (for example, whether data extracted from Chorus' systems can be aligned with inputs required by the IMs);

6.50.2 where Chorus cannot apply the IMs as written, whether the alternative method of calculation does not detract from promoting the purpose of Part 6 and where relevant, the promotion of workable competition, as per clause B1.1.14(2);

6.50.3 whether Chorus' proposed treatment produces either an equivalent effect or substantially the same effect as would result from applying the IMs as drafted, as per clause B1.1.14(3)(a); and

6.50.4 the quantum of any difference between the outcomes under the proposed treatment and the outcomes that would result from strictly applying the IMs.

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[508] *Electricity Distribution Services Input Methodologies Determination 2012* [2012] NZCC 26, clause 5.3.26.

6.51 The instances in which Chorus is unable to comply with the IMs are as follows:

6.51.1 Capital contributions are not matched to individual assets;

6.51.2 Use of NBV adjustments;

6.51.3 VCA not recorded as a separate asset;[509] and

6.51.4 Calculation of UFB cost allocation adjustment cash flow.

Capital contributions not matched to individual assets

Description of non-compliance

6.52 Clause B1.1.3(1) of the IMs requires the value of a commissioned asset with a commissioning date prior to the implementation date to be the cost as of the commissioning date, net of capital contributions.[510]

6.53 In its general-purpose financial statements, Chorus has recognised capital contributions as income in accordance with generally accepted accounting practice (**GAAP**).

6.54 There is no link between Chorus' fixed asset register (**FAR**) and its record of capital contributions information that would enable capital contributions to be traced to the individual assets in respect of which they were collected. Chorus is therefore unable to apply the IM as written to derive the VCA. This was a matter discussed in our main IMs final reasons paper and we undertook to work flexibly with Chorus to implement a practical approach to accommodate any compliance difficulties.[511]

6.55 The only submission on this matter, in response to the draft decision, was by Chorus who agreed with our draft decision that we accept Chorus' calculation.[512]

Analysis

6.56 In its IAV model, Chorus emulates the IM treatment of capital contributions through the creation of "capital contribution asset classes" made up of negative capex, equalling the value of capital contributions income, and negative depreciation.

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[509] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause B1.1.3(4)(b) of Schedule B.

[510] Ibid, clause B1.1.3(1).

[511] Commerce Commission "Fibre input methodologies: Main final decisions – reasons paper" (13 October 2020), paragraph 3.167.

[512] Chorus, "Submission on fibre PQID initial RAB and IM amendments draft decision" (16 September 2021), page 52.

6.57 Although this is applied at an asset class rather than an individual asset level, it is conceptually equivalent. In fact, the modelling used in Chorus' BBM IAV model applies all the IMs on an asset class basis, rather than summing the calculations at an individual asset level, which would not be workable given the large numbers of assets within each class.[513]

6.58 For the values of the allocated negative capex and the depreciation charge to be actually equivalent to the value of commissioned asset as set out in the IMs, the asset classes to which the capital contributions are attributed must include the assets likely to have generated the various types of capital contribution. Moreover, the actual equivalence of the depreciation charge requires the life of the asset class to be equivalent to the weighted lives of the assets within that class that are likely to have attracted capital contributions.

6.59 The model transforms the input into modelled (negative) capital expenditure on four "capital contribution" asset classes (below), in each of the four geographies (Won, Lost, Non, National) for each financial loss year for which we have data on the capital contributions. The capital contribution asset classes in the model are as follows:

6.59.1 CC Copper;

6.59.2 CC Fibre UFB A-D;

6.59.3 CC Fibre UFB E; and

6.59.4 CC Shared.

6.60 Each of these annual capital expenditures is modelled as falling within a particular timeframe, according to the financial loss year in which it occurs (eg, post-2012 actual or post-2012 forecast).

6.61 As is indicated by their names, these capital contributions asset classes are allocated differently between UFB FFLAS and services that are not UFB FFLAS.[514]

6.62 The capital contributions are collated from the following types:

6.62.1 Network relocations resulting from Roadworks activity;

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[513] The number of array calculations required means it is necessary to aggregate individual assets into a limited number of asset classes. See paragraphs 6.92 to 6.93 below for further explanation.

[514] Please note, Chorus/Analysys Mason uses the term 'non-FFLAS' to refer to 'services that are not regulated FFLAS' and 'services that are not UFB FFLAS'. Please refer to paragraph 2.33.3 above.

6.62.2 Reticulation for new property development;

6.62.3 Access seekers next generation access (NGA) Provisioning Ancillary Charges (these are not considered further as capital contributions);

6.62.4 Other Persons (Building owners) NGA Provisioning Ancillary Charges (these are not considered further as capital contributions);

6.62.5 NZD20M NSI funding;[515]

6.62.6 Access seeker HSNS (High Speed Network Service) Installations; and

6.62.7 Access seeker Fibre Installation Fees (Direct Fibre Access Service (DFAS), Intra-Candidate Areas Backhaul Service (ICABS)).

6.63 For each of these types, there is a set of flags controlling how they are to be treated (eg, capitalised; capitalised for tax purposes; or treated as one of two different types of revenue for tax purposes). The treatment of capital contributions for tax purposes is consistent with the tax IM requirement to apply tax rules.[516]

6.64 The closing unallocated value of capital contributions is $288m.

6.65 Various allocation factors are then used for allocating the capital contributions of different kinds between the different geographies and capital contribution asset types (ie, providing weightings for each available combination of capital contribution asset class and geography (4x4)). The sum of the weightings within each allocation factor is equal to one.

6.66 At an aggregate level, if the weighted average asset life over which the capital contributions is depreciated is less than that of the underlying UFB asset classes, this will give rise to an increase in the UFB closing asset value relative to applying the correct asset life. This is because capital contributions depreciation is negative. This increase is exactly offset by a decrease in the FLA, being the "present value of total net cash flows" plus the "UFB asset base closing asset value at implementation date" plus the "present value benefit of Crown financing".

[515] Non-standard installation funding, see the definition of capital contributions, *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021.

[516] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 3.4.1.

6.67 As a result, the effect of any depreciation difference arising from the application of a different life for the capital contributions is simply a value transfer between UFB assets and the FLA. As such, it does not matter from an overall valuation perspective if the life of the capital contributions asset class does not match the lives of the individual asset classes that would likely have attracted the capital contributions.

6.68 However, it does affect the valuation in an absolute sense if the capital contributions asset is incorrectly allocated between copper, shared and FFLAS asset classes. From discussion with Analysys Mason, we have confirmed that the capital contributions have been allocated consistent with the book value of the underlying UFB assets that are most likely to have attracted the capital contributions by type. For example, the capital contributions relating to network relocations and reticulation for new property development have been allocated to Fibre layer 1 infrastructure (cables, poles, trenches) using the same allocation factors for the four asset classes and four geographies.

6.69 We consider this allocation approach produces substantially the same effect as applying the IMs, without detracting from the promotion of either the purpose of Part 6 or workable competition in telecommunications markets for the long-term benefit of end-users of telecommunications services.

Use of NBV adjustments

Description of non-compliance

6.70 Chorus' accounts record transfers (between asset classes) and other NBV adjustments (for example lease adjustments arising from changes in lease liabilities under NZ IFRS 16), in addition to disposals. To make things more complicated, in Chorus' Fixed Asset Register in some years, certain transfers have been implemented via the "writeups" field rather than the "transfers" field. This means that in these particular years, the sum total of transfers is not zero.

6.71 The definition in the IMs of "UFB value of net commissioned assets cash flow" does not provide for transfers and other adjustments. It follows the definition of "fibre asset" in s 177 of the Act by concentrating on the cost incurred in constructing or acquiring the UFB asset, net of capital contributions, and adjusted for depreciation and impairment losses at the commissioning date.

6.72 The definition formula, except for the 2012 year which includes the sum of UFB opening asset values as at 1 December 2011, is expressed as "sum of value of commissioned assets – sum of value of disposed assets"[517] Chorus' BBM IAV model includes disposals as a negative NBV adjustment. The NBV adjustment treatment is also applied to the value of commissioned assets (VCA) used for tax purposes in the Chorus IAV model.

6.73 If Chorus does not allow for the NBV adjustments, reconciliation differences arise between the IAV model and the FAR up to the end of FY20. The model would in effect be estimating depreciation in all loss years and calculating NBV/Tax NBV to derive the tax asset values rather than applying the accounting closing NBV/tax closing NBV ratio. This is because Chorus could not rely on any of the FAR metrics other than the VCA beyond the start of FY12. Moreover, it would be practically difficult to remove the NBV adjustments from the IAV model.

6.74 The only submission on this matter, in response to the draft decision, was from Chorus which agreed with our draft decision that we accept Chorus' calculation.[518]

Analysis

6.75 The allocated values of the NBV adjustments are set out in set out in Table 6.3 below.

Table 6.3 NBV adjustments by year

2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
	[redacted]									

6.76 The large values in 2018 and 2020 arise from adjustments in respect of pole lease assets ($[redacted]m in 2018 and [redacted]m in 2020). Excluding these, the net value of the adjustments over the 9-year period is -$[redacted] and is not considered to be material.

6.77 Chorus has explained that the large 2018 value relates to the initial capitalisation of pole leases under NZ IFRS 16. They were treated as a write-up adjustment rather than VCA, as there was no capital expenditure involved.

[517] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause B1.1.2(4)(d)(i) and (ii) of Schedule B.

[518] Chorus "Submission on fibre PQID initial RAB and IM amendments draft decision" (16 September 2021), page 52.

6.78 The 2020 NBV adjustments were due to a change in asset class in the FAR for pole leases, from "Right of Use" to "Pole Operating Lease." This was done via retirement/acquisition entries in the FAR, as this is how Chorus' SAP (accounting system) is configured to process such a change.

6.79 We consider these explanations to be reasonable. The adjustments would give rise to values that are economically equivalent to those resulting from strict application of the IMs.

VCA not recorded as a separate asset

Description of non-compliance

6.80 Clause B1.1.2(9)(g) of Schedule B of the IMs define "UFB unallocated closing asset value", in respect of a UFB asset and a financial loss year, as UFB unallocated opening value (with disposed assets valued at nil) less depreciation. There is no "value of commissioned assets" term in this formula, as commissioned assets in the year of commissioning for new assets are dealt with by clause B1.1.3(1) of Schedule B (the value of which is then carried forward through the unallocated opening value).

6.81 Clause B1.1.3(4)(b) of Schedule B requires expenditure in respect of a UFB asset already commissioned to be treated as relating to a separate UFB asset. This does not always happen in Chorus' FAR, so, given that the IAV model follows the FAR for reconciliation purposes, it does not happen in the IAV model.

6.82 The fact that the IAV model asset classes are in fact aggregations of assets means the model inevitably has asset classes with VCA in multiple years (for example, an aggregated asset class such as Post2012Actual L1 Duct UFBA-D Won with VCA in each year).

6.83 Because the IAV model deals with aggregates, (and even if it did not because, as noted above, the FAR sometimes allows VCA to be added to existing assets), in principle there is VCA in all years at an asset class level and disposals can be partial disposals.

6.84 The closing value calculation therefore needs to be implemented as the unallocated opening value plus VCA plus NBV adjustments (which includes disposals or partial disposals if any) less depreciation. Again, the same applies to the treatment of the tax asset NBV –the net effect is to reproduce the accounting closing NBV/tax closing NBV.

6.85 The only submission on this matter, in response to the draft decision, was from Chorus which agreed with our draft decision that we accept Chorus' calculation.[519]

Analysis

6.86 Because of the large number of assets in the Chorus FAR, it is practically necessary to aggregate individual assets into asset classes.[520]

6.87 The number of asset classes (93) in the IAV model has been limited by the need to limit the number of array calculations, as after applying geographic boundary (4) and financial year boundary (4) allocations, the number of array calculations is already around 1500.

6.88 This means that, given the way the modelling has been implemented, there is no practical way to avoid having asset classes with commissioned assets across multiple years.

6.89 This does not affect the calculation of depreciation as the impact of VCA in multiple years on depreciation calculations is indirect. The model follows the FAR for depreciation (and tax depreciation) for all FAR assets in years to FY20. For all asset classes in FY21 and beyond, and for all years for any asset classes not in the FAR, the model uses calculated depreciation values based on the in-year VCA for new assets and the closing book value in the most recent year of "actual" data from the FAR (ie, FY20) depreciated over the estimated remaining lifetime (for old assets).

6.90 We consider the result of the calculation of UFB unallocated closing asset value produces substantially the same effect as applying the IMs, without detracting from the promotion of either the purpose of Part 6 or workable competition.

Calculation of UFB cost allocation adjustment cash flow

Description of non-compliance

6.91 The DCF calculation includes a cash flow called the "UFB cost allocation adjustment cash flow". This cash flow represents the periodic increase in the value of the UFB asset base as a result of allocating assets to UFB FFLAS. For example, as end-user demand shifts over time from copper to UFB FFLAS, the proportion of costs allocated to FFLAS increases.

[519] Chorus "Submission on fibre PQID initial RAB and IM amendments draft decision" (16 September 2021), page 52.

[520] The approach to how this is modelled in practice is discussed in Chapter 5 at paragraphs 5.61-5.72.

6.92 The IMs as amended require Chorus to use an "opening cost allocator value" and a "closing cost allocator value" in the calculation of the "cost allocation adjustment cash flow".[521] The "UFB cost allocation adjustment cash flow" is equal to the sum of "UFB unallocated closing asset values" multiplied by the difference between the closing and opening cost allocator values.

6.93 Chorus has proposed calculating the "UFB cost allocation adjustment cash flow" as the difference between the opening RAB for the subsequent financial period, and the closing RAB for the current financial period. In this calculation, Chorus uses an opening cost allocator value, but does not use a closing cost allocator value.

6.94 The only submission on this matter, in response to the draft decision, was from Chorus which agreed with our draft decision that we accept Chorus' calculation.[522] In that submission, Chorus clarified that the calculation is done using asset class allocation factors.

Analysis

6.95 The method proposed by Chorus results in a zero value of the "UFB cost allocation adjustment cash flow" for the final financial loss year (ie, 1 July 2021 – 31 December 2021 (defined in the IMs as "financial loss year 2022")), because the opening cost allocator value is outside of the pre-implementation period (ie, it is in the first year of PQP1).

6.96 If Chorus were to apply the allocators to asset classes that make up the UFB closing asset value for a period rather than the UFB opening asset value of the subsequent period, the UFB cost allocation cash flows would be the same in all periods, except for the final financial loss year (ie, financial loss year 2022). However, there would be an immaterial change in the value of the FLA, as can be seen from the following example.

6.97 If the "UFB cost allocation cash flow" for financial loss year 2022 was $15m, which is half of the amount in the previous full year period, rather than zero, the FLA would change from $1,391.220 million to $1,391.414 million. The reason for the small change is that the cash flow is a mid-year value which would be compounded to the implementation date. However, the UFB closing asset value is a negative adjustment in the discounted cash flow calculation and is not compounded.

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[521] *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause Clause B1.1.2(4) was amended to correct an error in the formula, as explained at paragraphs 6.118 to 6.136

[522] Chorus "Submission on fibre PQID initial RAB and IM amendments draft decision (16 September 2021), page 50.

6.98 Having analysed Chorus' calculation of the "UFB cost allocation adjustment cash flow", we have determined that it produces substantially the same effect as would be produced were the amended IM compliant calculation to be applied, and as such, end-users would not be worse off.

6.99 The reason we do not consider it appropriate to require Chorus to recalculate the "UFB cost allocation adjustment cash flow" in line with our amended IM formula is that it would require a substantial change to the spreadsheet model that is used for the calculation of the FLA.

6.100 Overall, we consider Chorus' calculation of the "UFB cost allocation adjustment cash flow" produces substantially the same effect as applying the IMs, without detracting from the promotion of either the purpose of Part 6 or workable competition.

6.101 The values of the UFB cost allocation adjustment cash flow for the calculation of the FLA are provided in Table 6.4.

Table 6.4 Values of UFB cost allocation adjustment cash flow for the FLA model ($m)

	2012[523]	2013	2014	2015	2016	2017	2018	2018	2019	2020	2021[524]
UFB cost allocation adjustment cash flow	4	7	14	24	31	39	53	54	47	30	0

Source: Commerce Commission FLA demonstration model

[523] Seven months from 1 December 2011 to 30 June 2012.

[524] Six months to 31 December 2021.

Attachment A Debt premium estimates applied in the vanilla WACC

A1 This Attachment outlines the corporate bonds used in the estimation of the debt premium values for the financial loss year periods. The debt premium is the parameter where we must apply judgement in determining an estimate. The tables below demonstrate our estimate of the debt premiums for a benchmark bond based on the corporate bond observations and the Nelson-Siegel-Svensson (NSS) estimate.

Table A1 Debt premium estimates for period prior to 1 Dec 2011

Details of benchmark bond

	Sector	100% Govt owned	Bond credit rating	Remaining term to maturity (years)	Debt premium (%)
Benchmark bond	Fibre	No	BBB	7.0	2.65

Debt premiums ordered by bond categories specified in the IMs

Bond category	Issuer	Sector	100% Govt owned	Bond credit rating	Remaining term to maturity (years)	Debt premium (%)	Notes reference
c	CONTACT ENERGY LTD	Other	No	BBB	5.4	2.37	*1*
c	POWERCO LIMITED	Other	No	BBB	3.6	2.18	*2*
e	AUCKLAND INTL AIRPORT	Airport	No	A-	5.0	1.87	*3*
e	FONTERRA COOPERATIVE G	Other	No	A-	4.3	1.48	*4*
e	GENESIS ENERGY LTD	Other	No	BBB+	7.0	1.60	*5*
e	MERCURY NZ LTD	Other	No	BBB+	7.0	1.68	*6*
e	MERIDIAN ENERGY LIMITE	Other	No	BBB+	5.3	1.92	*7*
e	SPARK FINANCE LTD	Telco	No	A-	4.3	2.19	*8*
f	TRANSPOWER NEW ZEALAND	Other	Yes	AA-	7.0	1.54	*9*
Nelson-Sigel-Svensson (NSS) estimate					7.0	2.67	

Notes on bonds analysed

1 CENNZ 7.855 04/13/17
2 PWCNZ 6.53 06/29/15
3 AIANZ 8 11/15/16
4 FCGNZ 6.83 03/04/16
5 GENEPO 7.65 03/15/16; GENEPO 8.3 06/23/20
6 MCYNZ 7.55 10/12/16; MCYNZ 8.21 02/11/20
7 MERINZ 7.55 03/16/17
8 SPKNZ 7.04 03/22/16
9 TPNZ 6.595 02/15/17; TPNZ 7.19 11/12/19

Table A2 Debt premium estimates for 6 months to 30 Jun 2012

Details of benchmark bond

	Sector	100% Govt owned	Bond credit rating	Remaining term to maturity (years)	Debt premium (%)
Benchmark bond	Fibre	No	BBB	7.0	2.70

Debt premiums ordered by bond categories specified in the IMs

Bond category	Issuer	Sector	100% Govt owned	Bond credit rating	Remaining term to maturity (years)	Debt premium (%)	Notes reference
c	CONTACT ENERGY LTD	Other	No	BBB	5.1	2.67	*1*
c	POWERCO LIMITED	Other	No	BBB	3.3	2.40	*2*
e	AUCKLAND INTL AIRPORT	Airport	No	A-	5.6	1.91	*3*
e	FONTERRA COOPERATIVE G	Other	No	A-	4.0	1.69	*4*
e	GENESIS ENERGY LTD	Other	No	BBB+	7.0	1.72	*5*
e	MERCURY NZ LTD	Other	No	BBB+	7.0	2.10	*6*
e	MERIDIAN ENERGY LIMITE	Other	No	BBB+	5.0	2.21	*7*
e	SPARK FINANCE LTD	Telco	No	A-	4.0	2.10	*8*
f	TRANSPOWER NEW ZEALAND	Other	Yes	AA-	7.0	1.70	*9*
Nelson-Sigel-Svensson (NSS) estimate					7.0	2.73	

Notes on bonds analysed

1 CENNZ 7.855 04/13/17
2 PWCNZ 6.53 06/29/15
3 AIANZ 5.47 10/17/17
4 FCGNZ 6.83 03/04/16
5 GENEPO 7.65 03/15/16; GENEPO 8.3 06/23/20
6 MCYNZ 7.55 10/12/16; MCYNZ 8.21 02/11/20
7 MERINZ 7.55 03/16/17
8 SPKNZ 7.04 03/22/16
9 TPNZ 5.14 11/30/18; TPNZ 7.19 11/12/19

Table A3 Debt premium estimates for Full year to 30 Jun 2013

Details of benchmark bond

	Sector	100% Govt owned	Bond credit rating	Remaining term to maturity (years)	Debt premium (%)
Benchmark bond	Fibre	No	BBB	7.0	2.15

Debt premiums ordered by bond categories specified in the IMs

Bond category	Issuer	Sector	100% Govt owned	Bond credit rating	Remaining term to maturity (years)	Debt premium (%)	Notes reference
c	CONTACT ENERGY LTD	Other	No	BBB	4.3	1.99	*1*
c	POWERCO LIMITED	Other	No	BBB	2.5	1.87	*2*
e	AUCKLAND INTL AIRPORT	Airport	No	A-	7.0	1.61	*3*
e	FONTERRA COOPERATIVE G	Other	No	A-	3.2	1.37	*4*
e	GENESIS ENERGY LTD	Other	No	BBB+	7.0	1.61	*5*
e	MERCURY NZ LTD	Other	No	BBB+	7.0	2.04	*6*
e	MERIDIAN ENERGY LIMITE	Other	No	BBB+	4.3	1.76	*7*
e	SPARK FINANCE LTD	Telco	No	A-	6.9	1.84	*8*
f	CHRISTCHURCH INTL AIRP	Airport	Yes	A-	7.0	1.90	*9*
f	TRANSPOWER NEW ZEALAND	Other	Yes	AA-	7.0	1.56	*10*
Nelson-Sigel-Svensson (NSS) estimate					7.0	2.21	

Notes on bonds analysed

1 CENNZ 7.855 04/13/17
2 PWCNZ 6.53 06/29/15
3 AIANZ 4.73 12/13/19
4 FCGNZ 6.83 03/04/16
5 GENEPO 7.65 03/15/16; GENEPO 8.3 06/23/20
6 MCYNZ 7.55 10/12/16; MCYNZ 8.21 02/11/20
7 MERINZ 7.55 03/16/17
8 SPKNZ 5 1/4 10/25/19
9 CHRINT 5.15 12/06/19
10 TPNZ 7.19 11/12/19; TPNZ 6.95

Table A4 Debt premium estimates for Full year to 30 Jun 2014

Details of benchmark bond

	Sector	100% Govt owned	Bond credit rating	Remaining term to maturity (years)	Debt premium (%)
Benchmark bond	Fibre	No	BBB	7.0	2.10

Debt premiums ordered by bond categories specified in the IMs

Bond category	Issuer	Sector	100% Govt owned	Bond credit rating	Remaining term to maturity (years)	Debt premium (%)	Notes reference
c	CONTACT ENERGY LTD	Other	No	BBB	6.4	1.97	*1*
c	POWERCO LIMITED	Other	No	BBB	1.5	1.49	*2*
e	AUCKLAND INTL AIRPORT	Airport	No	A-	6.0	1.46	*3*
e	FONTERRA COOPERATIVE G	Other	No	A-	2.2	0.91	*4*
e	GENESIS ENERGY LTD	Other	No	BBB+	7.0	2.03	*5*
e	MERCURY NZ LTD	Other	No	BBB+	7.0	1.98	*6*
e	MERIDIAN ENERGY LIMITE	Other	No	BBB+	3.3	1.48	*7*
e	SPARK FINANCE LTD	Telco	No	A-	5.9	1.73	*8*
e	WELLINGTON INTL AIRPOR	Airport	No	BBB+	6.5	1.89	*9*
f	CHRISTCHURCH INTL AIRP	Airport	Yes	BBB+	7.0	1.79	*10*
f	TRANSPOWER NEW ZEALAND	Other	Yes	AA-	7.0	1.36	*11*
Nelson-Sigel-Svensson (NSS) estimate					7.0	2.20	

Notes on bonds analysed

1 CENNZ 5.277 05/27/20
2 PWCNZ 6.53 06/29/15
3 AIANZ 4.73 12/13/19
4 FCGNZ 6.83 03/04/16
5 GENEPO 8.3 06/23/20; GENEPO 5.81 03/08/23
6 MCYNZ 8.21 02/11/20; MCYNZ 5.793 03/06/23
7 MERINZ 7.55 03/16/17
8 SPKNZ 5 1/4 10/25/19
9 WIANZ 5.27 06/11/20
10 CHRINT 5.15 12/06/19; CHRINT
11 TPNZ 6.95 06/10/20; TPNZ 5.448 03/15/23

Table A5 Debt premium estimates for Full year to 30 Jun 2015

Details of benchmark bond

	Sector	100% Govt owned	Bond credit rating	Remaining term to maturity (years)	Debt premium (%)
Benchmark bond	Fibre	No	BBB	7.0	1.75

Debt premiums ordered by bond categories specified in the IMs

Bond category	Issuer	Sector	100% Govt owned	Bond credit rating	Remaining term to maturity (years)	Debt premium (%)	Notes reference
c	CONTACT ENERGY LTD	Other	No	BBB	5.5	1.53	*1*
c	POWERCO LIMITED	Other	No	BBB	0.5	0.94	*2*
e	AUCKLAND INTL AIRPORT	Airport	No	A-	6.5	1.20	*3*
e	FONTERRA COOPERATIVE G	Other	No	A-	7.0	1.24	*4*
e	GENESIS ENERGY LTD	Other	No	BBB+	7.0	1.63	*5*
e	MERCURY NZ LTD	Other	No	BBB+	7.0	1.77	*6*
e	MERIDIAN ENERGY LIMITE	Other	No	BBB+	2.3	1.06	*7*
e	SPARK FINANCE LTD	Telco	No	A-	4.9	1.27	*8*
e	WELLINGTON INTL AIRPOR	Airport	No	BBB+	5.5	1.65	*9*
f	CHRISTCHURCH INTL AIRP	Airport	Yes	BBB+	6.8	1.59	*10*
f	TRANSPOWER NEW ZEALAND	Other	Yes	AA-	7.0	1.07	*11*
Nelson-Sigel-Svensson (NSS) estimate					7.0	1.79	

Notes on bonds analysed

1 CENNZ 5.277 05/27/20
2 PWCNZ 6.53 06/29/15
3 AIANZ 5.52 05/28/21
4 FCGNZ 5.52 02/25/20; FCGNZ 5.9 02/25/22
5 GENEPO 8.3 06/23/20; GENEPO 5.81 03/08/23
6 MCYNZ 8.21 02/11/20; MCYNZ 5.793 03/06/23
7 MERINZ 7.55 03/16/17
8 SPKNZ 5 1/4 10/25/19
9 WIANZ 5.27 06/11/20
10 CHRINT 6 1/4 10/04/21
11 TPNZ 6.95 06/10/20; TPNZ 5.448 03/15/23

Table A6 Debt premium estimates for Full year to 30 Jun 2016

Details of benchmark bond

	Sector	100% Govt owned	Bond credit rating	Remaining term to maturity (years)	Debt premium (%)
Benchmark bond	Fibre	No	BBB	7.0	1.75

Debt premiums ordered by bond categories specified in the IMs

Bond category	Issuer	Sector	100% Govt owned	Bond credit rating	Remaining term to maturity (years)	Debt premium (%)	Notes reference
c	CONTACT ENERGY LTD	Other	No	BBB	5.9	1.37	*1*
e	AUCKLAND INTL AIRPORT	Airport	No	A-	6.9	1.32	*2*
e	FONTERRA COOPERATIVE G	Other	No	A-	7.0	1.46	*3*
e	GENESIS ENERGY LTD	Other	No	BBB+	7.0	1.67	*4*
e	MERCURY NZ LTD	Other	No	BBB+	7.0	1.73	*5*
e	SPARK FINANCE LTD	Telco	No	A-	7.2	1.49	*6*
e	WELLINGTON INTL AIRPOR	Airport	No	BBB+	4.5	1.34	*7*
f	CHRISTCHURCH INTL AIRP	Airport	Yes	BBB+	5.8	1.51	*8*
f	TRANSPOWER NEW ZEALAND	Other	Yes	AA-	7.0	1.13	*9*
Nelson-Sigel-Svensson (NSS) estimate					7.0	1.79	

Notes on bonds analysed

1 CENNZ 4.4 11/15/21
2 AIANZ 4.28 11/09/22
3 FCGNZ 5.9 02/25/22; FCGNZ 5.08 06/19/25
4 GENEPO 8.3 06/23/20; GENEPO 5.81 03/08/23
5 MCYNZ 8.21 02/11/20; MCYNZ 5.793 03/06/23
6 SPKNZ 4.51 03/10/23
7 WIANZ 5.27 06/11/20
8 CHRINT 6 1/4 10/04/21
9 TPNZ 4.3 06/30/22; TPNZ 5.448 03/15/23

Table A7 Debt premium estimates for Full year to 30 Jun 2017

Details of benchmark bond

	Sector	100% Govt owned	Bond credit rating	Remaining term to maturity (years)	Debt premium (%)
Benchmark bond	Fibre	No	BBB	7.0	1.85

Debt premiums ordered by bond categories specified in the IMs

Bond category	Issuer	Sector	100% Govt owned	Bond credit rating	Remaining term to maturity (years)	Debt premium (%)	Notes reference
a	CHORUS LTD	Fibre	No	BBB	4.4	1.81	*1*
c	CONTACT ENERGY LTD	Other	No	BBB	4.9	1.78	*2*
e	AUCKLAND INTL AIRPORT	Airport	No	A-	6.9	1.51	*3*
e	FONTERRA COOPERATIVE G	Other	No	A-	7.0	1.87	*4*
e	GENESIS ENERGY LTD	Other	No	BBB+	6.2	1.88	*5*
e	MERCURY NZ LTD	Other	No	BBB+	6.2	1.86	*6*
e	MERIDIAN ENERGY LIMITE	Other	No	BBB+	6.2	1.71	*7*
e	SPARK FINANCE LTD	Telco	No	A-	7.0	1.57	*8*
e	WELLINGTON INTL AIRPOR	Airport	No	BBB+	3.5	1.58	*9*
f	CHRISTCHURCH INTL AIRP	Airport	Yes	BBB+	4.8	1.72	*10*
f	TRANSPOWER NEW ZEALAND	Other	Yes	AA-	7.0	1.34	*11*
Nelson-Sigel-Svensson (NSS) estimate					7.0	1.80	

Notes on bonds analysed

1 CNUNZ 4.12 05/06/21
2 CENNZ 4.4 11/15/21
3 AIANZ 3.97 11/02/23
4 FCGNZ 4.42 03/07/23; FCGNZ 5.08 06/19/25
5 GENEPO 5.81 03/08/23
6 MCYNZ 5.793 03/06/23
7 MERINZ 4.53 03/14/23
8 SPKNZ 4.51 03/10/23; SPKNZ 3.94 09/07/26
9 WIANZ 5.27 06/11/20
10 CHRINT 6 1/4 10/04/21
11 TPNZ 5.448 03/15/23; TPNZ 5.893 03/15/28

Table A8 Debt premium estimates for Full year to 30 Jun 2018

Details of benchmark bond

	Sector	100% Govt owned	Bond credit rating	Remaining term to maturity (years)	Debt premium (%)	
Benchmark bond	Fibre	No	BBB	7.0	1.80	

Debt premiums ordered by bond categories specified in the IMs

Bond category	Issuer	Sector	100% Govt owned	Bond credit rating	Remaining term to maturity (years)	Debt premium (%)	Notes reference
a	CHORUS LTD	Fibre	No	BBB	3.4	1.62	*1*
c	CONTACT ENERGY LTD	Other	No	BBB	4.9	1.35	*2*
c	VECTOR LTD	EDB/GPB	No	BBB	6.2	1.93	*3*
c	WELLINGTON INTL AIRPOR	Airport	No	BBB	7.0	1.61	*4*
e	AUCKLAND INTL AIRPORT	Airport	No	A-	5.9	1.19	*5*
e	FONTERRA COOPERATIVE G	Other	No	A-	7.0	1.48	*6*
e	GENESIS ENERGY LTD	Other	No	BBB+	7.0	1.77	*7*
e	MERCURY NZ LTD	Other	No	BBB+	5.2	1.65	*8*
e	MERIDIAN ENERGY LIMITE	Other	No	BBB+	6.3	1.55	*9*
e	SPARK FINANCE LTD	Telco	No	A-	7.0	1.25	*10*
f	CHRISTCHURCH INTL AIRP	Airport	Yes	BBB+	7.0	1.55	*11*
f	TRANSPOWER NEW ZEALAND	Other	Yes	AA-	7.0	1.15	*12*
Nelson-Sigel-Svensson (NSS) estimate					7.0	1.78	

Notes on bonds analysed

1 CNUNZ 4.12 05/06/21
2 CENNZ 4.63 11/15/22
3 VCTNZ 4.996 03/14/24
4 WIANZ 5.27 06/11/20; WIANZ 5 06/16/25
5 AIANZ 3.97 11/02/23
6 FCGNZ 4.42 03/07/23; FCGNZ 5.08 06/19/25
7 GENEPO 5.81 03/08/23; GENEPO 5 04/03/25
8 MCYNZ 5.793 03/06/23
9 MERINZ 4.88 03/20/24
10 SPKNZ 4.51 03/10/23; SPKNZ 3.94 09/07/26
11 CHRINT 6 1/4 10/04/21; CHRINT 5.53 04/05/27
12 TPNZ 5.448 03/15/23; TPNZ 5.893 03/15/28

Table A9 Debt premium estimates for Full year to 30 Jun 2019

Details of benchmark bond

	Sector	100% Govt owned	Bond credit rating	Remaining term to maturity (years)	Debt premium (%)
Benchmark bond	Fibre	No	BBB	7.0	1.90

Debt premiums ordered by bond categories specified in the IMs

Bond category	Issuer	Sector	100% Govt owned	Bond credit rating	Remaining term to maturity (years)	Debt premium (%)	Notes reference
a	CHORUS LTD	Fibre	No	BBB	2.4	1.82	*1*
c	CONTACT ENERGY LTD	Other	No	BBB	3.9	1.45	*2*
c	VECTOR LTD	EDB/GPB	No	BBB	5.2	1.98	*3*
c	WELLINGTON INTL AIRPOR	Airport	No	BBB	6.5	1.71	*4*
e	AUCKLAND INTL AIRPORT	Airport	No	A-	5.8	1.34	*5*
e	FONTERRA COOPERATIVE G	Other	No	A-	6.9	1.75	*6*
e	GENESIS ENERGY LTD	Other	No	BBB+	6.3	1.89	*7*
e	MERCURY NZ LTD	Other	No	BBB+	4.2	1.65	*8*
e	MERIDIAN ENERGY LIMITE	Other	No	BBB+	6.5	1.65	*9*
e	SPARK FINANCE LTD	Telco	No	A-	7.0	1.47	*10*
f	CHRISTCHURCH INTL AIRP	Airport	Yes	BBB+	7.0	1.73	*11*
f	TRANSPOWER NEW ZEALAND	Other	Yes	AA-	7.0	1.28	*12*
Nelson-Sigel-Svensson (NSS) estimate					7.0	1.88	

Notes on bonds analysed

1 CNUNZ 4.12 05/06/21
2 CENNZ 4.63 11/15/22
3 VCTNZ 4.996 03/14/24
4 WIANZ 5 06/16/25
5 AIANZ 3.51 10/10/24
6 FCGNZ 4.15 11/14/25
7 GENEPO 5 04/03/25
8 MCYNZ 5.793 03/06/23
9 MERINZ 4.21 06/27/25
10 SPKNZ 3.37 03/07/24; SPKNZ 3.94 09/07/26
11 CHRINT 4.13 05/24/24; CHRINT 5.53 04/05/27
12 TPNZ 3.823 03/06/25; TPNZ 5.893 03/15/28

Table A10 Debt premium estimates for Full year to 30 Jun 2020

Details of benchmark bond

	Sector	100% Govt owned	Bond credit rating	Remaining term to maturity (years)	Debt premium (%)
Benchmark bond	Fibre	No	BBB	7.0	1.55

Debt premiums ordered by bond categories specified in the IMs

Bond category	Issuer	Sector	100% Govt owned	Bond credit rating	Remaining term to maturity (years)	Debt premium (%)	Notes reference
a	CHORUS LTD	Fibre	No	BBB	1.4	1.27	*1*
c	CONTACT ENERGY LTD	Other	No	BBB	4.7	1.37	*2*
c	VECTOR LTD	EDB/GPB	No	BBB	5.5	1.64	*3*
c	WELLINGTON INTL AIRPOR	Airport	No	BBB	5.5	1.35	*4*
e	AUCKLAND INTL AIRPORT	Airport	No	A-	4.8	0.96	*5*
e	FONTERRA COOPERATIVE G	Other	No	A-	5.9	1.58	*6*
e	GENESIS ENERGY LTD	Other	No	BBB+	5.3	1.51	*7*
e	MERCURY NZ LTD	Other	No	BBB+	3.2	1.32	*8*
e	MERIDIAN ENERGY LIMITE	Other	No	BBB+	5.5	1.28	*9*
e	SPARK FINANCE LTD	Telco	No	A-	6.7	1.11	*10*
f	CHRISTCHURCH INTL AIRP	Airport	Yes	BBB+	7.0	1.41	*11*
f	TRANSPOWER NEW ZEALAND	Other	Yes	AA-	7.0	0.92	*12*
Nelson-Sigel-Svensson (NSS) estimate					7.0	1.52	

Notes on bonds analysed

1 CNUNZ 4.12 05/06/21
2 CENNZ 3.55 08/15/24
3 VCTNZ 3.45 05/27/25
4 WIANZ 5 06/16/25
5 AIANZ 3.51 10/10/24
6 FCGNZ 4.15 11/14/25
7 GENEPO 5 04/03/25
8 MCYNZ 5.793 03/06/23
9 MERINZ 4.21 06/27/25
10 SPKNZ 3.94 09/07/26
11 CHRINT 4.13 05/24/24; CHRINT 5.53 04/05/27
12 TPNZ 1.735 09/04/25; TPNZ 5.893 03/15/28

Table A11 Debt premium estimates for Full year to 30 Jun 2021

Details of benchmark bond

	Sector	100% Govt owned	Bond credit rating	Remaining term to maturity (years)	Debt premium (%)	
Benchmark bond	Fibre	No	BBB	7.0	1.45	

Debt premiums ordered by bond categories specified in the IMs

Bond category	Issuer	Sector	100% Govt owned	Bond credit rating	Remaining term to maturity (years)	Debt premium (%)	Notes reference
a	CHORUS LTD	Fibre	No	BBB	7.0	1.41	*1*
c	CONTACT ENERGY LTD	Other	No	BBB	3.7	0.96	*2*
c	VECTOR LTD	EDB/GPB	No	BBB	5.8	1.41	*3*
c	WELLINGTON INTL AIRPOR	Airport	No	BBB	4.5	1.87	*4*
e	AUCKLAND INTL AIRPORT	Airport	No	A-	3.8	1.02	*5*
e	FONTERRA COOPERATIVE G	Other	No	A-	4.9	1.11	*6*
e	GENESIS ENERGY LTD	Other	No	BBB+	4.3	1.09	*7*
e	MERCURY NZ LTD	Other	No	BBB+	7.0	1.03	*8*
e	MERIDIAN ENERGY LIMITE	Other	No	BBB+	4.5	0.95	*9*
e	SPARK FINANCE LTD	Telco	No	A-	5.7	0.70	*10*
f	CHRISTCHURCH INTL AIRP	Airport	Yes	BBB+	6.3	2.04	*11*
f	TRANSPOWER NEW ZEALAND	Other	Yes	AA-	7.0	0.76	*12*
Nelson-Sigel-Svensson (NSS) estimate					7.0	1.49	

Notes on bonds analysed

1 CNUNZ 1.98 12/02/27; CNUNZ 4.12 05/06/21; CNUNZ 2.51 12/02/30
2 CENNZ 3.55 08/15/24
3 VCTNZ 1.575 10/06/26
4 WIANZ 5 06/16/25
5 AIANZ 3.51 10/10/24
6 FCGNZ 4.15 11/14/25
7 GENEPO 5 04/03/25
8 MCYNZ 1.56 09/14/27; MCYNZ 1.917 10/09/30
9 MERINZ 4.21 06/27/25
10 SPKNZ 3.94 09/07/26
11 CHRINT 5.53 04/05/27
12 TPNZ 1.735 09/04/25; TPNZ 5.893 03/15/28

Table A12 Debt premium estimates for 6 months to 31 December 2021

Details of benchmark bond

	Sector	100% Govt owned	Bond credit rating	Remaining term to maturity (years)	Debt premium (%)
Benchmark bond	Fibre	No	BBB	7.0	1.00

Debt premiums ordered by bond categories specified in the IMs

Bond category	Issuer	Sector	100% Govt owned	Bond credit rating	Remaining term to maturity (years)	Debt premium (%)	Notes reference
a	CHORUS LTD	Fibre	No	BBB	7.0	0.83	*1*
c	CONTACT ENERGY LTD	Other	No	BBB	2.9	0.73	*2*
c	VECTOR LTD	EDB/GPB	No	BBB	5.1	1.14	*3*
c	WELLINGTON INTL AIRPOR	Airport	No	BBB	3.8	1.27	*4*
e	AUCKLAND INTL AIRPORT	Airport	No	A-	3.1	0.84	*5*
e	FONTERRA COOPERATIVE G	Other	No	A-	4.2	0.91	*6*
e	GENESIS ENERGY LTD	Other	No	BBB+	3.6	1.08	*7*
e	MERCURY NZ LTD	Other	No	BBB+	7.0	1.02	*8*
e	MERIDIAN ENERGY LIMITE	Other	No	BBB+	3.8	0.86	*9*
e	SPARK FINANCE LTD	Telco	No	A-	5.0	0.74	*10*
f	CHRISTCHURCH INTL AIRP	Airport	Yes	BBB+	5.6	1.38	*11*
f	TRANSPOWER NEW ZEALAND	Other	Yes	AA	6.5	0.69	*12*
Nelson-Sigel-Svensson (NSS) estimate					7.0	1.12	

Notes on bonds analysed

1 CNUNZ 1.98 12/02/27; CNUNZ 2.51 12/02/30
2 CENNZ 3.55 08/15/24
3 VCTNZ 1.575 10/06/26
4 WIANZ 5 06/16/25
5 AIANZ 3.51 10/10/24
6 FCGNZ 4.15 11/14/25
7 GENEPO 5 04/03/25
8 MCYNZ 1.56 09/14/27; MCYNZ 1.917 10/09/30
9 MERINZ 4.21 06/27/25
10 SPKNZ 3.94 09/07/26
11 CHRINT 5.53 04/05/27
12 TPNZ 5.893 03/15/28

Attachment B Overview of Chorus' initial PQ RAB (IAV) model

B1 In this attachment, we provide an overview of Chorus' initial PQ RAB model, which Chorus submitted to us on 26 March 2021. Public versions of Chorus' initial PQ RAB model and model documentation were published on our website on 30 April 2021.

B2 The final initial PQ RAB result has been determined using Chorus' IAV model. Changes have been made to the model to implement the final decisions set out in this paper.

B3 The model that Chorus submitted on 26 March 2021 produced a starting RAB of $5.5 billion for Chorus' FFLAS at 1 January 2022. The main components of Chorus' initial PQ RAB estimate are summarised in Table B1 below.

Table B1 Chorus' initial PQ RAB estimate

Asset category	Allocated value in initial PQ RAB
Fibre cable	$1.6 billion
Ducts, manholes, poles	$1.8 billion
Property	$0.1 billion
Cabinets, Transport, Layer 2, IT and other	$0.5 billion
Core fibre RAB	$4.0 billion
Initial RAB value of FLA	$1.5 billion
Total initial PQ RAB value	**$5.5 billion**

B4 Chorus' initial PQ RAB model is an Excel based model, which has been developed by Analysys Mason, and is referred to by Analysys Mason as their BBM IAV Model.[525] As shown above, it produces an estimate of Chorus' total initial PQ RAB value ($5.5 billion), which is comprised of the sum of the (allocated) initial RAB values of Chorus' core fibre assets ($4.0 billion) and an estimate of the initial RAB value of Chorus' FLA ($1.5 billion).

[525] Chorus uses the term Initial Asset Value (IAV) in referring to its model and in the model documentation. This is equivalent to the term initial RAB. We use the terms IAV and initial RAB interchangeably in this paper. Similarly, we will also use the terms Chorus' initial RAB model and BBM IAV model interchangeably.

B5 Chorus' initial PQ RAB model is based on a number of data sources, including Chorus' statutory accounts (Chorus' FAR for assets, and general ledger for operating costs and revenues), as well as forecasts from Chorus' five-year plan. Other key inputs include Chorus' proposed cost and asset allocators and allocator values, which are described in the model documentation.[526]

B6 A description of Chorus' BBM IAV model is provided in the model documentation prepared for Chorus by Analysys Mason. This is summarised as follows:

B6.1 The BBM IAV model is based around four service categories. It refers to these as "contracted UFB FFLAS", "voluntary FFLAS", "non-FFLAS fibre", and "copper services";

B6.2 There are 93 asset classes in Chorus' BBM IAV model;

B6.3 There are four time periods, which relate to when the particular asset was employed in the provision of UFB FFLAS; and

B6.4 There are four geographies in Chorus' BBM IAV model, representing ESAs:

B6.4.1 where Chorus was awarded the majority UFB contract;

B6.4.2 ESAs where Chorus lost the majority UFB contract;

B6.4.3 ESAs which are outside of the scope of the UFB deployment; and

B6.4.4 A "national" geography for central and core assets.

B7 We discuss each of these in greater detail below.

How Chorus has structured the BBM IAV model to cater for assets across time and geographies

Asset classes within the model

B8 The BBM IAV model that calculates Chorus' initial PQ RAB estimate groups assets according to "asset classes". This allows a large degree of aggregation and simplification from the highly granular data held in the FAR.

B9 Chorus explains that each asset class groups assets that have similar asset lifetimes and replacement cost trends. Each asset class is also shared between the different services in a similar way.

[526] See for example Analysys Mason report for Chorus "Building Block model IAV model documentation IAV model v314_120c" (24 March 2021), Figure 15.

B10 The model has space for 93 asset classes, but four are reserved for special purposes.[527]

Time periods used within the model

B11 The model has two time-related dimensions:

B11.1 the periods over which results are calculated; and

B11.2 the date at which assets are acquired.

B12 The time period covered by the BBM IAV model is from (financial year 2012) FY12 through to (financial year 2039) FY39. Where possible, the model works in Chorus financial years. Note that "FY12" refers to the financial loss year ending 30 June 2012, which is a special 7-month financial year.[528]

B13 The PQ RAB comes into operation on the 1 January 2022 implementation date, with the collection of fibre assets that are employed by Chorus in the provision of PQ FFLAS at 1 January 2022 being part of Chorus' initial PQ RAB. Chorus' financial loss years (apart from FY12) generally run from 1 July to 30 June, though the final "financial loss year" of the pre-implementation period (ie, FY21) is also a special 6-month financial year (1 July 2021 to 31 December 2021).

B14 The model is split into four distinct timeframes as follows:

B14.1 Pre-2012;

B14.2 Post2012Actuals (up to end of period or EOP FY20);

B14.3 Post2012Forecasts (from start of period or SOP FY21 to the implementation date); and

B14.4 PostRAB (from implementation date).

B15 It should be noted that the date of establishment of the PQ RAB (ie, the boundary between Post2012forecast and PostRAB) is fixed in the model.

Geographies used within the model

B16 Chorus' FAR has records of assets with most tagged to an ESA. Chorus describes a Chorus ESA as an area served by its copper network from one building.[529]

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[527] The list of 93 asset classes can be found in rows B1654 to B1746 of the "SListsAssumptions" sheet of the "Chorus NZL Core BBM v314_120c CRM IAV CC Final - 8 April 2021.xlsb", published on 30 April 2021.

[528] The pre-implementation period commenced on 1 December 2011.

[529] Analysys Mason report for Chorus "Building Block model IAV model documentation IAV model v314_120c" (24 March 2021), section 2.7.

B17 The model makes use of four geographies:

B17.1 ESA areas where Chorus is the main provider of UFB services (ie, it was awarded the contract to deliver the majority of UFB services in the ESA, "Won");[530]

B17.2 ESA areas where Chorus is not the main provider of UFB services ("Lost");

B17.3 ESA areas where there is no provider of UFB service (i.e. no UFB deployment) ("Non"); and

B17.4 A final geography for central and core assets which are used by all the other geographies ("National"). This class also includes some assets with unknown location.

B18 Chorus also uses a geographic term "rest of New Zealand" (RONZ). Chorus explains that this is a term used in other contexts to represent the area, including within an ESA, within which there are no UFB services. This is not a synonym for the "Non" area.

B19 RONZ is used within Chorus' demand and revenue forecast model, which is an input to the BBM IAV model, to indicate a specific geography. It includes Non-ESA areas and those parts of Won and Lost ESAs not covered by UFB services. That is, part of the RONZ is in the "Non" (RONZ/Non), but part is in the "Lost" (Lost/RONZ) and part is in the "Won" (which it calls Won/RONZ).

Asset classes are associated with a purchase timeframe and a geography

B20 Chorus' BBM IAV model combines asset classes with timeframes and geographies. As a result, the model generates approximately 1,500 combinations of asset class, geography, and timeframe, each of which are to be allocated using an asset allocator type and value.

B21 For example, "Pre2012 L1 Duct Won" would represent:

B21.1 An asset built prior to 1 December 2011;

B21.2 The asset class is layer 1 Duct; and

B21.3 The asset geography is in the "Won" area.

[530] It should be noted that another provider may be rolling out UFB services in another part of the ESA. The UFB area boundaries do not align to Chorus ESA boundaries.

A separate worksheet calculates the initial RAB value of the FLA

B22 Chorus' initial RAB model calculates the initial RAB value of the FLA, using the DCF methodology.[531] This calculation takes the present value of cash flow costs and cash flow revenues over the period from 1 December 2011 to 31 December 2021, as well as the present value of the benefits of Crown financing.

Verification and testing undertaken on Chorus' initial PQ RAB proposal

B23 Chorus has sought testing/verification by independent parties.

B24 Chorus has provided supporting documentation of verification it has sought to date on the model developed by Analysys Mason. Chorus says that the BBM IAV model built by Analysys Mason is based on the best available data, which can be reconciled to its published accounts.

B25 The Commission has obtained further independent scrutiny and review of Chorus' initial PQ RAB proposal.[532]

B26 We noted in our consultation that we would be requiring further independent scrutiny and review of the calculation of Chorus' estimate of the initial PQ RAB as part of our work to review Chorus' proposal.

B27 The Commission has undertaken further review of Chorus' estimate since that time. The results of that review are reflected in these final decisions.

[531] Analysys Mason report for Chorus "Building Block model IAV model documentation IAV model v314_120c.xlsb" (24 March 2021), section 3.6.7.

[532] See PwC " IAV Final IM review summary report" (24 August 2021) and Deloitte "Final FFLAS report" (24 August 2021).